

FINAL

ENVIRONMENTAL BASELINE SURVEY
For
Sixty-One Acres of Permit Terminated Lands
At
Fort Fisher, North Carolina

United States Air Force
Headquarters Air Combat Command



September 2000

ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command
ACM	Asbestos Containing Materials
AF	Air Force
AFB	Air Force Base
AFS	Air Force Station
AFI	Air Force Instruction
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
CE	Civil Engineer
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
CFR	Code of Federal Register
DoD	Department of Defense
DRMO	Defense Reutilization Marketing Organization
EBS	Environmental Baseline Survey
EDR	Environmental Data Resources, Inc.
ERA	Environmental Restoration Account
ERP	Environmental Restoration Program
GMI	Geo-Marine, Inc.
HER	Hazard Evaluation Report
JSS	Joint Surveillance System
LUST	Leaking Underground Storage Tank
NC	North Carolina
NPL	National Priority List
PCB	Polychlorinated Biphenyls
ppb	parts per billion
ppm	parts per million
RCC	NORAD Control Center
RCRA	Resource Conservation and Recovery Act
Recreation Area	Fort Fisher Air Force Recreation Area
SAGE	Semi-Automatic Ground Environment
SWDA	Solid Waste Disposal Act
TPH	Total Petroleum Hydrocarbons
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
UST	Underground Storage Tank
UTM	Universal Transverse Mercator
VSI	Visual Site Inspection

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EXECUTIVE SUMMARY

This Environmental Baseline Survey (EBS) has been prepared for the United States Air Force (Air Force) Headquarters Air Combat Command (ACC) by Gee-Marine, Inc. (GMI). This survey satisfies the requirements for an EBS as outlined in Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transaction*, 25 April, 1994, and involves only those tasks stated in Section 2.0, Survey Methodology, of this report. Disclosure of this information is prohibited without prior notification of the Air Force.

The Air Force proposes to not renew the current permit for a parcel of land permitted from the U.S. Army at Fort Fisher Recreation Area, North Carolina, and subsequently return control of the property to the U.S. Army. The property comprises approximately 61 acres and is located in New Hanover County, approximately twenty miles south of Wilmington, North Carolina.

The following activities were completed:

- Data collection.
- Review of existing report information.
- A field walkover, to confirm recent remediation activities and assess current environmental conditions.
- Interviews with key site personnel.
- An assessment of the property and compilation of all information into EBS format.

Based on the information and recommendations contained in this EBS, there appear to be no known environmental liabilities associated with the Air Force proposed use, lease, or transfer of the property. The findings and recommendations of the investigation are summarized in Table ES-1.

Table ES-1 Summary of Findings and Recommendations

Environmental Item	Findings	Recommended Actions
HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS	No hazardous substances or petroleum products are stored on the subject property. Small quantities of gasoline and oil (less than 5 gallons) are stored on adjacent properties and used for routine lawn mowing activities.	None.
ABOVEGROUND STORAGE TANKS (ASTs)	There are no above ground storage tanks on the property.	None.
UNDERGROUND STORAGE TANKS (USTs)	All known USTs have been removed or properly closed in place. One UST was removed from Parcel E3 in 1995.	None.
OILWATER SEPARATORS	No evidence found of current or historic presence of oil/water separators.	None.
PESTICIDES & HERBICIDES	A third party contractor currently performs all pesticide applications. No herbicides are currently applied on Recreation Area grounds. No evidence was found to indicate contamination or misuse of historically applied pesticides or herbicides.	None.
MEDICAL & BIOHAZARD WASTE	No current evidence of medical or biohazardous materials disposed of at either location, or elsewhere on the site. (Prior to 1988, Buildings 116 and 143, located on an adjacent parcel of property, housed the former medical clinic.)	None.
RADIOACTIVE WASTE	No evidence of current or historical presence of radioactive materials.	None.
SOLID WASTE	All solid waste is collected in dumpsters and disposed of offsite. Evidence of past dumping of vegetation debris and concrete posts from fencing material was found in Parcel E 1.	None.
GROUNDWATER	Ground water sampling in parcel E1 indicates contamination below NC standards. Monitoring wells on Parcel E1 are scheduled to be closed by the end of 2000. (All contamination on adjacent properties associated with USTs in the housing area has been remediated to below NC standards for water quality).	None.

Table ES-1 Summary of Findings and Recommendations (Continued)

Environmental Item	Findings	Recommended Actions
DRINKING WATER QUALITY	Bio-Environmental Engineering staff from Seymour Johnson AFB regularly test the drinking water at the Recreation Area in accordance with NC's drinking water regulations.	None.
ASBESTOS CONTAINING MATERIAL (ACM)	No evidence of ACM exists on the subject property. (Unexposed ACM remains in Buildings 140, 141, and 108, located on adjacent properties).	None.
POLYCHLORINATED BIPHENYLS (PCBs)	No evidence of PCBs exists on the subject property. (Adjacent property contains seven transformers that were identified in 1985 as containing greater than 50 parts per million (ppm) PCBs. They are properly labeled, currently used, and show no evidence of leakage).	None.
RADON	No radon testing has been performed at the Recreation Area. New Hanover County is rated as Zone 3, a low radon potential designation.	None.
LEAD-BASED PAINT	The potential for the presence of lead based paint exists in Building 118 located in parcel E3.	None.

1.0 PURPOSE OF THE ENVIRONMENTAL BASELINE SURVEY

1.1 INTRODUCTION

The purpose of this Environmental Baseline Survey (EBS) is to investigate the environmental condition of approximately 61 acres of land, hereafter referred to as “the property” that are part of the Fort Fisher Recreation Area, hereafter referred to as the “Recreation Area”. The property is currently leased under permit by the United States Air Force (Air Force) from the U.S. Army (Army). The Air Force has proposed to not renew the current permit and subsequently return control of the recreation area to the Army. The Recreation Area is located between the Cape Fear River on the west and the Atlantic Ocean on the east, approximately 14 miles south of Wilmington and one mile south of the small town of Kure Beach, North Carolina.

1.2 PURPOSE OF THE SURVEY

The primary objective of the EBS is to document the nature, magnitude, and extent of environmental contamination of the property if it is considered for acquisition, transfer, lease, sale, or any other disposition. Sufficient information must be developed to assess possible human health and safety or ecological risks so that adequate protection of human health and environment can be ensured. The EBS must identify potential environmental contamination liabilities associated with the subject property and document to the fulfillment of environmental “due diligence” as appropriate.

This EBS is based on information obtained through records search, interviews, an aerial reconnaissance, and visual site inspection (VSI) conducted for the property from May 2000 to September 2000. The information reviewed to prepare this EBS was obtained from standard historical use and environmental record sources listed in the American Society for Testing and Materials (ASTM) Standard E 1527-97, as well as, Seymour Johnson Air Force Base (AFB) and Air Combat Command (ACC) records. Information obtained in this EBS was prepared in accordance with the provisions of Air Force (AFI) 32-7066, *Environmental Baseline Surveys In Real Estate Transactions*, April 25, 1994, and in accordance with ASTM Standard E 1527-93, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*; and ASTM D 6008-96, *Standard Practice for Conducting Environmental Baseline Surveys*.

1.3 SCOPE OF THE SURVEY

The Recreation Area is located in New Hanover County, North Carolina, as shown in Figure 1. A Recreation Area site plan is presented in Figure 2.

The entire Recreation Area occupies approximately 240 acres including easements and areas leased by the North Carolina Army National Guard, and the Air Force. The Recreation Area is located approximately 33° 58' 52" North Latitude and 77° 54' 58" West Longitude. The easting and north-south 1,000 meter Universal Transverse Mercator (UTM) coordinates are 3763.90 and 230.60, and are located in Zone 18.

The approximate 61 acres of property to be **returned** to the Army is divided among three parcels of land designated as E1, E2, and E3 (Figure 2). The area south and east of the main operations, Parcel E1, is 58.5 acres of land bordered on the south end of the property by heavy woods. An open field used as a golf driving range is **located** on the northeast portion of Parcel E1. Parcel E2 is approximately 1.0 acre of land occupied by one playground and a water storage facility. E2 is bordered on the east by beach cottages and on the west by a trailer area. The Air Force plans to build an additional well and water storage facility on Parcel E2 during the summer of 2000. Parcel E3 is approximately 2.0 acres of land occupied by a pet kennel, storage shed, the Recreation Area reception center, and an associated parking lot.

Figure 1 . Ft. Fisher Recreation Area General Location Map

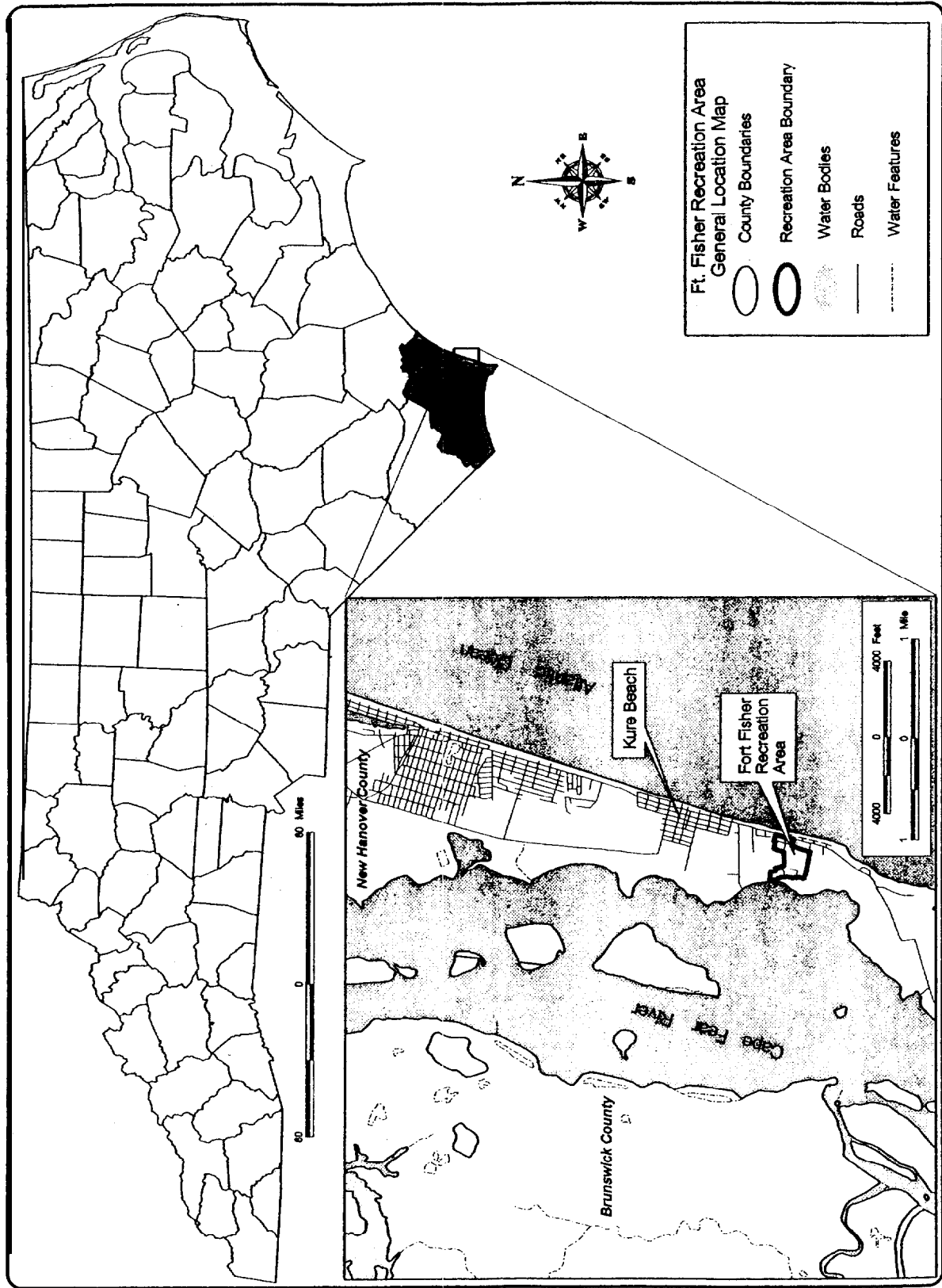
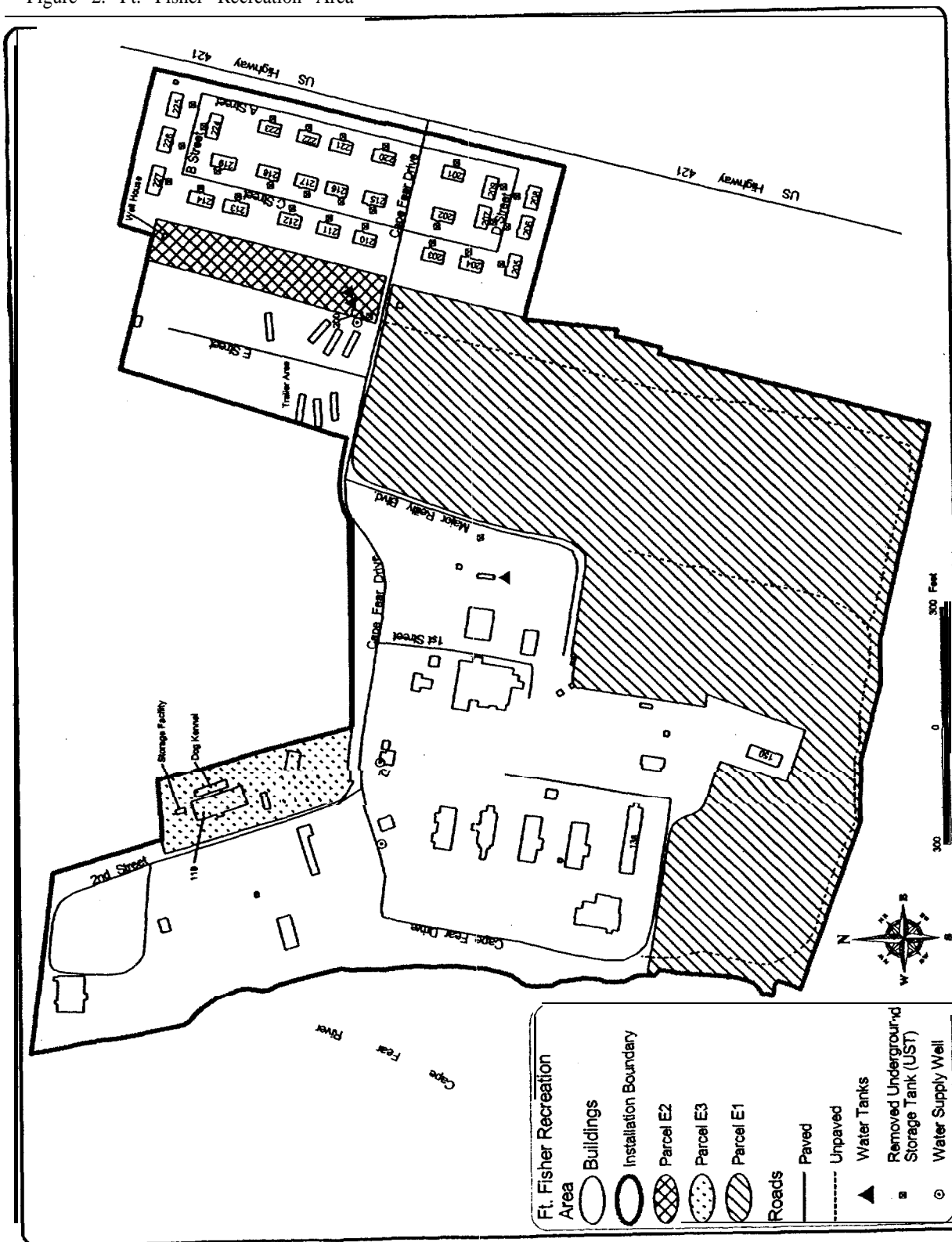


Figure 2. Ft. Fisher Recreation Area



2.0 SURVEY METHODOLOGY/ APPROACH AND RATIONALE

The objectives of the EBS are to:

- Document the nature, magnitude, and extent of any environmental contamination present at the Recreation Area, based on available information.
- Define potential environmental contamination liabilities associated with the site.
- Develop sufficient information to assess the health and safety risks and ensure adequate protection of human health and the environment related to the site.
- When required under Section 120 (h)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), provide the information for notice of the storage or release of hazardous substances on the property.

2.1 DESCRIPTION OF DOCUMENTS REVIEWED

To achieve the above-described objectives, the following activities were completed:

- A review of existing reported information (listed in Section 2.1.1).
- A review of applicable federal and state regulatory agency reports produced in accordance with CERCLA, the Resource Conservation and Recovery Act (RCRA), and the Solid Waste Disposal Act (SWDA).
- A review of land title records and available aerial photographs, building department or land use records.
- Interviews with key site personnel involved with the operations of the site.

2.1.1 Environmental Databases and Other Regulatory Inquiries

Federal and state environmental records were requested on June 8, 2000 from Environmental Data Resources, Inc. (EDR), a commercial information database company.

A radius search with Geo-Check@ was performed on the latitude/longitude coordinates of the Recreation Area for its inclusion in any of the following lists:

<u>Federal ASTM Standard</u>	<u>Search Distance (miles)</u>
National Priority List (NPL)	1.125
National Priority List (NPL) Deletions	1.125
Comprehensive Environmental Response, Compensation And Liability Information System (CERCLIS)	0.625
Comprehensive Environmental Response, Compensation And Liability Information System	0.375
Corrective Action Report	1.125
Resource Conservation and Recovery Information System	0.625
Resource Conservation and Recovery Information System	0.375
Emergency Response Notification System	Target Property

<u>State ASTM Standard</u>	<u>Search Distance (miles)</u>
State lists of hazardous waste sites	1.125
State landfill and solid waste facilities	0.625
State leaking underground storage tank (LUST) lists	0.625
State registered underground storage tank (UST) lists	0.375

A copy of the EDR site report and site map is provided in Appendix B.

Additional documents reviewed during the preparation of this EBS include the following:

- Hazardous Evaluation Report (HER), Fort Fisher Air Force Station (AFS), North Carolina, February 1989, Radian Corporation.
- Corrective Action Plan, Fort Fisher Recreation Area, Kure Beach, North Carolina, 1998, Radian Corporation.
- Draft Confirmation Sampling Report Former UST L- 17 Site, Fort Fisher Recreation Area, North Carolina, 2000, Radian International.
- Draft Confirmation Sampling Report Former UST L- 19 Site, Fort Fisher Recreation Area, North Carolina, 2000, Radian International.
- Site Remediation Report Remedial Excavation- Buildings 2 16, 2 17, and 2 19, Fort Fisher Recreation Area, Kure Beach, North Carolina, 1998, NFE Technologies, Inc.

2.1.2 Aerial Photographs and Deed Records

All aerial photographs were obtained from the Wilmington District of the USACE on August 7, 2000. Photographs of the area from 1954 to 1999 were reviewed (Appendix D).

An historical chain of title report was requested on July 19, 2000 from NETR, a real estate research and information company. A copy of the report is provided in Appendix C. Results from the nationwide environmental title search indicate the property has been under the ownership of the United States of America since at least 1940.

2. PERSONAL INTERVIEWS

Mr. Bernie Mitchell, NC National Guard Training Center Site Engineer, was interviewed twice, in person and in a phone interview, during which he provided site information. Mr. Ken Mostella, the Director of the NC National Guard Training Center, Mr. Stanley, the maintenance supervisor, and Mr. Bob Hayes, Facility Manager, provided a tour of the Recreation Area and the associated buildings. Ms. Betsy Bissell, Seymour Johnson AFB Real Estate, was interviewed twice, in person and in a phone interview, during which she provided information about property ownership and parcel boundaries. Mr. Stan Scott, Headquarters ACC Environmental Restoration Program, was also interviewed regarding the status of environmental investigations at Fort Fisher.

2. PROPERTY INSPECTION

On May 17, 2000, Mary Hassell, of Geo-Marine, Inc. (GMI) conducted a site visit and walkover of the vacant parcel of land known as E1. On July 17, 2000, Mary Hassell, Dana Halsey, and Susan Lee (GMI) met with the Recreation Area maintenance supervisor, Mr. Henry Stanley, and Mr. Bob Hayes to discuss their knowledge of the historical and current use of the property. The meeting concluded with a site walkover to verify issues discussed in personal interviews. All property parcels, including parcels E2 and E3 and buildings were inspected. The site walkover was concluded on July 18, 2000.

2. ENVIRONMENTAL SAMPLING

Sampling was not conducted during the EBS investigation; however, the results of previous sampling activities are summarized within this report.

3.0 FINDINGS FOR SUBJECT PROPERTY

3.1 HISTORY AND CURRENT LAND USE

The Fort Fisher area has had a military presence that dates to 1862, when confederate troops fortified the southern tip of this barrier island. Fort Fisher was an active Army installation prior to and during World War II. Fort Fisher Air Force Recreation Area, formerly Fort Fisher Air Force Station (AFS), was initially activated in August 1955 as the 701st Aircraft Control and Warning Squadron. In January 1963, the Air Force Station was integrated in as a back-up for the Semi-Automatic Ground Environment (SAGE) system at Fort Lee, Virginia. From July 1, 1968 to July 1, 1974, Fort Fisher was the secondary NORAD Control Center (RCC) for the northern portion of the 20th Air Division. Detachment 5 of the 1st 4th Missile Warning Squadron occupied the Station until July 1981, at which time reconfiguration to a Joint Surveillance System (JSS) began. The JSS was decommissioned in April 1983. Between 1983 and 1988, the 701st Aircraft Control and Warning Squadron continued to provide radar services until decommissioned in October 1988.

The Recreation Area is an Air Force multi-purpose facility currently operated and maintained by the Air Force and the Army National Guard. The Air Force uses much of the Recreation Area as an off-base recreation installation for military personnel. The Recreation Area includes a museum, lodging, and recreation equipment rentals. The National Guard uses its leased buildings primarily for indoor training purposes.

All buildings at the Recreation Area are listed with their construction dates in Table 3-1.

Table 3-1. Building List and Corresponding Construction Dates

Building Number	Current Building Description	Date Constructed
103	Water Supply	1955
104	Water Supply	1963
105	Fire Station, Currently Storage	1972
108 Remodeled	Recreation Center	1958/187
116 Remodeled	NC National Guard Training Center	1955/87
117	Electrical Power Station	1958
118	Reception Center, Store and Gift Shop	1977
119	Storage	1986
120	Outdoor Recreation Pavilion	1986
121	Rental Center and Restaurant	1978
122	Classrooms	1961
123	Museum	1962
125	FAA Tower	1962
129	Condensate Return Pump Station	1961
133	Paint Shed	1964
134	Site Director's Office	1965
135	NC National Guard Engineering Office	1970
136	FAA Storage Area	1961
138	NC National Guard Classroom & Air Force Maintenance	1978
L 0140 d g e		1963
141	Lodge	1967
142	NC National Guard Dining Hall	1973
143	Executive Quarters	1970
150	NC National Guard Storage	1971
t - - - - E -	MWR and NAF Storage	1987
154	Civil Engineering Storage Shed	1984
PB1-PB4	Civil Engineering Storage Shed (temporary)	1985
158	CE Spare Transformer Storage Area	1985
199	Bus Stop Station	1983
200	Water Supply Building	1961
201-227	Beach Cottages	1959
300	Ground/Air Transmission/Receiving	1961

Source: Hazard Evaluation Report (HER), Radian Corporation, February 1989.

3.1.1 Aerial Photographs

A description of the findings in the historical aerial photographs follows. The aerial photographs are included in Appendix D.

Photograph 1. November 9, 1954. Scale: 12"=10,000'. Black and White. Stereoscopic Pair.

The photograph indicates a largely wooded area located between Cape Fear River to the west and the Atlantic Ocean to the east. Wooded areas bound the property to the north and south. Four unpaved roads appear on the Recreation Area in this photograph. One road extends approximately 900 feet northwest from US Highway 42 1 into the Recreation Area (Road 1). Two roads extend southwest 1500 feet from the first road, originating 690 feet (Road 2) and 1125 feet (Road 3) from US Hwy 42 1. Originating approximately 750 feet south of Road 1, a fourth road extends 900 feet northwest from US Hwy 42 1 (Road 4). The land bordering US Hwy 42 1 extending approximately 400 feet along the paved road has been cleared of vegetation and the soil is exposed. One rectangular building appears north of the paved road in the clearing. One square structure appears to the south of the paved road in the clearing. Small patches of soil are exposed in the area between Road 2 and 3. Two circular structures appear in this area, as well. The area to the north of Road 1 remains vegetated with heavy trees. Immediately west of Road 3 three rectangular clearings appear. Further west of Road 3, five rectangular buildings/trailers appear. Southwest of these structures, the land has been cleared to the soil. With the exception of the mentioned clearings, the area west of Road 3 remains heavily vegetated. Approximately 100 feet east of the mean high water (MHW) line in the northwest corner of the property, six rectangular aboveground storage tanks (ASTs) and one building are evident. The soil between these tanks is exposed. An unpaved road connecting the tanks with Road 1 appears, as well.

Photograph 2. August 3, 1963. Scale: 1"=833'. Black and White. Stereoscopic Pair.

The network of the four roads that appeared in the 1954 photograph remains evident in the 1963 photograph. Road 1 has been paved and now extends from US Hwy 42 1 to the MHW and then turns south for an additional 750 feet. Road 1 then turns towards the east for 700 feet and then north for an additional 500 feet. An area approximately 6.5 acres in size immediately west of US Hwy 421 has been cleared of trees and revegetated with grasses. Twenty-seven rectangular buildings and four paved roads now appear :in this area (Beach Cottage Area). The two circular structures located between Road 2 and 3 that were apparent in the 1954 photograph are no longer evident. The area to the north of Road 1 and immediately west of the Beach Cottages has been

cleared of trees and revegetated with grasses. One square building, two large circular structures, and one small circular structure appear in this area. Further north of Road 1 in this area, another square building is evident. East of this area, the trees have been cleared and the area has been revegetated with grasses. Ten rectangular buildings now appear (Trailer Area). The area of land west of Road 3 and south of Road 1 extending to the MHW has been cleared of trees and revegetated with grasses. Immediately west of Road 3 and south of Road 1, one large circular aboveground storage tank (AST) and two small rectangular ASTs now appear. Adjacent to the ASTs, one square storage shed is evident. Directly west of the ASTs a large rectangular structure has been constructed. A paved road has been constructed running approximately 450 feet south of Road 1 providing access to the tanks and building. West of this road two L-shaped buildings are evident. A large spherical AST appears to the south of the L-shaped buildings. A paved road running parallel with Road 1 has been constructed providing access from the circular AST to the spherical AST. On the western portion of the Recreation Area at the point where Road 1 turns south then east, the land has been cleared of trees and revegetated with grasses. Two permanent buildings, three rectangular trailers, a swimming pool and a parking lot are evident in this area. Southeast of this area remains heavily wooded with the exception of an approximate 1.5-acre plot that has been cleared to the soil. North of Road 1 and northeast of the MHW, the ASTs that were evident in the 1954 photograph are no longer apparent. Two rectangular buildings with adjacent parking lots and a small square storage shed are apparent in this area. The area north of these buildings has been cleared of trees. The land immediately adjacent to the MHW in this area has been cleared to the soil. One paved road extends north from Road 1 and is located east of the buildings. The area east of this road remains heavily wooded.

Photograph 3. November 1975. Scale: 1"=1000'. Black and White. Stereoscopic Pair.

Roads 1, 2, 3, and 4 remain unchanged since the 1963 photograph. No noticeable changes have been made to the Beach Cottage Area, Trailer Area, and the field between these areas. North of the Trailer Area the trees have been cleared. Ten rectangular structures are evident in this area (Recreational Vehicle Area). Three additional rectangular buildings and one small square structure now appear in the area of land west of Road 3 and south of Road 1 extending to the MHW. The soil is exposed south and west of the swimming pool and adjacent to several of the buildings. Southeast of this area, approximately 0.5 acres of trees have been removed. Two rectangular structures are evident in this clearing. The land surrounding these structures has been partially cleared to the soil. North of Road 1 and northeast of the MHW, no new structures

appear. Vegetation has returned to the area that had been cleared to the soil in the 1963 photograph. The soil is exposed north of the buildings in this photograph.

Photograph 4. October 3, 1984. Scale: 1"=1000'. Black and White. Southern View.

Roads 1,2,3, and 4 remain unchanged since the 1975 photograph. No noticeable changes have been made to the Beach Cottage Area, Trailer Area, Recreational Vehicle Area and the field between these areas. The trees have been removed from a portion of the area between Road 2 and Road 3. One additional rectangular building now appears in the area of land west of Road 3 and south of Road 1 extending to the MHW. Southeast of this area, one of the rectangular structures observed in the 1975 photograph is no longer evident. The soil is exposed over much of the eastern portion of this area. Three new rectangular structures now appear north of Road 1 and northeast of the MHW. The vegetation has been cleared to the soil surrounding these new structures.

Photograph 5. April 15, 1995. Scale: 1"=12000'. Color. Stereoscopic Pair.

Road 1 remains unchanged since the 1984 photograph. Roads 2, and 4 are no longer apparent. Road 3 has been paved and now extends 600 feet south from Road 1 and then turns west for 275 feet. The Beach Cottage Area, Trailer Area, Recreational Vehicle Area and the field between these areas remains unchanged. Trees have been removed from approximately 8 acres of land east of Road 3. Two small square structures and a pile of dirt and plant debris are now evident in this area. An additional swimming pool, small rectangular storage shed, parking lot, and ball field now appear in the area west of Road 3. The vegetation has been restored to much of this area. North of Road 1 and northeast of the MHW, an additional six small rectangular structures, one square building, a parking lot and a ball field are now evident. The vegetation has been restored to most of this area, as well. A fishing pier that extends into the Cape Fear River is evident.

Photograph 6. March 19, 1999. Scale: 1"=12000'. Color. Stereoscopic Pair.

Road 1 and 3 remain unchanged since the 1995 photograph. A small square structure is now apparent in the northeast corner of the Beach Cottage Area. No changes are evident in the Trailer Area, Recreational Vehicle Area, or field between these areas and the Beach Cottages. One square building and the pile of plant debris located in the area east of Road 3 are no longer evident. No changes are evident in the area west of Road 3. Three of the rectangular structures

that were observed in the 1995 photograph north of Road 1 and northeast of the MHW are no longer apparent. No other changes appear to have been made to this area.

3.1.2 Deed Records

An historical chain of title report was requested on July 19, 2000 from NETR, a real estate research and information company. A copy of the report is provided in Appendix C. Results from the nationwide environmental title search indicates the property has been under the ownership of the United States of America since at least 1940.

Table 3-2 presents a summary of the land acquisition transactions for the Recreation Area. Real Estate maps and the modification of outgrant documents for Parcels E1, E2, and E3 were provided by Ms. Betsy Bissell of Seymour Johnson Real Estate (Appendix C).

Table 3-2. Real Estate Transactions for Parcels E1, E2, and E3

Grantor	Grantee	Acreage	Area Description	Tract ID	Grant Date	Acquisition instrument	Expiration Date	Termination Date
Dept. of the Army	Air Force	58.5	Area south and east of the Main Operations	E-1	Nov-68	Use Permit	Ott-88	N/A
Dept. of the Army	Air Force	1.0	Area between Beach Cottages and Trailer Area	E-2	Nov-68	Use Permit	Ott-88 (hold-over status)	N/A
Dept. of the Army	Air Force	2.0	Rental Center/ Restaurant Parking Lot and Ball Field	E-3	Nov-68	Use Permit	Ott-88	N/A

Source: Environmental Baseline Survey at Fort Fisher Recreation Area, North Carolina, Foothill Engineering, Inc. August 1996.

N/A: not available

3.1.3 History of Environmental Investigations

The following environmental investigations occurred on property adjacent to the Parcels E 1, E2 and E3. The property investigated in the following reports is not part of the property that is being transferred by the Air Force to the Army. There are no known incidents of prior contamination of the property prior to federal ownership.

- *Hazard Evaluation Report, Fort Fisher Air Force Station, North Carolina. February 1989.* This study was conducted to determine the presence of hazardous waste, polychlorinated biphenyls (PCBs), asbestos, and USTs. Results from the study indicated that hazardous wastes could be produced if certain materials were mismanaged (paint thinners, paints, adhesives, sealants and solvents), however, at the time of this study these materials were being properly stored. Asbestos containing materials (ACMs) were found in five buildings (#108, #116, #117, #140, and #141). Most of the ACMs were contained inside wrapping material thus preventing its release to the atmosphere. Polychlorinated biphenyls (PCBs) were found in seven transformers in the electrical distribution center. Each transformer was properly labeled. A total of 38 operational USTs were identified at the Air Force Station. Of the 38 USTs, twelve were eventually taken out of service, five were cleaned and filled with water or sand and sealed, and seven were completely removed by 1989.
- *Fort Fisher Air Force Recreation Area, Kure Beach, North Carolina. Environmental Baseline Survey. August 1996.* Foothill Engineering Consultants Inc. was contracted by the USACE, Omaha District, to provide engineering services to support the preparation of an EBS for Fort Fisher Air Force Recreation Area, North Carolina. The EBS was prepared to document the environmental condition of 240 acres of the Recreation Area. The EBS resulted in several recommended actions including the further investigation of hazardous substances, above ground storage tanks, underground storage tanks, and drinking water quality.
- *Confirmation Sampling Report Former UST L-1 9, Fort Fisher Air Force Recreation Area, Kure Beach, North Carolina. January 2000.* Confirmation soil sampling at Fort Fisher Recreation Area was conducted by a contracted architect-engineer for the Omaha District of the USACE. Sampling was performed on August 25, 1999 at the former sites of USTs L- 17 and L- 19. UST L- 17 had been used to store fuel oil #2 for residential heating, but was removed. The UST was removed from building 219 in 1995. Analytical results of the confirmation sampling for L-19 indicated the presence of extractable total petroleum hydrocarbons (TPH).
- *Confirmation Sampling Report UST L-1 7, Fort Fisher Air Force Recreation Area, Kure Beach, North Carolina. January 2000.* Confirmation soil sampling at Fort Fisher Recreation Area was conducted by the architect-engineer, with the Omaha District of the USACE. Sampling was performed on August 25, 1999 at the sites of former USTs L-17

and L-19. Former UST L-1 7 was used to store fuel oil #2 for residential heating. The UST was removed from building 2 1'7 in 1995. Analytical results of the confirmation sampling for L-1 7 indicated the presence of extractable total petroleum hydrocarbons (TPH).

3.2 ENVIRONMENTAL SETTING

3.2.1 Topography

The Recreation Area is located at 33° 58' 52" North Latitude and 77° 54' 58" West Longitude. The surrounding area is gently sloping and the elevation is a few feet above sea level. The coastline configuration consists of flat terrain with low relief, characteristic of coastal plains and barrier islands. The Recreation Area is located within the state and federal 100-year flood plain (FEC 1996).

3.2.2 Soils and Geology

The geology of the area is typical of the Gulf-Atlantic Coastal Plains. The ages of most of the coastal plain formations are Cretaceous or Tertiary. Marine Cretaceous sands and marl beds appear at the tide water level near Wilmington and are underlain by the Potomac Formation. The limestone Potomac Formation is the most important water-bearing formation of the coastal plain region. Underlying the Potomac Formation is a crystalline schist of Triassic age, and perhaps older (FEC 1996).

3.2.3 Surface and Groundwater Resources

The uppermost groundwater aquifer beneath the Recreation Area occurs within 15 feet of ground surface. The direction of groundwater flow varies with seasonal conditions and water levels of the Cape Fear River that fluctuate in response to tidal changes (FEC 1996).

3.3 FINDINGS

3.3.1 Hazardous Substances

3.3.1.1 Hazardous Materials and Petroleum Products

Currently, only landscaping equipment such as lawnmowers require the use of hazardous substances and petroleum products. Quantities used are less than five gallons. According to Mr.

Stanley, the maintenance supervisor, vehicle maintenance is prohibited on the property. On-going facility maintenance materials, categorized as either cleaners, paint supplies, maintenance supplies, or petroleum products are used at Fort Fisher. (Petroleum products are properly contained and not considered hazardous substances.) No existing historic documentation suggests release or mishandling of these materials (Hayes 2000). It was determined that no hazardous substances or petroleum products or their derivatives were stored for one year or more, known to have been released, or disposed of on the site.

All potentially hazardous materials generated by the Air Force are taken to Civil Engineering (CE) Paint Shop at Seymour Johnson AFB, located in Goldsboro, NC. If certain materials can be used by other military facilities, they are then transferred to the Defense Reutilization Marketing Organization (DRMO) at Seymour Johnson AFB.

3.3.1.2 Petroleum Product Spills and Releases

According to the database search conducted by EDR, one off-site leaking Underground Storage Tank (LUST) was located near the subject property. A fuel leak of unknown quantity occurred on March 20, 1995 from this unidentified tank (Incident Number 14490).

3.3.2 Environmental Restoration Program Contamination

Based on review of historical documents and interviews with site personnel, there are currently no sites that are eligible for Air Force Environmental Restoration Account (ERA) funds at the Recreation Area. Currently, there are no Environmental Restoration Program (ERP) sites on Fort Fisher.

3.3.3 Pesticides and Herbicides

No pesticides or herbicides are currently being stored at the Recreation Center. Third-party certified and licensed contractors perform all pesticide application; and herbicides are not used on site. According to Mr. Hayes all materials are applied in accordance with regulations and no incidents have been reported or noted. No evidence was found to indicate contamination of historically applied pesticides or herbicides (Hayes 2000).

3.3.4 Storage Tanks

3.3.4.1 Aboveground Storage Tanks

Two aboveground storage tanks (ASTs) on Parcel E2 associated with the Recreation Area's water distribution system are presently used for water supply and emergency fire protection. The tanks are located between the Beach Cottages and the mobile homes next to Building #200 (see Figure 2 and Figure 4). The water supply tanks hold 25,000 and 40,000 gallons respectively.

3.3.4.2 Underground Storage Tanks

All known USTs on the Recreation Area have been removed or closed in place. Only one UST was located on Parcel E3 near building 118 (Tank A). Tank A was installed in 1977 to hold No. 2 Heating Fuel Oil. The tank was later removed in 1995. UST information is summarized in Table 3-3. The locations of removed USTs are represented in Figure 4.

Table 3-3. UST Inventory

Tank ID	Bldg. No.	Contents	Capacity (gal)	Construction Materials	Installation Date	Status
A	118	No. 2 Heating Fuel Oil	2030	Steel	1977	Removed 1995
B	138	No. 2 Heating Fuel Oil	1150	Steel	1978	Removed 1995
C	150	No. 2 Heating Fuel Oil	991	Steel	1971	Removed 1995
D	140	No. 2 Heating Fuel Oil	2130	Steel	1986	Removed 1995
D2	140	No. 2 Heating Fuel Oil	1020	Steel	Unknown	Removed 1995
E	141	No. 2 Heating Fuel Oil	2060	Steel	1986	Removed 1995
F	142	No. 2 Heating Fuel Oil	1490	Steel	1973	Removed 1995
G	116	No. 2 Heating Fuel Oil	2240	Steel	1955	Removed 1995
H	117	Used Engine Oil	991	Unknown	1958	Removed 1995
I	150	Gasoline	4900	Steel	1982	Removed 1995
J	150	Grit Chamber	56.5	Concrete	1986	Closed in Place 1995
K	200	Gasoline	206	Steel	1961	Removed 1995
L1	201	No. 2 Heating Fuel Oil	261	Metal (steel)	1959	Removed 1995
L2	202	No. 2 Heating Fuel Oil	275	Metal (steel)	1959	Removed 1995
L3	203	No. 2 Heating Fuel Oil	252	Metal (steel)	1959	Removed 1995
L4	204	No. 2 Heating Fuel Oil	258	Metal (steel)	1959	Removed 1995
L5	205	No. 2 Heating Fuel Oil	173	Metal (steel)	1959	Removed 1995
L6	206	No. 2 Heating Fuel Oil	275	Metal (steel)	1959	Removed 1995
L7	207	No. 2 Heating Fuel Oil	255	Metal (steel)	1959	Removed 1995
L8	208	No. 2 Heating Fuel Oil	275	Metal (steel)	1959	Removed 1995
L9	209	No. 2 Heating Fuel Oil	252	Metal (steel)	1959	Removed 1995
L10	210	No. 2 Heating Fuel Oil	261	Metal (steel)	1959	Removed 1995
L11	211	No. 2 Heating Fuel Oil	267	Metal (steel)	1959	Removed 1995
L12	212	No. 2 Heating Fuel Oil	242	Metal (steel)	1959	Removed 1995
L13	213	No. 2 Heating Fuel Oil	246	Metal (steel)	1959	Removed 1995
L14	214	No. 2 Heating Fuel Oil	247	Metal (steel)	1959	Removed 1995

Table 3-3. UST Inventory (Continued)

Rank ID	Bldg. No.	Contents	Capacity (gal)	Construction Materials	Installation Date	Status
L16	216	No. 2 Heating Fuel Oil	229	Metal (steel)	1959	Removed 1995
L17	217	No. 2 Heating Fuel Oil	Unknown 278	Metal (steel) Unknown	1959 1986	Replace LUST 1986 Removed 1995
L18	218	No. 2 Heating Fuel Oil	267	Metal (steel)	1959	Removed 1995
L19	219	No. 2 Heating Fuel Oil	Unknown 249	Metal (steel) Unknown	1959 1986	Replace LUST 1986 Removed 1995
L20	220	No. 2 Heating Fuel Oil	264	Metal (steel)	1959	Removed 1995
L21	221	No. 2 Heating Fuel Oil	264	Metal (steel)	1959	Removed 1995
L22	222	No. 2 Heating Fuel Oil	281	Metal (steel)	1959	Removed 1995
L23	223	No. 2 Heating Fuel Oil	252	Metal (steel)	1959	Removed 1995
L24	224	No. 2 Heating Fuel Oil	276	Metal (steel)	1959	Removed 1995
L25	225	No. 2 Heating Fuel Oil	Unknown 248	Metal (steel) Unknown	1959 1986	Replace LUST 1986 Removed 1995
L26	226	No. 2 Heating Fuel Oil	272	Metal (steel)	1959	Removed 1995
L27	227	No. 2 Heating Fuel Oil	255	Metal (steel)	1959	Removed 1995
M	122	Gasoline	488	Metal (steel)	Unknown	Removed 1995
N	106	No. 2 Heating Fuel Oil	1060	Metal (steel)	Unknown	Removed 1995
P	107	Unknown	1000	Unknown	Unknown	Removed Prior to 1981
Q	108	No. 2 Heating Fuel Oil	950	Metal (steel)	Unknown	Removed 1995
R	125	Unknown	1000	Unknown	Unknown	Removed 1995
S	120	Unknown	1000	Unknown	Unknown	Closed in Place 1995
T	116	No. 2 Heating Fuel Oil	4800	Metal (steel)	Unknown	Removed 1995
U	134	No. 2 Heating Fuel Oil	6770	Metal (steel)	unknown	Closed in Place 1995
V	300	Unknown	1000	Unknown	Unknown	Unknown Removal Date
Y	150	Waste Oil Tank Adj. to Service Bay (UST J)	350	Metal (steel)	Unknown	Removed 1995
Z	150	Septic Tank	843	Unknown	Unknown	Removed 1995

Source: Environmental Baseline Survey at Fort Fisher Air Force Recreation Area, North Carolina. Foothill Engineering, inc. August 1996

3.3.4.3 Pipeline, Hydrant Fueling and Transfer Systems

Based on review of historical documents and the field walkover, no evidence was found to suggest the current or historical presence of any fuel pipelines, hydrant fueling, or transfer systems at the Recreation Area.

3.3.5 Solid Waste

Historically and presently, solid waste is hauled off-site for disposal. There are no active landfills at the Recreation Area. As indicated by the review of the aerial photographs and the site walkover, portions of parcel E1 have been used for disposal. The only known solid waste items that have been disposed at the Recreation Area are located in the northern portion of parcel E1 and include yard waste, concrete, and fence posts. Non-hazardous solid waste that is currently generated by the Recreation Area is disposed of through third-party contractors in accordance with all state and federal regulations.

3.3.6 Groundwater/ Drinking Water Quality

As shown in Figure 2, one active water supply well is located on Parcel E2 immediately northwest of the Beach Cottages (Well #3). Groundwater from this well and Well #1 (near Building 103) are combined to decrease the salinity of the water to meet the supply and demand for the Recreation Area.

Groundwater at the Recreation Area is within 15 feet of the surface in most places, and it is likely that a salt-water lense overlies and intrudes the groundwater table beneath much of the site.

During the closure of the USTs in 1995, no free product was reported at any of the tank locations. However, analysis of confirmatory soil and water samples indicated possible contamination of soil and/or groundwater at 17 of the tank locations. None of these 17 tanks were located on Parcels E1, E2, or E3. A Comprehensive Site Assessment (CSA) that included the 17 tank locations was completed in July of 1997. During the CSA, 31 monitoring wells were installed at the Recreation Area to evaluate groundwater contamination. Monitoring wells Z-1, C-1, Z-2, Z-3, and BL-1 are located on Parcels E1 and E2. The location of these monitoring wells is shown in Figures 3 and 4. Water quality from these monitoring wells indicates all contamination is below North Carolina

Figure 3. Ft. Fisher Monitoring Wells - Operations Area

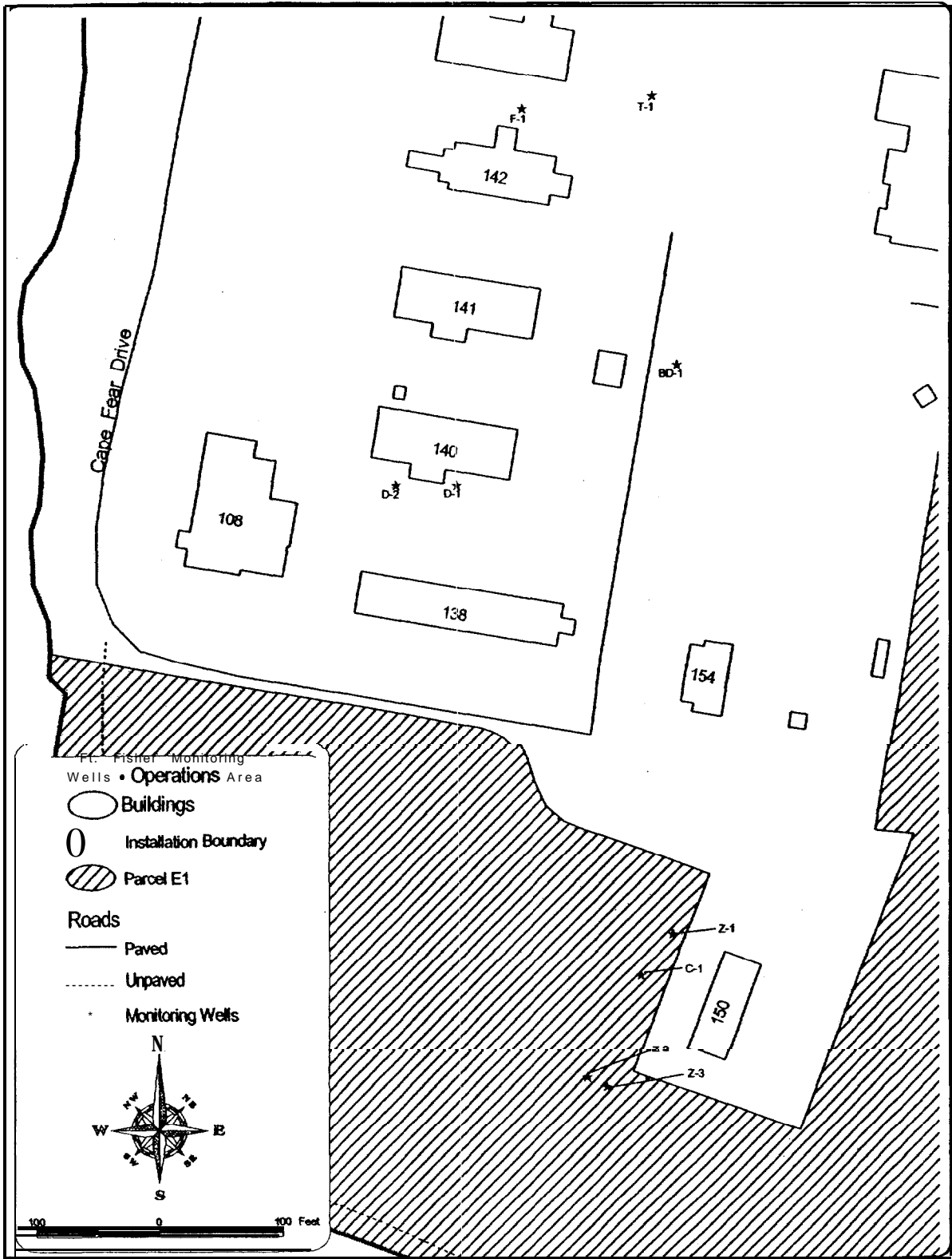
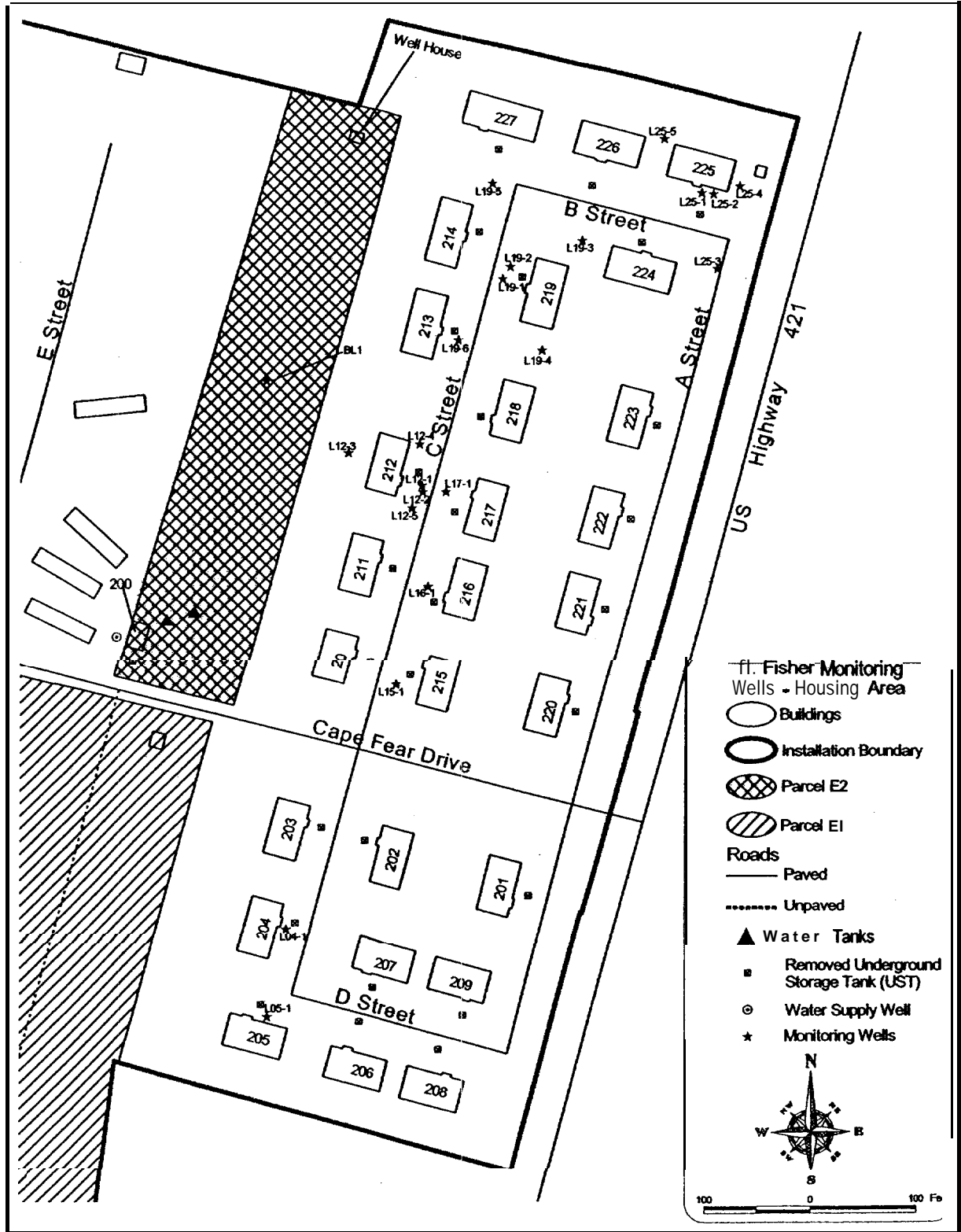


Figure 4. Ft. Fisher Monitoring Wells – Housing Area



water quality standards. The Air Force has scheduled the monitoring wells in Parcel E 1 to be closed in the future (Scott 2000).

3.3.7 Asbestos

Radian Corporation conducted an asbestos survey and sampling program as part of the field investigations done for a Hazard Evaluation Report (HER) in 1989. No buildings located on the Parcels of E1, E2, or E3 were identified as having asbestos containing materials (ACM).

3.3.8 Medical or Biohazardous Waste

There was no evidence found to suggest the historical or current presence of medical or biohazardous wastes.

3.3.9 Ordnance

Based on the review of historical documents and considering the historical mission of the AFS, no evidence was found to suggest current or historical use of ordnance at the Recreation Area.

3.3.10 Radioactive Waste

Since the activation of the 701st Radar Squadron, the mission of the AFS was in part, that of an air defense radar site. As such, there has been no historic or current requirement for the use or storage of any type of radioactive materials at the Recreation Area.

3.3.11 Polychlorinated Biphenyls

Seven transformers were identified in 1985 as containing greater than 50 ppm PCBs. These PCB-containing transformers are properly labeled and are currently being used. According to Seymour Johnson AFB Environmental Staff, all PCB-containing transformers are maintained on a regular basis. A summary of the 1985 transformer inventory is presented in Table 3-1 1. The only transformers that are part of the proposed property transfer are those associated with Building 118, which is located on Parcel E3.

Table 3-4. Transformer Inventory

Building Number	Location	Number of Transformers	PCB Concentration	Status
108	East side of Bldg-Pole #89	3	<50	Active
117	Northwest of Bldg-Pole #86C	1	<50	Active
	Northwest of Bldg-Ground	3	<50 224	Active
118	North side of Bldg-Pole #12A	3	<50	Active
119	West side of Bldg-Pole #16	1	<50	Active
120	South side of Bldg-Pole #70	1	<50	Active
		1	70	Active
122	East side of Bldg-Pole #64	3	<50	Active
123	West side of Bldg-Pole #63	3	<50	Active
125	North side of Bldg-Ground	3	<50	Active
	Southeast of Bldg-Pole #40-2	1	<50	Active
134	Southwest of Bldg-Pole #23	1	<50	Active
136	North side of Bldg-Pole #96	1	<50	Active
140	West side of Bldg-Pole #88	3	<50	Active
141	West side of Bldg-Pole #88	3	<50	Active
	-Pole #87	3	<50	Active
	-Pole #86	3	<50	Active
	-Pole #82	2	<50	Active
		1	101	Active
	North side of Bldg-Pole #82B	3	<50	Active
150	Northwest of Bldg-Pole #95	3	<50	Active
152	South side of Bldg-Pole #18	1	422	Active
200	North side of Bldg-Ground	3	<50	Active
203	East side of Bldg-Pole #43	1	<50	Active
205	East side of Bldg-Pole #44	1	<50	Active
211	East side of Bldg-Pole 47	1	<50	Active
214	Southeast of Bldg-Pole #49	1	<50	Active
222	Southeast of Bldg-Pole #55	1	<50	Active
226	Southeast of Bldg-Pole #51	1	<50	Active
300	West side of Bldg-Ground	1	296	Active
		1	244	Active
		1	233	Active
Trailer Park	-Pole #32	1	<50	Active
	-Pole #34	1	<50	Active
	-Pole #32D	1	<50	Active
	-Pole #32B	1	<50	Active
CE Storage Yard	-Ground	5	<50	Inactive

Source: Environmental Baseline Survey at Fort Fisher Recreation Area, North Carolina, Foothill Engineering, Inc. August 1996.

3.3.12 Radon

According to EPA's Map of Radon Zones for NC, the Recreation Area is located in an area rated as Zone 3. Zone 3 areas are considered to have a low radon potential. The average screening levels are less than 2 picoCuries per liter (pCi/L). A review of EPA's Region 4 indoor radon levels further supports this rating, averaging 0.0 to 1.9 pCi/L. EPA's action level for radon is 4 pCi/L.

3.3.13 Lead Based Paint

A lead based paint survey for the Recreation Area is not planned as of the date of this report. The potential for the presence of lead based paint is greater in buildings constructed prior to 1978, which includes Building 118. The visual inspection of the property indicated that all paint surfaces were in good condition.

3.4 REGULATORY REVIEW

Regulatory database searches at the federal and state levels were supplied by EDR, Inc. (Appendix B). The federal and state environmental databases were conducted using areas defined by their zip codes and street addresses, when available, in order to identify both the project site and neighboring properties. The radius of inquiry for different databases is consistent with the distances recommended in the ASTM guidelines for conducting Phase I Environmental Site Assessments (ASTM D 6008 - 96). Other databases were searched for the site and adjacent properties. GMI personnel conducted municipal and county inquiries and additional research at the state level.

3.4.1 Federal and State Environmental Databases

Federal and state records researched did not identify any facilities on the site or events that occurred on the site or within the specified distances that would be considered of environmental concern.

3.4.2 Regulatory Compliance Issues

Based on the review of federal and state environmental databases, and municipal and county inquiries, neither the site nor its immediate neighbors have a current compliance or other environmental regulatory concern.

4.0 FINDINGS FOR ADJACENT PROPERTIES

The Fort Fisher Recreation Area is located in the Town of Kure Beach, North Carolina. The Recreation Area is bordered by the Cape Fear River to the west and by U.S Route 42 1 and residential areas to the east. The Recreation Area extends to within 400 ft of the Atlantic Ocean. Adjacent properties to the north, south, and west across the Cape Fear River are owned and occupied by Sunny Point US Military Ocean Terminal. To the east, across Fort Fisher Boulevard, the land is residential.

Fort Fisher Recreation Area and adjacent properties were searched by zip code and radius from the site (from a latitude/longitude coordinate at a central point on the site). The search was conducted to identify any facilities associated with Fort Fisher Recreation Area or adjacent properties potentially impacting the Recreation Area and federal or state environmental lists regulated by CERCLA, RCRA, or the Solid Waste Disposal Act. The lists were searched through an environmental database company (EDR, Inc.) The complete findings are presented in Appendix A. All locations cited within a one-mile radius of the Recreation Area are summarized in Table 4.1. Record findings indicate that none of the sites are likely to have an environmental impact on the Recreation Area.

Table 4-1. Adjacent Properties Summary of Environmental Sites of Concern

Environmental Regulatory List	Facility Name	Facility Location	Record Findings from Environmental Agencies
Resource Conservation and Recovery Information System (RCRIS) List	US Military Ocean Terminal	Highway 421 Pleasure Island Kure Beach	Facility generates less than 100 kg per month of conditionally exempt waste.
Underground Storage Tank Registration Reports	Fort Fisher Air Force Station	Kure Beach	According to state records, seven USTs are currently registered and in use. However, all USTs are known to be removed as discussed in Section 3.3.4.2.
Underground Storage Tank Registration Reports	Fort Fisher State Historic Site	Highway 42 1 South of Kure Beach	The historic site is located less than one mile south of the Recreation Area, and currently has one active 550 gallon gasoline UST that was installed in 1981. Another 550 gallon gasoline UST was in operation on the site in 1968 but closed in 1993.
Underground Storage Tank Registration Reports	Fort Fisher Trading Post	858 Fort Fisher Blvd South Kure Beach	A British Petroleum (BP) service station at the trading Post is within one mile of the Recreation Area, and has four gasoline USTs of unknown capacity currently in use.

Table 4-1. Adjacent Properties Summary of Environmental Sites of Concern (Continued)

Environmental Regulatory List	Facility Name	Facility Location	Record Findings from Environmental Agencies
Underground Storage Tank Registration Reports	National Guard Training Center	US 421 Fort Fisher	The National Guard Training Center has one UST that was installed in 1964 and is currently registered on the states UST list to contain unknown substances. However all USTs are known to be removed as was discussed in Section 3.3.4.2.
Underground Storage Tank Registration Reports	Town of Kure Beach	401 H Avenue	The site is one mile north of the Recreation Area, and has one active 150 gallon diesel fuel UST that was installed in 1982. Another 1,000 gallon diesel fuel UST operated from 1971 until it was closed in 1989.

5.0 SUMMARY AND CONCLUSIONS

Per AFI 32-7066 (“Environmental Baseline Surveys in Real Estate Transactions”), the Air Force has defined the following categories regarding the presence of CERCLA hazardous substances [42 U.S.C. section 9601 (14)] or petroleum products or their derivatives:

- Category 1: No storage occurred. Areas where no storage, release, or disposal of hazardous substances or petroleum products has occurred.
- Category 2: Only storage occurred. Areas where only storage of hazardous substances or petroleum products has occurred.
- Category 3: Contamination below **action** levels. Areas where storage, release, disposal and/or migration of hazardous substances or petroleum products has occurred, but at concentrations that do not require a removal or remedial action.
- Category 4: Remedial action required and taken. Areas where storage, release, disposal, and or migration of hazardous substances or petroleum products has occurred, and all remedial actions necessary to protect human health and the environment have been taken.
- Category 5: Remedial or other action underway. Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, removal and/or remedial actions are underway, but all required actions have not yet been taken.
- Category 6: Required response action not implemented. Areas where storage, release, disposal, and/or migration of hazardous substances or petroleum products has occurred, but required response actions have not yet been implemented.
- Category 7: Further evaluation required. Areas that are unevaluated or require additional evaluation.

Based on observation and available information, the various components of the site have been categorized according to the definitions provided in AFI 32-7066. A summary of observed and available information for the Fort Fisher Recreation Area is presented in a Facility Matrix Summary (Table 5.1). Conclusions are based on a synthesis of all information presented in the EBS.

Table 5-1. Facility Matrix Summary

Description/Facility	Size	Year Built	PSTs	Haz Mat/ Haz Waste	ACM	LBP	Suspect PCBs	Comments	Category
Parcel E1	58.5 acres	NA	N	N	N	N	N	Contains 4 monitoring wells scheduled to be closed in 2000.	2
Parcel E2	1.0 acre	NA	N	N	N	N	N	Parcel had one UST removed in 1995.	4
Parcel E3 (Three main structures include: Bldg 118, the Reception Center, storage shed, and dog kennel)	2.0 acres	1977	N	N	N	Possible in Bldg. 118	N	Storage shed contains some cleaning chemicals and materials.	4

NA = not applicable; N = no

6.0 RECOMMENDATIONS

GMI recommends that the Air Force proceed with the proposed permit termination of the approximately 61 acres of land at the Fort Fisher Recreation Area.

7.0 REFERENCES

- EDR 2000 EDR Radius Map with GeoCheck®, Fort Fisher Recreation Area, Northeast Comer of Highway 42, Inquiry No. 504853.1s.
- FEC 1996 Environmental Baseline Survey at Fort Fisher Air Force Recreation Area, Kure Bach, North Carolina.
- Hayes 2000 Hayes, Bob, Fort Fisher Recreation Area, Facility Manager, personal interview with Mary D. Hassell, GMI, July 17.
- NETR 2000 Historical Chain of Title Report, Fort Fisher Recreation Area, Northeast Comer of Highway 42.
- NFET 1998a NFE Technologies, Inc., 1998, Site Remediation Report Remedial Excavation-Building 216, *Fort Fisher AFRA, Kure Beach, North Carolina.*
- NFET 1998b NFE Technologies, inc., 1998, Site Remediation Report Remedial Excavation-Building 2 17, *Fort Fisher AFRA, Kure Beach, North Carolina.*
- NFET 1998c NFE Technologies, Inc., 1998, Site Remediation Report Remedial Excavation-Building 2 19, *Fort Fisher AFRA, Kure Beach, North Carolina.*
- REI 1998 Radian Engineering, Inc., 1998. Corrective Action Plan, Fort Fisher Recreation Area, Kure Beach, North Carolina.
- RI 2000a Radian International, 2000, Draft Confirmation Sampling Report Former UST L 17 Site, Fort Fisher Recreation Area, North Carolina.
- RI 2000b Radian International, 2000, Draft Confirmation Sampling Report Former UST L 19 Site, Fort Fisher Recreation Area, North Carolina.
- RI 1999a Radian International, 1999, Draft Confirmation Sampling Report Former UST L 17 Site, Fort Fisher Recreation Area, North Carolina.
- RI 1999b Radian International, 1999, Draft Confirmation Sampling Report Former UST L 19 Site, Fort Fisher Recreation Area, North Carolina.
- Scott 2000 Scott, Stan, Environmental Restoration Program, Program Manager, HQ ACC Environmental Restoration Branch, personal interview with Mary D. Hassell, GMI, September 25.
- USAF 2000 United States Air Force, 2000. Air Force Station Status Report.

8.0 CERTIFICATIONS

**Certification of the Environmental Baseline Survey
Fort Fisher Recreation Area, North Carolina**

Geo-Marine, Inc., has conducted this Environmental Baseline Survey on behalf of the Air Force. Geo-Marine, Inc., has reviewed all appropriate records made available and conducted visual site inspections of the selected facilities following an analysis of information during the record search. The information contained within the survey report is based on records made available and, to the best of Geo-Marine, Inc.'s knowledge, is correct and current as of 28 September 2000.

Description of Property Surveyed:

The Fort Fisher Recreation Area, consisting of three non-contiguous parcels of land totaling approximately 6.1 acres, located in the Town of Kure Beach in New Hanover County, North Carolina.

Certified by: Mary D. Hassell
MARY D. HASSELL, CEP
Project Manager
Geo-Marine, Inc.

Date: Sept 28, 2000

Approved by: Charee Hoffman
CHAREE HOFFMAN
Project Manager
HQ ACC

Date: 29 Sep 00

**Certification of Polychlorinated Biphenyls Clearance
Fort Fisher Recreation Area, North Carolina**

Description of Property Surveyed:

Certify either one or the other (1 or 2)

The Fort Fisher Recreation Area, consisting of three non-contiguous parcels of land totaling approximately 6.1 acres, located in the Town of Kure Beach in New Hanover County, North Carolina.

- X - 1. This Real Property is in compliance with 40 CFR 76.1 as outlined below:
 - X - b) All in-service and stored serviceable PCB and PCB-contaminated Real Property Installed Equipment and Real Property PCB Items have been inspected, repaired, and are being maintained to prevent leakage, and, therefore, can be distributed according to Section 761.30.
- 2. A records search and an on-site inspection indicate that this property has not been exposed to PCB material or equipment.

Certified by: Mary D. Hassell
MARY D. HASSELL, CEP
Project Manager
Geo-Marine, Inc.

Date: Sept. 28, 2000

Approved by: Michael R. Patrick
MICHAEL R. PATRICK
Colonel, USAF
Chairperson, HQ ACC Environmental Leadership Board

Date: 4 Oct 2000

**Certification of Asbestos Clearance
Fort Fisher Recreation Area, North Carolina**

Description of Property Surveyed:

The Fort Fisher Recreation Area, consisting of three non-contiguous parcels of land totaling approximately 6.1 acres, located in the Town of Kure Beach in New Hanover County, North Carolina.

1. An on-site inspection has found asbestos in the property being excessed. A detailed description of the location of the asbestos is attached to this certificate. Friable asbestos will be properly removed and disposed of prior to or in conjunction with the disposal of the property. Removal and disposal will be in accordance with Federal Regulations 29 CFR 1910.100.1 and 40 CFR 61.145 through 61.151.

2. A records search and on-site inspection indicate that this property does not have asbestos-containing materials or equipment.

X 3. An on-site inspection revealed no friable asbestos based on current standards.

Certified by: Mary D. Hassell
MARY D. HASSELL, CEP
Project Manager
Geo-Marine, Inc.

Date: Sept. 28, 2000

Approved by: Michael R. Patrick
MICHAEL R. PATRICK
Colonel, USAF
Chairperson, HQ ACC Environmental Leadership Board

Date: 4 Oct 2000

**Certification of Contamination
Fort Fisher Recreation Area, North Carolina**

Description of Property

The information contained in this notice is required under the authority of regulations promulgated under section 120(h) of the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA or "Superfund") 42 U.S.C. section 9620(h). A complete search of agency files has revealed that hazardous substance(s), as that term is defined in the CERCLA in 42 U.S.C. 9601, as amended, were stored for one year or more, are known to have been released, or were disposed of on the excess Air Force-controlled real property described below.

- I. The following notice provides the available information discovered as a result of a complete search of agency files pertaining to hazardous substances or petroleum products known to have been stored, released, or disposed of on the excess real property.
 - A. There is no storage of hazardous substances as defined and amended by CERCLA at the real property described above. There are no petroleum products currently stored on the three parcels consisting of approximately 61 acres.
 - B. There is no known release of hazardous substances as defined and amended by CERCLA at the real property described above.
 - C. No hazardous substances or petroleum products are known to have been disposed of on the property.

The above information, based on agency files or other available information, addresses the period prior to June 2000. This information is the best available and is believed to be correct, but no guarantee of accuracy can be provided.

Certification of Contamination (continued)
Fort Fisher Recreation Area, North Carolina

Certified by: Mary D. Hassell
MARY D. HASSELL, CEP
Project Manager
Geo-Marine, Inc.

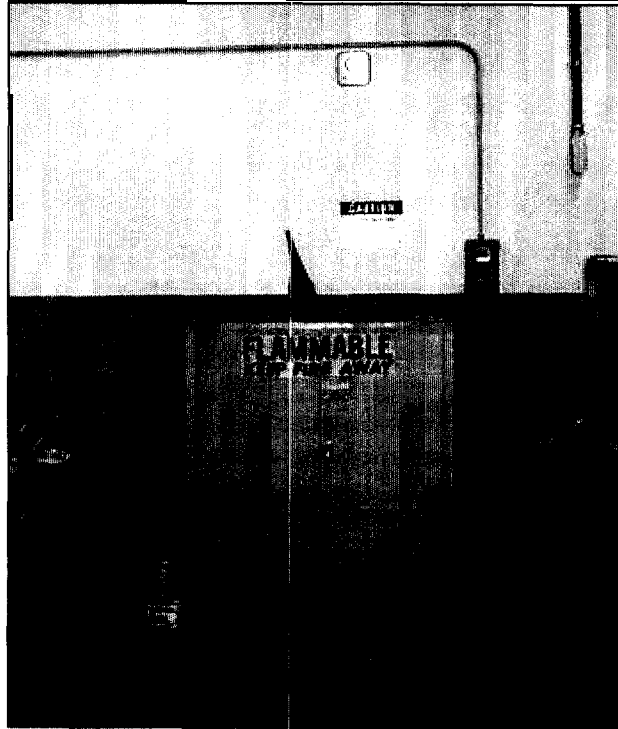
Date: Sept. 28 2000

Approved by: Michael R. Patrick
MICHAEL R. PATRICK

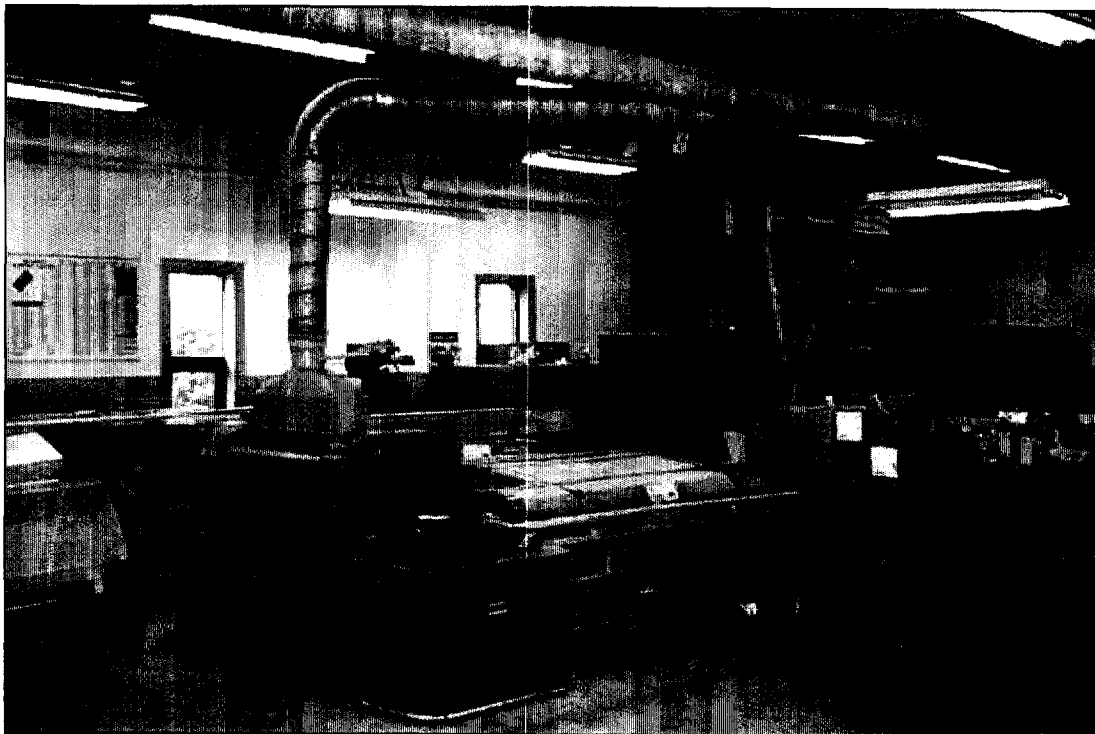
Date: 4 Oct 2000

Colonel, USAF
Chairperson, HQ ACC Environmental Leadership Board

APPENDIX A: SITE PHOTOGRAPHS



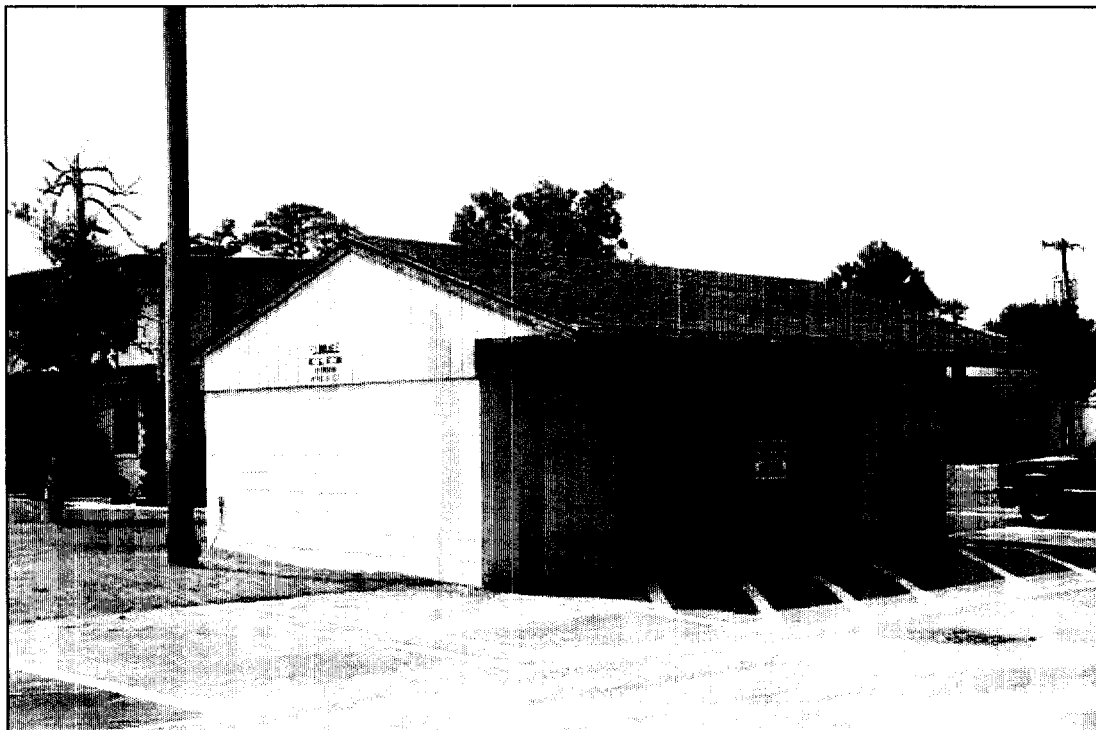
July 17, 2000. Flammables Cabinet (minimal storage of paint and paint thinner) inside Building 138, adjacent to Parcel E 1.



July 17, 2000. Inside view of Building 138 (Maintenance Shop) , adjacent to Parcel E 1.



July 17, 2000. RV Storage Area. Photo taken facing southeast of Building 138 , adjacent to Parcel E 1.



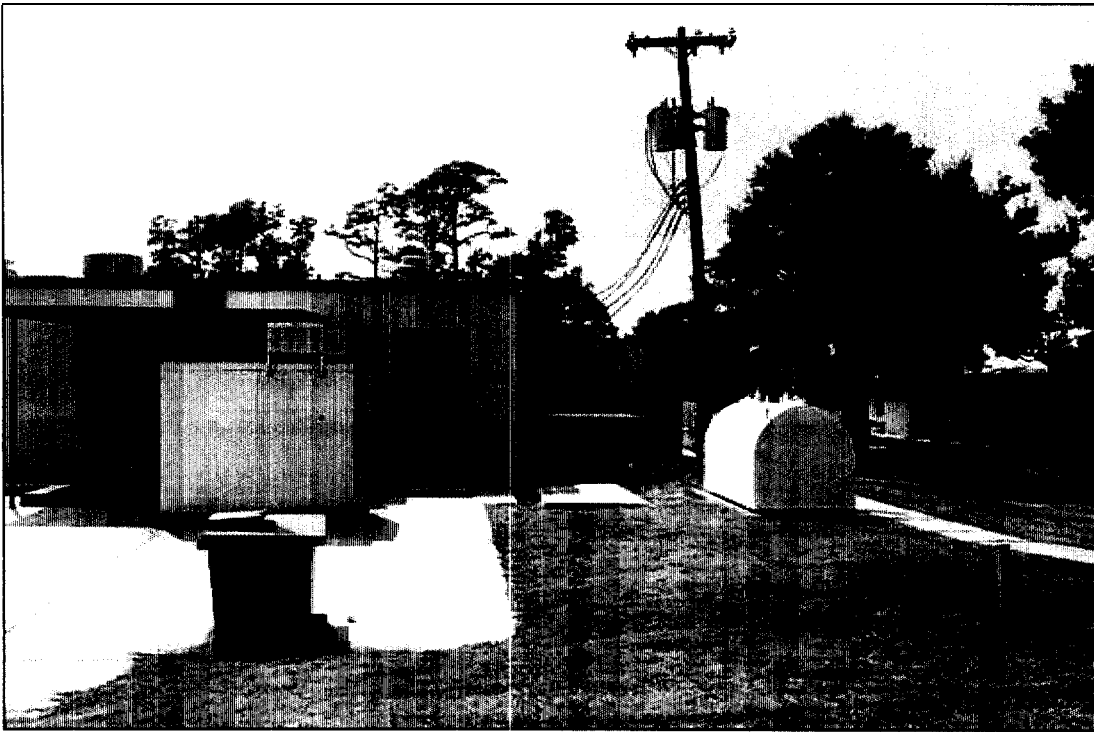
July 17, 2000. Lawnmower Storage northeast of Building 138 , adjacent to Parcel E1. Photo taken facing west.



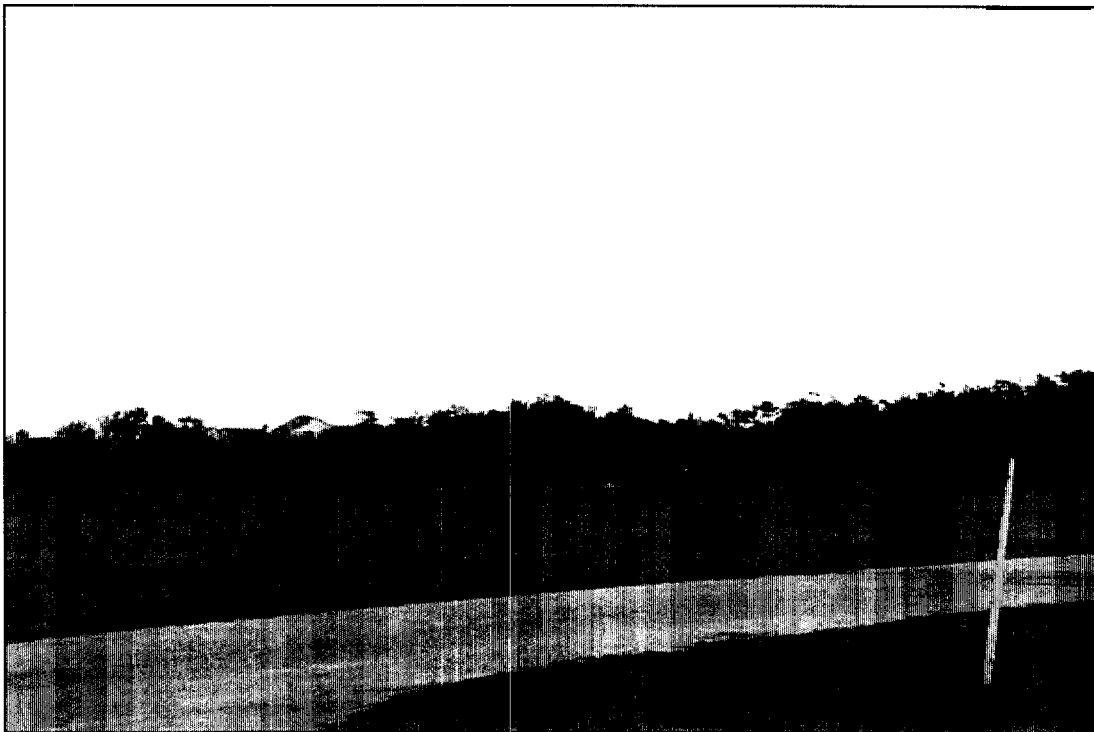
July 17, 2000. Inside view of lawn mower storage building. Building located northeast of Building 138 , adjacent to Parcel E1. Photo taken facing west.



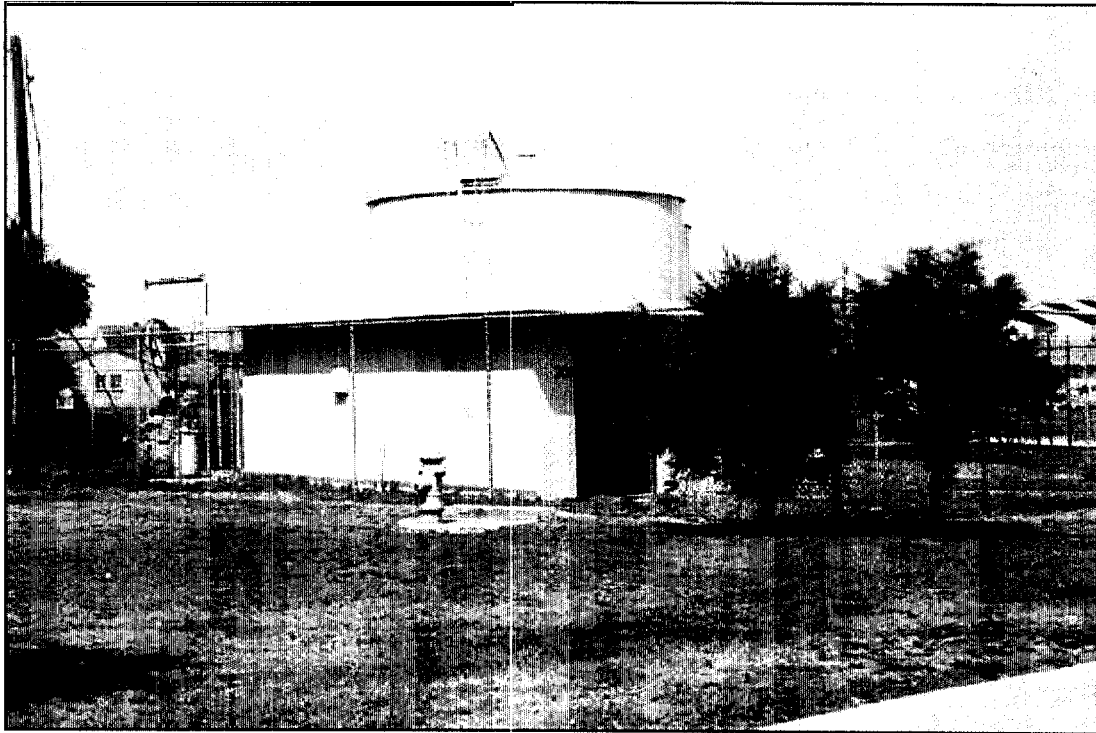
July 17, 2000. Heat. Pump east of Building 142 , adjacent to Parcel E1. Photo taken facing west.



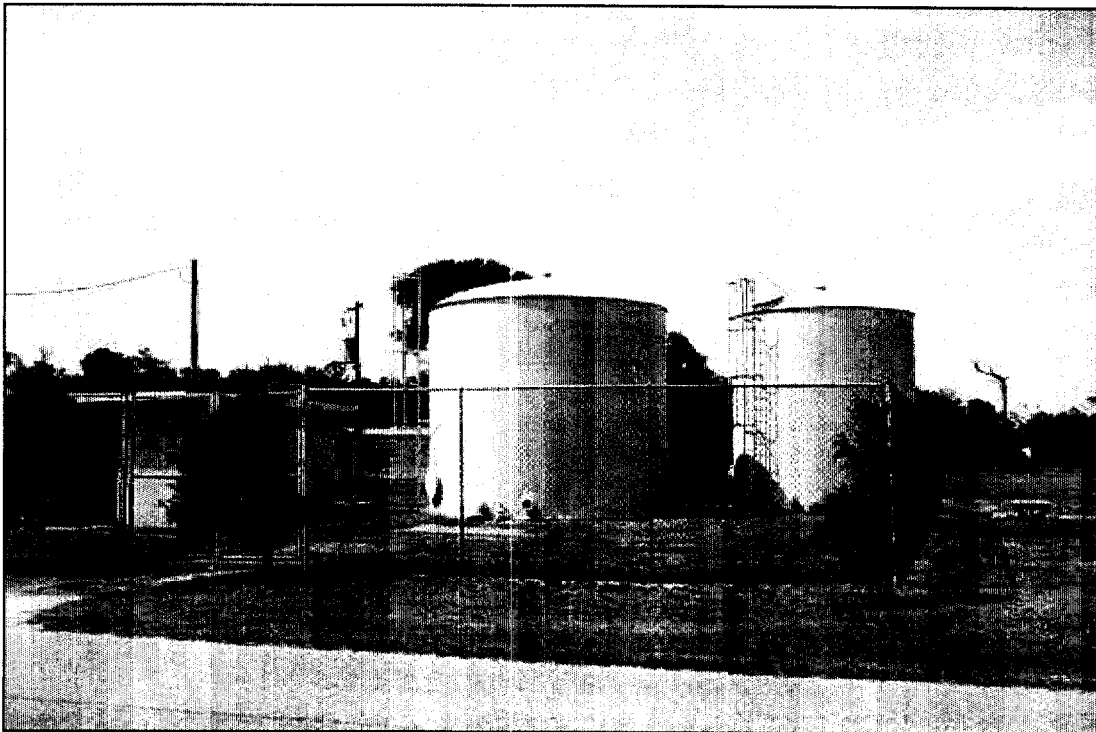
July 17, 2000. Building 142 with Heat Pump , adjacent to Parcel E1.
Photo taken facing west.



July 17, 2000. Driving Range, Parcel E 1. Photo taken from Cape Fear Dr. facing south.



July 17, 2000. Building 200 and two water storage facilities, Parcel E2. Photo taken facing northeast from Cape Fear Dr.



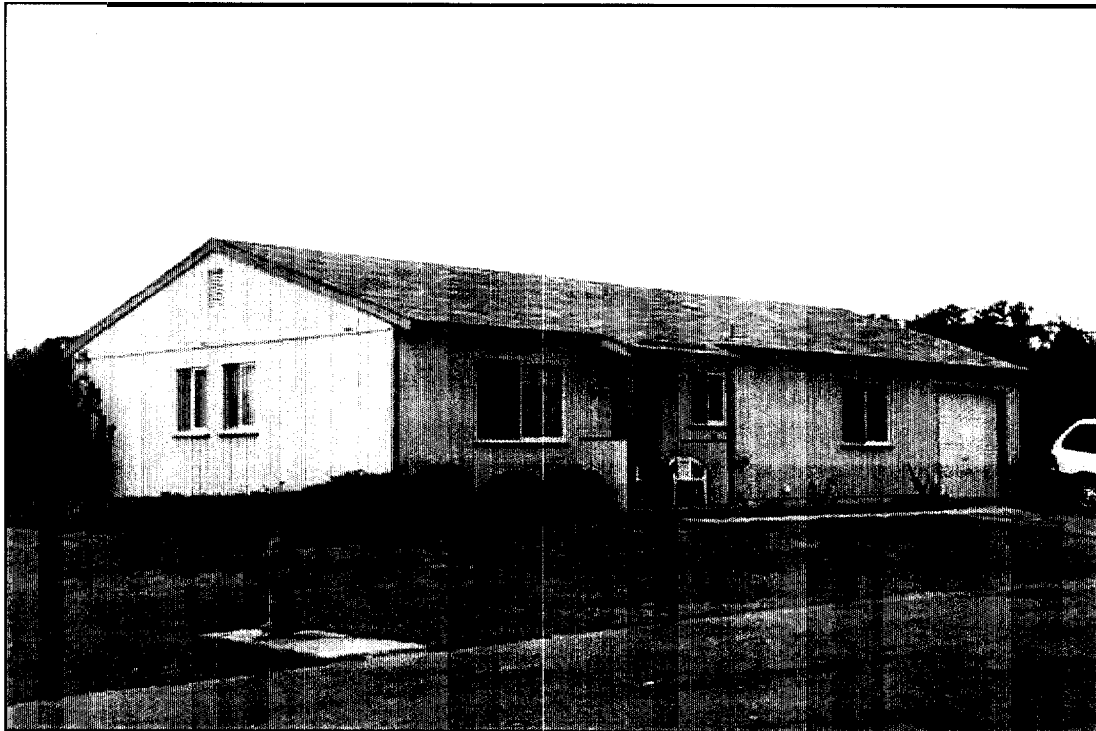
July 17, 2000. Building 200 and two water storage facilities, Parcel E2. Photo taken facing north on Cape Fear Dr.



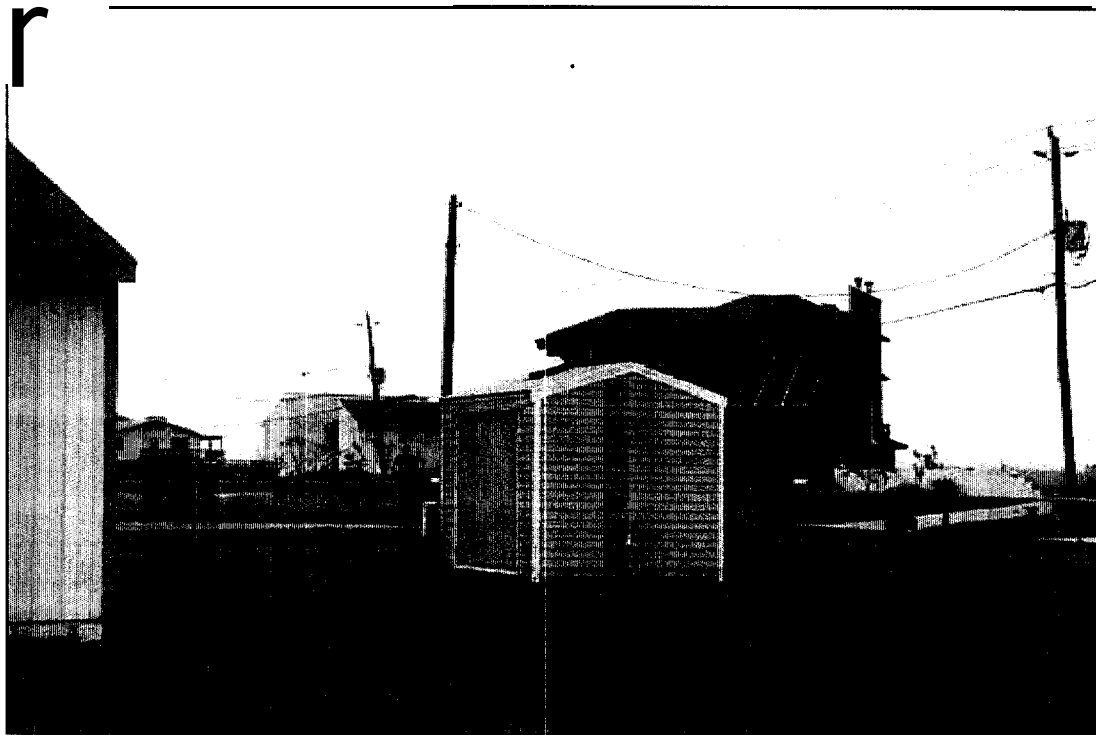
July 17, 2000. Parcel E2 bordered to the west by a trailer lot and to the east by vacation cottages. Well house located at rear of parcel. Photo taken facing northeast on Cape Fear Dr.



July 17, 2000. Vacation cottages, building 2 1 O-232 , adjacent to Parcel E2. Photo taken facing northeast at the intersection of Cape Fear Dr. and C St.



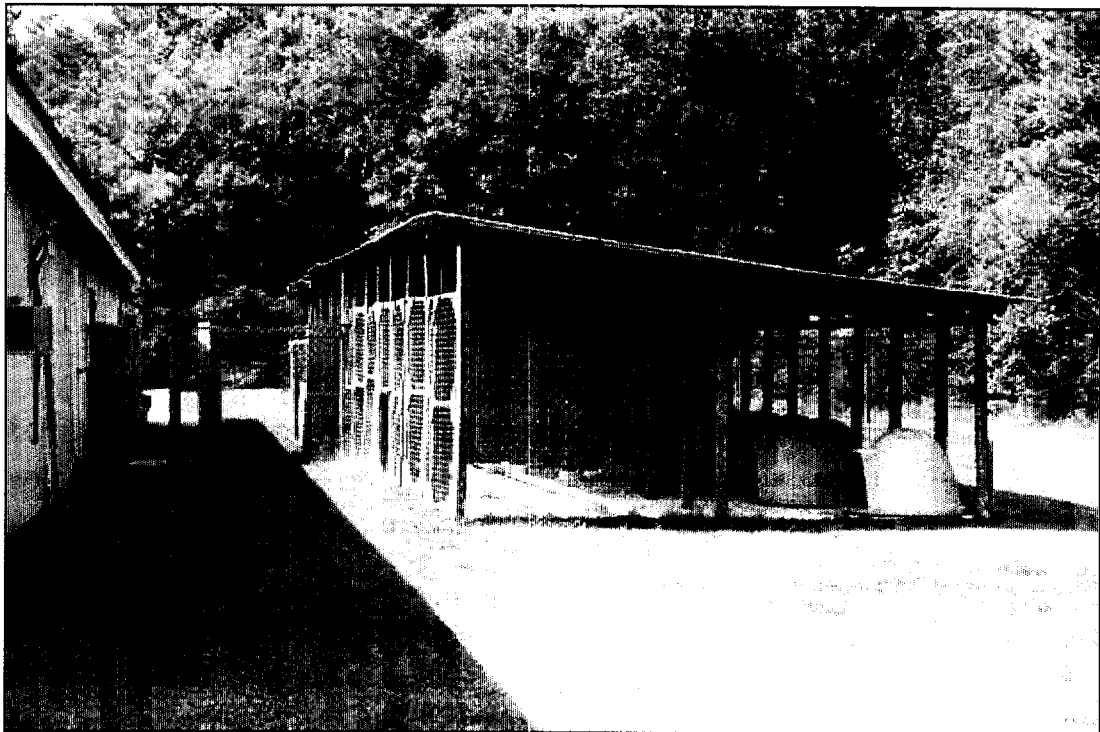
July 17, 2000. Building 211 (vacation cottage). Photo taken facing north on C St.



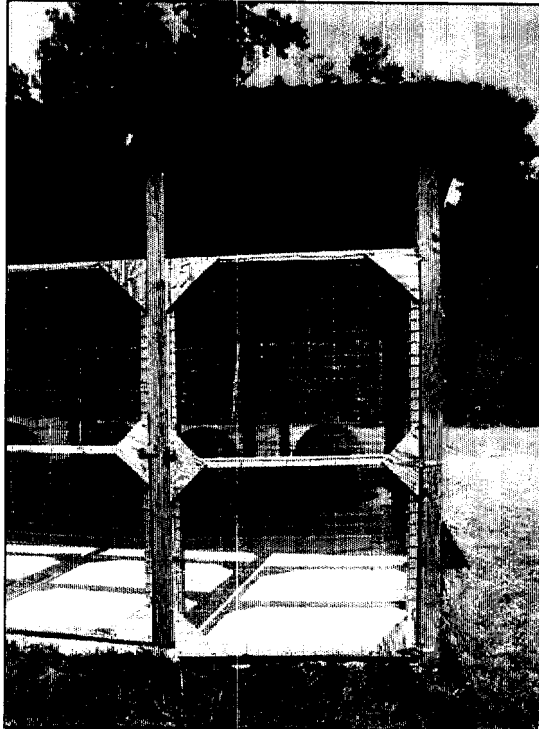
July 17, 2000. Site of sparging bioremediation activity , adjacent to Parcel E2. Photo taken northeast on B St.



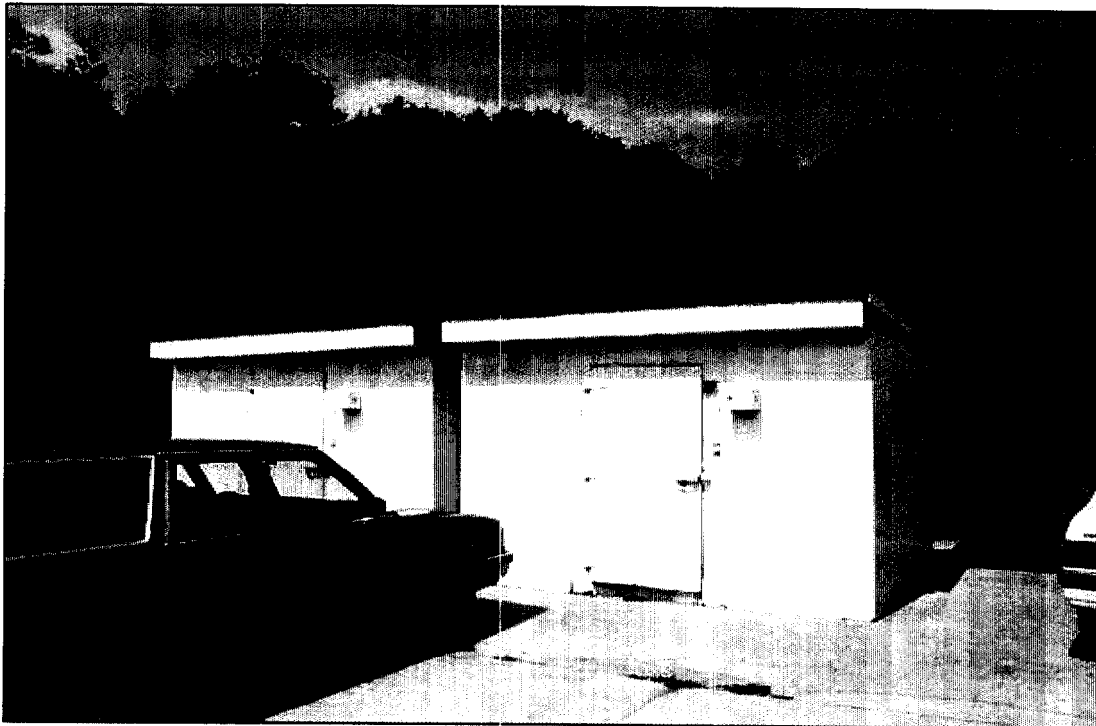
July 17, 2000. Electrical Transformer located on property owned by the Army National Guard, north of Parcel E 1. Photo taken facing southeast on Cape Fear Dr.



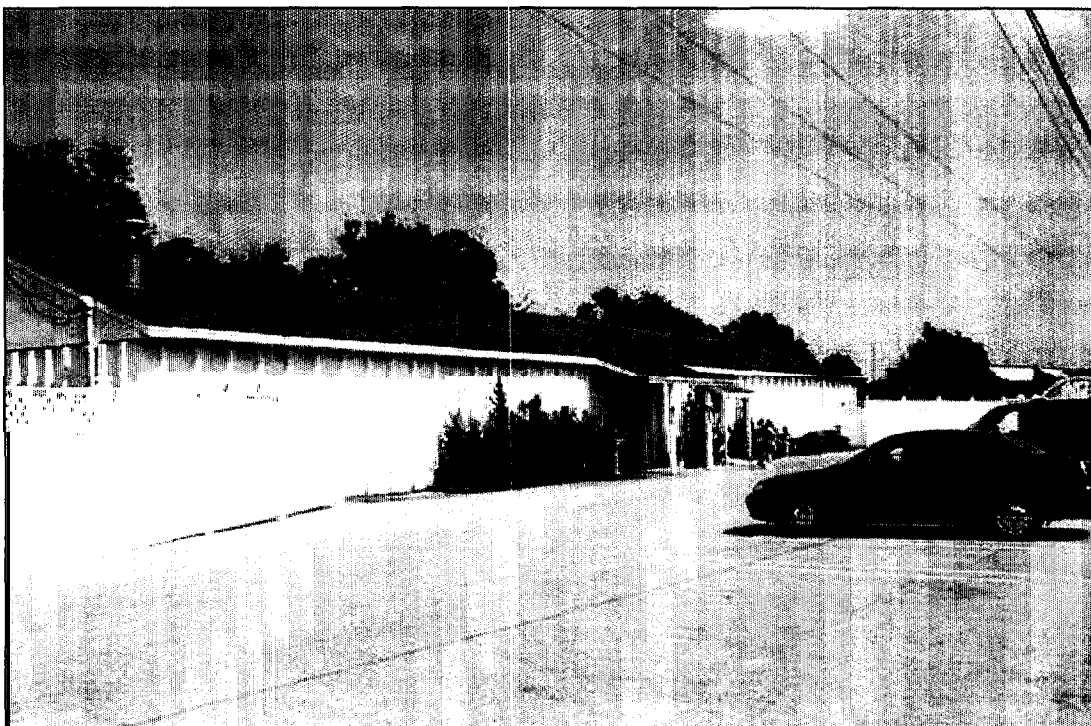
July 17, 2000. Dog kennel located immediately east of the Reception Center (Building 118), Parcel E3. Photo taken facing north off of 2nd St.



July 17, 2000. Dog kennel located immediately east of the Reception Center (Building 118), Parcel E3. Photo taken facing northeast off of 2nd St.



July 17, 2000. Cleaning Supplies Storage Facility located north of Building 118, on Parcel E3. Photo taken facing northeast on 2nd St.



July 17, 2000. Reception Center, Building 118, on Parcel E3. Photo taken facing southeast on 2nd St.



July 17, 2000. Monitoring Well Number 1 located on Parcel E 1, southwest of Building 138. Photo taken facing west on unmarked utility road.

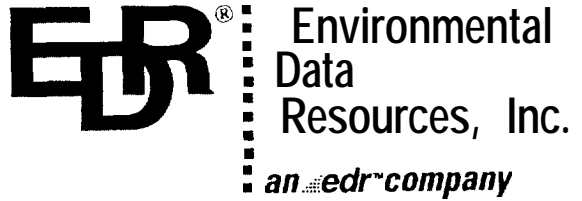


July 17, 2000. Landscaping Debris (vegetation trimmings, concrete from removed fence line:) found within wooded area on Parcel E1, southwest of Building 138. Photo taken facing south from unmarked utility road.



July 17, 2000. Monitoring Well Number Two located in wooded area on Parcel E1, southwest of Building 138. Photo taken facing southeast from unmarked utility road.

APPENDIX B: ENVIRONMENTAL DATABASE SEARCH RESULTS



The EDR-Radius Map with GeoCheck[®]

Fort Fisher Rec Area
Northeast Corner of Highway 42
Wilmington, NC 28449

Inquiry Number: 504853.1s

June 08, 2000

The Source For Environmental Risk Management Data

3530 Post Road
Southport, Connecticut 06490

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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<u>SECTION</u>	<u>PAGE</u>
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	5
Orphan Summary	8

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A - 1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-7
Physical Setting Source Map Findings	A-8
Physical Setting Source Records Searched	A-17

Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

Disclaimer and Other Information

This Report contains information obtained from a **variety** of public and other sources and Environmental Data Resources, Inc. (EDR) makes no representation or warranty regarding the accuracy, reliability, quality, suitability, or completeness of said information or ~~the~~ information contained in this report. The customer shall assume full responsibility for the use of this report.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc. (EDR). The report meets the government records search requirements of ASTM Standard Practice for Environmental Site Assessments, E 1527-97. Search distances are per ASTM standard or custom distances requested by the user.

TARGET PROPERTY ADDRESS

NORTHEAST CORNER OF HIGHWAY 42
WILMINGTON, NC 28449

TARGET PROPERTY COORDINATES

Latitude (North): 33.980 100 - 33' 58' 48.4"
 Longitude (West): 77.918700 - 77' 55' 7.3"
 Universal Transverse Mercator: Zone 18
 UTM X (Meters): 230351.4
 UTM Y (Meters): 3763595.8

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property: 2433077-H8 KURE BEACH, NC
 Source: USGS 7.5 min quad index

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following government records. For more information on this property see page 5 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
FORT FISHER STATE HISTORIC ST HWY 421 SOUTH OF KURE BEACH KURE BEACH, NC 28449	UST	N/A
FORT FISHER AIR FORCE US HWY 421 FORT FISHER, NC	LUST	N/A

SURROUNDING SITES: DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the ASTM E 1527-97 search radius around the target property for the following Databases:

FEDERAL ASTM STANDARD

- NPL: National Priority List
- Delisted** NPL: NPL Deletions
- CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System
- CERC-NFRAP:** Comprehensive Environmental Response, Compensation, and Liability Information System
- CORRACTS: Corrective Action Report
- RCRIS-TSD: Resource Conservation and Recovery Information System
- RCRIS-LQG:** Resource Conservation and Recovery Information System
- RCRIS-SQG: Resource Conservation and Recovery Information System
- ERNS: Emergency Response Notification System

EXECUTIVE SUMMARY

STATE ASTM STANDARD

SHWS: State Haz. Waste
SWF/LF: Solid Waste Facilities

FEDERAL ASTM SUPPLEMENTAL

CONSENT: Superfund (CERCLA) Consent Decrees
ROD:..... ROD
FINDS: Facility Index System/Facility Identification Initiative Program Summary Report
HMIRS: Hazardous Materials Information Reporting System
MLTS: Material Licensing Tracking System
MINES: Mines Master Index **File**
NPL Lien:..... NPL Liens
PADS: PCB Activity Database System
RAATS:..... RCRA Administrative Action Tracking System
TRIS: Toxic Chemical **Release** Inventory System
TSCA: Toxic Substances Control Act

STATE OR LOCAL ASTM SUPPLEMENTAL

IMD: Incident Management Database

EDR PROPRIETARY DATABASES

Coal Gas: Former Manufactured gas (Coal Gas) Sites.

SURROUNDING SITES: DATABASES WITH MAPPED SITES

Unmapped (orphan) sites are not considered in the foregoing analysis.

Elevations have been determined from the USGS 1 degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. EDR's definition of a site with an elevation equal to the target property includes a tolerance of +/- 10 feet. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property (by more than 10 feet). Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

STATE ASTM STANDARD

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environment, Health, & Natural Resources' Petroleum Underground Storage Tank Database.

A **review** of the UST list, as provided by EDR, and dated 1 **1/16/1999** has revealed that there is 1 UST site within approximately 0.375 miles of the target property.

<u>Equal/Higher Elevation</u>	<u>Address</u>	<u>Dist / Dir</u>	<u>Map ID</u>	<u>Page</u>
TOWN OF KURE BEACH	70 1 FORT FISHER BLVD N(1/4 - 1/2E	3	6

EXECUTIVE SUMMARY

STATE OR LOCAL ASTM SUPPLEMENTAL

HSDS: The Hazardous Substance Disposal Sites list contains locations of uncontrolled and unregulated hazardous waste sites. The file contains sites on the national priority list as well as the state priority list. The data source is the North Carolina Center for Geographic Information and Analysis.

A review of the NC HSDS list, as provided by EDR, and dated 06/21/1995 has revealed that there is 1 NC HSDS site within approximately 1.125 miles of the target property.

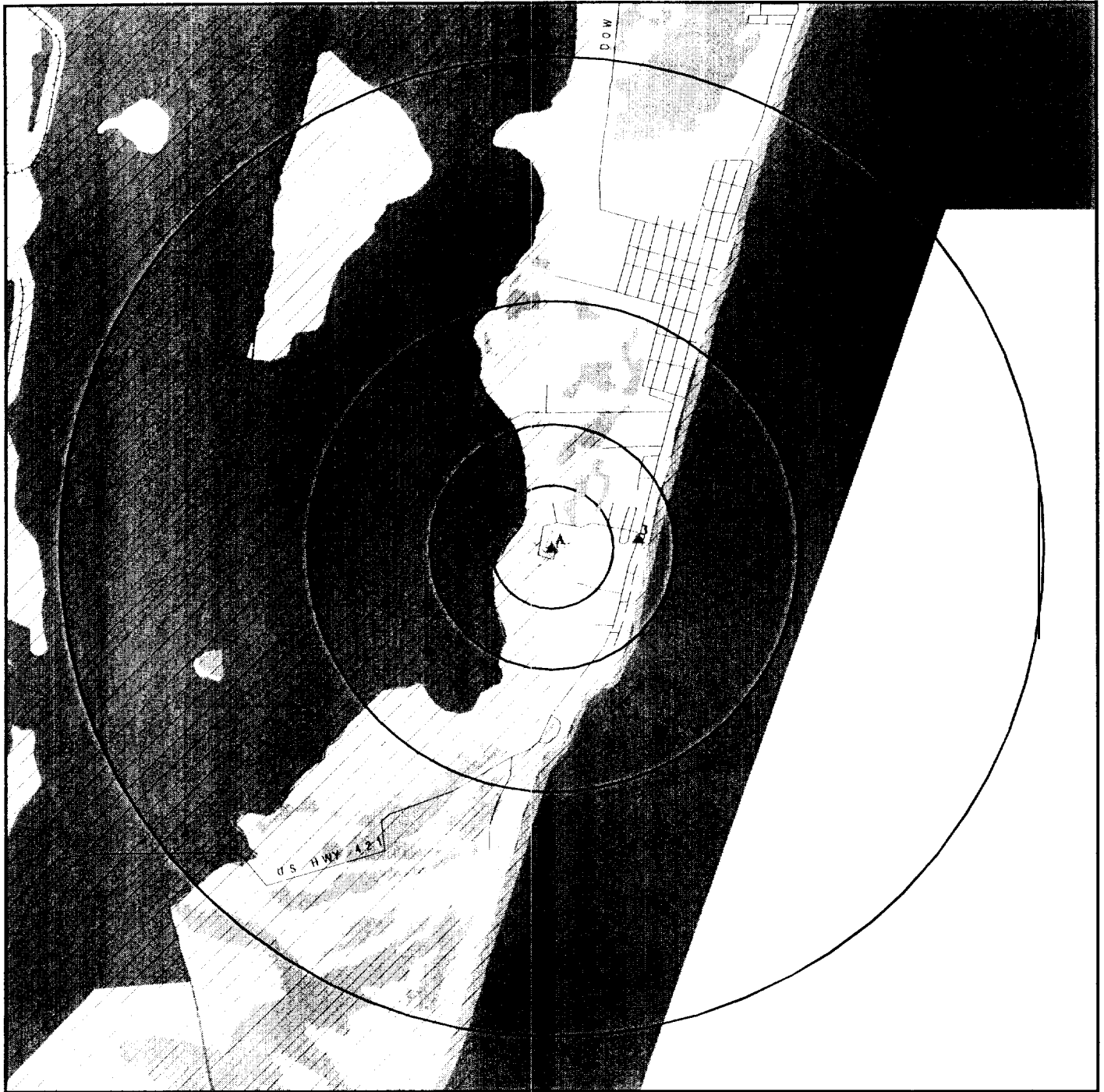
<u>Equal/Higher</u> Elevation	Address	<u>Dist</u> / <u>Djr</u> . . .	<u>Map ID</u> . . .	<u>Page</u> .
US DOD MILITARY	OCEAN TER/SUNN	0 - 1/8	0	6

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u> . . .
GENERAL ELECTRIC CO/WILMINGTON	SHWS
HERCOFINA/CAPE INDUSTRIES	SHWS
CAROLINA P&L CO. SUTTON STEAM	SHWS
VC CHEMICAL-ALMONT WORKS	SHWS
WILMINGTON COAL GAS PLANT	SHWS
NEW HANOVER COUNTY AIRPORT BURN	SHWS
SOUTHERN WOOD PIEDMONT COMPANY	SHWS
WILMINGTON GUN CLUB (FORMER)	SHWS
WILMINGTON MATERIALS INC	SWF/LF
CONGLE.TON DEMO LANDFILL	SWF/LF
KELMEFI INC	SWF/LF
WATERWAY MARINE	LUST
BRUCE!!; GAS & DINER	LUST
KENAN TRANSPORT CO.	LUST, IMD
AIRLIE GARDENS MAINT. SHED	LUST
EXXON TERMINAL	LUST
ESTATE OF DOROTHEA JONES-H.O.	LUST
CITY OF JACKSONVILLE-BRYNMAR	LUST
FREDRICKSON MOTOR EXPRESS	LUST
COASTAL BEVERAGE WASTE OIL UST	LUST
RYDER TRUCK RENTAL-DIESEL	LUST
RYDER TRUCK RENTAL, INC.	LUST
JORDAN PROPERTY	LUST
SOUTHERN, INC.	LUST
AMERICAN SKIN CO.	LUST
GERALDINE PINER PROPERTY	LUST
SCOTCHMAN #145	LUST
NC STATE PORTS AUTHORITY	LUST
KOCH FUELS, NORTH TERM.,WATER	LUST
WILMINGTON RADIO RELAY	LUST
NATIONAL GUARD TRAINING CENTE	UST
TOWN OF KURE BEACH	UST
BODENHAMER'S GROCERY	UST
SOUTHERN BELL - KRBHNCKA	UST
SOUTHERN BELL - WLMGNCHW	UST
FORT FISHER AIR FORCE STATION	UST
A-I SANITATION	UST
NITREX TRUCK WASHDOWN AREA	IMD
GENERAL ELECTRIC-w BASIN AREA	IMD

OVERVIEW MAP - 504853.1 s - Geo-Marine



◻ Target Property
 ▲ Sites at elevations higher than or equal to the target property
 ◆ Sites at elevations lower than the target property
 ▲ Coal Gasification Sites (if requested)
 ◻ National Priority List Sites
 ◻ Landfill Sites

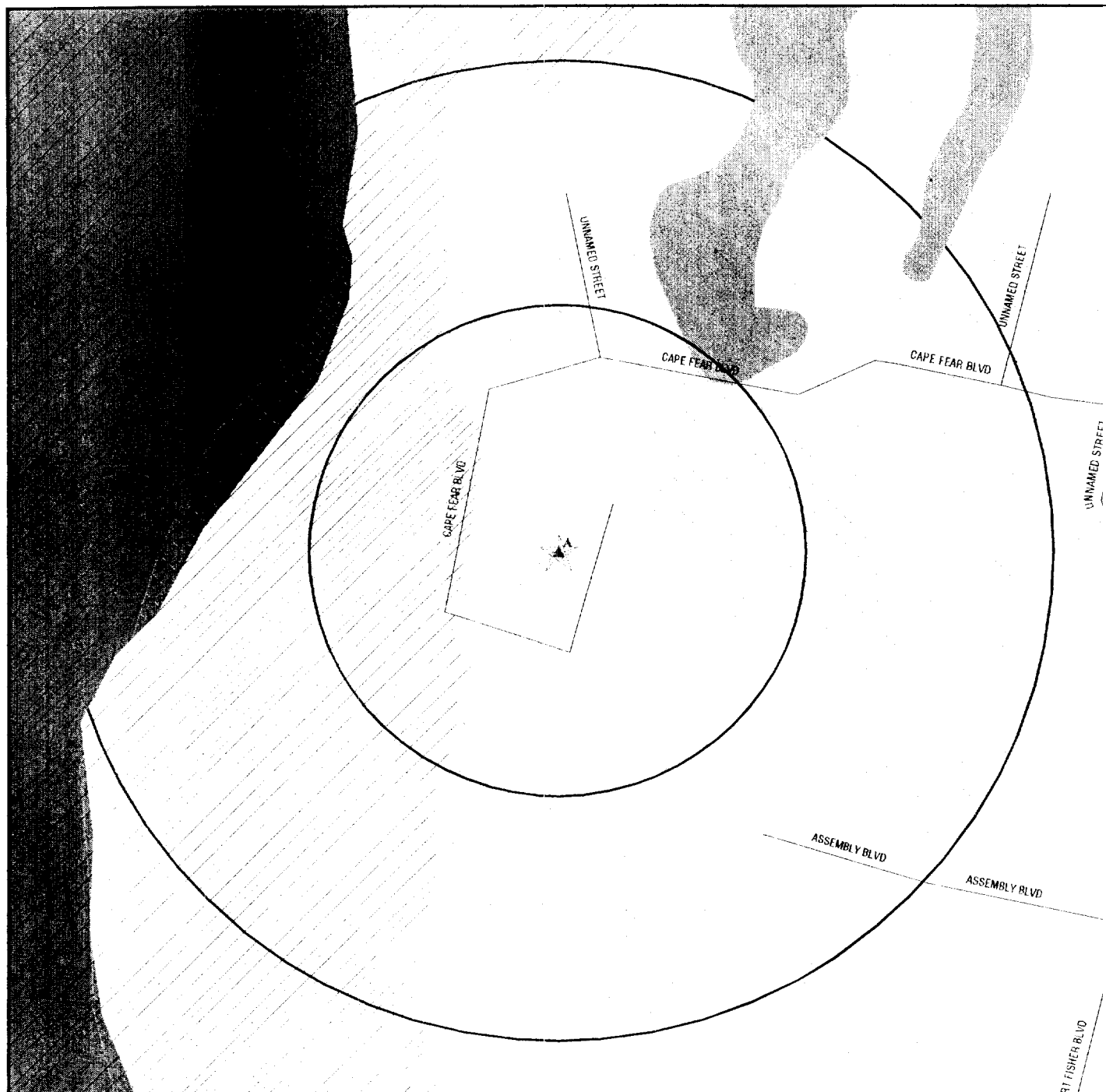
Power transmission lines
 Oil & Gas pipelines
 100-year flood zone
 500-year flood zone
 Wetlands per National Wetlands Inventory (1994)

Hazardous Substance Disposal Sites

Z

TARGET PROPERTY: ADDRESS: CITY/STATE/ZIP: LAT/LONG:	Fort Fisher Rec Area Northeast Corner of Highway 42 Wilmington NC 28449 33.9801 177.9187	CUSTOMER: CONTACT: INQUIRY #: DATE:	Geo-Marine Susan Lee 504853.1 s June 08.2000 4:07 pm
---	---	---	---

DETAIL MAP - 504853.1s - Geo-Marine



<p>Target Property</p> <ul style="list-style-type: none"> ▲ Sites at elevations higher than or equal to the target property ◆ Sites at elevations lower than the target property ▲ Coal Gasification Sites (if requested) ♣ Sensitive Receptors □ National Priority List Sites □ Landfill Sites 	<ul style="list-style-type: none"> — Power transmission lines — Oil & Gas pipelines □ 100-year flood zone □ 500-year flood zone □ Wetlands per National Wetlands Inventory (1994) 	<ul style="list-style-type: none"> □ Hazardous Substance Disposal Sites
--	--	--

TARGET PROPERTY: Fort Fisher Rec Area ADDRESS: Northeast Corner of Highway 42 CITY/STATE/ZIP: Wilmington NC 28449 LAT/LONG: 33.9801 / 77.9187	CUSTOMER: Geo-Marine CONTACT: Susan Lee INQUIRY #: 504853.1s DATE: June 08, 2000 4:08 pm
--	---

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL ASTM STANDARD</u>								
NPL		1.125	0	0	0	0	0	0
Delisted NPL		1.125	0	0	0	0	0	0
CERCLIS		0.625	0	0	0	0	NR	0
CERC-NFRAP		0.375	0	0	0	NR	NR	0
CORRACTS		1.125	0	0	0	0	0	0
RCRIS-TSD		0.625	0	0	0	0	NR	0
RCRIS Lg. Quan. Gen.		0.375	0	0	0	NR	NR	0
RCRIS Sm. Quan. Gen.		0.375	0	0	0	NR	NR	0
ERNS		TP	NR	NR	NR	NR	NR	0
<u>STATE ASTM STANDARD</u>								
State Haz. Waste		1.125	0	0	0	0	0	0
State Landfill		0.625	0	0	0	0	NR	0
LUST	X	0.625	0	0	0	0	NR	0
UST	X	0.375	0	0	1	NR	NR	1
<u>FEDERAL ASTM SUPPLEMENTAL</u>								
CONSENT		1.125	0	0	0	0	0	0
ROD		1.125	0	0	0	0	0	0
FINDS		TP	NR	NR	NR	NR	NR	0
HMIRS		TP	NR	NR	NR	NR	NR	0
MLTS		TP	NR	NR	NR	NR	NR	0
MINES		0.375	0	0	0	NR	NR	0
NPL Liens		TP	NR	NR	NR	NR	NR	0
PADS		TP	NR	NR	NR	NR	NR	0
RAATS		TP	NR	NR	NR	NR	NR	0
TRIS		TP	NR	NR	NR	NR	NR	0
TSCA		TP	NR	NR	NR	NR	NR	0
<u>STATE OR LOCAL ASTM SUPPLEMENTAL</u>								
NC HSDS		1.125	1	0	0	0	0	1
IMD		TP	NR	NR	NR	NR	NR	0
<u>EDR PROPRIETARY DATABASES</u>								
Coal Gas		1.125	0	0	0	0	0	0
AQUIFLOW	• see EDR Physical Setting Source Addendum							

TP = Target Property

NR = Not Requested at this Search Distance

• Sites may be listed in more than one database

Map ID
Direction
Distance
Distance (fl.)
Elevation Site

MAP FINDINGS 1

EDR ID Number
Database(s) EPA ID Number

Coal Gas Site Search: No site was found in a search of Real Property Scan's ENVIROHAZ database.

A2 FORT FISHER STATE HISTORIC ST UST U001200010
Target HWY 421 SOUTH OF KURE BEACH N/A
Property KURE BEACH, NC 26449

UST:

Facility ID:	o-021696	Telephone:	(919) 458-5538
Tank ID:	1	Tank Size:	550
Interior:	Unknown	Exterior:	Paint
Material:	Steel	Piping:	Steel
Date installed:	03/17/1968	Date removed:	08/20/1993
status:	Permanent Closed	Product:	Gasoline, Gasoline Mixture
Leak Detection:			
Tank:	Not reported		
Pipe:	Not reported		
Corrosion Protection:			
Tank:	Not reported		
Pipe:	Not reported		
Overfill Protection:	Not reported		
Financial Responsibility:	Not reported		
Case Number:	Not reported		
Certification:	Not reported		
Region:	08		
Owner:	NC DEPT OF CULTURAL RESOURCES 109 EAST JONES STREET RALEIGH, NC 27611		

Facility ID:	o-021696	Telephone:	(919) 458-5538
Tank ID:	2	Tank Size:	550
Interior:	Unknown	Exterior:	Paint
Material:	Steel	Piping:	Steel
Date installed:	03/14/1981	Date removed:	05/16/1996
status:	Permanent Closed	Product:	Gasoline, Gasoline Mixture
Leak Detection:			
Tank:	Not reported		
Pipe:	Not reported		
Corrosion Protection:			
Tank:	Not reported		
Pipe:	Not reported		
Overfill Protection:	Not reported		
Financial Responsibility:	Not reported		
Case Number:	Not reported		
Certification:	Not reported		
Region:	08		
Owner:	NC DEPT OF CULTURAL RESOURCES 109 EAST JONES STREET RALEIGH, NC 27611		

A1 FORT FISHER AIR FORCE LUST S101643650
Target US HWY 421 N/A
Property FORT FISHER, NC

Map ID
 Direction
 Distance
 Distance (ft.)
 Elevation Site

MAP FINDINGS

Database(s) EDR ID Number
 EPA ID Number

FORT FISHER AIR FORCE (Continued)

S101643650

LUST:

Incident Number:	14490	Region:	WIL
Date Occurred:	3/20/95 0:00:00	Submit Date:	8/31/95 0:00:00
GW Contam:	Not reported	Soil Contam:	Not reported
Incident Desc:	MINOR SOIL CONTAMINATION CONFIRMED FROM UST LEAK.		
Owner:	MS. KAY MARIE GROSINSKE		
Contact:	Not reported		
	129 ANDREWS ST. STE 346		
	LANGLEY AFB, VA 23665		
	NEWHA County		
Ownership:	Military	Operation:	Not Reported
Material:	DIESEL FUEL		
Qty Lost:	Not reported	Qty Recovered:	18.7 YDS.
Source:	Leak-underground	Type:	Gasoline/diesel
Location:	Facility	Setting:	Residential
Site Priority:	65B		
Priority Code:	5/30/98 0:00:00	Dem Contact:	BRUCE REED
Wells Affected:	Not reported	Num Affected:	0.00
Wells Contam:	Not reported		
Sampled By:	Not reported	Samples Include:	Not reported
7.5 Min Quad:	Not reported	5 Min Quad:	Not reported
Incident Phase:	Response	Last Modified:	Not reported
Norr Issued:	Not reported		
Nov Issued:	Not reported	Day Reported:	Not reported
Public Meeting:	Not reported	Corrective Action:	Not reported
SOC Signed:	Not reported	Reclass Rprt:	Not reported
RS Destination:	Not reported	Close Out Reprt:	Not reported
Close Req Dt:	Not reported	Owner Company:	ACCICESIESV
Lat/ Long:	Not reported	Risk Site	Yes

HSDS
 Region

US DOD MILITARY OCEAN TER/SUNNY PT

NC HSDS

S102442984
 N/A

, NC

< 118
 1

NC HSDS:

Facility Name:	US DOD MILITARY OCEAN TER/SUNNY PT		
Latitude:	33 58 11.481986	Longitude:	77 55 34.390174
Site Type:	Federal	Superfund ID #:	0210 020 541

3
 East
 114-112
 1868
 Higher

TOWN OF KURE BEACH
 701 FORT FISHER BLVD N(LIFT STAT
 KURE BEACH, NC 28449

UST

U001206541
 N/A

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Database(s) EDR ID Number
EPA ID Number

TOWN OF KURE BEACH (Continued)

U001206541

IJST:

Facility ID:	o-032762	Telephone:	(919) 458-5816
Tank ID:		Tank Size:	500
Interior:	FRP	Exterior:	FRP
Material:	FRP	Piping:	Other
Date installed:	05/01/1986	Date removed:	Not reported
status:	Currently In Use	Product:	Diesel, Diesel Mixture
Leak Detection:			
Tank:	Manual tank gauging		
Pipe:	Line tightness testing		
Corrosion Protection:			
Tank:	FRP tanks/piping		
Pipe:	G		
Overfill Protection:	Catchment basins		
Financial Responsibility:	Not reported		
Case Number:	Not reported		
Certiicatiin:	Not reported		
Region:	08		
Owner:	TOWN OF KURE BEACH 117 N 6TH AVE, PO BOX 3 KURE BEACH, NC 28449		

ORPHAN SUMMARY

city	EDR ID	Site Name	Site Address	Zip	Database(s)	Facility ID
KURE BEACH	U001206780	NATIONAL GUARD TRAINING CENTE	US 421 FT FISHER	28449	UST	0.033138
KURE BEACH	U001202260	TOWN OF KURE BEACH	401 H AVENUE	28449	UST	0.025277
KURE BEACH	U001199326	BODENHAMER'S GROCERY	308 SOUTH SECOND ST HWY 421	28449	UST	O-020509
KURE BEACH	U001 207043	SOUTHERN BELL * KRBHNCKA	6TH ST	28449	UST	o-032322
WILMINGTON	5103554371	GENERAL ELECTRIC CO/WILMINGTON	US 117, CASTLE HAYNE RD		SHWS	SIS650100686
WILMINGTON	U001207045	SOUTHERN BELL * WLMGNCHW	HWY 132		UST	o-032324
WILMINGTON	S 102554659	WATERWAY MARINE	RT 4 MASONS LANDING ROAD		LUST	17116
WILMINGTON	S103130740	NITREX TRUCK WASHDOWN AREA	HWY 421 N.		IMD	5031
WILMINGTON	S102869164	BRUCE'S GAS & DINER	HWY 421 SOUTH		LUST	18091
WILMINGTON	5103554396	HERCOFINA/CAPE INDUSTRIES	HWY 421 N		SHWS	SIS650100271
WILMINGTON	S103554266	CAROLINA P&L CO SUTTON STEAM	HWY 421		SHWS	SIS650100136
WILMINGTON	S103554633	VC CHEMICAL-ALMONT WORKS	US 421 NORTH		SHWS	SIS650101140
WILMINGTON	S103240432	WILMINGTON MATERIALS INC	HWY 421 NORTH		SWF/LF	
WILMINGTON	S101169421	KENAN TRANSPORT CO	HWY 421 N.		LUST, IMD	12099
WILMINGTON	S103717625	AIRLIE GARDENS MAINT SHED	ARLIE RD		LUST	19474
WILMINGTON	S103916982	GENERAL ELECTRIC-WT BASIN AREA	PO BOX 780HWY 117N		IMD	20195
WILMINGTON	S101522187	EXXON TERMINAL	PO BOX 1350		LUST	3066
WILMINGTON	5103240174	CONGLETON DEMO LANDFILL	CAROLINA BEACH ROAD		SWF/LF	
WILMINGTON	S103554651	WILMINGTON COAL GAS PLANT	CASTLE / SURRY STREETS		SHWS	SIS650100970
WILMINGTON	5104157366	ESTATE OF DOROTHEA JONES-H O	11021 CHESTNUT ST		LUST	20600
WILMINGTON	S103717076	CITY OF JACKSONVILLE-BRYNMAR	CORBIN ROAD		LUST	18760
WILMINGTON	5103717141	FREDRICKSON MOTOR EXPRESS	3327 FREDRICKSON RD		LUST	18842
WILMINGTON	5103554489	NEW HANOVER COUNTY AIRPORT BURN	GARDNER DRIVE		SHWS	SIS650100740
WILMINGTON	S103554565	SOUTHERN WOOD PIEDMONT COMPANY	GREENFIELD ST		SHWS	SIS650100432
WILMINGTON	S102554624	COASTAL BEVERAGE WASTE OIL UST	300 HARLEY ROAD		LUST	16913
WILMINGTON	5104157191	RYDER TRUCK RENTAL-DIESEL	US HWY 421 N		LUST	20363
WILMINGTON	S103130135	RYDER TRUCK RENTAL, INC	US HWY 421		LUST	6985
WILMINGTON	S103717333	JORDAN PROPERTY	1526 JOHN MORRIS PROPERTY		LUST	19077
WILMINGTON	5103130334	SOUTHERN, INC	KING ST.		LUST	15569
WILMINGTON	5102089368	AMERICAN SKIN CO	KRAUSS RD		LUST	15432
WILMINGTON	U003145706	FORT FISHER AIR FORCE STATION	KURE BEACH	28449	UST	0.022199
WILMINGTON	5103240234	KELMER INC	LORRANNE CIRCLE		SWF/LF	
WILMINGTON	S103554652	WILMINGTON GUN CLUB (FORMER)	MILITARY CUTOFF ROAD		SHWS	SIS650001124
WILMINGTON	S103717060	GERALDINE PINER PROPERTY	MYRTLE GROVE RD		LUST	18717
WILMINGTON	U001206992	A-I SANITATION	325 OREENVILLE AVE		UST	O-031 300
WILMINGTON	S104157441	SCOTCHMAN #145	RALEIGH ST / CAROLINA BEACH		LUST	20702
WILMINGTON	S102611337	NC STATE PORTS AUTHORITY	RIVER ROAD		LUST	17345
WILMINGTON	5103130522	KOCH FUELS, NORTH TERM WATER	RIVER ROAD		LUST	18733
WILMINGTON	S103717419	WILMINGTON RADIO RELAY	6601 WINDMILL WAY ROAD		LUST	19191

GOVERNMENT RECORDS RESEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a **monthly** or quarterly basis, as required.

Elapsed ASTM days: Provides confirmation that this EDR report meets or exceeds the **90-day** updating requirement of the ASTM standard.

FEDERAL ASTM STANDARD RECORDS

NPL: National Priority List

Source: EPA

Telephone: N/A

National Priorities List (**Superfund**). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC).

Date of Government Version: 02/04/00

Date Made Active at EDR: 03/15/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/07/00

Elapsed ASTM days: 37

Date of Last EDR Contact: 05/09/00

DELISTED NPL: NPL Deletions

Source: EPA

Telephone: N/A

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate

Date of Government Version: 1 1/08/99

Date Made Active at EDR: 03/15/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 02/10/00

Elapsed ASTM days: 37

Date of Last EDR Contact: 05/09/00

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

Source: EPA

Telephone: 703-413-0223

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/14/00

Date Made Active at EDR: 03/15/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/02/00

Elapsed ASTM days: 13

Date of Last EDR Contact: 02/28/00

CERCLISNFRAP: No Further Remedial Action Planned

Source: EPA

Telephone: 703-413-0223

As of February 1995, CERCLIS sites designated "No Further Remedial Action Planned" (NFRAP) have been removed from CERCLIS. NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for the site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. EPA has removed approximately 25,000 NFRAP sites to lift the unintended barriers to the redevelopment of these properties and has archived them as historical records so EPA does not needlessly repeat the investigations in the future. This policy change is part of the EPA's Brownfields Redevelopment Program to help cities, states, private investors and affected citizens to promote economic redevelopment of unproductive urban sites.

Date of Government Version: 02/14/00

Date Made Active at EDR: 03/15/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 03/02/00

Elapsed ASTM days: 13

Date of Last EDR Contact: 02/28/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CORRACTS: Corrective Action Report

Source: EPA

Telephone: 800-424-9346

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity

Date of Government Version: 09107199

Date Made Active at EDR: 10/28/99

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 09/13/99

Elapsed ASTM days: 45

Date of Last EDR Contact: 03/13/00

RCRIS: Resource Conservation and Recovery Information System

Source: EPA/NTIS

Telephone: 800-424-9346

Resource Conservation and Recovery Information System RCRIS includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA).

Date of Government Version: 12/22/99

Date Made Active at EDR: 03/23/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 01/07/00

Elapsed ASTM days: 76

Date of Last EDR Contact: 03/01/00

ERNS: Emergency Response Notification System

Source: EPA/NTIS

Telephone: 202-260-2342

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 01/06/00

Date Made Active at EDR: 02/08/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 01/31/00

Elapsed ASTM days: 8

Date of Last EDR Contact: 05/05/00

FEDERAL ASTM SUPPLEMENTAL RECORDS

BRS: Biennial Reporting System

Source: EPA/NTIS

Telephone: 800-424-9346

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups. Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/97

Database Release Frequency: Biennially

Date of Last EDR Contact: 12/20/99

Date of Next Scheduled EDR Contact: 03/20/00

CONSENT: Superfund (CERCLA) Consent Decrees

Source: EPA Regional Offices

Telephone: Vanes

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: Varies

Database Release Frequency: Vanes

Date of Last EDR Contact: Vanes

Date of Next Scheduled EDR Contact: N/A

ROD: Records Of Decision

Source: NTIS

Telephone: 703-416-0223

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/31/99

Database Release Frequency: Annually

Date of Last EDR Contact: 04/10/00

Date of Next Scheduled EDR Contact: 07/10/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FINDS: Facility Index System/Facility identification Initiative Program Summary Report

Source: EPA
Telephone: N/A

Facility Index System FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 10/13/99
Database Release Frequency: Quarterly

Date of Last EDR Contact: 03/29/00
Date of Next Scheduled EDR Contact: 07/10/00

HMIRS: Hazardous Materials Information Reporting System

Source: U.S. Department of Transportation
Telephone: 202-366-4526

Hazardous Materials incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 06/30/99
Database Release Frequency: Annually

Date of Last EDR Contact: 03/15/00
Date of Next Scheduled EDR Contact: 04/24/00

MLTS: Material Licensing Tracking System

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 10/29/99
Database Release Frequency: Quarterly

Date of Last EDR Contact: 04/10/00
Date of Next Scheduled EDR Contact: 07/10/00

MINES: Mines Master Index File

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959

Date of Government Version: 08/01/98
Database Release Frequency: Semi-Annually

Date of Last EDR Contact: 04/03/00
Date of Next Scheduled EDR Contact: 07/03/00

NPL LIENS: Federal Superfund Liens

Source: EPA
Telephone: 205-564-4267

Federal Superfund Liens. Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/5/91
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 02/24/00
Date of Next Scheduled EDR Contact: 05/22/00

PADS: PCB Activity Database System

Source: EPA
Telephone: 202-260-3936

PCB Activity Database PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/01/99
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/16/00
Date of Next Scheduled EDR Contact: 05/1/00

RAATS: RCRA Administrative Action Tracking System

Source: EPA
Telephone: 202-564-4104

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/95
Database Release Frequency: No Update Planned

Date of Last EDR Contact: 03/13/00
Date of Next Scheduled EDR Contact: 06/12/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TRIS: Toxic Chemical Release Inventory System

Source: EPA

Telephone- 202-260-1 531

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12131197

Database Release Frequency: Annually

Date of Last EDR Contact: 03/27/00

Date of Next Scheduled EDR Contact: 06/26/00

TSCA: Toxic Substances Control Act

Source: EPA

Telephone: 202-260-1444

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/94

Database Release Frequency: Every 4 Years

Date of Last EDR Contact: 04/24/00

Date of Next Scheduled EDR Contact: 07/24/00

STATE OF NORTH CAROLINA ASTM STANDARD RECORDS

SHWS: Inactive Hazardous Sites Inventory

Source: Department of Environment, Health and Natural Resources

Telephone: 919-733-2801

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state

Date of Government Version: 02/04/99

Date Made Active at EDR: 03/19/99

Database Release Frequency: Annually

Date of Data Arrival at EDR: 02/22/99

Elapsed ASTM days: 25

Date of Last EDR Contact: 04119100

LF: List of Solid Waste Facilities

Source: Department of Environment, Health and Natural Resources

Telephone: 919-733-0692

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/11/00

Date Made Active at EDR: 05/30/00

Database Release Frequency: Semi-Annually

Date of Data Arrival at EDR: 05/22/00

Elapsed ASTM days: 8

Date of Last EDR Contact: 05/01/00

LUST: Incidents Management Database

Source: Department of Environment, Health and Natural Resources

Telephone: 919-733-1315

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 01/28/00

Date Made Active at EDR: 03/02/00

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 02/01/00

Elapsed ASTM days: 30

Date of Last EDR Contact: 05/01/00

UST: Petroleum Underground Storage Tank Database

Source: Department of Environment, Health and Natural Resources

Telephone: 919-733- 1308

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 1 1/16/99

Date Made Active at EDR- 12/27/99

Database Release Frequency: Quarterly

Date of Data Arrival at EDR: 12/13/99

Elapsed ASTM days: 14

Date of Last EDR Contact: 03/13/00

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STATE OF NORTH CAROLINA ASTM SUPPLEMENTAL RECORDS

HSDS: Hazardous Substance Disposal Site

Source: North Carolina Center for Geographic Information and Analysis

Telephone: 914733-2090

Locations of uncontrolled and unregulated hazardous waste sites. The file includes sites on the National Priority

List as well as those on the state priority list.

Date of Government Version: 06/21/95

Database Release Frequency: Biennially

Date of Last EDR Contact: 03/07/00

Date of Next Scheduled EDR Contact: 06/05/00

IMD: **Incident** Management Database

Source: Department of Health and Natural Resources

Telephone: 919733-1315

Date of Government Version: 01/28/00

Database Release Frequency: Quarterly

Date of Last EDR Contact: 05/01/00

Date of Next Scheduled EDR Contact: 07/31/00

EDR PROPRIETARY DATABASES

Former **Manufactured Gas (Coal Gas) Sites**: The existence and location of Coal Gas sites is provided exclusively to EDR by Real Property Scan, Inc. ©Copyright 1993 Real Property Scan, Inc. For a technical description of the types of hazards which may be found at such sites, contact your EDR customer service representative.

Disclaimer Provided by Real Property Scan, Inc.

The information contained in this report has predominantly **been** obtained from publicly available sources produced by entities other than Real Property Scan. While reasonable steps have been taken to insure the accuracy of this report. Real Property Scan **does** not guarantee the accuracy of this report. Any liability on the part of Real Property Scan is strictly limited to a refund of the amount paid. No claim is made for the actual existence of toxins at any site. This report does not constitute a legal opinion.

HISTORICAL AND OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

Oil/Gas Pipelines/Electrical Transmission Lines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as **GeoData** Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines and electrical transmission lines.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors **typically** include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities • schools, daycares, hospitals, medical centers, and nursing homes • where individuals who are sensitive receptors are likely to be located.

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as **defined** by FEMA.

NWI: National Wetlands inventory This data, available in select counties across the country, was obtained by EDR in March 1997 from the U.S. Fish and Wildlife Service

Water Dams: National Inventory of Dams

Source: Federal Emergency Management Agency

Telephone: 202-646-2801

National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

FORT FISHER REC AREA
NORTHEAST CORNER OF HIGHWAY 42
WILMINGTON, NC 28449

TARGET PROPERTY COORDINATES

Latitude (North): 33.980099 • 33° 58' 48.4"
Longitude (West): 77.918701 • 77° 55' 7.3"
Universal Transverse Mercator: Zone 18
UTM X (Meters): 230351.4
UTM Y (Meters): 3763595.8

EDR's GeoCheck Physical Setting Source Addendum has been developed to assist the environmental professional with the collection of physical setting source information in accordance with ASTM 1527-97, Section 7.2.3. Section 7.2.3 requires that a current USGS 7.5 Minute Topographic Map (or equivalent, such as the USGS Digital Elevation Model) be reviewed. It also requires that one or more additional physical setting sources be sought when (1) conditions have been identified in which hazardous substances or petroleum products are likely to migrate to or from the property, and (2) more information than is provided in the current USGS 7.5 Minute Topographic Map (or equivalent) is generally obtained, pursuant to local good commercial or customary practice, to assess the impact of migration of recognized environmental conditions in connection with the property. Such additional physical setting sources generally include information about the topographic, hydrologic, hydrogeologic, and geologic characteristics of a site, and wells in the area.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata. EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater **flow** direction for a particular site is best determined by a qualified environmental professional using site-speck well data. If **such** data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic **information**, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

USGS TOPOGRAPHIC MAP ASSOCIATED WITH THIS SITE

Target Property: 2433077-H8 KURE BEACH, NC
Source: USGS 7.5 min quad index

GENERAL TOPOGRAPHIC GRADIENT AT TARGET PROPERTY

Target Property: General WNW

Source: General Topographic Gradient has been **determined** from the USGS 1 Degree Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Target Property County
NEW HANOVER, NC

FEMA Q.3 Flood
Data Electronic Coverage
YES

Flood Plain Panel at Target Property:
Additional **Panels** in search area:

3701680113E / CBPP
3701700001C / CBPP
3701700002C / CBPP
3701680126E / CBPP
3702950270E / CBPP
3702950385F | CBPP

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property
KURE BEACH

NWI Electronic
Coverage
YES

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

AQUIFLOW

Search Radius: 2.000 Miles

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Geologic Code: Q P
 Era: Cenozoic
 System: Quaternary
 Series: Pleistocene

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERN

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Surface Texture: sand

Hydrologic Group: Class B/D Drained/undrained hydrology class of soils that can be drained and are classified.

Soil Drainage Class: Poorly. Soils may have a saturated zone, a layer of low hydraulic conductivity, or seepage. Depth to water table is less than 1 foot.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Corrosion Potential - Uncoated Steel: **HIGH**

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

Soil Layer Information						
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)
	Upper	Lower		AASHTO Group	Unified Soil	
1	0 inches	3 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COURSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 20.00 Min: 6.00
2	3 inches	15 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COURSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 20.00 Min: 6.00
3	15 inches	30 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COURSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 6.00 Min: 0.60
4	30 inches	80 inches	sand	Granular materials (35 pct. or less passing No. 200), Fine Sand.	COURSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand.	Max: 20.00 Min: 2.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: fine sand
loamy sand
mucky - loam
loam

Surficial Soil Types: fine sand
loamy sand
mucky - loam
loam

Shallow Soil Types: fine sand
sandy loam

Deeper Soil Types: clay loam
sandy clay loam
stratified

GEOCHECK® • PHYSICAL SETTING SOURCE SUMMARY

loamy sand
loamy fine sand
sandy loam

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

According to ASTM E 1527-97, Section 7.2.2, "one or more additional state or local sources of environmental records may be checked, in the discretion of the environmental professional, to enhance and supplement federal and state sources... Factors to consider in determining which local or additional state records, if any, should be checked include (1) whether they are reasonably ascertainable, (2) whether they are sufficiently useful, accurate, and complete in light of the objective of the records review (see 7.1 .1), and (3) whether they are obtained, pursuant to local, good commercial or customary practice." One of the record sources listed in Section 7.2.2 is water well information. Water well information can be used to assist the environmental professional in assessing sources that may impact groundwater flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found	-	-

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A1	NC0465547	1/4 - 1/2 Mile SSE

Note: PWS System location is not always the same as well location

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
A2	NC00010486	1/4 - 1/2 Mile South
B3	NC00010571	1/2 - 1 Mile East
B4	NC00010570	1/2 - 1 Mile East
5	NC0001 0667	1/2 - 1 Mile SSW

GEOCHECK - PHYSICAL SETTING SOURCE SUMMARY

OTHER STATE DATABASE INFORMATION

NORTH CAROLINA LOCATIONS OF NATURAL HERITAGE DATABASE

ID	Class
0161360	Animal
0181458	Animal
02611307	Natural Community Occurrence
0031938	Animal
037 1728	Animal
0252677	Animal
011 1514	Natural Community Occurrence
0662457	Special Animal Habitats
0131938	Animal
0091136	Natural Community Occurrence
0081881	Plants
0023354	Plants
0232877	Natural Community Occurrence
0122479	Invertebrate
0013. 372	Plants
0182443	Natural Community Occurrence
0151' 352	Animal
0013029	Animal
0022885	Animal
0013354	Plants
0182283	Animal
0561504	Special Animal Habtats
0392754	Plants
0802457	Special Animal Habitats
0231587	Natural Community Occurrence
0042120	Animal
0222810	Animal
0052442	Natural Community Occurrence
0652457	Special Animal Habitats
0091881	Plants
0191597	Animal
0261607	Natural Community Occurrence
0231587	Natural Community Occurrence
0151952	Animal
0182443	Natural Community Occurrence

PHYSICAL SETTING SOURCE MAP - 504853.1s



- Major Roads
- Contour Lines
- (W) Water Wells
- (P) Public Water Supply Wells
- ↑ Groundwater Flow Direction
- (G) Indeterminate Groundwater Flow at Location
- (GV) Groundwater Flow Varies at Location
- Cluster of Multiple Icons
- (E) Earthquake epicenter, Richter 5 or greater
- Wildlife Areas
- Natural Areas
- flare & Endangered Species

No contour lines were detected within this map area

TARGET PROPERTY:	Fort Fisher Rec Area	CUSTOMER:	Geo-Marine
ADDRESS:	Northeast Corner of Highway 42	CONTACT:	Susan Lee
CITY/STATE/ZIP:	Wilmington NC 28449	INQUIRY #:	504853.1s
LAT/LONG:	33.9801 / 77.9187	DATE:	June 08, 2000 4:08 pm

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID		Database	EDR ID Number
Direction			
Distance			
Elevation			

A1		FRDS PWS	NC0465547
SSE			
114 • 1/2 Mile			
Higher			

PWS ID:	NC0465547	PWS Status:	Active
Date Initiated:	November 184	Date Deactivated:	Not Reported
PWS Name:	FT FISHER		
	KURE BEACH, NC 28449		

Addressee / Facility:	System Owner/Responsible Party		
	MR GEARIG OR MGR		
	PO BOX 68		
	KURE BEACH, NC 28449		

Addressee / Facility:	System Owner/Responsible Party		
	NC DEPT CULTURAL RES		
	RALEIGH, NC 27602		

Facility Latitude:	Not Reported	Facility Longitude:	Not Reported
City Served:	KURE BEACH	Population:	40
Treatment Class:	Untreated		

PWS currently has or had major violation(s) or enforcement: No

A2		NC WELLS	NC00010486
South			
1/4 • 1/2 Mile			
Higher			

Site Name:	KURE BEACH WATER SYSTEM	PWS Type:	Community
Public Water Sys. ID:	0465025	Longitude:	775508.000
Latitude:	335828.000	Source Type:	Ground
Source Name:	WELL #5	Source Availability:	Permanent
Responsible Party Tel.:	(910) 458-5816		
Retail Population:	1900		

a3		NC WELLS	NC00010571
East			
1/2 - 1 Mile			
Lower			

Site Name:	FT FISHER RECREATIONAL CENTER	PWS Type:	Community
Public Water Sys. ID:	0465197	Longitude:	775422.000
Latitude:	3358.50.000	Source Type:	Ground
Source Name:	WELL #3	Source Availability:	Permanent
Responsible Party Tel.:	(919) 736-6690		
Retail Population:	200		

B4		NC WELLS	NC00010570
East			
1/2 - 1 Mile			
Lower			

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Site Name:	FT FISHER RECREATIONAL CENTER		
Public Water Sys. ID:	0465197	PWS Type:	Community
Latitude:	335846000	Longitude:	775419.000
Source Name:	WELL #1	Source Type:	Ground
Responsible Party Tel.:	(919) 736-6690	Source Availability:	Permanent
Retail Population:	200		

5
SSW
1/2 - 1 Mile
Higher

NC WELLS NC0001 0667

Site Name:	FORT FISHER AQUARIUM		
Public Water Sys. ID:	0465553	PWS Type:	Transient Non-community
Latitude:	335800.000	Longitude:	775520.000
Source Name:	WELL #1	Source Type:	Ground
Responsible Party Tel.:	(910) 458-8257	Source Availability:	Permanent
Retail Population:	750		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0161360
Latitude / Longitude: 33.9972 / -77.9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0181456
Latitude / Longitude: 33.9972 / -77.9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0261607
Latitude / Longitude: 34.0111 / -77.9111
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0031938
Latitude / Longitude: 33.99721- 77. 9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0371720
Latitude / Longitude: 33.94661- 77. 9069
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Threatened

Site ID: 0252677
Latitude / Longitude: 33. 94661- 77. 9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: General
Occurrence Status: Extant
State Status: Special Concern

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FIE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0111514
Latitude / Longitude: 33.9861 I-77.9181
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Not Reported

Site ID: 9662457
Latitude / Longitude: 33.9736 I-77.9431
Classification, by Type: Special Animal Habitats
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0131938
Latitude / Longitude: 33.9722 I-77.9431
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0091136
Latitude / Longitude: 34.0111 f-77.91 11
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0081881
Latitude / Longitude: 33.9614 I-77.9386
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Candioate

Site ID: 0023364
Latitude / Longitude: 34.0008 i-77.9164
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Significantly Rare

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0232077
Latitude / Longitude: 33.9686 I-77.9269
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0 122479
Latitude / Longitude: 33.9917 I-77.9222
Classification by Type: Invertebrate
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0013372
Latitude / Longitude: 34.0117 f-77.9106
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Candidate

Site ID: 0182443
Latitude / Longitude: 33.9756 I-77.9186
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0151952
Latitude / Longitude: 33.9639 I-77.9250
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0013029
Latitude / Longitude: 33.9500 / -77.94 17
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Significantly Rare

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0022665
Latitude / Longitude: 33.9681 I-77.9194
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0013354
Latitude / Longitude: 34.0117 I-77.9106
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0182283
Latitude / Longitude: 33.9972 I-77.9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0561504
Latitude / Longitude: 33.9972 I-77.9375
Classification by Type: Special Animal Habitats
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0392754
Latitude / Longitude: 34.0117 / -77.9106
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0802457
Latitude / Longitude: 33.9931 I-77.9375
Classification by Type: Special Animal Habitats
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: No! Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0231587
Latitude / Longitude: 34.0114 / -77.9106
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0042120
Latitude / Longitude: 33.9500 / -77.9417
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0222810
Latitude / Longitude: 33.9972 / -77.9375
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0052442
Latitude / Longitude: 34.0097 / -77.9139
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0652457
Latitude / Longitude: 34.0056 / -77.9472
Classification by Type: Special Animal Habitats
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Historic, no evidence of destruction
State Status: Not Reported

Site ID: 0091881
Latitude / Longitude: 33.9639 / -77.9222
Classification by Type: Plants
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Candidate

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

OTHER STATE DATABASE INFORMATION

Site ID: 0191597
Latitude / Longitude: 33.9653 I -77.9569
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Special Concern

Site ID: 0261667
Latitude / Longitude: 34.0111 / -77.9111
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0231587
Latitude / Longitude: 34.0114 I-77.9106
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Minutes
Occurrence Status: Extant
State Status: Not Reported

Site ID: 0151952
Latitude / Longitude: 33.9639 I-77.9250
Classification by Type: Animal
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Significantly Rare

Site ID: 0162443
Latitude / Longitude: 33 9756 I -77.9186
Classification by Type: Natural Community Occurrence
Degree of Accuracy associated with coordinate: Seconds
Occurrence Status: Extant
State Status: Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for NEW HANOVER County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
 : Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L
 : Zone 3 indoor average level < 2 pCi/L.

NEW HANOVER COUNTY, NC

Number of sites tested: 10

<u>Area</u>	<u>Average Activity</u>	<u>% <4 pCi/L</u>	<u>% 4-20 pCi/L</u>	<u>% >20 pCi/L</u>
Living Area - 1st Floor	0.240 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Nat Reported	Not Reported	Not Reported
Basement	Not Reported	Nat Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in March 1997 from the U.S. Fish and Wildlife Service.

HYDROGEOLOGIC INFORMATION

AQUIFLOW™ Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the data of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale -A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS # 11 (1994).

STATSGO: State Soil Geographic Database

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the national Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

ADDITIONAL ENVIRONMENTAL RECORD SOURCES

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STATE RECORDS

North Carolina Wildlife Resources/Game Lands

Source: Center for Geographic Information and Analysis

Telephone: 919-733-2090

All publicly owned game lands managed by the North Carolina Wildlife Resources Commission and as listed in Hunting and Fishing Maps for North Carolina Game Lands, 198490.

North Carolina Rare/Endangered Species and Natural Areas

Source: Natural Heritage Occurrence Sites Center for Geographic Information and Analysis

Telephone: 919-733-2090

North Carolina Public Water Supply Wells

Source: Department of Environmental Health

Telephone: 919-715-3243

RADON

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

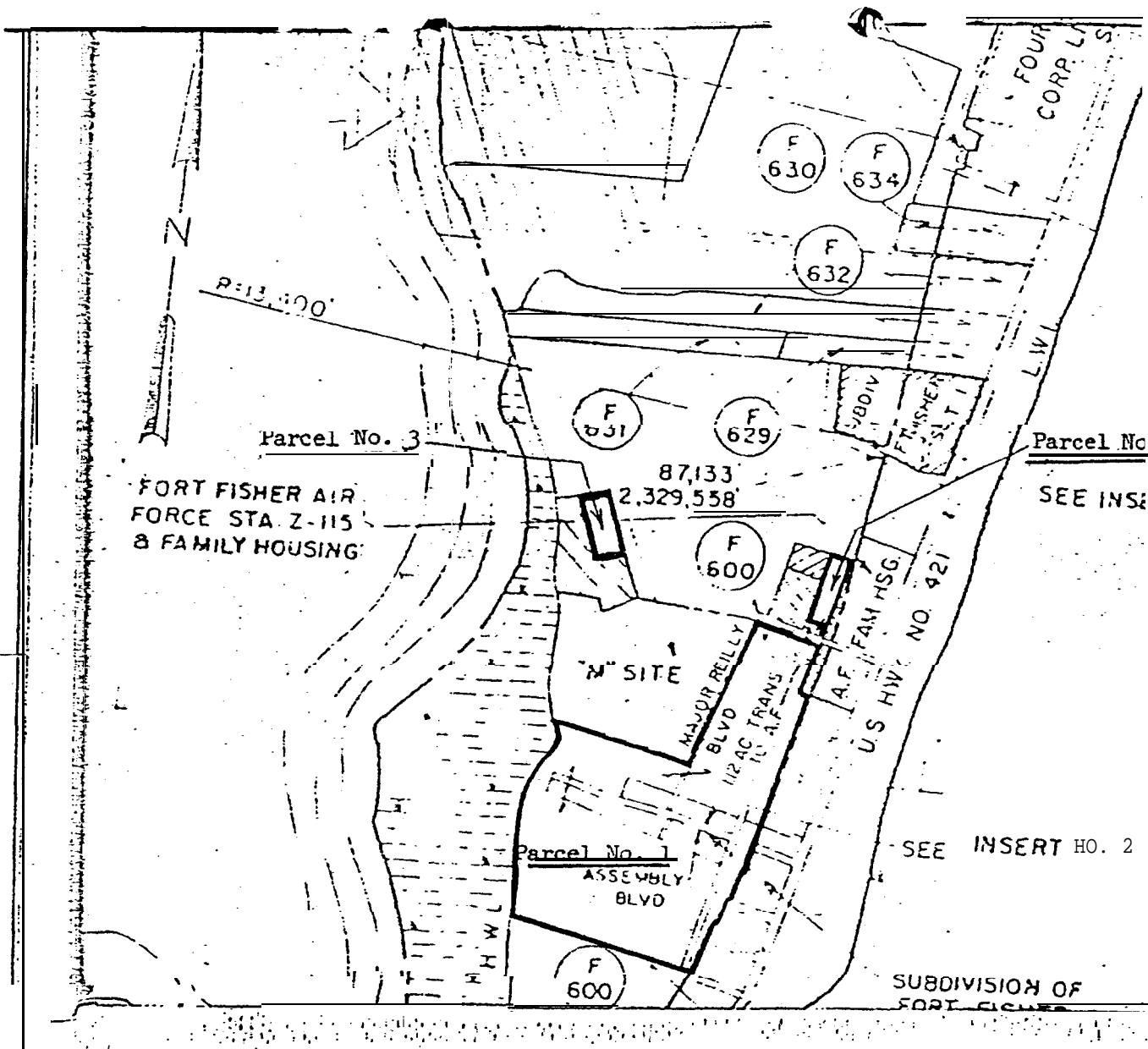
EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

APPENDIX C: REAL ESTATE DOCUMENTS AND HISTORICAL CHAIN OF
TITLE REPORT



FORT FISHER AIR
FORCE STA Z-115
& FAMILY HOUSING

Parcel No. 3
SEE INSE

SEE INSERT HO. 2

DESCRIPTION

As Shown in Red
 Parcel "1" - 58.5 Acre;;
 Parcel "2" - 1.0 Acre;;
 Parcel "3" - 2.0 Acres
TOTAL - 61.5 Acres

OUTGRANT MAP

SUNNY POINT, ARMY TERMINAL
TRACT NO, F600

 A Portion of Segment F
 New Hanover County, North Carol

 PERMIT BO. DACA21-4-69-1022

SUNNY POINT ARMY TERMINAL

PERMIT NO. DACA21-4-69-1022

DATE: 11 JULY 1974

PARCEL NO. 1

ACREAGE; 58.5

All that tract of land situate in New Hanover County, North Carolina, on Federal Point south of **Kure** Beach, being bound now or formerly on the North **by** Fort Fisher Air Force Station M-11.5; East by the Air Force Housing Area and the boundary line of Sunny Point Army Terminal; South by General Hoke Street and West by the ordinary high water line of the Cape Fear River and being more particularly described as follows:

Beginning at the northwest corner of the Fort Fisher Air Force Station's Family Housing Area located 350 feet west from the intersection of the south right-of-way line of the access road to the Air Station with the west right-of-way line of U. S. Highway No. 421; thence, in a southwesterly direction 320 feet to a concrete monument, **S 75° 11' 20" E** 58 feet to the boundary line of Sunny Point Army Terminal, **S 14° 51' 00" W** 364 feet, **S 15° 44' 34" W** 473.72 feet to the northeast corner of Lot 8, Block 22, Section 2, Fort Fisher Subdivision, recorded in Map Book 4, Page 94 in the records of New Hanover County, North Carolina; thence along the lot lines of Lots 7 and 8, Block 23, **S 14° 49' W** 391 feet **N 75° 11' W** 25 feet to the northeast corner of Lot 18, Block G, Section 3, Fort Fisher Subdivision, recorded in Map Book 5, Page 110 in the records of New Hanover County, North Carolina; thence, along the lot line between Lots 17 and 18, Block G, Section 3, **S 14° 49' W** 207 feet to the centerline of General Jackson Street; and along the centerline of General Jackson Street **N 75° 11' W** 25 feet; **thence, leaving** said street and along the lot line between Lots 18 and 19, Block H, Section 3, of the Fort **Fisher** Subdivision, **S 14° 49' W** 130 feet, and along the south line of Lot 19, **N 75° 11' W** 25 feet to the southeast corner of Lot 20, **S 14° 49' W** 360 feet to a point on the north right-of-way line of General Hoke Street; thence, along said right-of-way line in a **westerly** direction 1,150 feet to the ordinary high water line of the Cape Fear River; thence, along said ordinary high water line in a northerly direction 1,300 feet to the southwest corner of the Air Force Station M-115; thence, leaving said ordinary high water line and with the boundary line of the Air Force Station **S 76° 15' E** 958 feet to the west right-of-way line **of** Major Reilly Boulevard and along said right-of-way line **N 19° 23' E** 925 feet to the south right-of-way line of the access road to the Air Force Station **M-115**; thence, along the south right-of-way line of said access road, in an easterly direction **500** feet to the point of beginning and containing 58.5 acres, more or less.

EXHIBIT "B-1"

PARCEL NO. 2

ACREAGE: 1.00

All that tract of land situate in New Hanover County, North Carolina, on Federal Point, south of Kure Beach and being more particularly described as follows:

E-2

Bound on the north by land of **Sunny** Point Army Terminal; East by Fort Fisher Air Force Station Family Housing area; South by the access road to the Air Force Station M-115 and West **by** the Air Force Trailer Court containing 1.00 acres, more or less.

PARCEL NO. 3

ACREAGE: 2.00

All that tract of land situate in New Hanover County, North Carolina, on Federal Point South of Kure Beach and being more particularly described as follows:

E-3

Bound on the North by land of Sunny Point Army **Terminal**; East by the access road leading to the GATR site; South and West by land of the Fort Fisher Air Force Station and containing **2.00** acres, more or less.



2055 East Rio Salado Parkway
Tempe, Arizona 85281
(480) 967-6752
(480) 966-9422 Fax
www.netronline.com

HISTORICAL CHAIN OF TITLE REPORT

**FORT FISHER RECREATION AREA
NORTHEAST CORNER OF HIGHWAY 42
WILMINGTON, NORTH CAROLINA**

Submitted to:

**ENVIRONMENTAL DATA RESOURCES, INC.
C/O**

GEO-MARINE

118 17 Canon Boulevard, Suite 104
Newport News, Virginia 23606
757-873-8253

Attention: Ms. Susan Lee

Project No. NOO-1404

July 31, 2000

Nationwide Environmental Title Research hereby submits the following ASTM historical chain-of-title to the land described below, subject to **the** leases/miscellaneous shown in Section 2. Title to the estate or interest covered by this report appears to be vested in:

UNITED STATES OF AMERICA

The following is the current property legal description:

All that tract of land situate in New Hanover County, North Carolina, on Fedral Point south of Kure Beach, being bound now or formerly on the North by Fort Fisher Air Force Station M-1 15; East by the Air Force Housing Area and the boundary line of Sunny Point Army Terminal; South by General Hoke Street and West by the ordinary high water line of the Cape Fear River.

1. HISTORICAL CHAIN OF TITLE

1. The current owner of the subject property is the United States of America. Records were researched at the New Hanover County Assessors and Register of Deeds Offices back to 1940. No conveyances were found into the United States of America. Based on our research, it appears that the United States of America acquired title to the property prior to 1940.

2. LEASES AND MISCELLANEOUS

1. No environmental liens were found of record.

APPENDIX D: AEEUAL PHOTOGRAPHS

Photograph 1. November 9, 1954. Scale: 12"=10,000'. Black and White. Stereoscopic Pair.

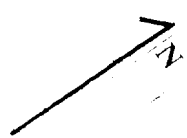
Photograph 2. August 3, 1963. Scale: 1"=833'. Black and White. Stereoscopic Pair.

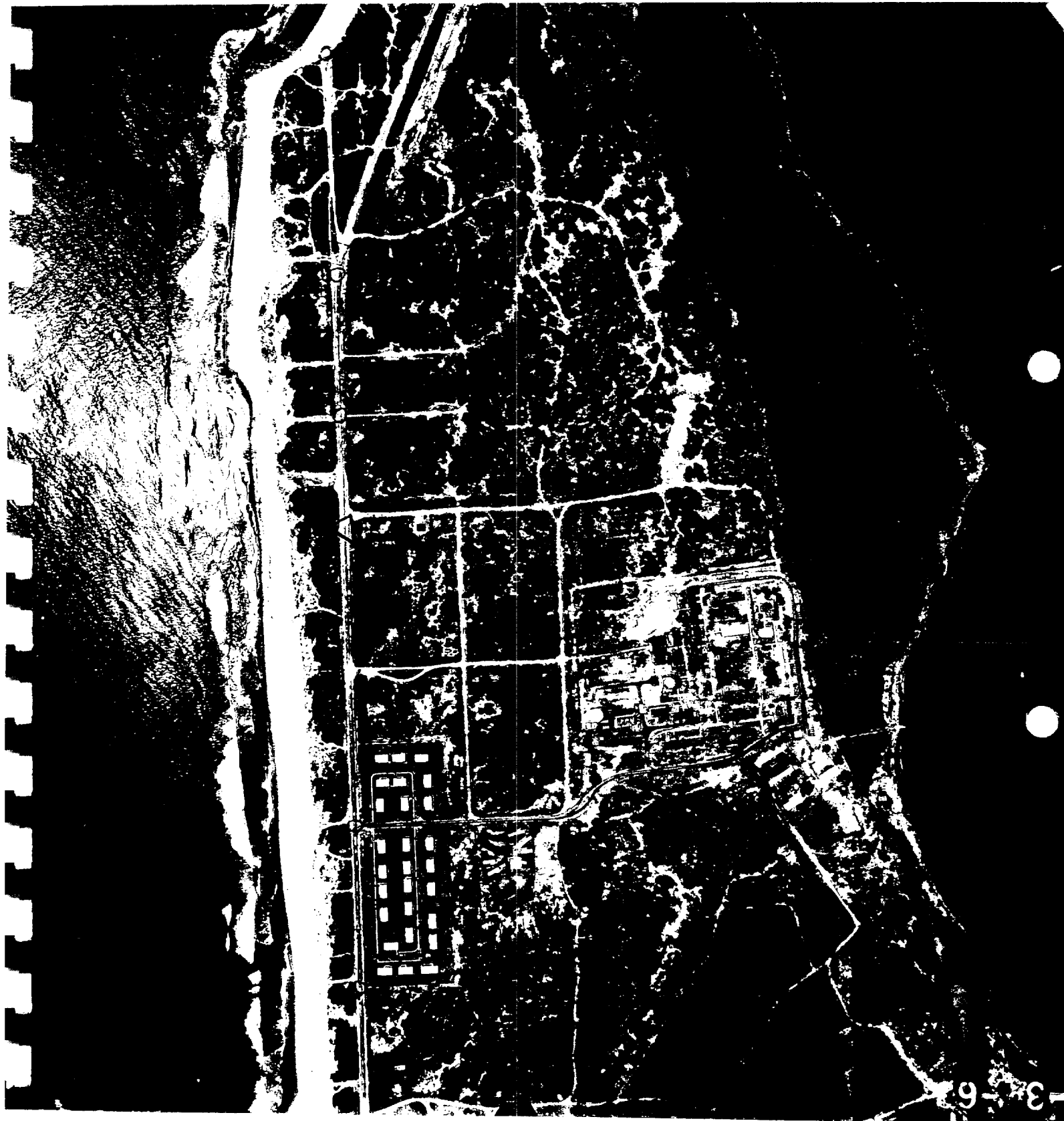
Photograph 3. November 1975. Scale: 1"=1000'. Black and White. Stereoscopic Pair.

Photograph 4. October 3, 1984. Scale: 1"=1000'. Black and White. Southern View.

Photograph 5. April 15, 1995. Scale: 1"=12000'. Color. Stereoscopic Pair.

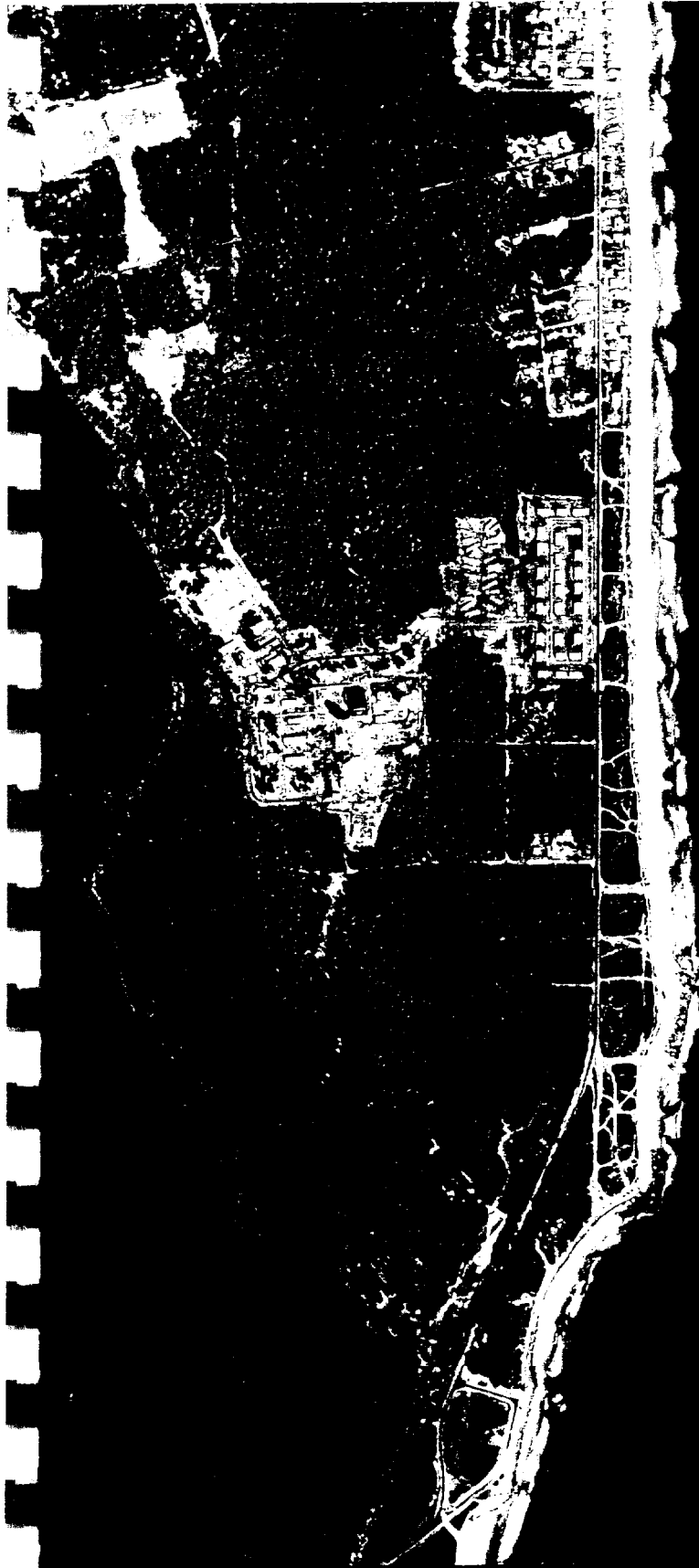
Photograph 6. March 19, 1999. Scale: 1"=12000'. Color. Stereoscopic Pair.





803.63





●
●
CAL. P. L.
151.63 mm
●
KF 6144



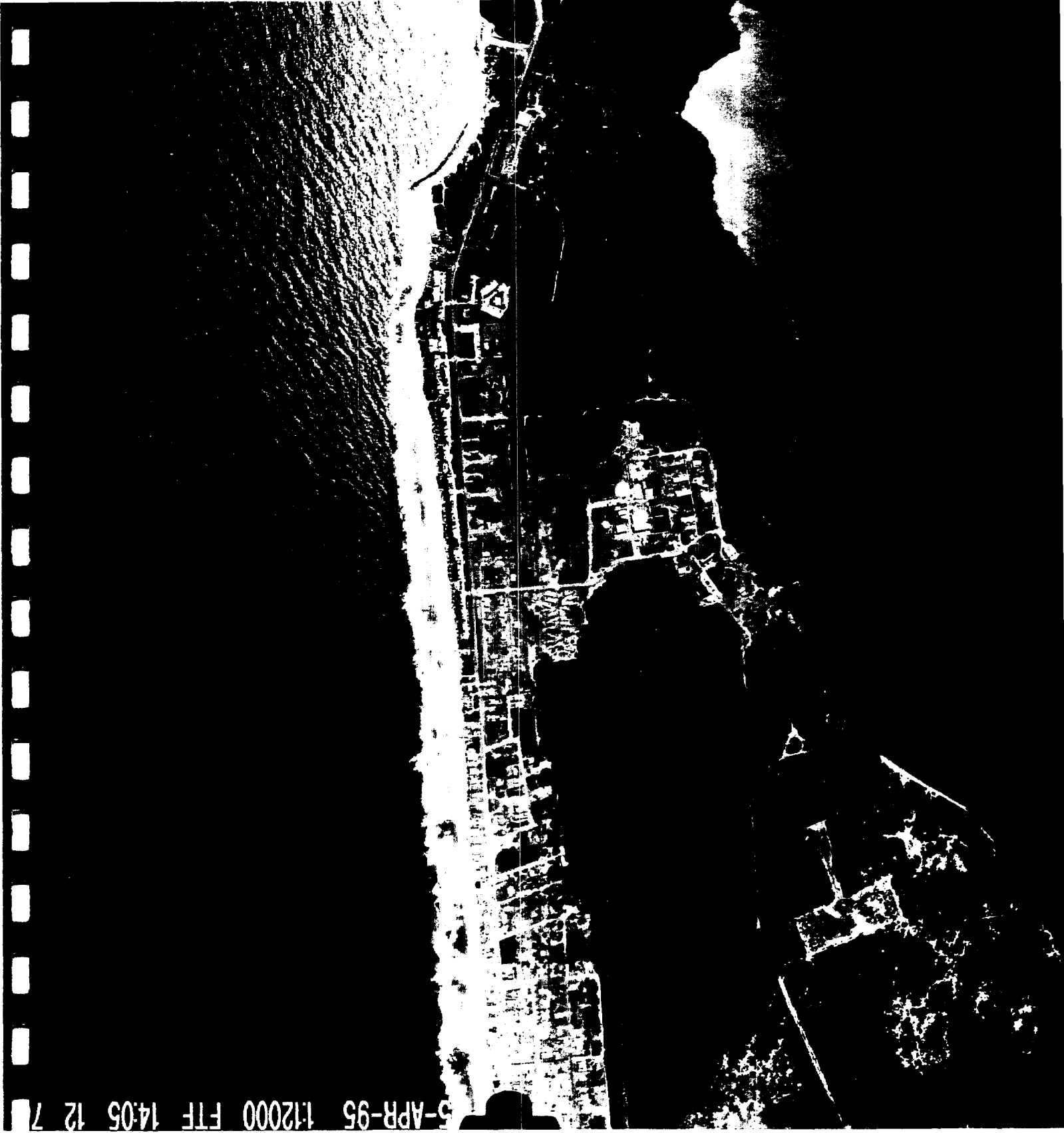


C.F.L.

AF 4885



'0.3.80



5-APR-95 1:12000 FTF 14:05 12 7



04.15.95



1:2000 318 92

