

M00263.AR.001523
MCRD PARRIS ISLAND
5090.3a

LETTER AND ATTACHED SITE 35 PERMIT REQUEST FOR INSTALLATION OF SEVEN
MONITORING WELLS AT MCRD PARRIS ISLAND SC
06/18/2014
UNITED STATES MARINE CORPS



UNITED STATES MARINE CORPS
MARINE CORPS RECRUIT DEPOT/EASTERN RECRUITING REGION
P.O. BOX 19001
PARRIS ISLAND, SOUTH CAROLINA 29905-9001

5090
NREAO
June 18, 2014

Ms. Annie Gerry
South Carolina Department of Health
and Environmental Control
Bureau of Land and Waste Management
2600 Bull Street
Columbia, SC 29201

RE: Site 35 Permit Request for Installation of Seven Monitoring
Wells at Marine Corps Recruit Depot Parris Island, South
Carolina

Dear Ms. Gerry:

Enclosed please find a permit request for installation of
seven monitoring wells in support of the Site 35 Remedial
Investigation.

If you have questions, please contact Ms. Lisa Donohoe at
(843) 228-2779.

Sincerely,

A handwritten signature in black ink, appearing to read "W S Tate".

W. S. TATE
Assistant Chief of Staff,
Installation and Logistics
By direction of the
Commanding General

Enclosures

Copy to: Dan Owens, NAVFAC SE (electronic copy)
David Warren, Resolution Consultants (electronic copy)

17 June 2014

Ms. Annie Gerry
South Carolina Department of Health & Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

via email: gerryam@dhec.sc.gov

**RE: Monitoring Well Permit Application
Remedial Investigation/Resource Conservation and Recovery Act Facility Investigation
Site 35, Salvage Yard
Marine Corps Recruit Depot Parris Island, South Carolina**

Dear Ms. Gerry:

On behalf of Naval Facilities Engineering Command Southeast and Marine Corps Recruit Depot (MCRD) Parris Island, Resolution Consultants requests permission to construct seven monitoring wells and advance up to 21 environmental soil borings at Installation Restoration Program Site 35, Defense Reutilization and Marketing Office Salvage Yard at MCRD Parris Island, South Carolina. Activities will be performed in **accordance with Resolution Consultants' Draft-Final Sampling Analysis Plan, Remedial Investigation/RCRA Facility Investigation, Site 35 DRMO Salvage Yard, MCRD Parris Island, South Carolina**, dated May 2014, and pursuant to *R.61-71 South Carolina Well Standards*. Enclosed, is the completed South Carolina Department of Health and Environmental Control Monitoring Well Application Form, including figures and construction specifications.

To evaluate shallow groundwater, hollow stem augers will be used to construct seven permanent monitoring wells up to 20 feet below ground surface, with final depths determined in the field by Resolution Consultants personnel. Monitoring wells will be constructed of 2-inch diameter Schedule 40 Polyvinyl Chloride riser, and either a 5-foot or 10-foot, 0.010-inch slotted pre-pack well screens. The well screens will be positioned to intercept the water table. A 20-40 silica sand filter pack will be placed in the annular space between the well screen and borehole, from the bottom of the borehole to 2 feet above the top of the well screen. Bentonite pellets will be placed on top of the filter pack and hydrated to form a seal approximately 2 feet thick. Next, a 30% solids bentonite grout will be placed in the borehole by forced injection, via tremie pipe, from the top of the filter pack seal to approximately 1-foot below ground surface. Depending on local land use, surface completions may consist of flush mount or above ground stickup. Flush mount completions will include a lockable well cap and a watertight, steel manhole, set into a concrete pad. Aboveground completions will include a riser extending approximately 3-feet above grade, an outer steel casing with lockable lid set, and protective bumper guards set into concrete. A 3-foot-by-3-foot-by-6-inch thick concrete pad will be constructed around each well and sloped to drain water away from the protective casing or manhole. Wells will be developed no sooner than 24 hours after construction, to allow for curing of the grout. Groundwater samples will be collected no sooner than 48 hours after development.



To evaluate soil, direct push technology will be used to advance up to 21 soil borings to an anticipated terminal depth of approximately 10-feet below ground surface. Following soil sample collection, soil borings will be abandoned in accordance with *R.61-71 South Carolina Well Standards*. Please note that actual locations for wells and soil borings may be adjusted based on access limitations or to avoid utilities. Investigative derived waste will be managed in accordance with applicable federal and state guidance and MCRD Parris Island protocol. Details are included in the *Draft-Final Sampling Analysis Plan, Remedial Investigation/RCRA Facility Investigation, Site 35 DRMO Salvage Yard, MCRD Parris Island, South Carolina* (Resolution Consultants, May 2014).

Resolution Consultants currently plans to initiate field activities the week of 21 July 2014, and will notify South Carolina Department of Health and Environmental Control prior to beginning such activities. If you require additional information or have questions or comments, please contact me at 843-884-0029 or dwarren@ensafe.com.

Sincerely,

Resolution Consultants



By: David Warren
Project Manager

CC: Daniel Owens, NAVFAC
Tim Harrington, MCRD Parris Island
Lila Llamas, U.S. EPA
Meredith Amick, SCDHEC

Enclosures: SCDHEC Well Application Form
Figures



SCDHEC Well Application Form



Monitoring Well Application

<p>1. Proposed Location of Monitoring Well(s):</p> <p>Street Address:</p> <p>City (including Zip):</p> <p>County:</p> <p>Please attach Scaled Map or Plat</p>	<p>5. Intended Purpose of Well(s):</p> <p>Pre-Purchase NOTE: If this request is for an existing DHEC project, please enter the Program area and ID number below.</p> <p>Investigation</p> <p>Program Area:</p> <p>Project or Site ID #:</p>
<p>2. Well Owner's Information:</p> <p>Name (Last then First):</p> <p>Company:</p> <p>Complete Address:</p> <p>Telephone Number:</p>	<p>6. Proposed number of monitoring wells:</p>
<p>3. Property Owner's Information:</p> <p style="padding-left: 40px;">Check if same as Well Owner</p> <p>Name (Last then First):</p> <p>Company:</p> <p>Address:</p> <p>Telephone Number:</p>	<p>7. Proposed parameters to be analyzed (check all that apply), please specify analytical method beside check box:</p> <p>VOCs</p> <p>BTEX</p> <p>MtBE</p> <p>Naphthalene</p> <p>PAHs</p> <p>Metals</p> <p>Nitrates</p> <p>Base, Neutral & Acid Ex.</p> <p>Pesticides/Herbicides</p> <p>Phenols</p> <p>Radionuclides</p> <p>PCBs</p> <p>Other (<u>specify below</u>)</p>
<p>4. Proposed Drilling Date:</p>	<p>8. Proposed construction details (complete and attach proposed monitoring well schematics):</p>

South Carolina Department of Health and Environmental Control (SCDHEC) summary of standards for monitoring well construction (per South Carolina Well Standards and Regulations R. 61-71)

Approval and License Requirements

Prior Department approval is required for the installation or abandonment of all monitoring wells including direct push, geoprobe or other temporary type monitoring wells. The attached monitoring well approval document should be completed, submitted and approved prior to construction of any monitoring well. A monitoring well is any well used to obtain water samples for water quality analyses or to measure groundwater levels. There are no fees for approvals. All monitoring wells must be drilled by a driller that is registered in South Carolina with the Board of Certification of the Environmental Systems Operators. If any of the information on the application including the proposed drilling date, well construction details or well placement changes, the Department (i.e. project manager issuing the well approval) must be notified 24 hours prior to well construction.

Location

Due to the nature and purpose of a monitoring well, the depth and location requirements in respect to surface water bodies, potential contamination sources, etc., are variable, and shall be approved on a case by case basis by the Department.

Construction and Material

Casing should be of sufficient strength to withstand normal forces encountered during and after well installation and be composed of material so as to minimally affect water quality analyses. Casing should have a sufficient diameter to allow for efficient sample collection (i.e., to provide access for sampling equipment). The diameter of the drilled hole needs to be large enough on all sides (1.5 inches of annular space) to allow forced injection of grout through a tremie pipe. All monitoring wells should have a cement pad or aggregate reinforced concrete at the ground surface which extends at least six inches beyond the bore hole diameter and six inches below ground surface to prevent infiltration between the surface casing and the bore hole. All monitoring wells should be grouted from the top of the bentonite seal to the surface with a neat cement, high solids bentonite or neat cement, bentonite mixture approved by the Department. A hydrated bentonite seal with a minimum thickness of 12 inches is to be placed above the filter pack to prevent infiltration of grout if the well has a filter pack. The monitoring well intake or screen design should minimize the amount of formational materials entering the well. The gravel pack should be utilized opposite the well screen as appropriate so that parameters analyses will be minimally affected. All monitoring wells should have a locking cap or other security device to prevent damage and/or vandalism. Any monitoring well which is destroyed, rendered unusable or is abandoned should be reported to the Department and be properly abandoned, revitalized or replaced as appropriate or required by permit or regulation.

Development

Monitoring wells shall be properly developed. Development shall include the removal of formation cuttings and drilling fluids from the well bore hole. Development shall be complete when the well produces water typical of the aquifer being monitored.

Reporting Requirements

A monitor well record form (1903) or equivalent to include the following should be completed and submitted to the Department within 30 days after completion of the monitoring wells:

Name and address of facility/owner;
Surveyed or global positioning system location of monitor well(s) on a scaled map or plat;
Driller and certification number;
Date drilled;
Driller's or Geologist's log;
Total depth;
Screened interval;
Diameter and construction details;
Depth to water table with date and time measured;
Surveyed elevation of measuring point with respect to established benchmark;
Monitoring well approval number issued by the Department.

Additionally, the groundwater and soil (if taken) analytical results should be submitted to the Department within 30 days of receipt from the laboratory.

Abandonment

All monitoring wells shall be properly abandoned, when deemed appropriate by the Department. Any well that acts as a source of contamination shall be repaired or permanently abandoned immediately after receipt of notice from the Department. Abandonment shall be by forced injection of grout or pouring through a tremie pipe starting at the bottom of the well and proceeding to the surface in one continuous operation. The well shall be filled with either neat cement, bentonite-cement, or 20% high solids sodium bentonite grout, from the bottom of the well to the land surface.

- * This summary of standards for monitoring well construction may not include a listing of all information necessary to obtain an approval to install monitoring wells. Final approval of monitoring well installation will be dependant upon the regulatory requirements for the Department program area for which the monitoring wells are to be installed.
- * Some areas of the Department may require a detailed justification of the placement of monitoring wells and the depth of monitoring well screened zones prior to granting installation approval.

Figures

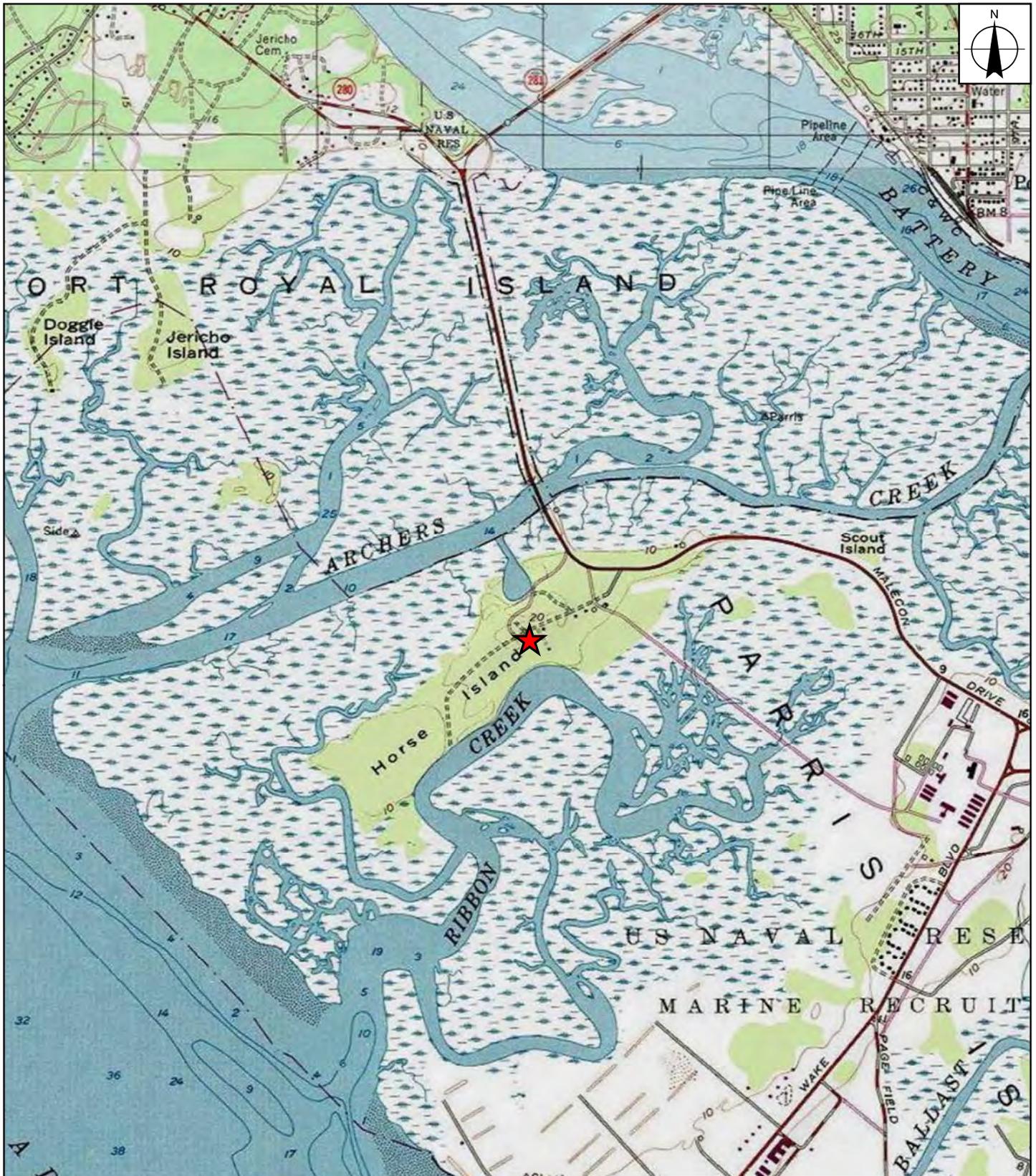


FIGURE 10-1
 SITE LOCATION MAP
 SITE 35
 MCRD PARRIS ISLAND, SOUTH CAROLINA

★ SITE LOCATION



1 inch = 2,000 feet

SOURCE: USGS 7.5 MINUTE PARRIS ISLAND (1980)
 AND BEAUFORT (1979) QUADRANGLES

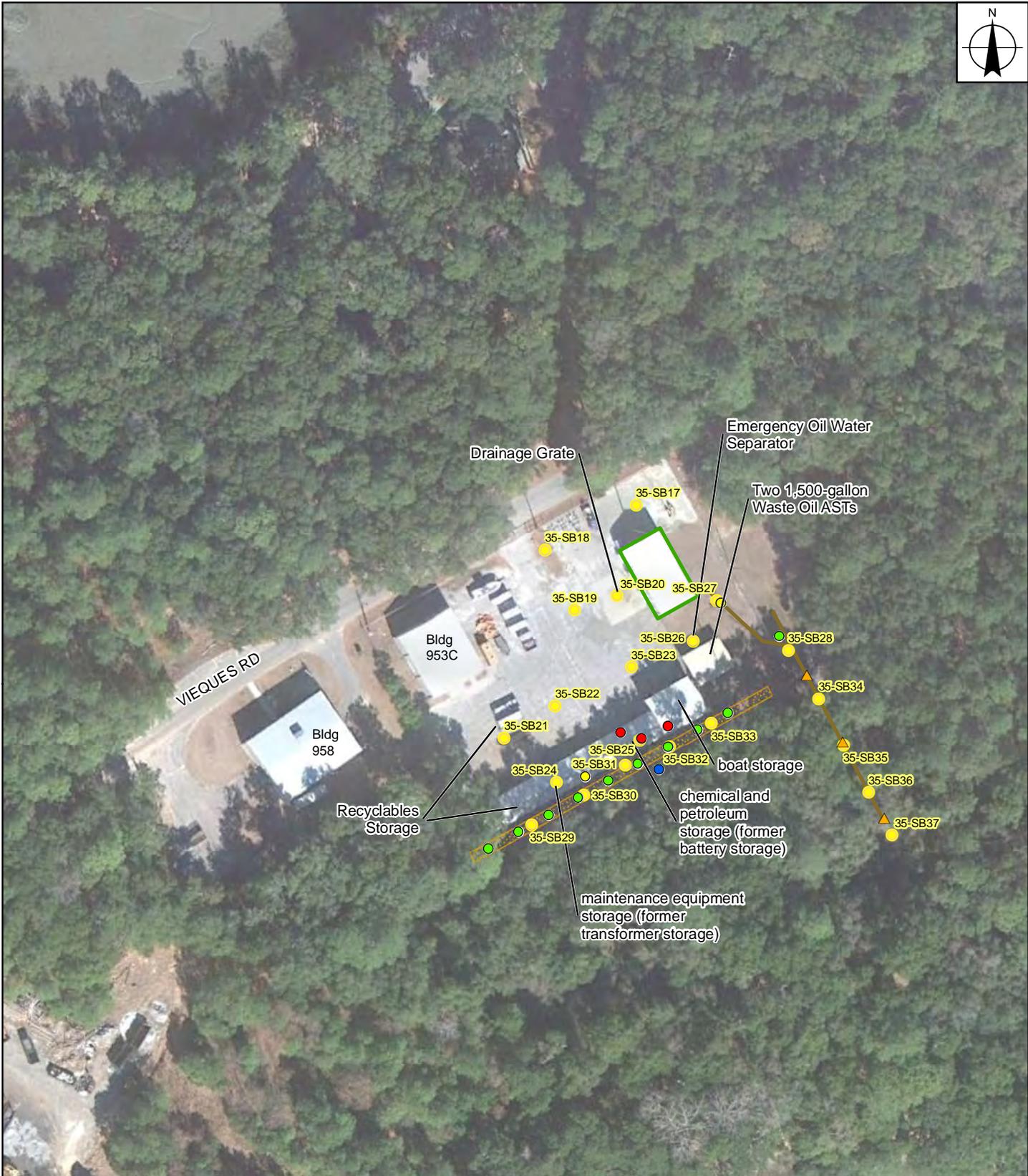


REQUESTED BY: D. WARREN

DATE: 5/2/2014

DRAWN BY: M. SENNE

TASK ORDER NUMBER: JM03



X:\Navy\ParrisIsland\Figure17_1\Proposedsoil.mxd

● Proposed Soil Boring/Sample Location

— Earthen Ditch (dry)

Historical Samples

▭ 90-day RCRA Hazardous Storage Facility (Building 953)

▭ 2004 Excavation Area

● 1995 soil sampling location

● 1999 soil sampling location

▲ 2003 soil sampling location

● 2005 confirmatory soil sampling location

● 1999 groundwater sampling location

SOURCE: GOOGLE EARTH PRO
IMAGE DATE: JAN 28, 2011

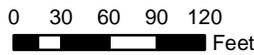


FIGURE 17-1
PROPOSED SOIL SAMPLING LOCATIONS
SITE 35
MCRD PARRIS ISLAND, SOUTH CAROLINA



REQUESTED BY: D. WARREN

DATE: 5/2/2014

DRAWN BY: M. SENNE

TASK ORDER NUMBER: JM03



X:\Navy\ParrisIsland\Figure17_2ProposedWELLS.mxd

Proposed Monitoring Well Location

Earthen Ditch (dry)

Historical Samples

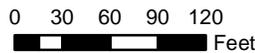
90-day RCRA Hazardous Storage Facility (Building 953)

SOURCE: GOOGLE EARTH PRO
IMAGE DATE: JAN 28, 2011

FIGURE 17-2
PROPOSED MONITORING WELL LOCATIONS
SITE 35
MCRD PARRIS ISLAND, SOUTH CAROLINA

- 1995 soil sampling location
- 1999 soil sampling location
- 2003 soil sampling location
- 2005 confirmatory soil sampling location
- 1999 groundwater sampling location

2004 Excavation Area



REQUESTED BY: D. WARREN

DATE: 5/2/2014

DRAWN BY: M. SENNE

TASK ORDER NUMBER: JM03

SHALLOW WELL CONSTRUCTION DIAGRAM

NOT TO SCALE

