M00263.AR.000082
MCRD PARRIS ISLAND
5090.3a

NOTICE OF TECHNICAL INADEQUACY AND SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL COMMENTS ON ENGINEERING EVALUATION AND INTERIM REMOVAL REMEDIAL WORK PLAN FOR SITE 45 MCRD PARRIS ISLAND SC
10/20/1997
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

03.01.00.0034

D H E C

OMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

CERTIFIED

October 20, 1997

Commanding General, MCRD
ATTN.: I&L ERR (NREAO)
P.O. Box 19001
Parris Island, SC 29905-9001

RE: Notice of Technical Inadequacy
Review of document titled:
Engineering Evaluation and Interim Removal Remedial Workplan, Interim Measure Work Plan, Site 45/SWMU 45, Revision 0,
dated September, 1997
Marine Corps Recruit Depot (MCRD)
Parris Island, South Carolina
SC6 170 022 767

Dear Commanding General:

The Corrective Action Engineering Section and the Hydrogeology Section of the South Carolina Department of Health and Environmental Control (Department) have reviewed the above referenced document. The document has been reviewed with respect to the requirements of the South Carolina Hazardous Waste Management Regulations (SCHWMR), R.61-79, and appropriate guidance documents.

The Department has determined that the above referenced Work Plan is technically inadequate. This work plan should be revised to address comments from Susan Peterson and Don Hargrove (memo Hargrove to Peterson). The response to comments may be in the form of a totally revised Interim Removal Remedial Work Plan/Interim Measure Work Plan or revised pages to be inserted into your original submittal. If you choose to submit revised pages, please provide the following information:

Page number, and
Date of revision on each page.
(For example, 32 (R-10/25/97) would be page 32, revised 10/25/97).

The revised plan should be submitted to the Department within 30 days of receipt of this letter. Please submit three (3) copies of the revisions to the following:

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
Attention: Susan Peterson
2600 Bull Street
Columbia, South Carolina 29201

Please contact me at (803) 896-4182 or Don Hargrove at (803) 896-4033 if you have any questions.

Sincerely,

Susan C. Peterson

Susan C. Peterson, Environmental Engineer Associate
Corrective Action Engineering Section
Bureau of Land & Waste Management

Attachment: Comments from Susan Peterson
Attachment: Memo: Hargrove to Peterson, 10/13/97

cc: Don Hargrove, Hydrogeology
Russell Berry, SCDHEC-Low Country EQC
Allison Humphris, USEPA Region IV
Art Sanford, Southern Division
Karen Atchley, Bechtel Environmental Inc.
Mark Speranza, Brown & Root Environmental
Glenn Wagner, Brown & Root Environmental
Jody Laprade, Galileo Quality Institute (via e-mail)

D H E C
OMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

Susan Peterson, Environmental Engineer Associate
Corrective Action Engineering Section
Comments on document titled:

Engineering Evaluation and
Interim Removal Remedial Work Plan/Interim Measure Work Plan

Site 45/SWMU 45
Dry Cleaners Facility
Building 193

Marine Corps Recruiting Depot
EPA I.D. No. SC6 170 022 762

1. Section 1.4.3, Interim Removal Action Objectives, page 11
   Explain the omission of "Minimize further migration of groundwater containing VOCs around the dry cleaning facility"(as seen in the June, 1997 IM WP) as an Interim Removal Action Objective.

2. Section 1.7.1, Pump and Treat, page 17
   Revise the document to include figures that depict the treatment system (to include as Attachment 5).

3. Section 3.3.4, Personal Protective Equipment, page 23
   Note whether the PPE will be disposed in a South Carolina licensed landfill.

D H E C
OMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

MEMORANDUM

TO: Susan Peterson, Engineering Associate
Corrective Action Engineering Section
Division of Hazardous and Infectious Waste Management
Bureau of Land and Waste Management

FROM: Donald C. Hargrove, Hydrogeologist
Hazardous Waste Section
Division of Hydrogeology
Bureau of Land and Waste Management

DATE: 13 October 1997

RE: Parris Island Marine Corps Recruit Depot (MCRD)
Parris Island, South Carolina
Beaufort County
SC6 170 022 762

The Engineering Evaluation and Interim Removal Remedial Work Plan/Interim Measure Work Plan, Site 45/SWMU 45, Revision 0, dated September 1997

The Division of Hydrogeology has reviewed The Engineering Evaluation and Interim Removal Remedial Work Plan/Interim Measure Work Plan, Site 45/SWMU 45, Revision 0 at MCRD. This work plan (dated September 1997) was received on 29 September 1997. It provides a physical description of SWMU 45 that includes the history of the site. This work plan explains that SWMU 45 is the old dry cleaners facility at MCRD. A spill of tetrachloroethylene (PCE) occurred at the dry cleaning facility on March 11, 1994 due to the overfilling of above ground storage tanks located at the facility. This work plan briefly describes previous studies performed at this SWMU for both site assessment and remedial alternatives.

This work plan describes and discusses different remedial alternatives and proposes the installation of a pump and treat system that incorporates three extraction wells with an air stripper to be used for source removal as well as ceasing further contaminant migration. The treated effluent will be sent to MCRD's federally-owned treatment works (FOTW) after solvent concentrations have been reduced below maximum contaminant levels (MCLs).

This document was reviewed with respect to R.61-79 of the South Carolina Hazardous Waste Management Regulations (SCHWMR), and appropriate guidance documents. The following

comments should be addressed and a revised document submitted:

1) Figures 1.3 and 1.4: These figures do not indicate the confining or semi-confining clay layer described in Sections 1.1.2 and 1.3.2. Please revise the figures to indicate that an aquitard is present at a depth of approximately 14 feet below ground surface (bgs).

2) Section 2.4, Permits: This section does not mention existing air emission permits or the possible need for obtaining an additional permit to cover the estimated air emissions of 200 pounds per month as stated in Section 1.7.2, Off-Gas Discharge section. Does this discharge require an additional permit? Please revise the text to justify whether or not existing permits are adequate.

3) Section 4.2.3, Groundwater Monitoring: It should be noted within this section that some of the monitoring wells at SWMU 45 have been damaged due to vehicular traffic. MCRD should include in this work plan a discussion on which of these wells have been damaged, which wells should be abandoned, and the type of well to replace the abandoned wells.

With respect to the type of wells that will replace the damaged wells, the issue of flush-mount versus above ground stick-ups arises. Flush-mounted wells are only warranted where normal vehicular traffic would be impeded by an above-ground stickup. Parking lots, the Parade Deck, roads or alleys, and certain training areas are locations where flush-mount installations may be appropriate. The use of flush-mounted wells is not recommended elsewhere due to problems associated with cover-seal integrity, the possibility of being covered by other on-base activities, and low visibility which makes them difficult to locate by field personnel and State and Federal regulatory personnel. Additionally, the installation of flush-mount wells in any area that is not paved is not recommended. The possibility of sand and debris compromising the seal also is increased in these areas. Additionally, the possibility of pesticides, herbicides and/or fertilizers entering these wells due to direct application is increased if flush-mounted wells are installed in vegetated areas or areas where these chemicals are transported and/or handled.

Since flush-mounted monitoring wells currently exist at SWMU 45 as well as other areas of the base, this section should be revised to include the protocol for inspecting the concrete pad (cracking and/or a lack of stability), opening the water-tight cover, performing a seal inspection and evaluation, and inspecting and documenting whether the flush-mount casing interior is wet or dry. If the interior has standing water, procedures for removing any standing water should be specified in the work plan and the standing water should be treated as Investigation Derived Waste (IDW). Additionally, the water-tight seal on the cover must be repaired or replaced if no longer viable.

A field inspection and evaluation form should be drafted and added to Volume II of the Master Work Plan as well as this work plan. This form should be included with all field

sampling efforts in order to establish a history of seal integrity with respect to the flush-mount wells.

Maintenance of the flush-mount seals is vital to the quality and acceptability of the data generated from monitoring wells installed as flush wells.

The integrity of these monitoring wells should be of utmost importance in the design, construction, and maintenance of said wells. If a monitoring well is damaged by vehicular traffic or vandalism, or contaminated due to unlocked caps, breached well seals, or vandalism, steps must immediately be taken to either repair or abandon and replace the monitoring well in question. This action might include re-mobilization of field personnel as well.

4) Attachment 4, Drawing 145-D000-002: The recovery well profile indicates that all three extraction wells will be installed in vaults with the casings terminating approximately 1 foot below ground surface. This design is not acceptable due to the following reasons:

   a) The proposed screened interval is 4 to 14 feet bgs. Using 2 feet of this interval for the vault allows only 2 feet above the screen for extra filter pack, the bentonite seal, and grout (concrete has been excluded).

   b) The bottoms of the vaults are constructed of gravel. This porous media will allow infiltration of groundwater up into the vault and possibly enter the well during a rise in the water table due to seasonal highs and excessively wet conditions.

   c) The recovery well profile shows the bentonite seal installed directly above the screen with no extra filter pack as a buffer. This oversight could allow for intrusion of bentonite into the screen which could clog the screen and/or the filter pack surrounding the screen.

   d) The wells proposed vary from the standard installation of monitoring wells as set forth in R.61-71 of the South Carolina Well Standards and Regulations, and Section 6 of the USEPA Environmental Investigations Standard Operating Procedures and Quality Assurance Manual (EPA-SOPQAM) (May 1996). There is no written justification for this variation. The exact variations that should be explained and justified include:
      i) The proposed wells are designed as below grade installations enclosed in vaults.

      ii) The proposed wells do not allow for any filter pack to be installed above the screen.

      iii) The proposed wells do not allow for the installation of a 2 foot bentonite seal.

iv) The proposed wells do not allow for at least 2.5 feet of grout above the bentonite seal.

v) The proposed wells do not allow for the installation of concrete to be installed to a depth of 2 feet in the borehole with a pad at the surface extending 6 inches below ground surface.

These extraction wells should be installed with casings that terminate above ground. This will allow 4 feet between the ground surface and the top of the screen for extra filter pack to act as a buffer, the bentonite seal, and concrete to the surface along with the pad. Even by making this change to an above ground design, the proposed screened intervals of 4-14 feet do not allow a sufficient length of borehole above the filter pack to install the bentonite seal, grout, and concrete pad. A variation of the monitoring well construction must be made to allow for this shallow screened interval. Listed below are the specifications that would be acceptable for construction of these wells with such a shallow screen:

a) The filter pack should extend one (1) foot above the screen.

b) The bentonite seal should extend one (1) foot above the filter pack.

c) The remainder of the borehole (2 feet) should be filled with concrete as an integral part of the concrete pad that extends six (6) inches below ground surface.

The bentonite seal must still be hydrated properly before placement of the concrete. The only exclusion here is the grout. This variation should still protect the filter pack and screen from intrusion of bentonite, concrete, or surface contamination.

This above ground design can be protected by using a well housing and protective guard posts painted with high visibility paint.

Please revise the figure to show extraction wells completed above ground.

5) The actual design of the low profile air stripper should be included in a figure. Please revise.

6) A figure should be added that shows the proposed locations for the extraction wells, the air stripper, all electrical service details, as well as plumbing from the wells to the stripper and from the stripper to the sewer system. Please revise.

If you have any questions concerning these comments, please contact me at (803)896-4033.