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MONITORING WELL REQUEST FOR SOLID WASTE MANAGEMENT UNIT 166 (SWMU 166)
CNC CHARLESTON SC
1/25/2002
SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL



2600 Bull Street
Columbia, SC 29201-1708

25 January 2002

CERTIFIED MAIL

Ms. Amy Daniels
Caretakers Site Office
1895 Avenue F
Charleston Naval Base
North Charleston, SC 29405

RE: Naval Base Charleston (CNAV)
Charleston, South Carolina
SC0-170-022-560

Monitoring Well Request
Zone K, SWMU 166
Revision 0, Dated 23 January 2002, Received 23 January 2002

Dear Ms. Daniels:

The above referenced request has been reviewed with respect to R.61-79.265 Subpart F of the South Carolina Hazardous Waste Management Regulations and R.61-71 of the South Carolina Well Standards and Regulations. This request is for the installation of three permanent wells to monitor the reactions of Zero Valent Iron within the surficial aquifer as described in the Interim Measures Workplan of January 2002. The Interim Measures Workplan was received 17 January 2002 and has not been reviewed or approved. The three permanent monitoring wells should be completed to a maximum depth of approximately thirty five feet.

A matter of great concern with this well request is that two of the wells will have nonstandard 15 foot screens. Typical EPA and Navy guidance is for the installation of monitoring wells with three to five foot screens to better understand site conditions (copies enclosed). The primary issue with the 15 foot screens is the intentional creation of a conduit for contamination migration. The second issue is that samples collected from 15 foot screens will not be representative of the aquifer conditions due to preferential flow paths. It has been well documented that contaminant migration at this site is not uniform but follows preferential flow paths. The contaminant, following a preferential flow path into a 15 foot screened interval, would be diluted resulting in misleading conclusions. The effect of preferential flow paths may be observed in monitoring well 166GW005. Finally, the low flow sampling method may not be reproducible. Low Flow sampling typically collects samples from the center of the screened interval. Samples could be collected from variable depths within the screened interval, which would result in varying analytical results. Also, the 15 foot screens may also

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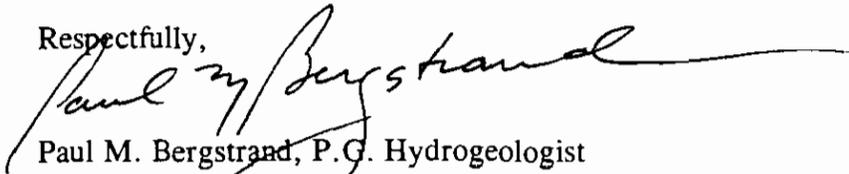
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result in collection of diluted samples from a more permeable zone penetrated by the monitoring well resulting in misleading conclusions.

During a telephone conversation with Mr. Tom Beisel on 24 January 2002 these concerns were expressed. The Department suggested the installation of separate wells with five foot screens to better monitor the results of zero valent iron at specific depths. This approval allows the drilling of the monitoring wells however the use of 15 foot screens has not been validated and therefore is not appropriate.

Attached, please find a copy of the proposed well locations. A copy of the well approval form and this letter should be on site during drilling operations. Additional assessment may be required at this well location. Should there be any questions, please contact me at 803.896.4016 or by e-mail at bergstpm@dhec.state.sc.us.

Respectfully,



Paul M. Bergstrand, P.G. Hydrogeologist
RCRA Hydrogeology Section
Division of Hydrogeology
Bureau of Land and Waste Management

Enclosures
HW-02-007

CC: Christine Sanford-Coker, Trident District EQC
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