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BLUERIDGE ENVIRONMENTAL, INC.

August 17, 1998

Ms. Armalia Berry
Engineering Field Activity, Chesapeake
Washington Navy Yard
Building 212
901 M Street, S.E.
Washington, D.C. 20374-5018

RE: Review of Professional Reports
Site 46 and Site "W" Swale
Naval Surface Warfare Center
White Oak, Maryland
BlueRidge Project No.98107

Dear Ms. Berry,

Thank you for allowing BlueRidge Environmental, Inc. (Blue Ridge), on behalf of Paint Branch Elder Care, to review documents associated with the investigation of soil and groundwater contamination at the above-referenced facility (the "Site"). As you are aware chemical contaminants, principally trichloroethylene (TCE), have been detected in surface water and groundwater at the Naval Surface Warfare Center. These contaminants have also been documented to be migrating off of the Site onto the adjacent property owned and occupied by Paint Branch Elder Care.

BlueRidge has been retained by the owners of Paint Branch Elder Care to review and provide comments on reports prepared on behalf of the federal government concerning the documented contamination at the site. To that end, BlueRidge has reviewed in detail the following documents:

- *Site Investigation Report for Site 46, Naval Surface Warfare Center, White Oak, Maryland, dated May 1998, Engineering Field Activity Chesapeake, Naval Facilities Engineering Command, prepared by Brown & Root Environmental.*
- *Basis of Design Report, Site W Swale Treatment System at Aurora Facility, Army Adelphi Research Laboratory, Naval Surface Warfare Center, White Oak, Maryland, July 1998, Engineering Field Activity Chesapeake, Naval Facilities Engineering Command, prepared by Brown & Root Environmental.*

BlueRidge's review of the *Design Report* identified one main area of concern. The swale sump system includes the installation of a single sump in the bottom of the swale. This sump is designed to collect groundwater that migrates along the trench as well as surface water which

BLUERIDGE ENVIRONMENTAL, INC.

August 17, 1998
Ms. Armalia Berry
Page 2 of 2

travels overland through the swale. BlueRidge discussed the design with Mr. Scott Nesbit of Brown & Root and confirmed that there was no planned barrier to surface water flow within the swale downgradient of the sump system. This causes a concern for two reasons: during times of peak storm flow, the design parameters of the sump pump will be exceeded, thereby allowing the sump to fill with water and overflow with the untreated effluent flowing down the swale and off-site onto the Paint Branch Elder Care property; additionally, should the pump system become inoperable for any reason (e.g., loss of electricity, clogging, mechanical failure) there is a possibility that the holding capacity of the sump itself would be exceeded and again a situation would occur where untreated water would flow down the swale and off-site onto the adjacent property.

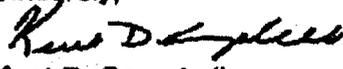
BlueRidge would like to present the following formal comments:

1. Specific engineering evaluations should be conducted to determine what the range of flow rates through the swale would be during the 10- and 25-year storm events. These calculations should evaluate the combined surface water and groundwater influent flow. Additional analyses based on these calculations should be made to determine the feasibility of some form of flow retention device or barrier that would allow for all flow entering the swale to be processed through the treatment system.
2. The discharge capacity of the sump pump should be further evaluated based upon the first comment. Should the sump pit itself fill to a level above the collection trench influent pipe elevation, then a condition would occur whereby groundwater would backup within the collection trench due to the head pressure from the water column within the sump and the swale exerted on the passive flow from the groundwater collection trench. Under this scenario groundwater could circumvent the limits of the trench and migrate off-site untreated.

BlueRidge understands that the federal government is proposing a remedial action that is intended to eventually alleviate the further migration of contaminants from the site onto the Paint Branch Elder Care property. However, portions of the design parameters should be further evaluated to ensure that the remediation system will collect and treat all surface and groundwater prior to discharging the water off site. BlueRidge recommends consideration of the installation of a sump pump with a higher gallon per minute flow capacity and the installation of some form of retention barrier such that all water discharged off site from the Site W Swale is processed through the groundwater treatment system.

Please feel free to contact me with any questions concerning this correspondence.

Sincerely,


Kent D. Campbell
Principal Geologist

cc: Fred Storck, Paint Branch Elder Care
Jim Witkin, Linowes and Blocher