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NCBC DAVISVILLE
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EMAIL REGARDING GROUNDWATER CLASSIFICATION FOR SITE 16 NCBC DAVISVILE RI
7/29/2010
U S NAVY

Vetere, Stephen

From: Dale, Jeffrey M CIV NAVFAC MIDLANT, PNBC [jeffrey.m.dale@navy.mil]
Sent: Thursday, July 29, 2010 1:51 PM
To: Vetere, Stephen; Anderson, Scott; Sinagoga, Lee Ann
Subject: FW: Davisville Site 16 groundwater classification
Signed By: jeffrey.dale@navy.mil

FYI
-----Original Message-----
From: Richard Gottlieb [mailto:richard.gottlieb@DEM.RI.GOV]
Sent: Monday, July 26, 2010 14:29
To: Dale, Jeffrey M CIV NAVFAC MIDLANT, PNBC; williams.christine@epamail.epa.gov
Cc: Olson.Bryan@epamail.epa.gov; Barney, David A CIV OASN (EI&E), BRAC PMO NE; Richard Gottlieb; Matthew Destefano
Subject: RE: Davisville Site 16 groundwater classification

RIDEM has reviewed the attached report and the Navy's rationale for classifying the groundwater around NCBC IR Site 16 as EPA Class III. Our understanding is that Class III groundwater is not suitable for potable use. RIDEM does not use the EPA groundwater classification system. Instead, RIDEM has classified the groundwater in this area as GB, meaning that it is presumed to require treatment prior to consumption. That said, there is nothing in the report that would preclude treatment such that the groundwater in this area could not be treated to potable standards. This study looked at the possibility of withdrawing 3 million gallons per day noting there was some concern with salinity. It would seem that withdrawing a lesser amount or withdrawing from multiple points could reduce this concern.

There was also concern about radon levels in groundwater being over the proposed EPA standard of 300 pCi/l. Levels ranged from 640 to 1500 pCi/l. In discussions with the Rhode Island Department of Health (RIDOH), who would regulate this parameter in groundwater, they indicated that many groundwater sources in Rhode island have radon levels greater than 4,000 pCi/l. RIDOH indicated that they would not require monitoring for the levels detected in this study. One of their main concerns, however, is that there are no laboratories certified to measure radon in groundwater.

Again, RIDEM does not use the EPA groundwater classification system, however, we would be opposed to the Class III designation since the study shows that with reasonable treatment groundwater can be made potable. An EPA Class II designation would be similar to RIDEM's GB designation.

If you have any questions or require additional information please let me know.

Thanks,

Richard Gottlieb, P.E.
Principal Engineer

Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908

Tel 401-222-2797 x 7138

Fax 401-222-3812
email richard.gottlieb@dem.ri.gov

-----Original Message-----
From: Dale, Jeffrey M CIV NAVFAC MIDLANT, PNBC [mailto:jeffrey.m.dale@navy.mil]
Sent: Monday, July 19, 2010 10:45 AM
To: williams.christine@epamail.epa.gov; Richard Gottlieb
Cc: Olson.Bryan@epamail.epa.gov; Barney, David A CIV OASN (EI&E), BRAC PMO NE
Subject: Davisville Site 16 groundwater classification

Christine and Richard

As a follow-up to our discussion regarding the classification and usability of Site 16 groundwater, the Navy reviewed the Desalination Feasibility Study Report, prepared for QDC in 2007. The report is attached to this email and they collected and evaluated data just south of Site 16. I summarized the relevant points below. Based on this, the Navy does not feel the groundwater at Site 16 is a developable resource without significant treatment expense and could be considered Class III.

The Navy has two primary conclusions based on review of the study, that only wells near the bay would yield sufficient water, which would become brackish or saline, and that all groundwater sampled during the study contained naturally occurring radon above the EPA proposed MCL.

The Navy asks if EPA and RIDEM draw the same conclusions from the Feasibility Study.

Jeffrey M. Dale
Naval Facilities Engineering Command, Mid-Atlantic
4911 South Broad Street
Bldg 679, PNBC
Philadelphia, PA 19112
Voice (215) 897-4914
Fax (215) 897-4902

Re; Summary of Desalination Feasibility Study Report, Quonset Business Park, October 2007, Prepared by Maguire Group Inc.

QDC conduced the desalination feasibility study to ascertain whether portions of the QBP land could be potentially be developed into a reliable source of potable drinking water, and if so, what would be the project costs to develop these areas into a well field(s) that complies with all permitting requirements. (Page 1)

QDC conducted ten test borings, six of which were converted into monitoring/test wells. The remaining four borings encountered materials they determined were non-productive or incapable of bearing significant quantities of groundwater and these four were not converted into monitoring/test wells (Page 1). They conducted pump tests on the six monitoring wells.

The soil boring conducted about 2,000 feet south of former Building 41 (TB-5 Figure 1) was determined not suitable for conversion to a monitoring well. More information is provided in the driller's report in Appendix B.

The most suitable well locations (MW-6, MW-8, and MW-10) were less than 200 feet from Narragansett Bay (Figure 1). Their suitability is based partly on proximity to the Bay which would provide replenishment that was limited only by recharge of an infinite volume (Page 5) of Bay water. Page 4/5). The prediction that most of the water from a supply well in this

location would be sourced from induced recharge from Narragansett Bay is repeated in the Appendix.

QDC concluded that a well could yield more than 1 million gallons per day depending on construction methods (Page 5).

All groundwater samples collected had TDS values within the fresh water range (<1,000 mg/L) (Page 7 and Appendix D).

All six groundwater samples collected contained radon above the proposed EPA proposed MCL of 300 pCi/L (ranged from 640 to 1,500 pCi/L) and groundwater would require pretreatment specific to the removal of radon. (Page 9 and Appendix D). Literature review* identified published reference with conclusions that radon in groundwater is due to underlying geology, and radon in groundwater above 300 pCi/L was widespread.

QDC proposed additional tests to determine by what amount salinity (and therefore TDS) would rise based on long term pumping scenarios. They provided costs for a variety of treatment options for a variety of TDS concentrations (1,000 mg/L 5,000 mg/L, and 25,000 mg/L. (Page 10-20)).

*RI DEM/Water Resources- 2004 305(b) Report, Section IV, Groundwater Quality