

**RESPONSES TO RIDEM COMMENTS DATED 26 FEBRUARY 1996
FOR DRAFT FINAL IR PROGRAM SITE 09, ALLEN HARBOR LANDFILL
PHASE III REMEDIAL INVESTIGATION
NAVAL CONSTRUCTION BATTALION CENTER
DAVISVILLE, RHODE ISLAND**

COMMENT: 2. Page 5-8, Section 5.1.2.2, Site Evaluation;
Paragraph 1, Sentence 4.

Review of this table shows that only the maximum observed concentration of trichloroethene (250,000 ug/L) exceeded 1% of its corresponding water solubility (1,100,000 ug/L). (This sentence references Table 5-5).

The above sentence should be revised to also include 1,2 Dichloroethene (3%) and 1,1,2,2-Tetrachlorethane (3.4%).

RESPONSE: The sentence will be revised to include 1,1,2,2-tetrachloroethane at a maximum detected concentration of 100,000 ug/L. However, there is a typo in Table 5-5 for 1,2-dichloroethene and should be 7.00E+6, not 7.00E+5. Therefore, the maximum detected concentration of 1,2-dichloroethene (28,000 ug/L) does not exceed the related 1% criteria.

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COMMENT: 8. The RI indicates that shallow groundwater is definitely reaching Allen Harbor through a relatively direct route. The solvents in the other landfill layers have probably migrated under the harbor. The document mentions that there is some potential for a vertical component to the ground water flow. The document acknowledges that the chlorinated volatiles are biodegrading and are forming smaller more volatile, more mobile, and less dense compounds. These compounds may rise to the surface over time and may be another component adding to the volatile compound concentrations entering the harbor directly. The document should include the possibility that this may happen. This document should state that the ecological risk of these volatiles will be discussed in a later document.

RESPONSE: The dissolved phase of these VOC will move in the subsurface with the ground-water. Such movement was modeled as part of the Phase III RI to estimate the mass flux of VOC to the Harbor from the 3 unconsolidated (soil) geological units layers underlying the Site and the results are presented in Section 5.3.4 and Table 5-8. Three of the VOC (TCE, and the biodegradation products 1,2-DCE and vinyl chloride [VC]) were selected (TCE had the highest Layer 1 mass flux value, 1,2-DCE had the highest Layer 2 mass flux value, and VC had the second highest Layer 2 mass flux value; refer to Table 5-8), and then, also modeled over a 30-yr period. The results are presented in Sections 5.3.6 and 5.3.7. The output of that modeling work was then input to a surface water model to evaluate the impact on the Harbor. The results indicate that the maximum concentrations of these three VOC would be well below State and federal AWQC. Additionally, VOC were not identified in the Marine ERA (SAIC, 1996) as proposed constituents of concern (PCOC).

COMMENT: 33. Chapter 4, section 4.6.2.3 in general.

Many wells show little or no petroleum hydrocarbon (BTEX) contamination. This fact may be due to the analytical sample dilution required to quantitate the very high levels of chlorinated solvents. The fact is there is no way to determine the levels of BTEX in these samples but the BTEX is probably there. The Marine ERA has identified unacceptable ecological risk in the southern end of the landfill near where the higher levels of BTEX were found in ground water.

RESPONSE: 39 ground-water samples were collected during the Phase III RI from monitoring wells across the Site, of which 29 samples were analyzed undiluted and 10 had to be diluted prior to analysis.

Of the 29 undiluted samples, BTEX were detected in 14 samples and undetected in 15 samples. The required detection limit for the undiluted samples was 10 ug/L; although in some samples, these analytes were detected at an estimated concentration as low as one ug/L.

BTEX were detected in diluted samples with the exception of MW09-09D (20:1 dilution) and MW09-20I (2000:1 dilution). In these samples, BTEX were not detected and could be present at levels below the elevated detection limits. These two samples represent only 5% of the ground-water samples collected and analyzed from the Site during the

Phase III RI. In the remaining eight diluted samples, BTEX was detected ranging from 0.4 $\mu\text{g/L}$ (Toluene, MW09-04S) to 300 $\mu\text{g/L}$ (Toluene, MW09-07I).

Based upon existing data, there is a good understanding of BTEX in ground water beneath the Site. Additionally, BTEX are not identified as PCOC by the ecological risk assessments (SAIC 1996 and EA 1996).