United States Environmental Protection Agency
5 Post Office Square, Suite 100
Boston, MA 02109-3912

Via Electronic Mail and Certified Mail – Return Receipt Requested

June 2, 2011

Mr. Manu Sharma, Principal
Gradient Corporation
20 University Road
Cambridge, MA 02138

Re: Savage Municipal Water Supply Well Site, Milford, New Hampshire, Operable Unit 2: Conditional Approval of *Workplan for Assessing Vapor Intrusion*, April 22, 2011

Dear Mr. Sharma:

This letter provides the Environmental Protection Agency's (EPA) conditional approval of the *Workplan for Assessing Vapor Intrusion* (the "Workplan") submitted by Gradient Corporation on April 22, 2011. Gradient Corporation shall revise the Workplan to address the comments and conditions below and shall implement it within 90 days of the date of this conditional approval.

Pursuant to Paragraph 40 of the Consent Decree (CD) governing the cleanup at the Savage Municipal Water Supply Well Site, EPA, after consultation with the New Hampshire Department of Environmental Services (NHDES), approves the above-referenced submittal, subject to the following conditions:

1. The first paragraph of the Introduction identifies the key compound of concern as tetrachloroethylene (PCE) and indicates that it originates from OU1 and migrates into OU2 via groundwater. This reference is repeated in other sections of the Workplan, including Section 2.3. At this time, the groundwater within each operable unit is being managed independently based on the assumption that the contamination within the groundwater at each operable unit is existing and historic and from multiple points of origin, and that no significant amounts of PCE continue to originate from OU1 since construction of the slurry wall and operation of the pump and treat system. Gradient shall revise the language in the Workplan to more accurately reflect this assumption.

2. Section 3, Vapor Intrusion Assessment, shall more clearly specify that at the conclusion of each phase of the investigation, and following the comparison of

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collected data against USEPA and NHDES screening criteria, that the investigation may be terminated if the data is below the applicable screening values, and after consultation with the NHDES and USEPA.

3. The Vapor Intrusion Source paragraph within Section 3.1 should not characterize the vapor intrusion into buildings as exclusively due to volatilization of contaminants from the "water table's surface". Although USEPA guidance identifies the characterization of the "uppermost saturated zone" as a critical element of the pathway screening process, the guidance also indicates that all contamination detected in groundwater that is within 100 feet vertically from a building should be screened and considered as a potential source. Gradient's description of possible vapor intrusion sources shall clearly indicate that groundwater proximate (within 100 feet horizontally and vertically) to a building was considered during the screening evaluation.

4. In Section 3.1, Receptors, Gradient shall more clearly identify all the properties in OU2 that are possibly subject to a vapor intrusion pathway, their proximity to the groundwater plume, and an explanation of why each property should or should not be included for further vapor intrusion investigation. In addition to the properties listed in the Workplan, the following properties shall also be discussed:

    - Buildings on Hollow Oak Lane
    - 489 Elm Street – Express Tire
    - 475 Elm Street – Residence
    - 441 Elm Street – Medlyn Motor
    - 419 Elm Street – Accent Auto Group

5. The second paragraph in Section 3.2, Screening of Existing Data, describes using groundwater quality data from the water table's surface as the ideal screening approach. Again, this is not consistent with the Guidance or to Region 1 policy, which currently recommends screening of all groundwater data within 100 feet horizontally and vertically of a building, including data from different depths within the same well or at the same location. The final Workplan shall consider all groundwater data collected within 100 feet horizontally and vertically of a building during the screening process.

6. The results of the reconnaissance described in Section 3.4.1, Phase I, shall be included in the final investigation report to fully document the physical characteristics of the homes and to identify possible vapor intrusion preferential pathways and other construction details that may be relevant. The documentation shall also include an assessment of the extent to which the characteristics of the home impact ventilation and potential vapor intrusion pathways.

7. Section 3.4.2, Phase II, shall be modified to establish permanent wells for the collection of samples from the water table's surface at the locations proposed in the Scope of Work. The wells shall be adequately screened (five feet above and below water table surface) to collect representative samples along the groundwater interface and to account for fluctuations in groundwater elevation. Samples for use in the vapor intrusion investigation and for comparison against groundwater screening criteria shall be collected during two separate monitoring events occurring during different seasonal and groundwater elevation conditions. If the samples results are below the screening criteria applicable for groundwater, then additional samples shall be collected during the following two rounds of periodic groundwater sampling at OU2. If the samples are above the screening criteria, then sampling these wells shall be incorporated into the permanent monitoring program for OU2.

8. Section 3.4.2 shall be modified to indicate that the investigation may be terminated if the data is below the screening values, and after consultation with the NHDES and USEPA.

9. At this time, USEPA is recommending that Section 3.4.3, Phase III, be removed from the Scope of Work as an additional screening level. The collection of soil gas samples within 10 feet of the nearest mobile home and in the vicinity of the monitoring well points where EPA groundwater screening criteria are exceeded will not provide data that is representative of sub-slab conditions and therefore cannot be used to effectively evaluate a potential vapor intrusion pathway. Soil gas concentrations external to a structure, particularly 10 feet away, tend to be much lower than directly underneath a concrete slab or within a crawl space. Therefore, the data collected during Phase III may underestimate the potential for vapor intrusion into structures.

   If the results of groundwater sampling proposed in Phase II exceed the screening values for groundwater, then the investigation shall proceed directly to Phase IV, crawl space, indoor air and ambient air sampling.

10. Gradient shall modify Phase IV so that crawl space, indoor air and ambient air sampling are conducted simultaneously and not in two phases as proposed in the Workplan. Having representative data over the same period of time from the crawl space, indoor air and ambient air will provide a more complete vapor intrusion pathway assessment. USEPA Region 1 policy is to have sampling performed during the heating and non-heating seasons, not a point time event as proposed.

11. A Quality Assurance Project Plan (QAPP) and analytical Standard Operating Procedures (SOPs) would need to be developed and submitted for approval prior to the initiation of the work described in the approved Workplan.

If you have any questions regarding this letter, please contact me at (617) 918-1882.

Sincerely,

Richard W. Hull
Remedial Project Manager

cc:
Robin Mongeon, NHDES
Gregory H. Smith, McLane, Graf, Raulerson & Middleton
John Peltonen, Sheehan, Phinney, Bass & Green