STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

November 14, 2006

Curt Richards
Vice President
Olin Corporation
P.O. Box 248
Charleston, TN 37310

RE: Alternative for Demonstrating Compliance with Pollutant Mobility Criteria
Newhall Street Neighborhood, Hamden

Dear Mr. Richards:

The Remediation Division of the Bureau of Water Protection and Land Reuse ("Department") has reviewed the proposed work plan titled "Alternative for Demonstrating Compliance with Pollutant Mobility Criteria, Newhall Street Neighborhood (SRD-128)" dated September 20, 2006. That work plan was prepared on your behalf by MACTEC in response to the Department's guidance document concerning leachability of contaminants from polluted soils entitled "Column Studies to Evaluate Leaching Potential of Fill Material" dated August 17, 2006.

The work plan proposed a program for determining the leachability of contaminants from fill materials within the Newhall Street Neighborhood by an alternative method from the default SPLP analysis approach, as allowed for under subsection 22a-133k-2(d)(3) of the Connecticut Remediation Standard Regulations (RSRs). That proposed plan included several variations from the column study approach outlined in the guidance document. While many of those variations are appropriate, the items discussed below must be modified to make the plan acceptable.

A detailed scope of work for the completion of additional tasks needed to implement this column study must be provided to the Department no later than 45 days from the date of this letter. That scope of work must include, at a minimum, a schedule for the collection of soil samples for both SPLP and column leachability studies, estimates of when analytical data will become available, and the length of time needed to propose a remedial approach following receipt of that analytical data.

As previously discussed with Department staff on October 17, 2006, the items needing modification are as follows:

1. The work plan proposes to use five (5) sampling locations (Blocks C, F, H, J and P) for characterizing the leachability of the fill material. Since previous delineation of the distribution of waste characterization suggests eight (8) separate areas appear to have unique waste types, each of these will need to be included in the column study characterizing the potential for the waste material to leach. These include:

i. Block A (Properties at 249-275 Morse Street, where the EPA removal action identified leachable lead at concentrations greater than other portions of the project area)
ii. Blocks C&F (Wastes in both blocks appear similar based on prior sampling and test pits)
iii. Blocks E&P (Industrial wastes with a different appearance from other areas)
iv. Block H (Wastes include greater amounts of industrial metal pieces)
v. Block J (Mixed industrial and municipal wastes)
vi. Block L (Industrial waste with elevated concentrations of lead and other metals)
vii. Block Q (Disturbed soil with elevated lead concentrations)
viii. Block T (Disturbed soil – PAHs and ETPH)

2. Waste fill samples are proposed to be collected from properties where access has already been granted for the ongoing sampling of existing monitoring wells. Specific locations within the proposed blocks will need to be pre-approved by the Department. For each separate area, several potential sampling locations should be listed in order of preference to allow for changes due to difficulty in collection of valid columns or issues in gaining site access.

3. The work plan proposes to retest material from ten (10) locations (exclusively from Blocks C and F), by SPLP analyses for comparison to groundwater protection criteria. That plan will need to be expanded to include samples from waste types representative of any of the eight (8) separate areas, noted in Item 1 above, which might be considered for elimination from the column test requirement. Specifics will be needed concerning the number of samples and individual constituents to be considered for determining whether any of these separate areas does not have leachability concerns and so could be excluded from the column study program.

   The materials for SPLP analyses would need to also include retesting for total (mass) constituents to confirm the materials were comparable to the original material analyzed.

4. The proposal for use 3" Shelby Tubes, rather than the 4" repacked columns that were specified, would be acceptable if a larger diameter direct-push method is not readily available.

5. The work plan proposed to use a single-walled column filled by direct-push, rather than the double-walled hand-packed column that was specified in the guidance document. Depending on the size of the material in the fill, this approach could create voids along the tube walls where water can drain more rapidly. Therefore, if Olin includes the single-walled/direct push column in its scope of work, Olin must propose criteria must to visually determine the suitability of a column based on the presence of voids. Use of alternative sampling locations may be needed, as described in Item 2 above.

6. Clarification is needed concerning the meaning of having the simulated precipitation events being "spaced fairly close to one another" to reduce the length of the leaching process.

7. The work plan proposes to collect two pore volumes of water per column. As discussed with Department staff on October 17, 2006, if the consistency between the two analytical results is good, two pore volumes might be adequate. However, the work plan must include criteria for determining what level of variability between the samples would cause the collection of additional pore volumes to be required.

8. The work plan proposes to use averaging of the leaching results from all of the locations together. This method poses a problem, because the column study approach focuses on individual samples from discrete waste types, rather than multiple samples of similar waste types. Such averaging will be considered only to the extent that the blocks being investigated are clustered together, have generally similar wastes and generally similar results from leaching tests. Even if this were not an issue, the default approach for statistical averaging of soil concentrations in subsection 22a-133k-2(e)(2) of the RSRs requires a minimum of twenty samples be evaluated. While averaging of results would be allowable for groundwater samples characterizing a plume, it appears to have limited technical justification for use in comparing separate release areas.

9. The work plan proposes to allow a calculated dilution factor based on a ratio between the impacted and unimpacted acreage within the project area. While the use of a site specific dilution factor is allowable under subsection 22a-133k-2(c)(2)(E) of the RSRs, it would not be appropriate to use this approach for acreage at which polluted fill is proposed to be removed, if the impacts of that fill on the underlying soils have not been thoroughly investigated. Also, use of a dilution factor would need to take into account impaired background water quality resulting from land use outside of the Consent Order boundary. Therefore, it is likely that this provision would be used only sparingly across the project area.

If you have any questions regarding this matter, please contact Thomas RisCassi or Maurice Hamel of my staff at (860) 424-3781 and (860) 424-3787, respectively.

Sincerely,

Patrick Bowe
Director
Remediation Division
Bureau of Water Protection & Land Reuse

PB:MRH

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