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Rhode Island Department of Environmental Management
Office of Waste Management
235 Promenade Street
Providence, RI 02908
Attn: Joseph Martella

RE: Responses to questions – Proposed groundwater remediation system
Former Gorham Manufacturing facility
Providence, RI

Dear Joe:

As you know, on September 12, 2012, questions regarding the proposed groundwater remediation system for the former Gorham Manufacturing site were forwarded to you and I from Ms. Amelia Rose on behalf of the Environmental Justice League of Rhode Island and the Reservoir Triangle Residents Group. The questions were developed in response to a bilingual informational notice that Textron distributed to the expanded stakeholder list for the project. Textron is not aware of any other questions or comments that were received in response to the informational notice. Responses to questions are contained below in this document. For ease of review, questions are restated below in **BOLD** text, followed by corresponding responses in *ITALIC* text.

Question 1. What is the expected removal efficiency for the treatment plan (water)?

Response 1. The remediation system was designed such that groundwater will be treated and discharged in compliance with the RIDEM issued RIPDES permit which, when issued, will specify requirements to which Textron will have to adhere to for groundwater treatment system discharges. Typically, removal efficiencies greater than 95% are realized using the proposed technologies (air stripping and carbon absorption).

Question 2. What are the contingency plans if/when expected removal efficiencies are not achieved?

Response 2. If the required discharge limits per the RIPDES permit are not met, the system will be shutdown and evaluated for possible reasons as to why desired treatment levels are not being met. Corrective action will take place and the system will be restarted and evaluated again to ensure compliance. Routine maintenance on system components will be performed on a regular basis to ensure that all components are in good working condition at all times; thereby minimizing the potential for permit exceedances. It should be noted that once groundwater passes through the air stripping unit (primary treatment mechanism), groundwater will then enter two vessels containing granular activated carbon which function as a final polishing step. The vessels will be plumbed in series and routine sampling will be performed pre, mid and post carbon treatment vessel. Change out of carbon media from the initial vessel will occur once VOCs are detected at or near the RIPDES discharge levels at a

sampling port between the two vessels. The secondary vessel would then be switched to the primary role and the newly bedded vessel would then function as the secondary vessel. This type of setup is often used at groundwater remediation sites to ensure continuous compliance with discharge criteria.

Question 3. Request that water concentrations prior to treatment, as well as post-treatment concentrations (air and water) be reported and that the removal efficiency also be reported publicly and on RIDEM's website.

Response 3. Such reporting is a requirement of the RIDEM RIPDES permit and will be reported on a quarterly basis. Similar to other project submittals, quarterly reports will be posted to RIDEM's Gorham project website which is available to the public.

Question 4. What percent of removal of VOCs is considered to be adequate for discharge into the stormwater drain?

Response 4. Percent removal is not a compliance criteria, rather discharge limits are set by the RIDEM RIPDES permit for individual VOC constituents. For example, the RIPDES Permit discharge limit for TCE is 5 micrograms per liter (same as the USEPA drinking water standard). The RIDPES Permit discharge limit for PCE is also 5 micrograms per liter (same as the USEPA drinking water standard).

Question 5. Quarterly treated water sampling seems infrequent for waters which are known to exceed regulatory criteria prior to remediation. How long will the more frequent testing be performed; when will it change to quarterly testing? What conditions might preclude switching to quarterly testing from the more frequent testing?

Response 5. Testing requirements will be stipulated in the RIPDES permit to which Textron will adhere to. Typically more frequent sampling is required at system startup until a track record can be established of consistent compliant results.

Question 6. Will any of these activities interfere or impact other remediation plans also under review or underway?

Response 6. The groundwater remediation system will not hinder any of the other remediation activities. In actuality, the groundwater remediation system will have positive impact on other site activities by removing contaminant mass and influencing site groundwater flow directions.

Question 7. How much of the contaminated groundwater will be treated in this manner?

Response 7. The design flow of the remediation system is an average of 16 gallons per minute. This equates to over 8,000,000 gallons per year. It is envisioned that the system will operate for many years and ultimately will therefore treat a very large volume of groundwater.

Question 8. Does completion of this plan imply no additional groundwater remediation efforts will be undertaken?

Response 8. No. Additional groundwater remediation will likely be needed in area on the northern portion of the Y Parcel. Given the remote nature of this area, relative small size in comparison to the Parcel A impacts and the lower level of contaminant concentrations, this area is not suited for the groundwater extraction and treatment. Other technologies may be better suited for this area and will be evaluated in the future.

Question 9. Will drinking water criteria be applied to the groundwater quality assessment?

Response 9. RIDEM has identified this site to be located in a "GB" groundwater classification area. GB standards, which are based on the theoretical volatilization pathway, therefore apply and will be the ultimate criteria for groundwater at the site. Groundwater in the vicinity of the site is not used as a drinking water source. A link to the RIDEM groundwater classification map is provided below.

<http://www.dem.ri.gov/maps/mapfile/gw/jpg/providence.jpg>

Question 10. If the proposed depth does not provide adequate access to the contaminated groundwater, will there be a multi-phased multi-depth approach?

Response 10. This situation is not anticipated based on the characterization work completed to date. Extraction wells will extend down to the top of a confining clay layer (~55' below ground surface) that essentially serves as a "floor" for vertical contaminant migration. Therefore we are confident that the designed depth of the extraction wells will capture contaminated groundwater at depth.

Question 11. What is the proposed post-treatment monitoring plan to ensure that this is a long term solution to the groundwater issue?

Response 11. Textron has been conducting semi-annual groundwater monitoring on the site for many years and will continue to do so until contaminant concentrations in groundwater have been reduced to levels that are compliant with RIDEM regulations.

Question 12. What is the estimated volume of water that will be treated?

Response 12. As mentioned in response to #7, it is anticipated that the system will treat many millions of gallons of water.

Question 13. Though there will be air treatment vessels and filtering units to dispel VOCs emanating from the groundwater during these activities, as a precautionary measure, will air monitoring take place while the treatment is underway, in order to determine any VOC exceedances in the ambient air? What will be done if exceedances are detected in the air? Will real-time air monitoring results be available for the public to view?

Response 13. Yes, Air monitoring of the air emissions following vapor phase carbon treatment will be required by RIDEM. The exact frequency of monitoring events is not known at this time. The results of these monitoring events will be made available to the public via RIDEM's Gorham project website which is available to the public. Real-time air monitoring is not anticipated given the controls in place and the predictability of the system once operating. It is also noted that Textron conducts quarterly air monitoring in conjunction with the sub-slab depressurization systems operating in the Parcel A retail building. Ambient air samples are collected as part of this effort. All results are posted on the RIDEM Gorham site website.

I trust that the content of the responses in this document are complete and answer the questions to the satisfaction of the individuals who initially posed them. Textron is prepared to move forward with this very important remediation activity and looks forward to receiving a Remedial Decision Letter from RIDEM for this activity; the next step in the regulatory approval process.

Please contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Simpson', with a long horizontal flourish extending to the right.

Gregory L. Simpson
Sr. Project Manager - Site Remediation

cc: Ms. Amelia Rose, Environmental Justice League of Rhode Island
Mr. Richard Michalewich, AECOM