

**INVITATION TO TENDER "ITT"/ NO. PS20161665 -  
VANCOUVER LANDFILL W40HA CLOSURE & GAS WORKS**

**QUESTIONS AND ANSWERS NO.4**

ISSUED ON MARCH 17, 2017

Q1	<p>Regarding Section 31 32 22 DrainTube:</p> <p>Part 2.01.A Note (2) and Part 2.01.B Note (2) specify boundary conditions of geomembrane/sand. What is the fill material above the geomembrane and in between the corrugated pipes within the DrainTube to ensure even distribution of the 450 kPa load?</p> <p>Without a fill material the geomembrane may not be in intimate contact with the DrainTube. Without intimate contact the void space between the geomembrane and DrainTube will allow flow of the test liquid. This will result in a false transmissivity value not representative of site conditions.</p> <p>Additionally, is the hydraulic conductivity of the fill material considered in the final transmissivity value?</p>
A1	For details regarding specific material performances refer to manufacturer specifications.
Q2	Item 7.04 indicates "...lesser amounts of contractor supplied..." please provide a breakdown; x% or xm3 is owner supplied fill in geogrid folds. What material is to be installed?
A2	Contractor to install 100% minus 19mm Owner supplied crushed material in the upper geoweb layer and inside the 12 oz. geotextile wraps. Contractor to supply and install 25-100 mm crushed concrete for the 500 mm thick, geogrid wrapped, face of the wall.
Q3	Detail I of 212 should indicate min 400mm of 25-75mm round gravel?
A3	Detail I from Drawing 212 is correct. The minimum cover above the slotted leachate collector pipe shall be 200 mm or more. For additional information, refer to details F and G from Drawing 211.
Q4	There is not a quantity of four on drws for item 6.63
A4	There is a quantity of 4 condensate drain traps in waste for Item 6.63. The traps are near the following gas wells: VGW-16, VGW-17, VGW-18, and VGW-22.
Q5	If a 4" or 6" pvc perforated pipe installs inside a 10.25" hollow stem auger cutting a 18" hole be an acceptable alternative for the gas wells? The construction method has been requested or deemed suitable at several landfills throughout the province.
A5	No. A smaller diameter boring and smaller diameter pipe is not considered an acceptable alternate for this project. The City has contemplated this type of gas well on past projects and has used similar smaller diameter borings and pipes on past projects. The intent is to use a more robust gas well for long term performance and larger diameter pipe to accommodate dewatering pumps if necessary.
Q6	For item 3.04 Spacing for Plants, Cattails, bulrushes and reeds shall be planted at a 2.0 m meter grid interval. Does this mean all 3 plants at 2m intervals or 1 of the 3 at 2m

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	intervals?
A6	Each 2 x 2 m grid shall include minimum one specimen of each species: cattails, bulrushes and reeds.
Q7	Please see attached submittal for review by the City to approve an equivalent geocomposite drainage product.
A7	<p>The attached/referenced submittal, <i>Drain tubes vs. Geonet Drainage Geocomposites</i>, identifies on page -61-, that "Figure 5a gives the desired, but admittedly difficult, preferred detail" for a geocomposite to horizontal pipe connection. Upon review connecting to the currently designed active LFG extraction piping system appears problematic. Furthermore, the information provided doesn't provide a suitable solution for connecting geocomposite panels installed on both sides of a horizontal collection pipe.</p> <p>The proposed connections do not appear to incorporate any settlement allowance measures.</p> <p>Except for the Santosh Landfill, for an undisclosed surface, there is no other reference to the use of a geocomposite layer as a gas collection layer. There is no case study or reference for any geocomposite use in combination with an active gas collection system.</p> <p>In addition, the current tendering process and construction implementation has a very tight and rigorous schedule which does not allow for additional design investigations and revised implementation measures.</p> <p>The current contemplated drainage materials have been studied in detail, including construction of test pads and performance monitoring programs, as well as pilot implementation in previous projects.</p> <p>For the above reasons, the City rejects the use of the geocomposite as an alternative material for the current project. However, the City encourages the supplier to provide further details for the product to be considered in future projects.</p>