



September 12, 2016

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**Subject: Durham York Energy Centre – 2015 Soil Testing Report  
Response to MOECC Comments  
Project No. 111-26648-00-100-1624011**

Dear Mr. Anello:

We are pleased to forward our response to the comments provided by the Ministry of the Environment and Climate Change on the 2015 Soil Testing Plot Report for the Durham York Energy Centre (DYEC). The comments and recommendations provided by the Ministry are contained in the letter dated July 28, 2016. The 2015 Soil Testing Report was prepared by WSP Canada Inc.

## 1. Discreet Soil Samples from Subplots

***Recommendation that discreet soil samples be collected from each subplot to help determine whether or not any observed changes in soil quality (if any) are due to site variability or the result of some other source.***

Discreet soil samples were not collected/analysed from each subplot during the soil testing program in 2015. The existing plot areas are relatively small, having dimensions of 10 m x 10 m, and the assessment of the slight variation of soil characteristics within this type of small area would provide no interpretive benefit for evaluation of the potential influence on adjacent soil quality by the facility; which is the purpose of the soil testing plan. As noted in the MOECC letter, discreet soil sampling is not required as part of the approved Durham York Energy Centre Soil Testing Plan, and discreet sampling within the subplots is not considered necessary for the existing sampling and assessment program.

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## 2. Use of Acetone and Hexane Wash

***Requirement that soil corers be cleaned using detergent followed by a rinse with de-ionized water, then a rinse with acetone and hexane. It is unclear if the use of an acetone and hexane wash was followed during the soil sampling event in 2015.***

The soil corer used during the soil sampling event in 2015 was decontaminated between samples using an inert detergent (Alconox) mixed with water, and rinsed with de-ionized water. An acetone and hexane wash was not used as part of the decontamination procedure during the soil sampling events in 2015. Soil sampling for the 2015 soil testing program was completed in accordance with O.Reg 153, Record of Site Condition Part XV.1 of the Act, which are procedures established for the sampling and assessment of contaminated sites in Ontario. The sampling procedures outlined under the regulation are established with the understanding that various contaminants of concern may be encountered at different contaminated sites. The categories of parameters included in the sampling programs at contaminated sites include the potential for analysis of inorganic, volatile organic, and semi-volatile organic compounds, etc. The implementation of the sampling procedures, as outlined in O.Reg 153, is sufficient and appropriate for the soil testing program at the DYEC.

The Ministry reference to an acetone and hexane rinse is associated with the MOE document titled "*Standard Operating Procedure for the Sampling of Soil and Soil-like Material for Inorganic and Non-volatile Organic Analysis*", dated September 2008. The document indicates the use of an acetone and hexane wash was added to the Standard Operating Procedure (SOP), at the recommendation of the Ministry's Laboratory Services Branch, due to potential PCB cross-contamination of laboratory samples attributed to PCB residuals remaining on laboratory equipment. The use of an acetone rinse, followed by a hexane rinse, reportedly eliminated PCB cross-contamination of laboratory samples.

As shown in Tables 2 and 3 of the 2015 Soil Testing Report, the parameter concentrations for PAH and dioxins and furans during the sampling events in 2013 and 2015 are low, with the values satisfying the applicable Table 1 Standards; and there are no elevated concentrations which may suggest cross contamination between subplots or plot areas. The use of an acetone and hexane rinse would be considered in the future for the soil sampling program if cross-contamination of soil samples becomes apparent during soil sampling events at the site.

### 3. Potential Off-Site Sources

***Other potential offsite source(s) should be identified and explained.***

The production of dioxins and furans, along with PAH, are attributed to the combustion of fossil fuels and garbage, and to the historical use of herbicides and pesticides. Potential off-site sources that may contribute to an influence on the soil quality within the soil plot areas includes, but is not limited to, the following:

- Vehicle traffic along Highway 401.
- Motorized vehicle traffic along the adjacent roads, including Osborne and Energy Drive, on-site parking lot, and on-site truck traffic. This localized traffic could have a notable influence at the upwind and on-site soil plot locations.
- Pedestrian traffic across the plot areas, between sampling events, resulting in transfer of material from other off-site sources.
- Airborne pollutants originating from other urban or distant areas. This may include industrial sources or residuals from the burning of garbage or wood, wildfires, or forest fires.
- Motorized landscaping equipment, particularly lawnmowers, near the upwind and on-site soil plot locations.

The magnitude of the potential influences from the various off-site sources cannot be quantified at this time, but the slight variations of the soil chemistry, based on the two routine soil sampling events, are not unexpected and are not attributed to the operation of the facility. The chemical results obtained to date will be used as a baseline to assess potential influences from the facility in the future.

We trust that this is satisfactory for your needs at this time. If there are any questions, please contact us.

Yours truly,  
**WSP Canada Inc.**



Stephen J. Taziar, P.Eng., DCE  
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