

July 8, 2015

Project No. 1525331

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PRIVILEGED & CONFIDENTIAL – OVERVIEW OF TECHNICAL ISSUES, GREENBANK AIRWAYS, 1140 HIGHWAY 47 EAST, SCUGOG, ONTARIO

Dear Mr. Loopstra,

As requested, Golder Associates Ltd. (“Golder”) has prepared this letter for Loopstra Nixon LLP with Golder’s comments on the extent to which Greenbank Airways (“Owner”) has addressed specific technical issues associated with fill operations at 1140 Highway 47 East, Scugog, Ontario (the “Site”). The Township of Scugog (the “Township”) has submitted repeated requests that the Owner confirm that the Owner’s obligations under the Site Alteration Agreement have been met and/or to conduct additional studies to address specific issues raised by the Township. These requests concern soil remediation, groundwater quality, and storm water management. The remainder of this letter summarizes the current status of each of these issues.

SOIL REMEDIATION

As noted in the Loopstra Nixon LLP letter of April 23, 2015, the Township requires the Owner to provide a remediation plan for soil exceeding the Table 2 standards. In response, the Owner has provided the following reports:

- Remediation Plan, prepared by D.L. Services Inc. for Greenbank Airways, dated May 20, 2015.
- Revised Remediation Plan, prepared by D.L. Services Inc. for Greenbank Airways, dated June 8, 2015.
- Revised Remediation Plan, prepared by D.L. Services Inc. for Greenbank Airways, dated June 29, 2015.

Golder has previously provided comments on the May 20 and June 8 submissions. Comments on the Revised Remediation Plan are provided in Attachment A. In general, the Revised Remediation provides substantially more information on the scope and approach of the Owner’s remediation program than the original May 20, 2015 submission. The only significant outstanding issues are that the Revised Remediation Plan includes only limited information describing the scope of additional investigations that will be undertaken to determine the vertical and

lateral extent of soil impacts that will be addressed through in situ remediation and that the approach for collecting representative samples of stockpiles for potential use as backfill may be inadequate.

Given these uncertainties, the delineation and confirmation monitoring data collected during the remediation program may not satisfy the Township that all soil exceeding the Table 2 standards has been remediated or removed from the Site. It will therefore be necessary to conduct further independent testing of stockpiles, in situ remediation treatment areas, and excavation floors and sidewalls.

In a meeting with DLS, it was Golder's understanding that only metals-impacted soil would be excavated and that in situ remediation will be used to treat the remaining exceedences of the Table 2 standards. This would represent a substantive change in the proposed approach, since the Revised Remediation Plan indicates that in situ treatment would only be used at a single location (BH15-13). A formal revised remediation plan indicating such a change has not been submitted for review and approval by the Township.

GROUNDWATER QUALITY

As noted in the Loopstra Nixon LLP letter of April 23, 2015, the Township requires the Owner to provide a groundwater investigation to develop an understanding of the geological and hydrogeologic conditions at the Site and evaluate the groundwater pathway between contaminated fill materials and potable water receptors in the area surrounding the Site. In response, the Owner has provided the following reports:

- Water Quality Monitoring, Greenbank Airways, 1140 Highway 47 East, Uxbridge, Ontario, prepared by D.L. Services Inc. for Greenbank Airways, April 8, 2014; and
- Water Quality Monitoring - 2014, Greenbank Airways, 1140 Highway 47 East, Uxbridge, Ontario, prepared by D.L. Services Inc. for Greenbank Airways, May 20, 2015.

These reports satisfy the routine groundwater monitoring and reporting requirements of the Site Alteration Agreement. Golder notes that the 2014 Groundwater Monitoring Report includes a recommendation for the replacement of MW-5, MW-6, and MW-7 (located downgradient of the fill), which were or about to be buried by fill operations. To date, these wells have not been replaced by the Owner as recommended.

In the Miller Thomson letter of June 10, 2015, the Township was advised that the Owner was preparing a comprehensive groundwater investigation report to address this requirement. This remains outstanding and should be produced to the satisfaction of the Township.

STORM WATER MANAGEMENT

As noted in the Loopstra Nixon LLP letter of April 23, 2015, the Township requires the Owner to confirm that the storm water management measures in the Storm Water Management Plan prepared by Genivar for Greenbank Airways and dated August 16, 2015 were implemented as designed and to establish that if there has been any contamination of surface water related to the contaminated fill materials, particularly with respect to peak flow conditions. In response, the Owner provided the following report:

- "Surface Water Sampling Data, Greenbank Airways Fill Project", prepared by D.L. Services Inc., dated August 11, 2014.

This report includes surface water quality data representing a single sampling event in July 2014 without reference to flow conditions and does not comment on the implementation of the 2012 Storm Water Management Plan, which was intended to address storm water management during fill operations and should have been implemented in 2012. Based on site observations, while silt fencing has been installed in some

locations on the southern and eastern limits of the fill and on the adjacent property to the east, the remaining storm management measures specified in the 2012 Storm Water Management Plan have not been implemented.

Some recent developments emphasize the importance of this issue. The Township and Greenbank have received a letter from the resident at 18200 Highway 12 indicating that fill operations at the Site resulted in flooding of the resident's property. Based on a preliminary visit by Golder to the resident's property, it appeared that storm water discharging from the southeast corner of the Site (the proposed location of a sedimentation basin to control peak flows and improve water quality) may flow across the Hill property and onto the resident's property. In March 2015, drainage through the culvert under the resident's laneway was reportedly obstructed by ice and limited drainage away from the resident's property. Further, it was recently noted by local residents that runoff from the north end of the Site was discharging into the ditch along Highway 47. The results of preliminary environmental monitoring conducted by the Township under conditions representative of peak flows determined that there was an exceedence of the Provincial Water Quality Objectives for surface water quality and that sediment deposited in the right-of-way, which appeared to consist of eroded fill materials from the Site, exceeded the Table 2 standards.

To address these concerns, the Owner should immediately implement the 2012 Storm Water Management Plan, retain a professional engineer to design and implement additional storm water management measures to control discharge from the north side of the Site, and conduct additional surface water monitoring to confirm that off-Site surface water and sediment quality under peak flow conditions is acceptable.

LIMITATIONS

This letter was prepared for the exclusive use of Loopstra Nixon LLP and the Township of Scugog. No third parties may rely upon this report. Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, is the sole responsibility of such third party.

Golder Associates Ltd. has relied in good faith on information provided by others. We accept no responsibility for any deficiency, misstatements or inaccuracies contained in this letter as a result of omission, errors, misinterpretations or fraudulent acts of the persons interviewed. Golder Associates Ltd. accepts no responsibility for any reduction in property value, either real or perceived, or for decisions made as a result of the reporting of factual information herein.

If additional information is obtained during future work at the Site, Golder should be requested to re-evaluate the opinions presented in this report and provide amendments as required. This document does not provide a legal opinion regarding compliance with applicable laws. With respect to regulatory compliance issues, it should be noted that regulatory statutes and the interpretation of regulatory statutes are subject to change.

CLOSURE

We trust that this satisfies your current requirements. Should you have any questions regarding the contents of this letter, please do not hesitate to contact the undersigned.

Yours truly,

GOLDER ASSOCIATES LTD.



Eric Hood, Ph.D., P.Eng., QP
Associate, Senior Engineer



EHT/TAM/eh/lb

Attachments: A – Detailed Comments on Remediation Plan
B – Erosion and Sedimentation Control Plan (July 2015)

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ATTACHMENT A
Detailed Comments on Remediation Plan



ATTACHMENT A

Detailed Comments on Revised Remediation Plan

- 1) Golder Comment: The basis for the scope of work provided in Table 1 must be more clearly explained. The revised table must include the known coordinates and elevation of each sample in question such that each location can be tied back to a specific sample ID listed in either the Golder report or a Quarterly Progress Report. The sample ID must be provided. The number of excavation areas in Table 1 (29) does not appear to match the number of areas shown in Figure 1.

DLS Response: see updated Table in the "Revised Remediation Plan".

Golder Comment: Acknowledged.

- 2) Golder Comment: Provide the lateral extent of the in situ bioremediation zone at the target depth interval and the anticipated timeline for treatment. Provide a description of the confirmation monitoring that will be conducted following treatment (including samples of both the soil in the treatment zone and soil laterally and vertically adjacent to the treatment zone).

DLS Response: The lateral extent of the in-situ bioremediation zone at the target depth zone will have to be determined in the field prior to injection through additional borehole investigations. These investigations will be scheduled within the first few days (as early as possible) of the remediation so that injections can be designed to give the longest treatment time possible. Near the end of the specified 60 day field program, confirmation monitoring will be conducted via additional borehole sampling.

Golder Comment: No information on the scope of the additional borehole investigations is provided, which should fully delineate both the lateral and the vertical extent of soil impacts. In our opinion, the collection of additional soil samples from at least four boreholes at each investigation location will be necessary. No information on confirmation sampling was provided (e.g., number and anticipated locations of samples to be collected). The Township may wish to consider collecting independent samples where in situ remediation is used.

- 3) Golder Comment: The figure should include the proposed location of the temporary stockpile for metals-impacted soil.

DLS Response: There is no need to show the proposed metals stockpile locations on Figure 1 as the intent of this figure is to show the approximate remedial excavation locations. As indicated in the text of the work plan, the soil with potential metals impacts will be stockpiled next to the excavation from whence it came and marked with a stake. The chosen locations for each potential metals stockpile as well as the locations of the confirmatory samples following their removal will be shown on figures in the final report.

Golder Comment: Acknowledged.

- 4) Golder Comment: The Owner should confirm that any soil found to contain any analyte at a concentration exceeding the Table 2 standard will be removed from the Site to a licensed facility within 45 days following its excavation (subject to the success of any on-Site treatment that may be completed in compliance with the terms of an applicable MOECC approval).

DLS Response: Following stockpile characterization through the collection and analysis of representative samples, the soil associated with any sample that reports analytes associated with the fill that does not meet the Table 2 standards will be removed to an offsite licensed receiver. After the stockpiled soil is



removed, additional confirmatory representative samples will be collected from the location of the former stockpiles to ensure that the material was sufficiently removed.

Golder Comment: Acknowledged.

- 5) Golder Comment: Provide a description of the procedure to be used to characterize soil quality in stockpiles. A reference to technical guidance is not acceptable. Stockpile characterization must include the collection of soil samples for field screening at the frequencies specified in Table 2 Schedule E of O.Reg. 153/04. Samples submitted for laboratory analysis should represent “worst-case” conditions, as determined by field screening. Soil samples must be collected from at least 30 centimetres below the soil surface. The same procedure should apply to characterization of any stockpile (subject to stockpile size), including the overburden stockpile. Composite sampling is not acceptable for the analysis of volatile organic compounds or petroleum hydrocarbon compounds (“PHC”) F1 (including BTEX).

DLS Response: The soil sampling procedures to be used to characterize the stockpiles will be the same procedures that the MOECC now requires for characterization of the treated soil stockpiles at soil recycling facilities. These sampling procedures are based on the procedures for collecting representative samples from large piles contained within the MOECC document “Principles of Sampling and Analysis of Waste for TCLP Under Ontario Regulation 347” (February 2002). This document states that the preferred method of sampling piles is for composite samples to be obtained which represent known locations within the pile. The sample aliquot locations will be chosen in a properly randomized manner from locations within each stockpile no more than 4 metres apart (i.e. 2m radius around a central point), with the exception that known or suspected “hotspots” must be sampled. We agree that in the absence of other available guidance, stockpile sampling frequency should be based on Table 2, Schedule E of O.Reg. 153/04, and understand that the MOECC will adopt Table 2 frequencies of samples for laboratory analysis for the characterization of treated soil stockpiles at soil recycling facilities. Each composite sample will be comprised of a minimum of five aliquots. Each aliquot will be collected in its own dedicated Ziplock bag for field screening. Where VOC analysis is required, the VOC sample will be collected from the aliquot reporting the highest PID reading for each sample prior to compositing for the remaining parameters. For metals and non-volatile organics, the aliquots will be combined into a single composite sample. The objective of this composite sampling is to ensure that the samples best represent the volume of material nearest each point of interest. As a result of applying this guidance, a stockpile of >500 m³ to 1500 m³ would require a minimum of 10 composite samples for laboratory analysis, each comprised of a minimum of 5 aliquots, taken no more than 4 metres apart.

Golder Comment: The response cites a guidance document that no longer published by MOECC and so we cannot establish the applicability of this document to the current circumstance. The details provided provide increased confidence in the proposed stockpile sampling program; however, while the revisions make it clear that field screening using a photoionization detector will be conducted to select “worst-case” soil samples to be submitted for volatile analysis, it does not appear that field screening of samples will be used to select “worst-case” composite samples for metals, inorganic, or PAH or PHC F2-F4 beyond a visual inspection of the stockpile for suspected “hotspots”. Further, it appears that the intent is to collect soil samples from the surface of stockpiles, which is not acceptable. The Township should collect independent samples from stockpiles to be used for backfill and verify that the soil quality is acceptable.



ATTACHMENT A

Detailed Comments on Revised Remediation Plan

- 6) Golder Comment: Clarify the basis upon which confirmation soil samples from excavations will be selected for laboratory analysis.

DLS Response: Confirmatory soil samples from the excavations will be selected based on the results of field screening (i.e., maximum readings) and any other evidence (visual, olfactory, etc.) of contaminants of concern. We agree that in the absence of other available guidance, excavation confirmation sampling frequency should be based on Table 3, Schedule E of O.Reg. 153/04.

Golder Comment: Acknowledged.

- 7) Golder Comment: Identify the proposed XRF operator and provide evidence of certification. Specify daily calibration of all field screening equipment.

DLS Response: The proposed XRF operator will be Ron Mahoney, his declaration of training is attached. The daily calibration of the PID was described on page 10 of the Revised Remediation Plan. The XRF does not have a daily calibration procedure, but has an internal self-diagnostic function.

Golder Comment: Acknowledged.

- 8) Golder Comment: Duplicate samples must be submitted at a “minimum” frequency of one duplicate for every ten sampling locations. The Remediation Plan should be revised to reflect this requirement.

DLS Response: Page 8, paragraph 2 of the revised Remediation Plan does not discuss the duplicate sampling frequency. This discussion was found on page 11, paragraph 3 of the revised remediation plan and was originally on page 8, paragraph 2 in the first version of the remediation plan. DLS trusts that Golder has reviewed the most current version of the Remediation Plan. DLS has proposed to submit one (1) field duplicate soil sample for every ten (10) assessment samples. This frequency meets the accepted industry practice and will remain as written.

Golder Comment: Acknowledged.

- 9) Golder Comment: For each excavation, a scaled drawing showing excavation limits and the locations of all field screening and confirmation samples is required. The Remediation Plan should be revised to reflect this requirement.

DLS Response: It is industry standard practice for technical reports to include sample location figures and should not need to be specifically referenced in a work plan. The sample location figures will be as accurate as possible without the aid of a site survey and keeping in mind that personnel will not be entering the deeper excavations due to safety concerns. In these situations, sample locations will be approximated.

Golder Comment: Acknowledged.

- 10) Golder Comment: Provide the anticipated schedule for report submission to the Township.

DLS Response: The anticipated schedule for report submission to the Township was provided in the Revised Remediation Plan on pages 11 and 12. A draft report will be provided to the Client within 30 days of receipt of all laboratory data and the final report will be issued two days following receipt of the Clients comments on the draft.

Golder Comment: Acknowledged.



ATTACHMENT A

Detailed Comments on Revised Remediation Plan

- 11) Golder Comment: The Township reports that fugitive dust emissions from the fill stockpile have previously occurred, resulting in nuisance impacts to downwind property owners. There is the potential that the excavation activities and the creation of temporary stockpiles will result in further dust emissions. This matter is of increased concern to the Township given the exceedances of the Table 2 standards. The Remediation Plan should include dust control plan that presents dust control measures, environmental monitoring of dust emissions, action levels, and a contingency plan.

DLS Response: Dust Control Plan– incorporated into Erosion and Sedimentation Plan

Golder Comment: This document was provided separately to Golder by DLS and is included in Attachment B. The Dust Control Plan indicates that soil will be wetted down during construction activities, which should include the remediation program.

- 12) Golder Comment: Further, the Township reports that considerable erosion of fill materials occurred following a recent rainfall, resulting in erosion, off-Site sediment discharge and obstruction of proper surface water drainage. There is the potential that the excavation activities and the creation of temporary stockpiles will result in further erosion and off-Site sediment discharge. Township By-law 52-10 requires the installation and maintenance of erosion and sediment control measures, as identified in the Stormwater Management Plan prepared by Genivar (dated August 16, 2012) and the latest guidelines for erosion measures from the Kawartha Conservation Authority. In addition, Golder notes that by prior correspondence, the Township required the property owner to provide a surface water investigation prepared by a Professional Engineer to confirm that the Storm Water Management Plan has been implemented as planned, and to establish if there has been any contamination of surface water related to the contaminated fill materials. To date, this work has not been completed. Golder notes that By-law 52-10 6.01(f) also requires the submission of a comprehensive report addressing these and other concerns, which has not been provided to the Township.

DLS Response: Erosion and Sedimentation Control Plan – attached

Golder Comment: This document was provided separately to Golder by DLS and is included in Attachment B. The measures described are consistent with those described in the 2012 Genivar Storm Water Management Plan. The Erosion and Sedimentation Control Plan indicates that these measures will be implemented during “normal fill operations”. No specific details are provided to explain how these measures will be applied to the proposed remediation program. Further details should be provided as described in Golder’s letter of July 8, 2015.

- 13) Golder Comment: The York Durham District Office of the Ministry of the Environment and Climate Change has advised the Township that Environmental Compliance Approvals 6263-78KFBG and 2852-4J5HN8 (including amendments) do not permit ex situ treatment of soil at the Site. Further, these approvals do not appear to permit in situ treatment of soil. The Owner should provide either the required approvals for on-Site soil treatment or revise the Remediation Plan accordingly.

DLS Response: Our client has instructed DLS that any of the reported impacts that cannot be treated in situ will be characterized for removal from site.

Golder Comment: Acknowledged.



ATTACHMENT B
Erosion and Sedimentation Control Plan (July 2015)

1.0 Objectives & Scope

This Erosion & Sedimentation Control Plan aims to eliminate or minimize the potential negative environmental impacts associated with the large scale fill operations at the Greenbank Airways property.

The objectives of the Policy are:

- Implement best management practices for erosion and sediment control
- Prevent soil erosion and sediment transfer during ongoing filling operations
- Prevent loss of soil during filling operations by surface water runoff and wind erosion
- Prevent sedimentation of receiving streams and ditches
- Prevent polluting the air with dust and particulate matter

2.0 Procedures & Strategies

The best-practice standard for erosion and sediment control, although not legislated, is the Toronto Region Conservation Authority's Erosion & Sediment Control Guidelines for Urban Construction (December 2006).

a) Stabilization of Soil

Under normal filling operations:

- soil stabilization by temporary seeding, mulching, tarping, or other similar methods shall be employed
- Soil should be periodically checked on slopes to ensure that it is not unreasonably loose, thereby presenting erosion and sedimentation concerns

b) Controlling Runoff

Under normal filling operations:

- runoff flowing across the site is slowed down through the use of interceptor dikes and swales
- runoff from off-site areas shall be prevented from flowing across the disturbed areas of the site by drainage swales around the perimeter of the fill site.

c) Controlling Dust and Sediment

To ensure dust control during filling and construction activities:

- Dust producing materials shall be wetted down during the progress of work. Demolition of pre-existing buildings shall occur in a manner that minimizes dust generation.

In addition to the sediment control pond specified by WSP in their Stormwater Management Plan, to prevent sediment from being washed away, all receiving ditches, swales and streams shall be protected.

- Perimeter Control Practices – maintain the existing silt fencing and vehicle tracking control practices (mud mats and on-site paved surfaces)
- Settling Control Practices - Straw Bales – a permeable barrier installed along the contour of mild slopes to assist in reducing flow and increasing the interception of suspended sediments.

3.0 Monitoring & Quality Assurance

During filling operations, inspections of erosion and sedimentation control measures should be completed at the following intervals:

- a) Weekly
- b) After every significant rainfall event
- c) After every significant snowmelt event
- d) Daily during periods of extended rainfall or snowmelt activity

Greenbank Airways shall retain site photographs, logs and/or appropriate records on-site to document full compliance with the requirements of this plan.

4.0 Time Period

This plan will be implemented for one year, from July 2015, after which, this plan will be reviewed and revised as required.