



A RISK ASSESSMENT OF THE FORMER MULOCK FARM PROPERTY, NEWMARKET, ONTARIO

Presentation to the Committee of the Whole, Town of Newmarket

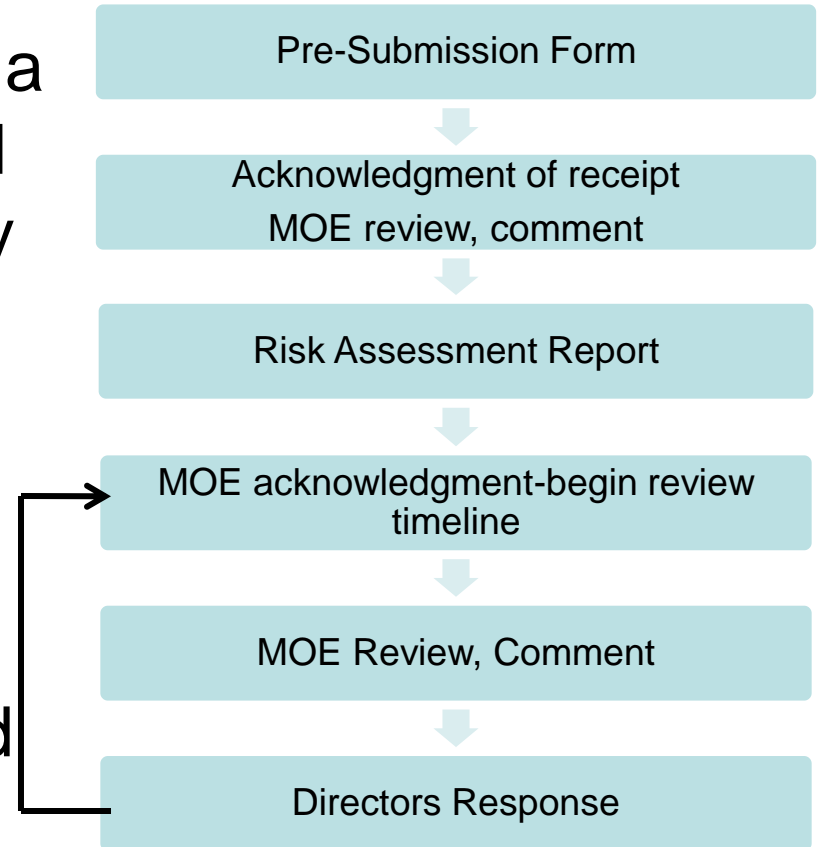
October 31, 2011

Risk Assessment

- The Ministry of Environment Generic Standards are created by following a Risk Assessment process
- The Generic Standards (i.e. 17 ug/g) for arsenic in soil, is based on calculating the risk at any site across the province
- Site Specific Standards are generated following the MOE Risk Assessment process, based on the exact conditions and land use of a specific property
- In this case the Site Specific Standards developed through the Risk Assessment were higher than the Generic Standards (58 ug/g for arsenic).

What is the Risk Assessment Process in Ontario?

- A Risk Assessment follows a standard approach dictated by O. Reg. 153/04 (recently amended)
- All risk assessments are reviewed by the MOE Standards Development Branch
- The process is iterative and always requires several rounds of edits.



Scenarios and Pathways

- A long-term outdoor maintenance worker
- A construction worker
- An on-site resident (although land is parkland)
- An off-site resident
- A parkland visitor
 - Adults and children using the trail
 - Children spending time off the trail in the wooded area.

Final Property-Specific Standards for Chemicals in Groundwater (µg/L)

| COC | Maximum Groundwater Concentration | Table 1 Site Condition Standard | Property-Specific Standard | Basis of Property-Specific Standard | Risk Management Requirement^a |
|------------|--|--|-----------------------------------|---|--|
| Barium | 96 | NV | 1,000 | 2009 Table 8 Site Condition Standard | No |
| Lead | 1.21 | 1 | 10 | 2009 Table 8 Site Condition Standard | No |
| Chloride | 300,000 | NV | 790,000 | 2009 Table 8 Site Condition Standard | No |
| Sodium | 37,000 | NV | 41,000 | Maximum Concentration + 10% (protective of direct contact for on-site aquatic VECs) | No |

Final Property-Specific Standards for Chemicals in Soil ($\mu\text{g/g}$)

| | <i>Maximum Soil Concentration</i> | <i>Table 1 Site Condition Standard</i> | <i>Property-Specific Standard</i> | <i>Basis of Property-Specific Standard</i> | <i>Risk Management Requirement</i> |
|---------|-----------------------------------|--|-----------------------------------|--|---|
| Arsenic | 143 | 17 | 58 | Lowest PSS protective of direct soil contact for parkland visitor | No (targeted soil remediation required prior to filling of RSC) |
| Boron | 0.77 | NV | 1.5 | 2009 Table 2 Site Condition Standard | No |
| Lead | 422 | 120 | 460 | Maximum concentration + 10% (protective of plants, soil invertebrates and birds) | No |
| DDD | 0.024 | NV | 0.026 | Maximum concentration + 10% (protective of birds) | No |
| DDE | 0.44 | NV | 0.48 | Maximum concentration + 10% (protective of plants and soil invertebrates) | No |

Current Status

- Risk Assessment took longer than expected, as the MOE issued O.Reg. 511/09 as an amendment to O.Reg. 153/04, part way through the process
- On October 13, 2011, MOE approved the Risk Assessment of the Former Mulock Farm Property
- MOE currently drafting a Certificate of Property Use (CPU)
- Targeted remediation (soil removal) is required for those areas exceeding the Site Specific Standards
- Once remediation is complete, a Record of Site Condition (RSC) will be filed.