## Home & Garden

The goal of the Home & Garden Program within THE Plan is to prevent and reduce health risks from exposure to lead and smelter metals in the home and yard environment. Specific goals are:

* to prevent people’s, and particularly young children’s and pregnant women’s, exposure to lead in their home and yard environments
* to inform the community, and particularly expectant families and families with young children, about the potential health risks from lead and other smelter metals in the home & yard environment
* to engage the community, and particularly expectant families and families with young children, in addressing potential health risks from lead and other smelter metals in the home and yard environment
* to prevent health risks from exposure to soil in the community.

The Home & Garden works towards these goals through the following main approaches:

Community Program Office

Healthy Homes Program

Residential Soil Assessment and Remediation

Healthy Home Program (primary prevention and case management)

Residential yard soil remediation (where lead concentrations exceed 5000 mg/kg. and to prevent/reduce risks)

Residential vegetable garden soil remediation (where lead concentrations exceed 1000 mg/kg and to prevent/reduce risks);

Home Renovation Support Program

Soil assessment (in the community) – playgrounds, schools etc.

### Each of these approaches is described in detail below.

### CPO

Information and support to residentents submitting their own soil samples for analysis.

### Residential Soil Assessment & Remediation

Assessment

* Soil assessment is prioritized for Trail and Rivervale residents to prevent and reduce health risks from exposure to metals that may be present in yard and garden soil. Top priorities are expectant families, families with children age 3 and under, and children who have measured blood lead levels above the Family Health case management threshold levels.
* Yard soil assessment is offered to every expectant family and family with children 3 years and under living in Trail and Rivervale. This is part of the Healthy Homes Program (see xx below).
* Yard soil assessment is offered to residents in higher prioritiy areas as part of a block program. These are targeted areas where we are anticipating soil metals concentrations above the remediation trigger values described below.
* Vegetable garden soil assessment is available upon request for residents in Trail and Rivervale.
* People outside Trail and Rivervale can request soil sampling and will be prioritized on a case-by-case basis. These requests are typically low priority as other communities are likely to have soil metal concentrations below remediation trigger levels (see below).
* Soil assessment process includes
  + site recon visit: onsite property inspection, sketch and - onsite observation of the property conditions and XRF screening for metals,
  + soil sample collection and: shallow soil samples
  + soil screening:
  + laboratory analysis
  + quality assurance/control measures:
  + Data interpretation: property information and data is managed through the THE Database,
* Sample locations are recorded so that future samples (e.g. excavation base sampling) can take place in the same general areas as the assessment.
* For yard soil assessments, shallow samples (up to 0.15 m below grade) are taken from across the yard, and areas of bare soil, sandboxes, flower and vegetable gardens. Deep samples are collected on a case-by-case basis, where it is known or suspected that soil metals may be present due to smelter impacts other than aerial emissions (may want to give an example –does this happen often?) tadanac residue issue or very high samples.
* Residential soil assessment generally takes place between April and November when the ground is snow-free.
* Assessment results letters are provided to property owners following the assessment work and a summary letter is submitted to Teck after the assessment season is complete.
* Assessment results are reviewed with property owners where properties qualify for remediation as well as for all families participating in the Healthy Homes Program or receiving Family Health case management (is this right?). YES!

Remediation

Residential properties are selected for remediation by comparing the soil assessment results to the Risk Based Remediation Trigger Values. Top remediation priorities are properties where young children are living. Second priority is vegetable gardens followed by yards and other properties. The Risk Based Remediation Trigger Values used to determine if remediation is required are as follows:

* Where children less than 3 years of age are living or cared for (i.e. daycares); properties with soil concentrations above 1,000 mg/kg lead are prioritized.
* Where vegetabale garden concentrations are above 1,000 mg/kg the garden is prioritized for remediation, and
* Where the UCLM for the propery is above 5,000 mg/kg lead the yard is prioritized for remediation. Properties with soil lead concentrations above 5,000 mg/kg are considered high risk sites under the BC CSR.
* Remediation work is carried out under a risk management approach. Notification of the MoE– For remediation work being completed on a residential property, a notification of independent remediation is submitted to the Ministry of Environment. (note that notification is not provided for gardens or partial remediation work such as ground cover improvement).
* Remediation work is completed by a remediation contractor hired by Teck. Consent from the property owner is required prior to any remediation work. A remediation plan is developed with the property owner to define the scope of work planned.
* Remediation includes;
  + ground cover improvement and partial remediation for properties, soil excavation, disposal and replacement to a depth of 60 cm in vegetable gardens and 30 cm in full yards. Deeper excavation may be required where soil exceeds 5,000 mg/kg lead at 30 cm below surface.
* Soil disposal: Additional analytical testing is required prior to soil disposal. Analysis of leachable metals is completed for soil greater than 5,000 mg/kg lead. Soil below the leachate standards is hauled to Teck Metals Landfill. Soil which exceeds leachate standards is hauled for reprocessing at the Teck Metals Trail Operations.
* Remediation soil monitoring: Soil samples are collected from the base of any excavations. Following soil replacement, surface soil samples are collected to ensure quality of the replaced soil. Records related to the remediation and soil results collected during and after the remediation are recorded in the THE Database.
* Re-landscaping of remediated areas such as cover replacement of sod, rock, and plants
* Results of the remediation are provided to the property owner and to Teck. An update to the MoE on the completion of the remediation is submitted. If the property was classified as high risk, then a letter to re-classify the property as non-high risk is requested.
* Long term Soil Study: A study to monitor metals concentrations on remediated yards and vegetable gardens over time is being carried out. The study started in 2010 and it will likely take a number of years to determine the level to which soil metal concentrations are changing.

 Overview of program only. Details on the prioritization of yards and gardens for remediation (based on lead concentrations in soil), the actual activities involved in remediation, as well as restoration of the yards and gardens are provided in SNC-Lavalin (2011). This document also includes Standard Operating Procedures, notification letters, and detailed methods for analyzing and managing data.

Describe basis for 5000 and 1000 mg/kg targets

Long Term Soil Study (what is it and how does it tie in)

Produce sampling etc. Did the HHRA produce screening values for comparison?

Grass Clipping assessment (what is it and how does it tie in?)

Information and Advice about Soil

### Healthy Home Program

Overview of program - soil assessment to prioritize properties for remediation based on the presence of young children, both for Case Management (where BLL are elevated), and for Primary Prevention (to prevent elevated BLL from occurring)

Lead paint testing (is this offered only to our PP and CM families or is it offered to anyone receiving the HRSP services?)

Collaboration with Family Health Program - describe

### Home Renovation Support Program

Overview of program only. Details provided…….

Communication and outreach to increase public awareness of program.

Supplies, equipment provided. Education/information.

Connect to BC1Call, Building Permits in the appropriate place

Make sure that the description responds to the following recommendation made after the 2010 consultation: “Given strong public support but low awareness of this program, it is a priority to conduct more extensive promotion of the Home Renovation Support Program. This includes expanded outreach to young families throughout Greater Trail through daycares, family play groups, home & garden stores, libraries and other businesses and services that cater to young families. There also will be increased outreach to home renovation professionals and links to the RDKB building permits department.”

Lead Paint Testing (should this be here????)

Engagement of the home building sector - Contractor Training, what else?

### Soil Assessment (& Remediation?) in the Community

* Playgrounds, schools etc. Who remediates?

### Compliance Monitoring and Adaptation

Describe how work will be evaluated/reviewed to determine the need for changes

### Summary and Conclusions

### References

SNC-Lavalin. 2011. Draft Trail Wide Residential Remediation Guidelines. Version 5. Prepared for Teck Metals Ltd. August 2011.

SNC-Lavalin. 2008. Draft. Soil Assessment Guidelines.

### Contacts

Please refer to Table 1-1 for more information or to obtain copies of the referenced documents.

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| **Table 1-1 Contact Information for the Home and Garden Program** | | | |
| Program Area | Contact Person | Contact Phone Number | Contact Email |
| Trail Health and Environment Program General Information | Mark Tinholt | 250-364-4385 | Mark.Tinholt@Teck.com |
| Residential Yard Remediation |  |  |  |
|  |  |  |  |
| Home Renovation Support Program |  |  |  |