

***Limited Remedial Action
Reference Documentation
For
Site Professionals***

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1.0 LRA Background

Limited Remedial Action (LRA) was defined in the 1999 "**Guideline for the Management of Contaminated Sites**" as remediation of a site without the use of a Site Professional. It has become evident over the past three years of **Guideline** use, that there may be simple situations where a complete site assessment (as defined in the Atlantic RBCA Reference Documentation) would not be necessary to delineate and remediate contamination. Limited Remedial Action is now defined as follows: "The remediation of soil impacts at a site under direction of a Site Professional, or ENV personnel in exceptional circumstances. The ENV shall determine during completion of a site inspection questionnaire if it is appropriate to attempt to use limited remedial action measures at a site."

LRA would not be applicable in the following types of scenarios:

- Operating service stations or bulk storage facilities;
- Sites with multiple sources of contamination;
- Sites where spillage was not recent.

It is expected that most LRA procedures will be directed by Site Professionals. The involvement of ENV in directing actual remedial activities will be limited to exceptional situations. These would typically occur when the Responsible Party does not have the financial resources to adequately address significant risks to the environment or to human health.

Once it has been determined by ENV that it is feasible to carry out LRA, the Responsible Party is requested to hire a Site Professional to carry out the LRA process. As per the requirements of the **Guideline**, Site Professionals must be currently registered or licensed engineers or geoscientists with the Association of Professional Engineers and Geoscientists of New Brunswick.

The Site Professional will carry out testing and remediation of the site using his or her professional knowledge and judgment while ensuring that the Minimum LRA Testing and Reporting Requirements, as outlined in Section 3, are met.

The Site Professional will apply the Atlantic PIRI Risk-Based Corrective Action Approach at Tiers I and II for LRA. Note that any Tier I exceedences must be addressed by use of the Atlantic PIRI RBCA computer model at Tier II, or by the evaluation of pathways and addition of engineered improvements (i.e. a new floor slab for dirt floor basement) which would make Tier I numbers applicable.

Upon completion of LRA, the Site Professional submits a closure report and Record of Site Condition for acknowledgement. A copy of the Record of Site Condition is contained in Appendix A. Minimum requirements regarding content of the report are contained in Section 3 of this document.

2.0 LRA Procedure and Flow Chart

Limited Remedial Action procedure

Following the initial notification to the ENV of the spill, accident or occurrence, the inspector will conduct a site inspection and/or review the situation with the Site Professional. The significance of the problem will be evaluated by utilizing an internal departmental inspection questionnaire. The ENV will make a determination as to whether it is appropriate to attempt to use limited remedial action measures at a site. The ENV will attempt to determine a responsible party at this time and may then order the responsible party to carry out the remediation of a contaminated site.

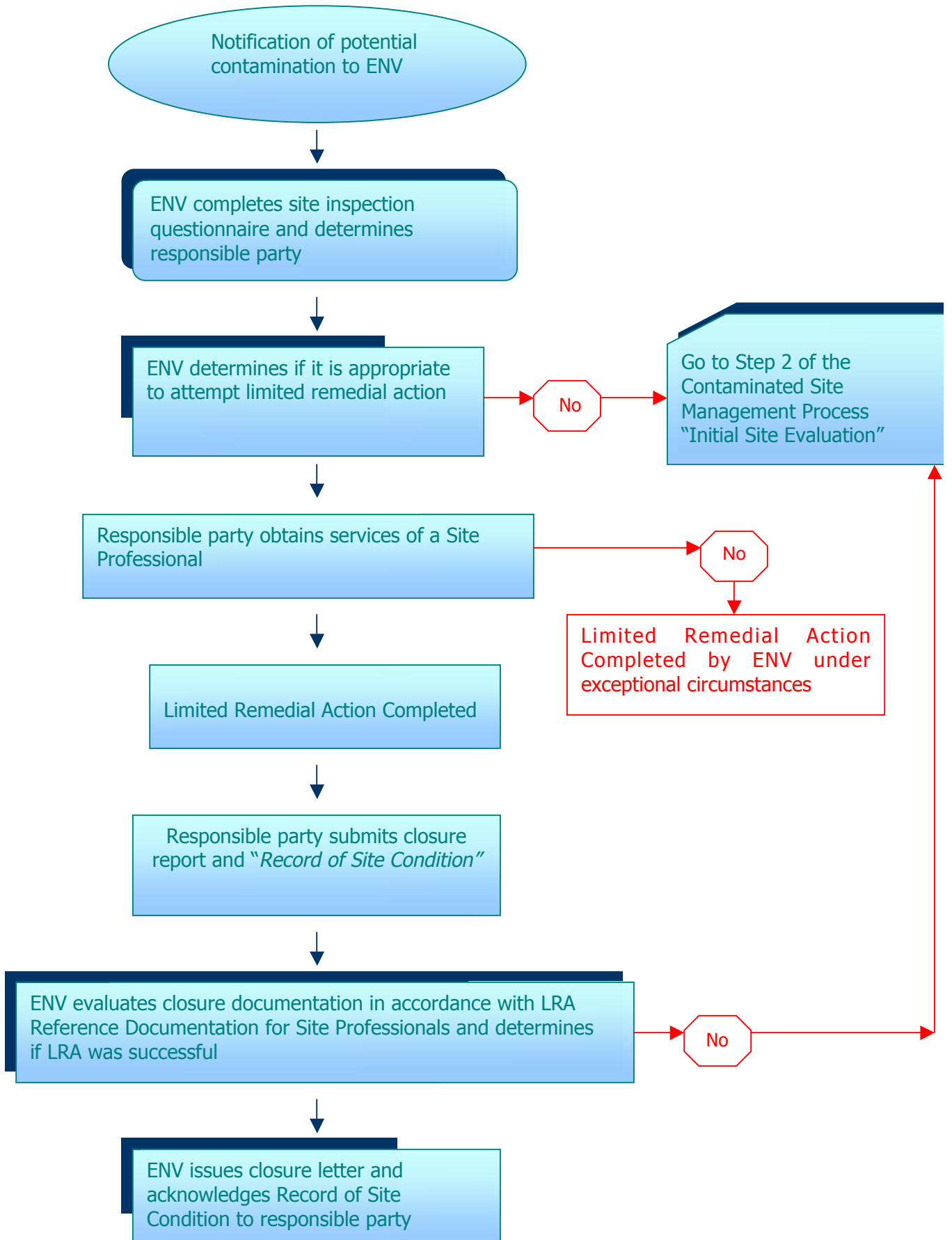
The use of limited remedial action measures would be restricted to the expeditious removal of impacted soils **only** and within a reasonable timeframe (approximately 30 days) subject to the ENV approval. It is limited to situations where the contamination is restricted to soils only and where no impacts to groundwater are evident. The use of limited remedial action measures is also restricted to sites which do not pose a significant risk to potential ecological receptors. Sites where measures other than short-term emergency action and/or excavation are required to address vapours within a building, would not qualify for use of limited remedial action.

Limited remedial action must be directed by the ENV or a Site Professional. When a Site Professional oversees a limited remedial action program at a site on behalf of a responsible party, the Site Professional will conduct the necessary confirmatory soil sampling of the excavation boundaries and submit a closure report along with a Limited Remedial Action "Record of Site Condition" for review and acknowledgement of receipt by the ENV.

In the case where the work is not overseen by the Site Professional, the ENV will conduct the necessary confirmatory soil sampling of the excavation boundaries and submit a closure letter to the responsible party.

If at any time during the limited remedial action program it becomes evident that the situation is more complex and no longer meets the requirements of a limited remedial action program, the ENV will require that the Contaminated Site Management Process be followed.

LIMITED REMEDIAL ACTION FLOWCHART



3.0 Minimum LRA Testing and Reporting Requirements

Testing requirements for site evaluation

Soil samples

Once soil removal is complete, representative confirmatory soil samples must be collected from all walls and the floor of the excavation.

Any anomalous soils must be identified and sampled.

Sampling protocols, consistent with current industry standards, must be adhered to.

Soils must be analyzed at a CAEAL (Canadian Association of Environmental Analytical Laboratories) certified lab.

Soils must be analyzed for Benzene, Toluene, Ethylbenzene, Xylenes (BTEX,) and Total Petroleum Hydrocarbons (TPH) according to Atlantic PIRI Tier I or II analytical methods where the contaminant of concern is hydrocarbons. Any other chemicals of concern must be analyzed by a method acceptable to ENV.

Water samples

On sites where there is a potable well or spring supplying water, the well or spring must be sampled and analyzed for BTEX and TPH, according to Atlantic PIRI Tier I or Tier II methods. Sampling for Methyl Tertiary-Butyl Ether (MTBE) must also be carried out on the water supply and the analytical method must meet the requirements of ENV.

Any other water samples the Site Professional chooses to collect must be analyzed for BTEX and TPH according to Atlantic PIRI Tier I or Tier II methods, and for MTBE according to ENV requirements.

4.0 Submission and review process for LRA

If LRA is to be carried out by Site Professional, the Site Professional is responsible for submitting a Closure report along with a signed copy of the Record of Site Condition to the Regional Office. A document submission form, completed by the Site Professional, must accompany these documents. A copy of all documentation must also be sent to Impact Management Branch of ENV in Fredericton, NB.

The Inspector who has been assigned to the file will review the submission form which accompanies the closure documentation to ensure that all required elements are present in the closure report and Record of Site Condition.

If required elements are missing, the closure documentation may be returned to the Responsible Party for correction and re-submission by the Site Professional. The Site Professional will also be informed that the closure documentation has been returned to the Responsible Party.

The Inspector may review the closure documentation to verify that LRA requirements as per the **Guideline** are satisfied. If there are technical issues requiring further work by the Site Professional, the Site Professional and the Responsible Party will be contacted by the inspector. The inspector may consult with Remediation Engineers at Headquarters in Fredericton to resolve technical issues.

The original Limited Remedial Action Closure Letter and a copy of the Record of Site Condition will be sent by registered mail to the Responsible Party if the requirements of the **Guideline** have been met. The original Record of Site Condition will remain at the Regional Office along with a copy of the LRA closure letter. The Record of Site Condition and the LRA closure letter will also be copied to the Site Professional and to the Remediation Administrator at ENV Headquarters in Fredericton. The remediation file will then be closed on the Remediation Database.

Appendix A
Record of Site Condition

Limited Remedial Action Reference Documentation for Site Professionals

As of September 1, 2006, Version 2.0 of the Contaminated Sites Management Record of Site Condition and Version 1.0 of the Limited Remedial Action Record of Site Condition should no longer be used by Site Professionals.

Site Professionals should obtain the current version of the Record of Site Condition from www.atlanticrbca.com

Appendix B

Applicability of Risk-Based Screening Levels for Site Closure

Limited Remedial Action Reference Documentation for Site Professionals

The following are the requirements for Application of Risk-Based Screening Levels as per the Atlantic RBCA Reference Documentation. Consult the Atlantic RBCA User Guidance for additional information.

Overall site characteristics:

- The site characteristics and exposure scenarios must be compatible with the Atlantic RBCA default values for the current and reasonably foreseeable future site activities;
- No exposure potential to ecological receptors;
- No known or reasonably suspected contaminants of concern on site that are not identified on the Tier I look-up table.

Soil requirements:

- Soils must not contain liquid and/or free petroleum product;
- Surface soils must not be stained;
- Residual hydrocarbons in soil must be at concentrations that do not cause objectionable odours or explosive conditions in indoor or outdoor air;
- Application to situations with impacted bedrock requires justification.

Groundwater requirements:

- Non-aqueous phase liquids (NAPL) must not be present in the groundwater;
- Potable water must be free of objectionable hydrocarbon odour and taste;
- No springs supplying potable water on the property;

Indoor air requirements:

- No explosive vapours;
- No objectionable indoor vapours;

Building requirements:

- Concrete floor slab must be present over the entire basement footprint;
- The seasonal high water table must be below the impacted basement floor;
- No open sumps in the basement containing hydrocarbon-impacted groundwater.

Appendix C

Submission Form for Closure Documents

Limited Remedial Action Reference Documentation for Site Professionals

As of January 1, 2005, the Limited Remedial Action Submission Checklist version 1.0 from the Limited Remedial Action for Site Professional Reference Documentation dated November 2002 should no longer be used by Site Professionals.'

Site Professionals should obtain the current version of the Limited Remedial Action Report Submission from www.atlanticrbca.com