



**REGIONAL DISTRICT
of Fraser-Fort George**

**REQUEST FOR PROPOSALS
ES-24-01**

**Environmental Monitoring Services
Regional Landfills**

- Date Issued:** January 10, 2024
- Closing Location:** Regional District Office
3rd Floor, 155 George Street,
Prince George, BC V2L 1P8
purchasing@rdffg.bc.ca
- Closing Time:** **February 21, 2024**
2:00 pm (Pacific Standard Time)
No Public Opening
- Inquiries:** Darwin Paton, Environmental Services Technologist
Project Manager
dpaton@rdffg.bc.ca
- Note:** Late submissions will not be considered.



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**Request For Proposals
ES-24-01
Environmental Monitoring Services– Regional Landfills
Contract duration: April 1, 2024 – March 31, 2027**

1.0 INTRODUCTION

The Regional District of Fraser-Fort George (Regional District) is requesting Proposals from a qualified company to provide consulting services for the environmental monitoring of five (5) sites within the Regional District. The sites consist of two (2) closed landfills and three (3) operating landfills. The five (5) sites are as follows;

- 1) The Foothills Boulevard Regional Landfill (Block A of the northwest ¼ of DL 4053 and Block A of the northwest ¼ of DL 4048 Cariboo District. UTM 53 59'22.89" N 122 49'05.71" W) (Appendix "E": Figure 1). Opened in 1975 the site covers approximately 87.3 ha with only 25 ha currently being utilized. The site consists of a public transfer station drop-off area, recycling center, materials exchange area and composting facility. There are currently fourteen (14) ground water monitoring wells on the site and an additional eight (8) groundwater monitoring wells associated with the site and located along a forested bench to the south, southwest of the site (Appendix "E": Figure 2).
- 2) The Mackenzie Regional Landfill – this site is located approximately 3 km south of the town of Mackenzie (4.2 km south of the SW Corner of DL 12463 Cariboo Land District, UTM 55 18'17.5" N and 125 05'49.1" W) (Appendix "E": Figure 3). Opened in 1974, the site covers approximately 8.2 ha with almost all of this area having been utilized. The site consists of a public drop-off area, materials recycling center, materials exchange area and a compostable materials area. In 2019, a full-service Transfer Station was constructed adjacent to the site and the current landfill remains operational but has been converted to a Demolition and Construction Waste landfill. There are currently five (5) active groundwater monitoring wells located on site (Appendix "E": Figure 4).
- 3) The West Lake Regional Landfill, (Block A NW ¼ of DL 1886, Cariboo Land District UTM 53 45'04.94" N 122 51'50.21" W) (Appendix "E": Figure 7). Closed in 2005, the site currently has four (4) groundwater monitoring wells on site (Appendix "E": Figure 8).
- 4) The Legrand Demolition and Construction Waste Landfill (south half of DL 7078 and the north half of DL 7077, Cariboo Land District, UTM 53 23'48" N and 120 25'50" W) (Appendix "E": Figure 5). Closed to municipal solid waste (MSW) in 2005, the site continues to accept permitted construction, land-clearing, and demolition waste from sources within the Robson Valley. There are currently seven (7) monitoring wells located on site. (Appendix "E": Figure 6).
- 5) The Valemount Regional Landfill, (4.4 ha SE portion within the SE ¼ of DL 5707, Cariboo Land District. UTM 52 50'53.06" N 119 17'01.52"W) (Appendix "E": Figure 9). The site is an operational transfer station. The landfill site is located adjacent to the transfer station and is permanently closed. There are currently nine (9) monitoring wells located on site (Appendix "E": Figure 10).

2.0 INVITATION AND SUBMISSION INSTRUCTIONS

2.1 Request for Proposals (RFP) Documents:

RFP Documents may be obtained on, or after the Issue Date as follows:

- a) in a PDF (Public Document Format) file format from the Regional District's website at www.rdffg.ca, or
- b) on the BCBid website @ www.bcbid.gov.bc.ca.



All subsequent information regarding this RFP, including addendum(a) and answers to questions will also be available as above.

It is the sole responsibility of the Proponent to ascertain that they have received a full set of the RFP documents. Upon submission of their Proposal, the Proponent will be deemed conclusively to have been in possession of a full set of the RFP documents.

The lowest priced or any Proposal will not necessarily be accepted. The Regional District reserves the right to accept or reject any or all Proposals.

2.2 Proposal Submissions and Closing Time

Proposals must be in English and submitted using one of the submission methods below.

The submission must include a Title page that identifies the RFP and Proponent information, and a letter of introduction that includes the signature of an authorized representative of the Proponent that confirms the Proponent's intent to be bound to the RFP process.

The Regional District will accept Proposals submitted by email or by direct delivery (in person or by courier/mail) to the Regional District's main office at 155 George Street, Prince George, BC.

All Proposals must be submitted to the Regional District's General Manager of Financial Services by 2:00 p.m. (local time) on February 21, 2024.

Proposals submitted by fax will **NOT** be accepted. Any Proposal received after the closing time will be considered disqualified and will be returned to the Proponent.

Submissions methods

- Email format
 - Proposal attached to the email in a PDF, or equivalent, format and emailed to purchasing@rdffg.bc.ca. The subject line should read "**ES-24-01 – Environmental Monitoring Services - Regional Landfills - [Proponent Name]**", (The maximum file size able to be received by the Regional District is 35 MB); **or**
 - Electronic format submitted on a USB readable device with the Proposal in a PDF, or equivalent, format; **or**
 - Hard copy format with three (3) complete Proposal copies.

Mail or courier (USB or hard copy formats)

- Proponents should submit Proposal in a sealed envelope with the following information written on the outside of the envelope containing the Proposal, as well as on the outside of the courier envelope (if sending by courier):

Attention: General Manager of Financial Services
Regional District of Fraser-Fort George
3rd Floor, 155 George Street, Prince George, BC V2L 1P8

Request for Proposals: ES-24-01 Environmental Monitoring Services -
Regional Landfills

Responding Proponent's name and address

To be considered, Proposals must include a letter of introduction and be signed by an authorized signatory of the Proponent. By signing the Proposal, the Proponent is bound to statements made



in response to this RFP. Any Proposal received by the Regional District that are unsigned will be rejected.

Proposals not submitted in strict accordance with these instructions or not complying with the requirements in this RFP may be rejected.

The Regional District will not be responsible for any costs incurred by Proponents as a result of the preparation or submission of a Proposal pertaining to this RFP. The accuracy and completeness of the Proposal is the Proponent's responsibility. Should errors be discovered, they will be corrected by the Proponent at their expense before Closing Time.

The Regional District reserves the right to negotiate with any Proponent at its discretion. The Proponents will be qualified, competent and capable of performing the work. The Proponent may be required to provide evidence of previous experience and financial responsibility before a contract is awarded.

2.3 Proponents Site Meeting

There will be no mandatory site meeting for this RFP.

2.4 Acknowledgement Letter

Upon receipt of this RFP, a potential Proponent should complete and sign the Acknowledgement Letter (Appendix "A") and email the signed Acknowledgement Letter to the Project Manager, Darwin Paton at dpaton@rdffg.bc.ca.

A Proponent who signs and returns the Acknowledgement Letter is not obligated to submit a Proposal.

Any Proponent who does not submit the Acknowledgement Letter will not be sent any Addendum(a) or answers to questions and their Proposal may be disqualified if it is incomplete or non-compliant as a result of the Proponent's failure to acknowledge receipt of an addendum in accordance with this RFP, or as a result of the Proponent's failure to comply with the requirements of an addendum to this RFP.

3.0 **RFP PROCESS RULES**

3.1 Definitions

"Addendum(a)" means all additional information regarding this RFP including amendments to the RFP.

"BC Bid" means the BC Bid website located at www.bcbid.gov.bc.ca.

"Board" means the Board of the Regional District of Fraser-Fort George.

"Closing Location" includes the location or email address for submissions indicated on the Title page of this RFP, or BC Bid, as applicable.

"Closing Time" means the closing time and date for this RFP as set out on the Title page of this RFP.

"Contract" means the written agreement resulting from this Request for Proposal, if any, in accordance with this Request for Proposal.

"Contractor" means the successful Proponent to the RFP who enters into a Contract with the Regional District.



“Must” means a requirement that must be met in order for the Proposal to receive consideration.

“Place of Work” means the designated site or location of the Work identified in the Contract Documents.

“Project Manager” means the Regional District’s representative.

“Proponent” means the person submitting a Proposal.

“Proposal” means a submission in response to this Request for Proposal.

“Regional District” means the Regional District of Fraser-Fort George.

“Request for Proposal” or “RFP” means the request for Proposal described in this document, including any attached or referenced appendices, schedules or exhibits and as may be modified in writing from time to time by the Regional District by Addendum(a).

“Should” or “May” means a requirement having a significant degree of importance to the objective of the request for Proposals, but which the Regional District would strongly prefer to be fulfilled, and which the Regional District may in its sole discretion elect to treat the failure to fulfill as a grounds for rejection of a Proposal.

“Subcontractor” means a person or entity having direct contact with the Contractor to perform a part or parts of the Work at the Place of the Work

“Total Contract Price” means the fully inclusive, all-in total contract price, constituting the aggregate sum of all compensation whatsoever quoted by and receivable by a Proponent in its Proposal with respect to the Services contemplated by this RFP and, unless expressly and specifically agreed in writing by the Regional District, otherwise, shall be the maximum compensation and consideration receivable by the Consultant under the Contract or otherwise for providing all Services, including incidentals, contemplated under the Contract. The Total Contract Price shall include, without limitation, all professional fees, consulting fees, staff time, and other Service fees, all Disbursements, costs, expenses, allowances and charges whatsoever, all items and incidentals to be provided pursuant to the RFP and anything properly included as a best practice. Total Contract Price does not include applicable taxes.

“Work” means the total construction and/or related professional services required by the Contract Documents.

3.2 Acceptance of Terms and Conditions

Submitting a Proposal indicates acceptance of all the terms and conditions set out in the RFP, including those that follow and that are included in all appendices and any Addendum(a).

3.3 Submission of Proposal

Proposals must be submitted before Closing Time using one of the submission methods set out on the Title page of this RFP. Proposals must not be sent by fax. The Proponent is solely responsible for ensuring that, regardless of submission method selected, the Regional District receives a complete Proposal, including all attachments or enclosures, before the Closing Time.

3.4 Errors, Omissions, Clarifications

It is the sole responsibility of the Proponent to ascertain that they have received a full set of the RFP documents. Upon submission of their Proposal, the Proponent will be deemed conclusively to have been in possession of a full set of the RFP documents.



All requests for clarification or inquiries must be made to the Project Manager at dpaton@rdffg.bc.ca by Tuesday, February 6, 2024 in order that addendum(a), if necessary, are issued in time for all Proponents to complete their Proposal submission and have it delivered to the Regional District office prior to the closing time on the submission date.

If the Regional District, in the Regional District's sole discretion, determines that a clarification, addition, deletion, or revision of the RFP is required then the Regional District will issue an addendum and the addendum will be posted on the Regional District website and BC Bid.

It is the sole responsibility of the Proponent to check for addendums.

3.5 Late Proposals

Proposals will be marked with their receipt time at the Closing Location. Only complete Proposals received and marked before the Closing Time will be considered to have been received on time. Proposals received late will be marked late and not considered or evaluated. In case of a dispute, the Proposal receipt time as recorded by the Regional District at the Closing Location will prevail whether accurate or not.

3.6 Changes to Proposals

By submitting written notice, the Proponent may amend or withdraw its Proposal before the Closing Time. Proponents should use a consistent submission method for submitting Proposals and any amendments or withdrawals.

3.7 Conflict of Interest

When submitting a Proposal, the Proponent must complete, sign and include with their Proposal a Conflict of Interest Disclosure Statement (Appendix "B").

The Regional District may reject a Proposal based on an actual, potential or perceived conflict of interest.

The Regional District may reject any Proposal where:

- a) one or more of the directors, officers, principals, partners, senior management employees, shareholders or owners of the Proponent, is an officer, employee or director of the Regional District or a consultant involved in the procurement process, or is a member of the immediate family of an officer, employee or director of the Regional District or a consultant involved in the procurement process; or
- b) in the case of a Proposal submitted by a Proponent who is an individual person, where that individual is an officer, employee or director of the Regional District or a consultant involved in the procurement process or is a member of the immediate family of an officer, employee or director of the Regional District or a consultant involved in the procurement process.

(collectively, "Restricted Parties")

A Proponent who has any concerns regarding whether a current or prospective employee, advisor or member of that Proponent is, or may be, a Restricted Party, should request an advance decision by submitting to the Project Manager, not less than ten working days (Tuesday, February 6, 2024) prior to the Closing Time, by email, the following information:

- a) names and contact information of the Proponent and the person for which the advance opinion is requested;



- b) a description of the relationship that raises the possibility or perception of a conflict of interest or unfair advantage; and
- c) copies of any relevant documentation.

The Regional District may make an advance decision regarding whether the person is a Restricted Party, and whether the Regional District will reject a Proposal based on the information provided.

If Proponent has identified an actual, perceived or potential conflict of interest regarding this RFP process or project, the Proponent must submit a Conflict of Interest Disclosure Statement (Appendix “B”) to the Project Manager by Tuesday, February 6, 2024.

3.8 Subcontractors

All Subcontractors, including affiliates of the Proponent, should be clearly identified in the Proposal as per the form attached as Appendix “D”.

A Proponent may not subcontract to a company or individual whose current or past corporate or other interests, may, in the Regional District’s opinion, give rise to an actual, perceived or potential conflict of interest in connection with the services described in the RFP. This includes, but is not limited to, involvement by the company or individual in the preparation of the RFP or a relationship with any employee, contractor or representative of the Regional District involved in preparation of the RFP, participating on the evaluation committee or in the administration of the Contract. If a Proponent is in doubt as to whether a proposed subcontractor might be in a conflict of interest, the Proponent should consult with the Project Manager prior to submitting a Proposal. By submitting a Proposal, the Proponent represents that it is not aware of any circumstances that would give rise to a conflict of interest that is actual, perceived or potential, in respect of the RFP.

3.9 Rejection of Proposal

The Regional District may, in its sole discretion, reject any and all Proposals, or accept the Proposal deemed most favourable in the interests of the Regional District. The lowest, or any Proposal, will not necessarily be awarded.

Proposals which contain qualifying conditions or otherwise fail to conform to the instructions contained in this RFP may be disqualified or rejected. The Regional District may, however, in its sole discretion, reject or retain for its consideration Proposals which are non-conforming because they do not contain the content or form required by the RFP, or for failure to comply with the process for submission set out in this RFP, whether or not such non-compliance is material.

The Regional District’s intent is to enter into a Contract with the Proponent who has submitted the best offer. The Regional District reserves the right to accept any or none of the Proposals submitted and will evaluate Proposals based on the best value offered to the Regional District and not necessarily the lowest price, using the criteria specified in this RFP. The Regional District reserves the right in its sole unrestricted discretion to:

- a) accept any Proposal which the Regional District deems most advantageous to itself;
- b) reject any and/or all irregularities in a Proposal submitted;
- c) waive any defect or deficiency in a Proposal whether or not that defect or deficiency materially affects the Proposal and accept that Proposal;
- d) reject any and/or all Proposals for any reason, without discussion with the Proponent(s);
- e) accept a Proposal which is not the lowest Proposal; and/or,
- f) cancel or reissue the RFP without any changes.

Without limiting any other provision of this RFP, the Regional District may, in its sole discretion, reject a Proposal submitted by a Proponent, if the Proponent or any officer or director of a corporate



Proponent, is, or has been within a period of two years prior to the Closing Time, engaged either directly or indirectly through another corporation or legal entity in a legal proceeding initiated in any court against the Regional District in relation to any contract with, or works or services provided to the Regional District.

3.10 Liability for Errors

The Regional District will not be responsible for any costs incurred by Proponents as a result of the preparation or submission of a Proposal pertaining to this RFP. The accuracy and completeness of the Proposal is the Proponent's responsibility. If errors are discovered, they will be corrected by the Proponent at their expense.

Proponents acknowledge that the Regional District, in the preparation of the RFP supply of oral or written information to Proponents, review of Proposals or the carrying out the Regional District's responsibilities under this RFP, does not owe a duty of care to the Proponents.

3.11 Limitation of Liability

Each Proponent, by submitting a Proposal, irrevocably waives any claim, action, or proceeding against the Regional District including without limitation any judicial review or injunction application or against any of the Regional District's employees, advisors or representatives for damages, expenses or costs including costs of Proposal preparation, loss of profits, loss of opportunity or any consequential loss for any reason including: any actual or alleged unfairness on the part of the Regional District at any stage of the Request for Proposal process; if the Regional District does not award or execute a contract; or, if the Regional District is subsequently determined to have accepted a noncompliant Proposal or otherwise not complied with the terms of this Request for Proposals, with the exception of fraud on the Regional District's part.

3.12 Ownership of Proposals and Freedom of Information

Proposals will be received and held in confidence by the Regional District, subject to the provisions of the Freedom of Information and Protection of Privacy Act and this RFP. Each Proposal should clearly identify any information that is considered to be confidential or proprietary information.

All documents, including Proposals, submitted to the Regional District become the property of the Regional District.

As an exception to Proposals being received and held in confidence, Proponents are advised and acknowledge that any contract entered into as a result of this Proposal may be subject to Board approval, which may be discussed and voted on at a meeting of the Board that is open to the public. If Board approval is required, details of Proposals, including but not limited to proposed or negotiated fees, may be provided to the Board in a publicly available staff report, discussed at a Council meeting that is open to the public, and posted on a publicly available electronic agenda on the Regional District's website.

3.13 Confidentiality

In accordance with the Freedom of Information and Protection of Privacy Act, the Proponents will treat as confidential and will not, without prior written consent of the Regional District, publish, release, or disclose, or permit to be published, released, or disclosed, any information supplied to, obtained by, or which comes to the knowledge of the Proponents as a result of this RFP except insofar as such publication, release or disclosure is required by the laws of British Columbia.

4.0 PURPOSE

The Regional District of Fraser-Fort George intends to engage a qualified consulting company to provide environmental monitoring services for five (5) of its landfills. These services will include:



- groundwater, surface water, leachate and condensate sampling at defined intervals at all of the previously listed sites;
- all the required sample analysis;
- interim and annual report preparation; and,
- recommendations for future development of the Regional District's monitoring program.

Note: *Surface sampling from at least two (2) locations associated with the Foothills Boulevard Regional Landfill site may be undertaken starting in 2024. Additional groundwater monitoring wells may be installed during the undertaking of the contract and should be considered for, within the scope of this Proposal.*

Field work for this Proposal will commence in spring of 2024 and as determined by the Regional District.

Pricing will be detailed as outlined in the Financial Proposal section of this document.

5.0 SCOPE OF WORK

The scope of the work will be carried out for the duration of this contract, which is April 1, 2024 to March 31, 2027.

The scope of work will include but not be limited to the following:

5.1 Meetings

The following is a list of required meetings that will be attended by the successful Proponents Project Manager, senior field team representative and the Regional District. These individual(s) will be identified at the commencement of the contract. Any changes to the individuals responsible for the carrying out of the work plan will be communicated to the Regional District by the successful Proponent.

- Start-up Meeting - history and review of program to date and expectations (April 2024);
- Prior to commencement of the autumn field work in 2024;
- Prior to commencement of the spring field work in 2025;
- Prior to commencement of the autumn field work in 2025;
- Prior to commencement of the spring field work in 2026
- Prior to commencement of the autumn field work in 2026; and,
- Final review of the completed works covered by the Proposal (January 2027).

For agenda purposes, items to be covered will be discussed via phone or electronic media prior to actual meeting dates. Autumn meetings may consist of virtual/ conference calls, if no significant changes in the works are anticipated, and it is agreeable to both parties. Spring meetings will be in person in Prince George.

5.2 Environmental Monitoring and Sampling

The successful Proponent must carry out the following items in their work plan:

- Provide qualified field personnel to carry out the ground water, surface water, leachate, and condensate sampling at all the sites listed in the introduction of this document. The successful Proponent will provide the Regional District with a list of all personnel involved in the carrying out of this Proposal.
- Senior reviewers and signatories to the Interim and Annual reports are required to be registered with a designated regulatory body under the Province of British Columbia's *Professional Governance Act* (Bill 21, 2022).



- Adhere to the “best practices” approach as accepted by government and industry for the sampling of groundwater, surface water leachate and condensate.
- Provide the Regional District copies of the written sampling methods and procedures, including the Quality Assurance and Quality Control Protocol, to be followed during the attainment of all samples.
- Follow the sampling schedule as provided by the Regional District and provide seven (7) days electronic notification to the Project Manager indicating the start of any sampling event(s) or a request for change in the sampling dates.
- Immediately notify the Regional District by electronic means of any infrastructure damage or adverse site conditions encountered during sampling events.
- At no time shall the Proponent carry out work that may be deemed unsafe or that may impact the sampling results.

5.3 Sample Analysis

The successful Proponent must carry out the following items in their work plan:

- Have all samples analyzed by one (1) certified laboratory to conduct, analysis and listed with the Ministry of Environment and Climate Change Strategy in the Province of British Columbia. This laboratory will be agreed upon by the Regional District and the successful Proponent. Any requested changes in the use of an agreed upon certified laboratory must be submitted in writing to the Regional District with an accompanying explanation as to why the change is warranted.
- Provide written copies to the Regional District of the laboratory’s analytical methodologies, including the Quality Assurance and Quality Control Protocols.
- Individual parameters to be sampled will be determined by the Regional District with consideration being given to past sampling results and projected trends. Refer to Tables 1 to 10 in Appendix “F” for detailed lists.
- All samples will be compared using the applicable BC Environmental Guidelines, including but not limited to, *Contaminated Sites Regulation* (BC Reg 375/96 as amended up to and including BC Reg. 133/2022, March 1, 2023) for the protection of aquatic life and drinking water (AW and DW respectively).
- Immediately notify the Regional District of any aberrations or unexpected results observed within the sample analysis and do not meet the applicable guidelines.

5.4 Reporting Requirements

The successful Proponent must carry out the following items in their work plan:

Interim Reports

Within forty-five (45) days of a sampling event, prepare and provide the Regional District with a brief overview of the sampling results for each of the sampling locations (sites). These interim reports will include but not be limited to:

- A summary of the results from each sampling location should include the field data, areas of concern highlighted in previous annual reports, and any significant anomalies and trends;
- An Excel spreadsheet for each sampling location containing the monitoring results from the most recent and prior five (5) years of monitoring events, highlighting results exceeding applicable limits;
- Graphs showing trends for the key indicator parameters generated from the Excel tables; and,



- Any recommendations for additional sampling/testing or remedial work that should be included where necessary.

The interim reports must be emailed to the Project Manager in pdf format. In addition to the pdf files, the sampling results spreadsheet and graphs shall be delivered in Excel format. The results of this interim report shall be included in each annual report as an appendix.

Annual Reports

By December 15th of each calendar year covered under the contract (2024, 2025, 2026) the Proponent shall prepare a *draft* of the annual report for each of the five (5) sites covered under the term Totals of this Proposal. These reports will include but not be limited to the following:

- Brief site descriptions based on available existing hydrogeological studies;
- Brief description of the monitoring program and any implemented revisions that have been approved by the Regional District;
- Applicable regulations used for the evaluation of the sampled parameters;
- Description of the written sampling methods and procedures used;
- Summary of the sampling program carried out over the previous calendar year;
- Drawings and figures showing the different sampling locations at each of the five (5) sites;
- Summary of the results from each sampling location, including:
 - Excel spreadsheets showing the analytical results, including all prior monitoring events for the past five years;
 - Graphs showing the trends for the key indicator parameters for each sampling location, generated from the Excel spreadsheets;
- Drawings showing groundwater flow direction across site with groundwater elevations indicated for each sampling location;
- Groundwater quality time series charts for selected landfill leachate indicator parameters, to be determined by the Regional District;
- Stiff diagrams, plot of select anions and cations, determined by the Regional District, for individual monitoring locations for graphical comparison; and,
- In an appendix, include laboratory reports.

Once reviewed by the Regional District, the final draft of the Annual Report must be submitted by February 15th, for each of the previous years' covered by the contract. The Annual Report must be sealed and stamped by a registered professional. Delivery of the report must include:

- Two (2) bound hard copies;
- Electronic copies in Microsoft Word and pdf format with no security or editing restrictions or password protection;
- Tables and graphs shall be delivered in Excel format; and,
- Drawings will be in an AutoCAD 2018 or higher format and pdf format.

All documents produced within this contract are the property of the Regional District.

6.0 FINANCIAL PROPOSAL

The Proponent must specify in the Proposal, the cost summary/fees required to satisfy the scope of work for the project. The Proponent must clearly identify and detail all of the costs in the various stages of the work plan, with taxes (BC PST and GST) and disbursements clearly identified as separate line items. The fee structure shall be based on milestones and deliverables to the Regional District over the duration of the contract period.

A cost estimate table must be included, detailing the following items (but not limited to):



- Professional time and fees for each project team member based on milestones and deliverables:
 - Review of existing reports;
 - Site meetings;
 - Preparation and delivery of Interim Report;
 - Preparation and delivery of draft and final Annual Report; and,
 - Field work (sampling per well and field tests).
- Disbursements:
 - Lab analysis;
 - Equipment;
 - Travel and accommodations;
 - Copies; and,
 - Correspondence.

The total contract price is to be based on the scope of work in this RFP. The Proposal shall allow for cost adjustments due to changing numbers of samples due to weather conditions, accessibility, damages, decommissioning and/or additional sampling locations. The Proposal also should provide costs for additional site meetings if required.

Terms of Payment

The Proponent must specify in the Proposal, the terms of payment required for the duration of the project.

7.0 PROPOSAL FORMAT

The following format and sequence should be followed in order to provide consistency in Proponent response and to ensure each Proposal receives full and complete consideration. All pages should be consecutively numbered.

- 1) Title Page – including Request for Proposal title and number, Proponent’s name and address, telephone number, email address and contract representative.
- 2) Letter of Introduction- signed by the authorized signatory on behalf of the Proponent which will bind the Proponent to statements made in response to this RFP.
- 3) Table of Contents- including page numbers.
- 4) Executive Summary- with the key features of the Proposal.
- 5) Body of the Proposal, i.e. the ‘Proponent’s Response’, including:
 - a. Project Team;
 - b. Work Plan, methodology and schedule; and,
 - c. Financial proposal.
- 6) Goods and Services Tax Information form
- 7) Conflict of Interest Disclosure Statement
- 8) Addendum(a), if any, issued for this RFP. Each addendum(a) should be signed by the Proponent and included with the Proposal and will form part of the Proposal and Contract.

8.0 PROJECT TEAM INFORMATION

8.1 Qualifications and Relevant Experience

The Proponent must include the following in the Proposal with respect to each member of the project team:

- the list of the personnel on the project team;
- their project role;
- a statement of qualifications;
- relevant experience with level of complexity; and,



- a curriculum vitae (maximum three (3) pages) for each member of the team, with items with relevant areas highlighted.

Subcontractors, if any, must be identified in the project team information above and in the 'List of Subcontractors' document in Appendix "D".

8.2 References

The Proponent must include a minimum of three (3) references, complete with contact information, in the Proposal for projects similar to the Environmental Monitoring Services at Regional Landfills. A brief description of the projects completed for each reference should be provided.

8.3 Professional Responsibility

Only qualified and experienced Environmental Consultants will be considered for this project. The successful Proponent will be expected to provide services in accordance with a standard of care, skill and diligence maintained by a person (or company) providing the services described herein. The successful Proponent will be required to seal all documents issued for this project.

Senior reviewers and signatories to the Interim and Annual reports are required to be registered with a designated regulatory body under the Province of British Columbia's *Professional Governance Act* (Bill 21, 2022).

9.0 **PROPOSAL EVALUATION**

9.1 Proposal Evaluation

All Proposals will be evaluated by the Regional District to assess the qualifications and capabilities of Proponents to meet the minimum standards specified in the RFP. Proposals will be assessed by a committee formed by the Regional District.

9.2 Selected Proponent Negotiations

The Regional District, at its sole discretion, may enter into contract negotiations with a selected Proponent, or Proponents, based only on the evaluation of the written Proposal(s), and/or an evaluation of the combination of the written Proposals and/or detailed discussions.

The Regional District may enter into negotiations with any Proponent without requiring any other Proponents to make any presentations or require any other Proponents to enter into detailed discussions with the Regional District.

9.3 Termination of Negotiations and/or RFP Process

The Regional District may terminate contract negotiations with any Proponent, and to enter into contract negotiations with any other Proponent if, in the opinion of the Regional District at any time, the contract negotiations with the initially selected Proponent will not be satisfactorily completed in the best interests of the Regional District. The Regional District may, at its sole discretion, reject any or all Proposals at any time throughout the Proposal evaluation, Proponent selection, or contract negotiation process.

9.4 Compliance with RFP Requirements

All terms and conditions of this RFP are assumed to be accepted by the Proponent and incorporated in its Proposal.

All items in the Proposal that are not in full compliance, or that vary from the specific requirements, should be clearly identified in the Proposal as non-compliant and/or variant, and should include



specific reference to the relevant section in the RFP and the precise nature of the variance or non-compliance. Non-compliance or variances with the specific RFP requirements will not necessarily result in rejection of a Proposal.

The acceptance or rejection of all non-compliant items, and/or variances to the RFP requirements, will be at the sole discretion of the Regional District, without any obligation by the Regional District to either request clarifications, enter into detailed discussions, or negotiations with the Proponent(s).

10.0 SELECTION AND EVALUATION

10.1 Selection Criteria

The following are the criteria and the percentage of the total score for each criterion that will be used by the Regional District to select a Proponent. The list of criteria is not in any particular order of priority. The Regional District, in its sole judgment, will base the selection of a successful Proponent on a combination of the criteria.

Evaluation Criteria

ES-24-01 – Environmental Monitoring Services – Regional Landfills	
EVALUATION CRITERIA	WEIGHT
Project Team Qualifications, Relevant Experience and References	25
Work Plan, Methodology and Project Schedule	30
Financial Proposal	30
Quality of Proposal including format	15
Total	100

The Proposal submission should be clear, concise and complete.

a) *Project Team Qualifications, Relevant Experience, and References (25 points)*

This includes, but not limited to, the qualifications and relevant experience of the:

- the person named in the Proposal as the Proponent’s project manager;
- the Proponent company’s experience in doing similar projects;
- the project team, including Subcontractors, assigned by the Proponent’s company to work on this project; and,
- the evaluation of the information received through the reference checks.

b) *Work Plan, Methodology, and Project Schedule (30 points)*

This includes, but not limited to, the evaluation of the:

- thoroughness of the project approach reflected in the work plan and project schedule,
- level of effort reflected in the total work hours of the team assigned to complete the project, and
- timing of project tasks outlined in the project schedule.

c) *Financial Proposal (30 points)*

This includes, but not limited to, the evaluation of the:



- cost summary/fees required to satisfy the scope of work for the project;
- amount of detail given to cost summary and the overall proposed project cost per site and year; and,
- level of effort reflected in the total work hours of the team assigned to complete the project.

d) *Quality of Proposal including format (15 Points)*

11.0 CONTRACT

11.1 Form of Contract

The Proponent will be required to enter into a Contract prior to commencing work and subject to negotiation between the Regional District and the Proponent. The Contract will include this RFP, Conflict of Interest Disclosure Statement, all appendices addendum(a), as well as the successful Proponent's submission.

The successful Proponent will also have to meet the following requirements:

- a) Be compliant with BC Occupational Health and Safety statutes and supply a WorkSafeBC Clearance Letter.
- b) Meet a number of insurance provisions including Commercial General Liability in an amount of at least \$5,000,000 and appropriate owned and non-owned automobile insurance coverage in the amount of \$2,000,000 if automobile use is required.

11.2 Notification

Approval of a Proponent and the award of a Contract is expected to occur by March 21, 2024. The Regional District, in its sole judgment, may delay the award of Contract date as deemed appropriate by the Regional District

11.3 Contract Duration

The duration of the Contract will begin on April 1, 2024 at 12:01 a.m. and will remain in force until midnight March 31, 2027.

12.0 CONTRACT PRICE

All prices for the work are to be in Canadian dollars. Taxes are considered extra to the project budget cap and should be shown as a separate line item. Any applicable Federal or Provincial taxes, or levies, must be included in the Total Contract Price.

13.0 WORK PLAN AND PROJECT SCHEDULE

The Proponent must provide a finalized work plan with the Contract. The work plan is to include a schedule of events, reporting milestones, the sequence of task occurrence and details concerning implementation and completion dates for each task.

14.0 DOCUMENTS

The successful Proponent must provide all documents related to the contract to the Regional District in the following formats:



- Two (2) bound hard copies of each Annual Report;
- Annual Report and all other documents:
 - Electronic copies in Microsoft Word and pdf format with no security or editing restrictions or password protection;
 - Tables and graphs shall be delivered in Excel format; and,
 - Drawings will be in an AutoCAD 2018 or higher format and pdf format.

All documents will be the property of the Regional District.

15.0 FACILITY OPERATING HOURS

The successful Proponent will conduct all activities during site operating hours where applicable. For closed sites, all activities will be carried out between dawn and dusk.

16.0 REGIONAL DISTRICT PROJECT MANAGER

All questions concerning RFP ES-24-01 – Environmental Monitoring Services – Regional Landfills, are to be directed to the Project Manager.

Darwin Paton, Environmental Services Technologist
Regional District of Fraser-Fort George
Telephone: 250-960-4400
Email: dpaton@rdffg.bc.ca

17.0 TIME SCHEDULE

The anticipated schedule for the service procurement process is as follows:

Issue RFP	Wednesday, January 10, 2024
Conflict of Interest Disclosure Statement- Advance Decision Request	Tuesday, February 6, 2024
Requests for Clarification Deadline	Tuesday, February 6, 2024
Proposal Closing Time	Thursday, February 21, 2024
Selection of Proponent	Thursday, March 21, 2024



APPENDICES

Appendix “A” – Acknowledgement Letter

Appendix “B” – Conflict of Interest Disclosure Statement

Appendix “C” – Goods and Services Tax Information

Appendix “D” – List of Subcontractors

Appendix “E” – Figures

- Figure 1 - Foothills Blvd Regional Landfill Site Location Map
- Figure 2 - Foothills Blvd Regional Landfill Groundwater Well Location Map
- Figure 3 - Mackenzie Regional Landfill Site Location Map
- Figure 4 - Mackenzie Regional Landfill Groundwater Well Location Map
- Figure 5 - Legrand Demolition and Construction Waste Landfill Site Location Map
- Figure 6 - Legrand Demolition and Construction Waste Landfill Groundwater Well Location Map
- Figure 7 - West Lake Regional Landfill Site Location Map
- Figure 8 - West Lake Regional Landfill Groundwater Well Location Map
- Figure 9 - Valemount Regional Landfill and Transfer Station Site Location Map
- Figure 10 - Valemount Regional Landfill and Transfer Station Groundwater Well Location Map

Appendix “F” – Tables

- Table 1 - Foothills Boulevard Regional Landfill Annual and Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
- Table 2 - Foothills Boulevard Regional Landfill Semi-Annual Groundwater Well/Surface Water/ Leachate Monitoring Program Parameters
- Table 3 - Mackenzie Regional Landfill Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
- Table 4 - Mackenzie Regional Landfill Groundwater Monitoring Program - Parameters
- Table 5 - Legrand Demolition and Construction Waste Landfill Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
- Table 6 - Legrand Demolition and Construction Waste Landfill Groundwater Well Monitoring Program - Parameters
- Table 7 - West Lake Regional Landfill (closed) Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
- Table 8 - West Lake Regional Landfill (closed) Groundwater Well Monitoring Program - Parameters
- Table 9 - Valemount Regional Landfill (closed) Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
- Table 10 - Valemount Regional Landfill (closed) Groundwater Well Monitoring Program - Parameters

Appendix “G” – Approximate Water Levels



**Appendix "A"
ACKNOWLEDGEMENT LETTER**

The undersigned has received the full set of Request for Proposal Documents.

Signature

Company

Name (please print)

Address

Title

City

Phone Number

Email

Date

We presently intend to _____ provide/ _____ not provide a Tender as requested.

Return immediately to:

Darwin Paton, Environmental Services Technology
Regional District of Fraser-Fort George
155 George Street
Prince George BC V2L 1P8

dpaton@rdffg.bc.ca



**Appendix “B”
CONFLICT OF INTEREST DISCLOSURE STATEMENT**

RFP ES-24-01
Environmental Monitoring Services – Regional Landfills

Proponent Name: _____

The Proponent, including its officers, employees, and any person or other entity working on behalf of or in conjunction with (including Subcontractors), the Proponent on this procurement process:

- is free of any conflict of interest that could be perceived to improperly influence the outcome of this procurement process.
- has not, and will not, participate in any improper procurement practices that can provide the Proponent with an unfair competitive advantage including obtaining and using insider type information to prepare a solicitation offer or participating in bid rigging.
- has an actual, perceived or potential conflict of interest regarding this procurement process as a result of:

State reason(s) for conflict of interest:

If an actual, perceived or potential conflict of interest regarding this procurement process has been identified, the Proponent must submit this document to the Project Manager by Tuesday, February 6, 2024. By signing below, I certify that all statements made on this form are true and correct to the best of my knowledge.

Print Name of Person Signing Disclosure

Authorized Representative of:

Signature of Person Making Disclosure

Date Signed



**Appendix "C"
GOODS AND SERVICES TAX INFORMATION**

Supplier:

Name

Address

City Province

Postal Code Phone Number

Are you a GST Registrant? Yes _____ No _____

If YES, please indicate your registration number: _____

If NO, Please fill in the following (check appropriate box):

Supplier qualifies as a small supplier under s.148 of the legislation

Other: Specify _____

Signature of Authorized Person

Print Name

Title

Date



Appendix “D”
LIST OF SUBCONTRACTORS

The Proponent advises that they will be subcontracting the following parts of the work to the Subcontractor(s) listed below. In the Proponent’s opinion, the Subcontractor(s) named are reliable and competent to perform that part of the work for which each is listed. Please indicate “not applicable” on this page if Subcontractors are not required and include it with your Proposal. Following acceptance of the Proposal, the Subcontractors named in the List of Subcontractors must not be changed nor will additional Subcontractors be employed except with the written approval of the Regional District.

Subcontractor’s Legal Name	Work to be Performed by Subcontractor

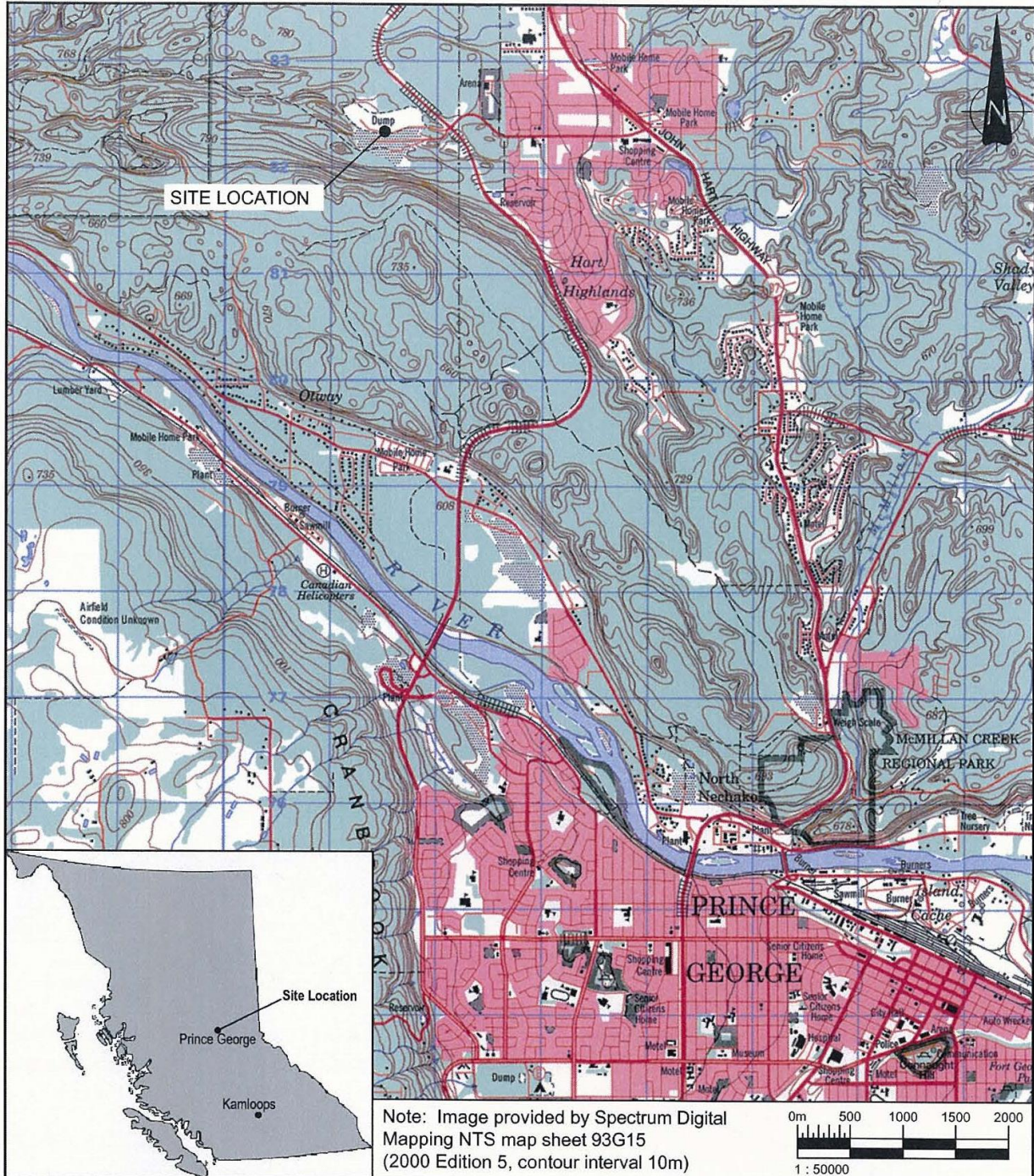


Appendix “E” FIGURES

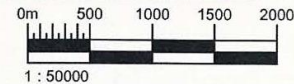
- Figure 1 - Foothills Blvd Regional Landfill Site Location Map
- Figure 2 - Foothills Blvd Regional Landfill Groundwater Well Location Map
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- Figure 4 - Mackenzie Regional Landfill Groundwater Well Location Map
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Figure 1
Foothills Boulevard Regional Landfill Site Location Map



Note: Image provided by Spectrum Digital Mapping NTS map sheet 93G15 (2000 Edition 5, contour interval 10m)

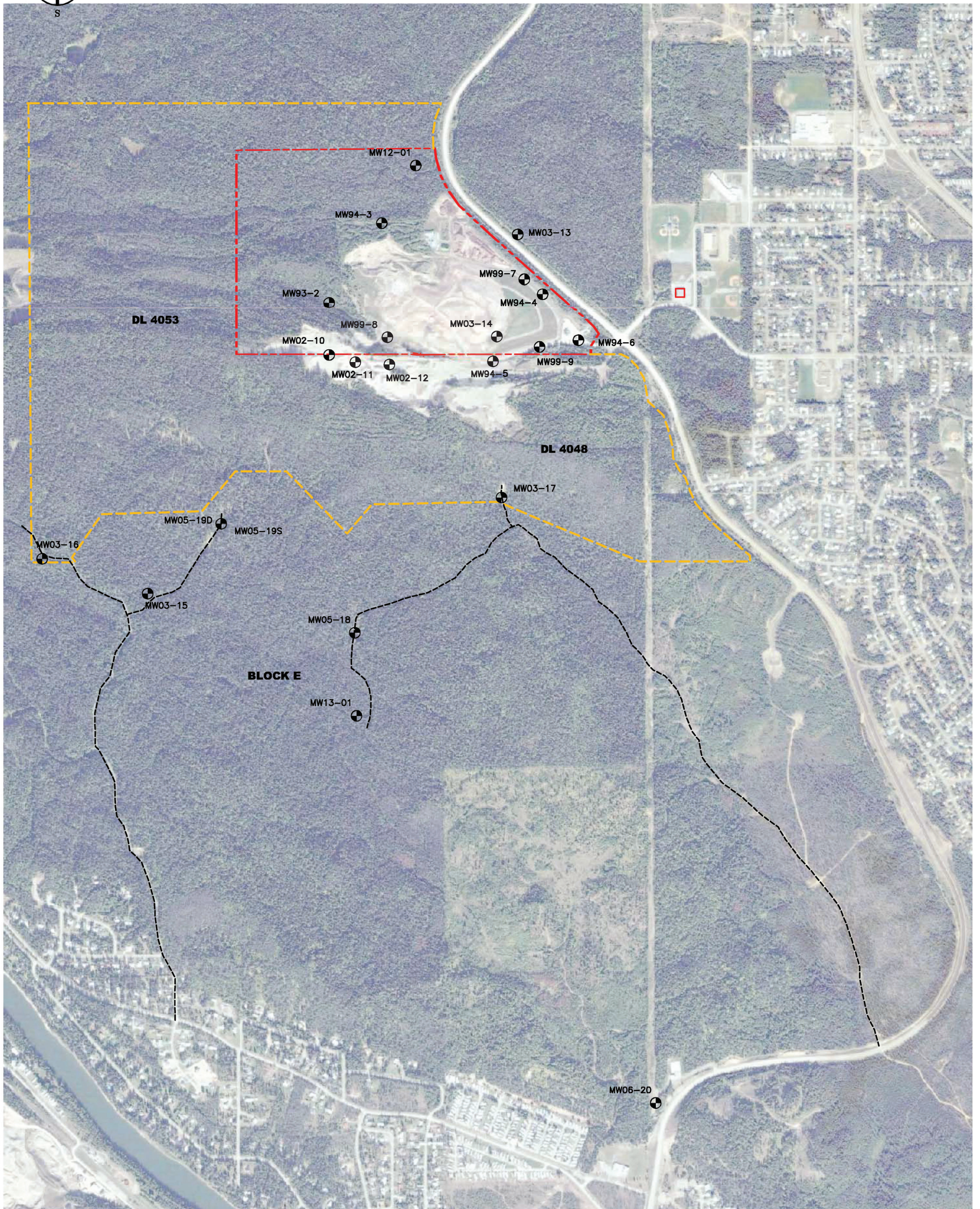
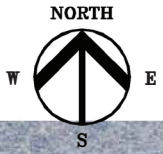


		CLIENT					
TITLE	SITE LOCATION PLAN	DWN BY:	S.Ruiz	DATUM:	NAD83	DATE:	APRIL 2010
PROJECT	FOOTHILLS BLVD. REGIONAL LANDFILL PRINCE GEORGE, BC	CHK'D BY:	K.Fairweather	REV. NO.:	A	PROJECT NO.:	KX05103
		PROJECTION:	UTM Zone 10	SCALE:	1:50 000	FIGURE No.	FIGURE 1

S:\Internal\KX05103-RDFFG-Foothills-GW09-CAD\KX05103-fig1-NTS.dwg - FIGURE1 - Apr. 20, 2010 12:26pm - shelley.ruiz



Figure 2
Foothills Boulevard Regional Landfill Groundwater Well Location Map



LEGEND 0 250 500 750 METRES

- - - - - LANDFILL BOUNDARY
- - - - - AREA OF INTEREST
- MONITORING WELL
- - - - - ACCESS ROAD

REFERENCE DRAWINGS

DWG. NO.	DATE	DESCRIPTION
REVISIONS		



CLIENT NAME: REGIONAL DISTRICT OF FRASER-FORT GEORGE
 PROJECT LOCATION: FOOTHILLS BOULEVARD REGIONAL LANDFILL, PRINCE GEORGE, BC

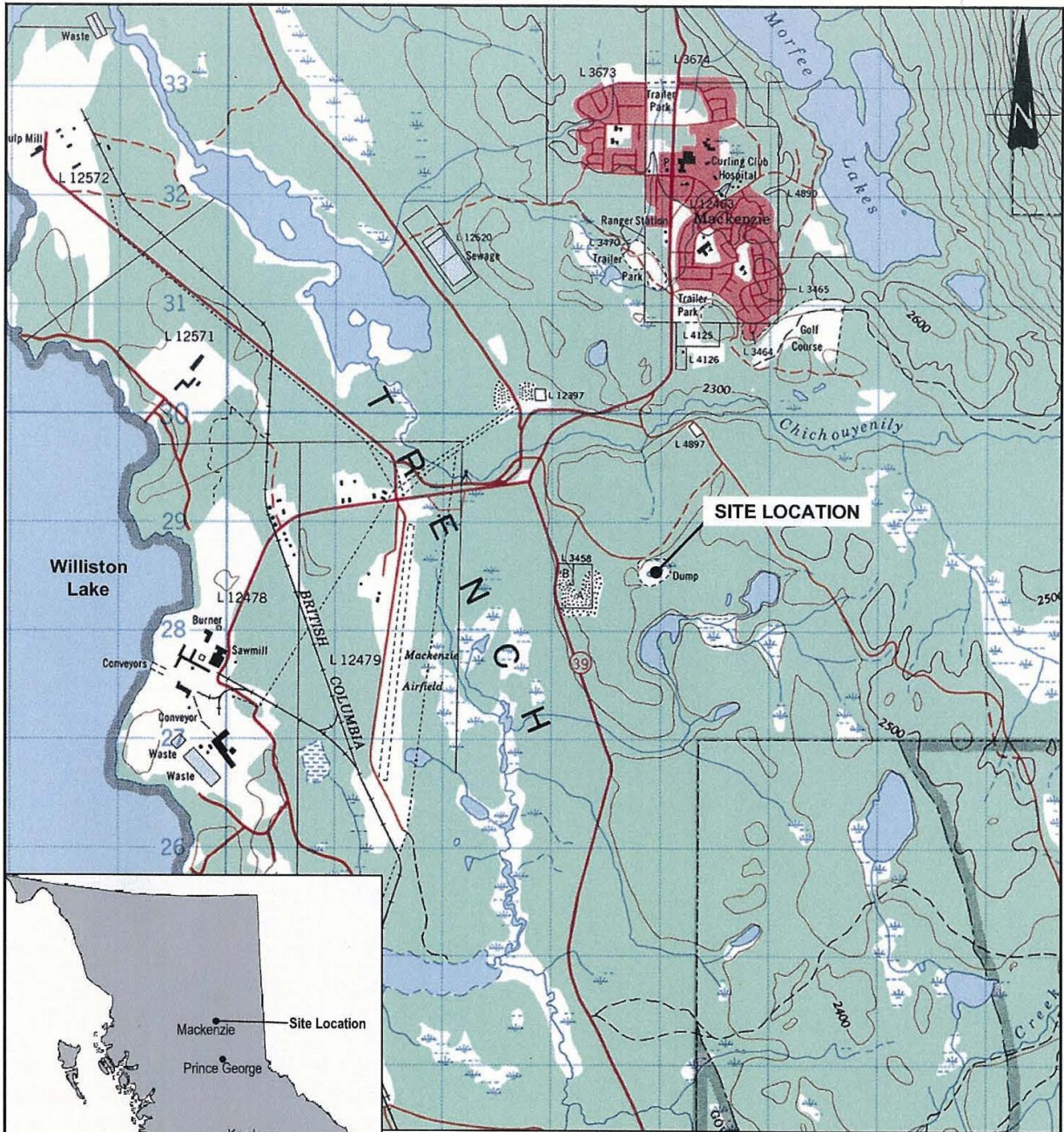
SITE PLAN

ORIGINAL DRAWING IN COLOUR.

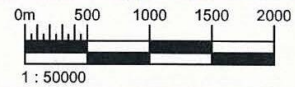
REV. 4	DATE 2017-03-30	DESCRIPTION ISSUED TO CLIENT	BY AJK	CHK BH	DWN BY: AJK	SCALE: 1:15000	DATE: 2011-09-15	DWG No: REV.: 4



**Figure 3
Mackenzie Regional Landfill Site Location Map**



Note: Image provided by Spectrum Digital
Mapping NTS map sheet 9306
(1981 Edition 2, contour interval 100')



		CLIENT			
TITLE		DWN BY:		DATE:	
SITE LOCATION PLAN		S.Ruiz		MARCH 2010	
PROJECT		CHK'D BY:		REV. NO.:	
MACKENZIE REGIONAL LANDFILL, MACKENZIE, BC		K.Fairweather		A	
		PROJECTION:		SCALE:	
		UTM Zone 10		1:50 000	
				PROJECT NO:	
				KX05106	
				FIGURE 3	

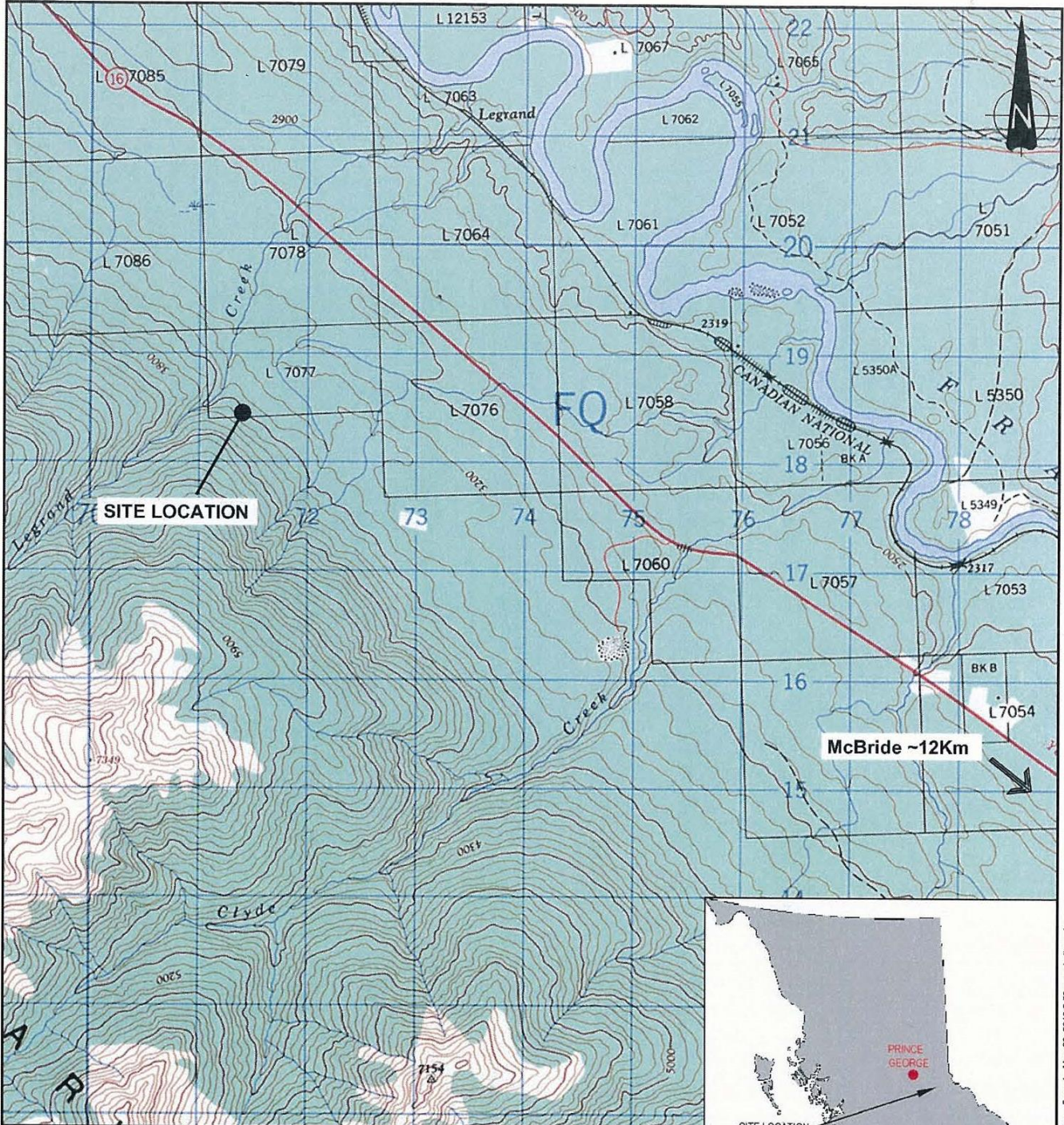
S:\internal\KX05106-RDFTG-Mackenzie-GW09-CAD\KX05106-fig1-NTS.dwg - figure1 - Mar. 30, 2010 8:14am - ahellay.nuz



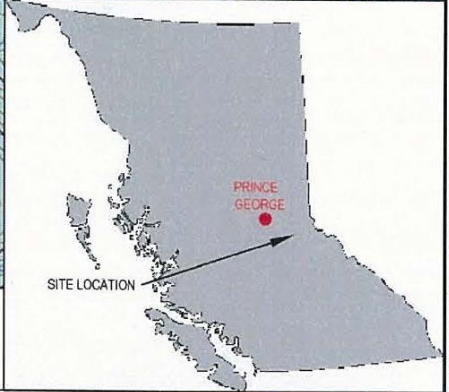
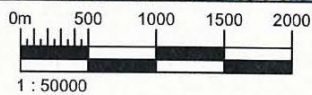
Figure 4
Mackenzie Regional Landfill Groundwater Well Location Map




**Figure 5
Legrand Demolition and Construction Waste Landfill Site Location Map**



Note: Image provided by Spectrum Digital Mapping NTS map sheet 93H8 (1975 Edition 2, contour interval 100')



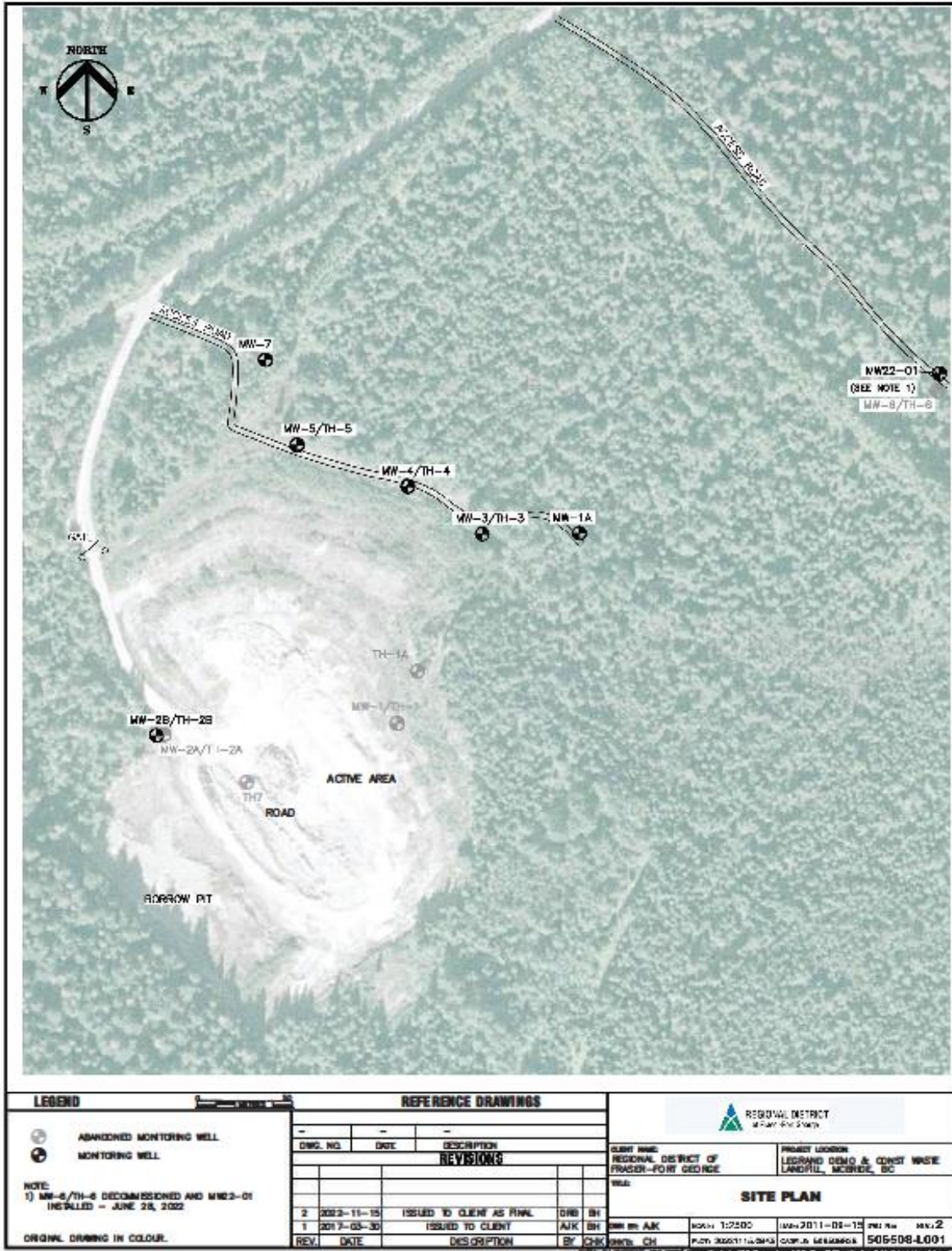
		CLIENT		
				
TITLE		DWN BY:	DATUM:	DATE:
SITE LOCATION PLAN		S. Ruiz	NAD27	MARCH 2010
PROJECT		CHK'D BY:	REV. NO.:	PROJECT NO.:
LEGRAND LANDFILL, MCBRIDE, BC		K. Fairweather	A	KX05104
		PROJECTION:	SCALE:	FIGURE No.:
		UTM Zone 10	1:50 000	FIGURE 5

S:\internal\KX05104-RDFC-Legrand-GW09-CAD\KX05104-fig-1-NTS.dwg - figure1 - Mar. 29, 2010 2:53pm - ehaley.nrz

This drawing was originally produced in colour.

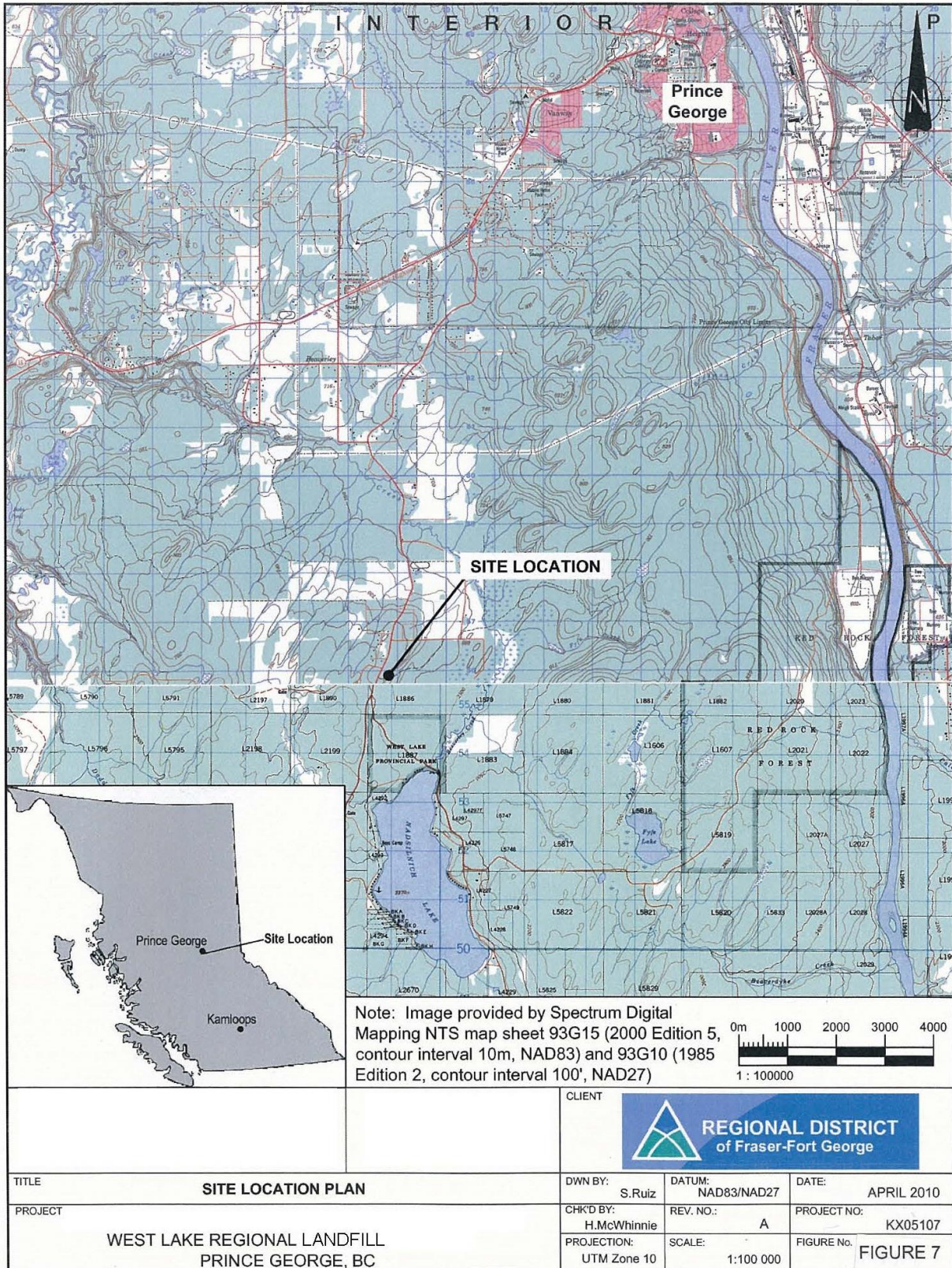


**Figure 6
Legrand Demolition and Construction Waste Landfill Groundwater
Well Location Map**



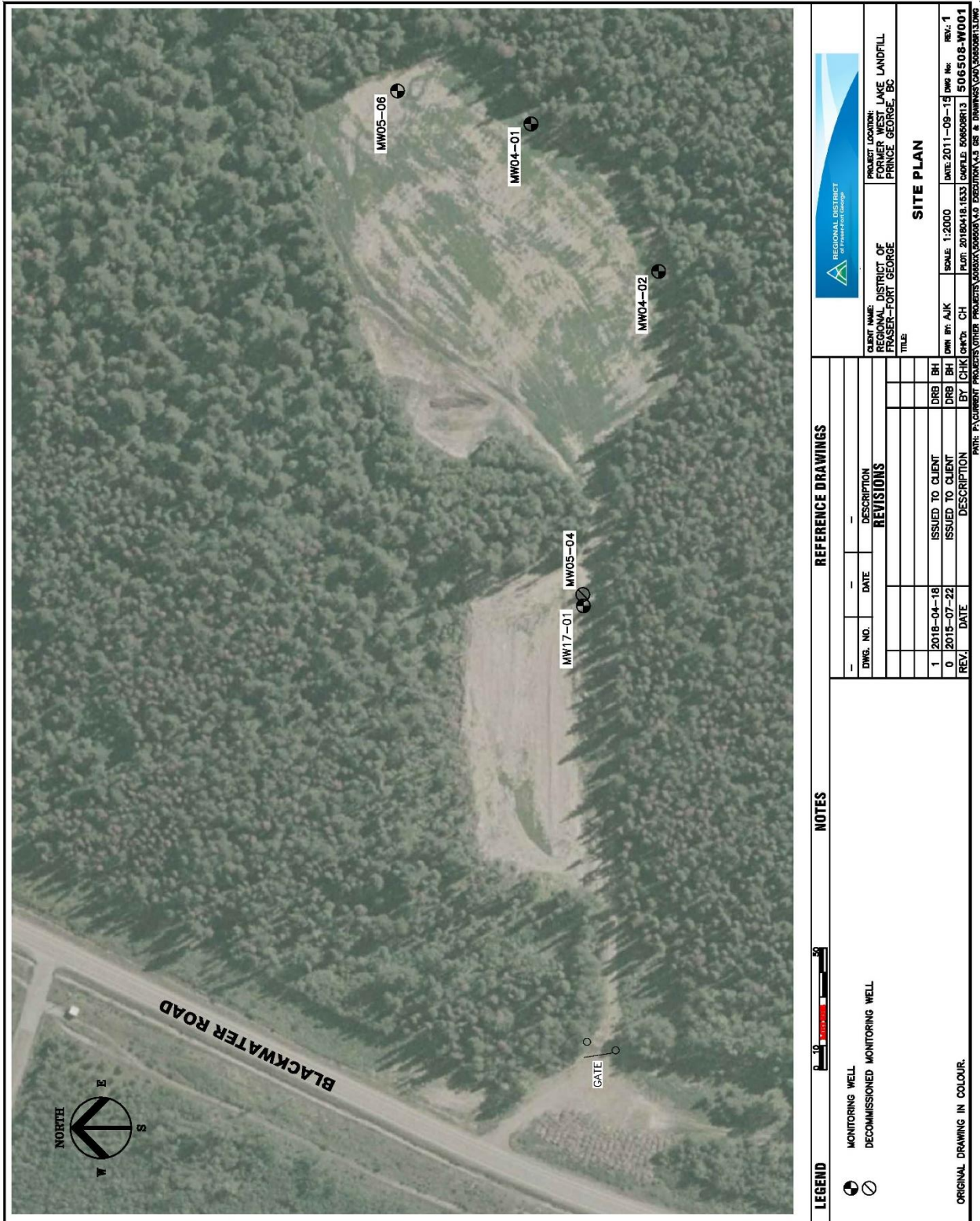


**Figure 7
West Lake Regional Landfill Site Location Map**



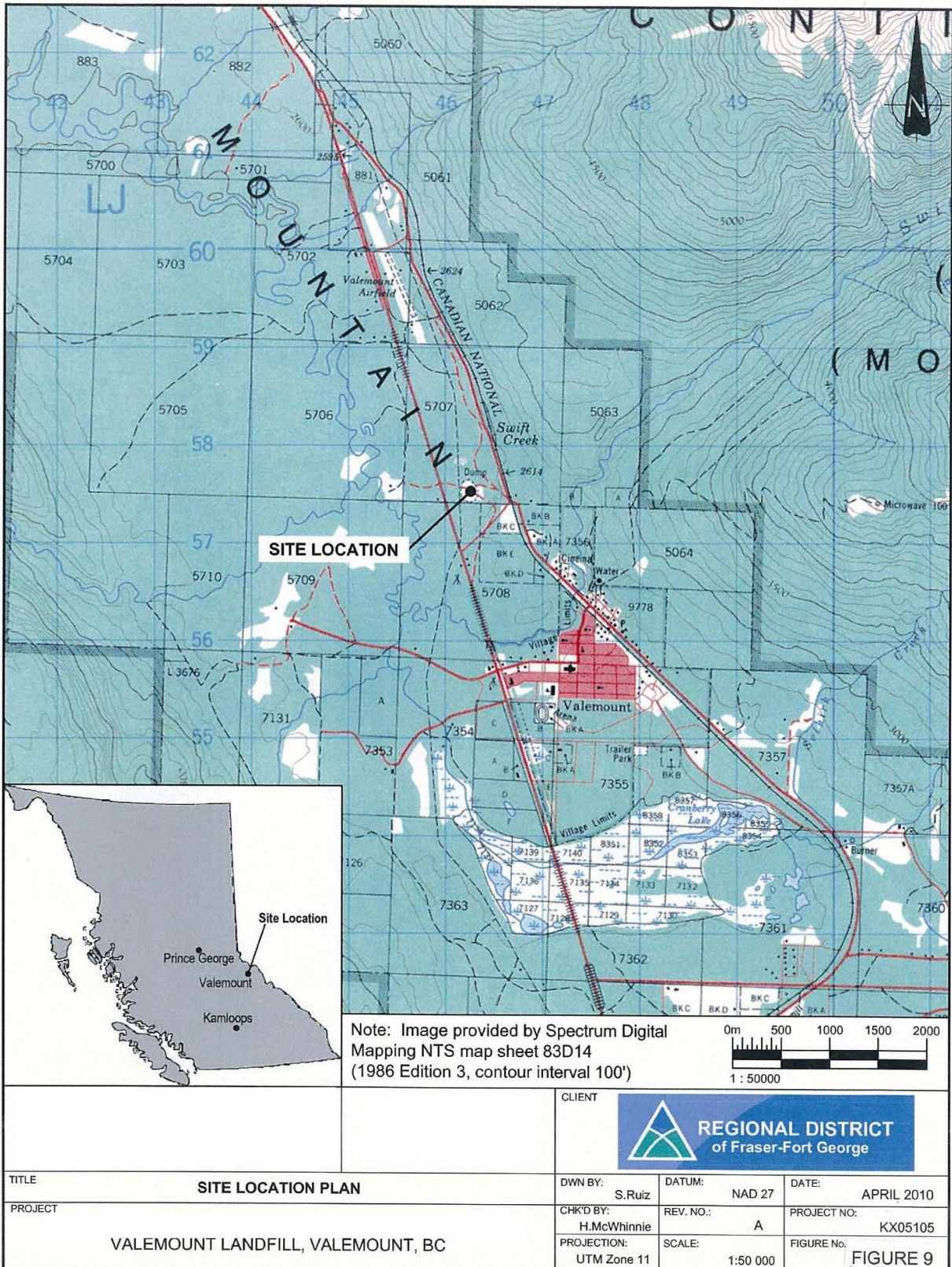


**Figure 8
West Lake Regional Landfill Groundwater Well Location Map**



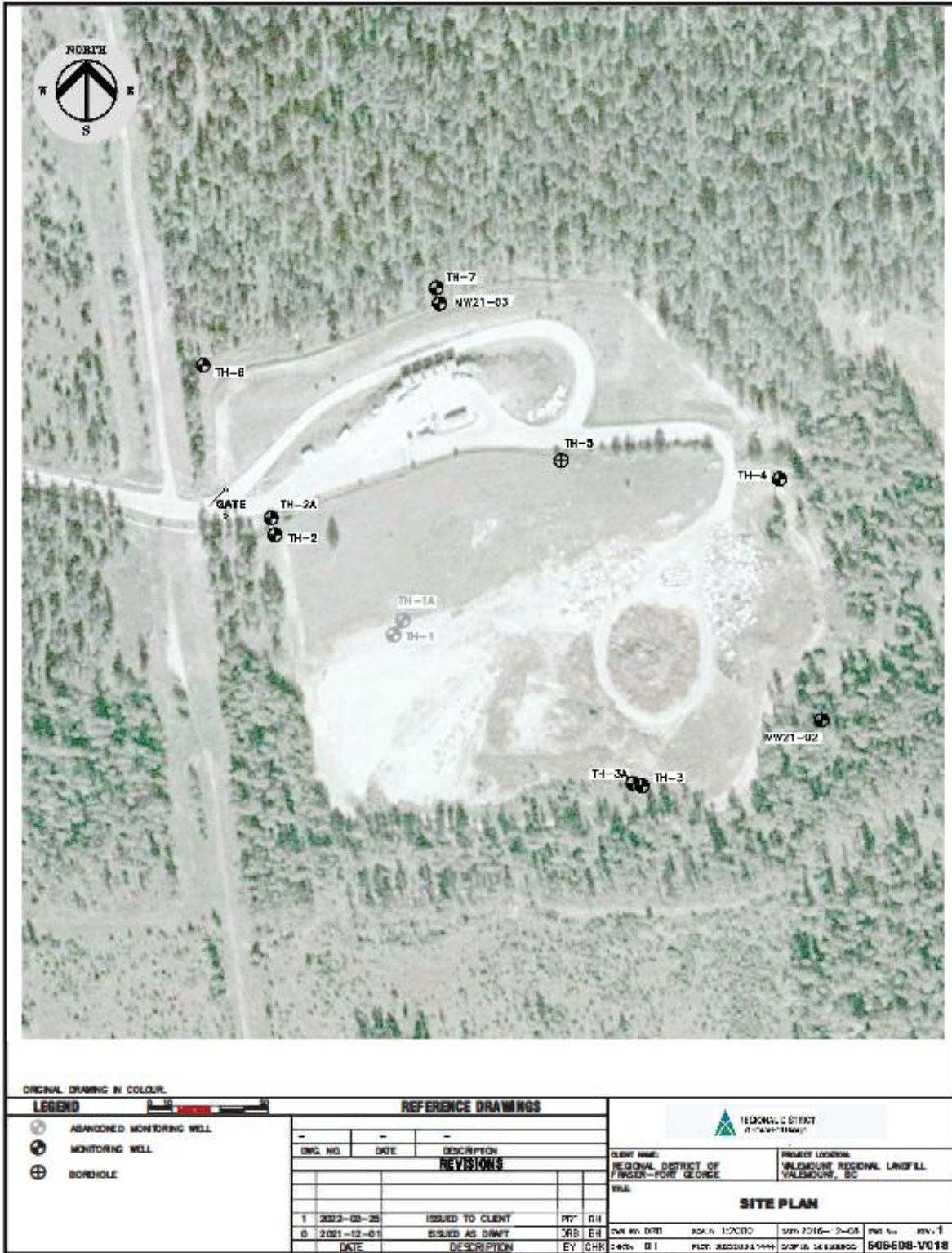


**Figure 9
Valemount Regional Landfill and Transfer Station Site Location Map**





**Figure 10
Valemount Regional Landfill and Transfer Station Groundwater
Well Location Map**





**Appendix “F”
TABLES**

Table 1	- Foothills Boulevard Regional Landfill Annual and Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
Table 2	- Foothills Boulevard Regional Landfill Semi-Annual Groundwater Well/Surface Water/Leachate Monitoring Program Parameters
Table 3	- Mackenzie Regional Landfill Semi-Annual Groundwater Wells Monitoring Program – Description and Sampling Frequency
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Table 8	- West Lake Regional Landfill (closed) Groundwater Well Monitoring Program - Parameters
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Table 10	- Valemount Regional Landfill (closed) Groundwater Well Monitoring Program - Parameters



Table 1
Foothills Boulevard Regional Landfill
Annual and Semi-Annual Groundwater Wells Monitoring Program-
Description and Sampling Frequency

Monitoring Location	Monitoring Well	Description	Sampling Frequency
Foothills Landfill	MW88-1	Decommissioned	N/A
Foothills Landfill	MW93-2	Sentry Well (deep)	Annual
Foothills Landfill	MW94-3	Sentry Well (deep)	Annual
Foothills Landfill	MW94-4	Down gradient (deep)	Semi-annual
Foothills Landfill	MW94-5	Down gradient (deep)	Semi-annual
Foothills Landfill	MW94-6	Down gradient (deep)	Semi-annual
Foothills Landfill	MW99-7	Down gradient (deep)	Semi-annual
Foothills Landfill	MW99-8	Down gradient (deep)	Semi-annual
Foothills Landfill	MW99-9	Down gradient (deep)	Semi-annual
Foothills Landfill	MW02-10	Down gradient (deep)	Semi-annual
Foothills Landfill	MW02-11	Down gradient (deep)	Semi-annual
Foothills Landfill	MW02-12	Down gradient (deep)	Semi-annual
Foothills Landfill	BH03-1	Decommissioned	N/A
Foothills Landfill	MW03-13	Background (deep)	Semi-annual
Foothills Landfill	MW03-14	Down gradient (deep)	Semi-annual
Foothills Landfill	BH03-14A	Decommissioned	N/A
Foothills Landfill	MW03-15	Down gradient (deep)	Semi-annual
Foothills Landfill	MW03-16	Down gradient (deep)	Semi-annual
Foothills Landfill	MW03-17	Down gradient (shallow)	Semi-annual
Foothills Landfill	MW05-18	Down gradient (deep)	Semi-annual
Foothills Landfill	MW-0519s	Down gradient (deep)	Semi-annual
Foothills Landfill	MW05-19d	Down gradient (deep)	Semi-annual
Foothills Landfill	MW06-20	Down gradient (deep)	Semi-annual
Foothills Landfill	MW12-01	Background (deep)	Semi-annual
Foothills Landfill	MW13-01	Down gradient (deep)	Semi-annual
Foothills Landfill	Leachate Characterization	Closed on-site system	Semi-annual

Note: Deep refers to all wells greater than 15 meters in depth.

Note: Annual refers to 'Fall' (September to November)

Semi-Annual refers to 'Spring' (March to May) and 'Fall' (September to November)



Table 2
Foothills Boulevard Regional Landfill
Semi-Annual Groundwater Well/Surface Water/ Leachate Monitoring Program-
Parameters

	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Field Observations			
Conductivity	X	X	X
Dissolved Oxygen	X	X	X
Oxygen Reduction Potential (ORP pH (Field))	X	X	X
Temperature	X	X	X
Odor	X	X	X
Water Elevation	X	X	X
pH (field)	X	X	X
General Chemistry			
Alkalinity (Total) CaCO ₃	X	X	X
Biochemical Oxygen Demand (BOD)	X	X	X
Chemical Oxygen Demand (COD)	X	X	X
Chloride	X	X	X
Conductivity (lab)	X	X	X
Cyanide (WAD)	X	X	X
Fluoride (Dissolved)	X	X	X
Manganese (Total)	X	X	X
Bicarbonate HCO ₃	X	X	X
Bromide	X	X	X
Carbonate CO ₃	X	X	X
Hydroxide	X	X	X
Ion Balance %	X	X	X
Calcium	X	X	X
Hardness	X	X	X
Oil and Grease (Total)			X
pH (lab) @25c	X	X	X
Phenols (Total)	X	X	X
Sulfate	X	X	X
Total Dissolved Solids (TDS)	X	X	X
Total Organic Carbon (TOC)	X	X	X
Total Suspended Solids (TSS)	X	X	X
Nutrients			
Ammonia-n	X	X	X
Nitrate (as N)	X	X	X
Nitrite (as N)	X	X	X
Orthophosphate	X	X	X
Total Kjeldahl Nitrogen (N)	X	X	X



	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Metals			
Dissolved	X	X	X
Total			
Aluminum	X	X	X
Antimony	X	X	X
Arsenic	X	X	X
Barium	X	X	X
Beryllium	X	X	X
Bismuth	X	X	X
Boron	X	X	X
Cadmium	X	X	X
Calcium	X	X	X
Chromium Total	X	X	X
Cobalt	X	X	X
Copper	X	X	X
Iron	X	X	X
Lead	X	X	X
Lithium	X	X	X
Magnesium	X	X	X
Manganese	X	X	X
Mercury	X	X	X
Molybdenum	X	X	X
Nickel	X	X	X
Phosphorus	X	X	X
Potassium	X	X	X
Selenium	X	X	X
Silicon	X	X	X
Silver	X	X	X
Sodium	X	X	X
Strontium	X	X	X
Sulphur	X	X	X
Tellurium	X	X	X
Thallium	X	X	X
Thorium	X	X	X
Tin	X	X	X
Titanium	X	X	X
Uranium	X	X	X
Vanadium	X	X	X
Zinc	X	X	X
QA/QC	X	X	X
Anion/Cation Radio	X	X	X
VOC's	Spring		Spring
PAH's	Spring	Spring	Spring
Hydrocarbons (BTEX)			
Benzene			X
Ethyl benzene			X
MTBE			X
Styrene			X
Toluene			X
Xylenes			X



Table 3
Mackenzie Regional Landfill
Semi-Annual Groundwater Monitoring Program-
Description and Sampling Frequency

Monitoring Location	Monitoring Well	Description	Sampling Frequency
Mackenzie Landfill	TH1	Dry (destroyed)	N/A
Mackenzie Landfill	TH2	Down gradient (deep)	Semi-annual
Mackenzie Landfill	TH3	Down gradient (deep)	Semi-annual
Mackenzie Landfill	TH4	Down gradient (shallow)	Semi-annual
Mackenzie Landfill	TH5	Down gradient (deep)	Semi-annual
Mackenzie Landfill	TH6	Up gradient (deep)	Semi-annual

Note: Deep refers to all wells greater than 15 meters in depth.

Note: Semi-Annual refers to 'Spring' (March to May) and 'Fall' (September to November)



**Table 4
Mackenzie Regional Landfill Groundwater Monitoring Program-
Parameters**

	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Field Observations			
Conductivity	X		
Dissolved Oxygen	X		
Oxygen Reduction Potential (ORP pH (Field))	X		
Temperature	X		
Odor	X		
Water Elevation	X		
pH (Field)	X		
General Chemistry			
Alkalinity (Total)CaCO3	X		
Biochemical Oxygen Demand (BOD)	X		
Chemical Oxygen Demand (COD)	X		
Chloride	X		
Conductivity (lab)	X		
Cyanide (WAD)	X		
Fluoride (Dissolved)	X		
Manganese (Total)	X		
Bicarbonate HCO3	X		
Carbonate CO3	X		
Bromide	X		
Hydroxide (CaCO3)	X		
Calcium (Total)	X		
Hardness (CaCO3)	X		
Magnesium (Total)	X		
pH (lab) @25c	X		
Phenols (Total)	X		
Sulfate	X		
Total Dissolved Solids (TDS)	X		
Total Organic Carbon (TOC)	X		
Total Suspended Solids (TSS)	X		
Sulfide (as H2S)	X		
Potassium (Total)	X		
Sodium (Total)	X		
Iron (Total)	X		
Nutrients			
Ammonia-n	X		
Nitrate (as N)	X		
Nitrite (as N)	X		
Orthophosphate	X		
Total Kjeldahl Nitrogen (N)	X		



	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Metals			
Dissolved	X		
Total	X		
Aluminum	X		
Antimony	X		
Arsenic	X		
Barium	X		
Beryllium	X		
Bismuth	X		
Boron	X		
Cadmium	X		
Calcium	X		
Chromium Total	X		
Cobalt	X		
Copper	X		
Iron	X		
Lead	X		
Lithium	X		
Magnesium	X		
Mercury	X		
Molybdenum	X		
Nickel	X		
Phosphorus	X		
Potassium	X		
Selenium	X		
Silicon	X		
Silver	X		
Sodium	X		
Strontium	X		
Sulphur	X		
Tellurium	X		
Thallium	X		
Thorium	X		
Tin	X		
Vanadium	X		
Zinc	X		
Titanium	X		
Uranium	X		
Manganese	X		
QA/QC	X		
Anion/Cation Ratio	X		
VOC's			
PAH's			



Table 5
Legrand Demolition and Construction Waste Landfill
Semi-Annual Groundwater Well Monitoring Program-
Description and Sampling Frequency

Monitoring Location	Monitoring Well	Description	Sampling Frequency
Legrand Landfill	MW-1A	Down gradient (shallow)	Semi-annual
Legrand Landfill	TH-2A/MW-2A	Decommissioned	N/A
Legrand Landfill	TH-2B/MW -2B	Background (shallow)	Semi-annual
Legrand Landfill	TH-3/MW-3	Down gradient (shallow)	Semi-annual
Legrand Landfill	TH-4/MW-4	Down gradient (shallow)	Semi-annual
Legrand Landfill	TH-5/MW-5	Down gradient (shallow)	Semi-annual
Legrand Landfill	TH-6/MW-6	Decommissioned	Semi-annual
Legrand Landfill	MW-7	Down gradient (shallow)	Semi-annual
Legrand Landfill	MW22-01	Down gradient (shallow)	Semi-annual

Note: Deep refers to all wells greater than 15 meters in depth.

Note: Semi-Annual refers to 'Spring' (March to May) and 'Fall' (September to November)



**Table 6
Legrand Demolition and Construction Waste Landfill
Groundwater Well Monitoring Program-
Parameters**

	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Field Observations			
Conductivity	X		
Dissolved Oxygen	X		
Oxygen Reduction Potential (ORP pH (Field))	X		
Temperature	X		
Odor	X		
Water Elevation	X		
pH (Field)	X		
General Chemistry			
Alkalinity (Total)CaCO3	X		
Biochemical Oxygen Demand (BOD)	X		
Chemical Oxygen Demand (COD)	X		
Chloride	X		
Conductivity (lab)	X		
Cyanide (WAD)	X		
Fluoride (Dissolved)	X		
Manganese (Total)	X		
Bicarbonate HCO3	X		
Bromide	X		
Carbonate CO3	X		
Hydroxide (CaCO3)	X		
Calcium (Total)	X		
Hardness (CaCO3)	X		
Magnesium (Total)	X		
pH (lab) @25c	X		
Phenols (Total)	X		
Sulfate	X		
Total Dissolved Solids (TDS)	X		
Total Organic Carbon (TOC)	X		
Total Suspended Solids (TSS)	X		
Sulfide (as H2S)	X		
Potassium (Total)	X		
Sodium (Total)	X		
Iron (Total)	X		
Nutrients			
Ammonia-n	X		
Nitrate (as N)	X		
Nitrite (as N)	X		
Orthophosphate	X		
TKN	X		



	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Metals			
Dissolved	X		
Total	X		
Aluminum	X		
Antimony	X		
Arsenic	X		
Barium	X		
Beryllium	X		
Bismuth	X		
Boron	X		
Cadmium	X		
Calcium	X		
Chromium Total	X		
Cobalt	X		
Copper	X		
Iron	X		
Lead	X		
Lithium	X		
Magnesium	X		
Mercury	X		
Molybdenum	X		
Nickel	X		
Phosphorus	X		
Potassium	X		
Selenium	X		
Silicon	X		
Silver	X		
Sodium	X		
Strontium	X		
Sulphur	X		
Tellurium	X		
Thallium	X		
Thorium	X		
Tin	X		
Vanadium	X		
Zinc	X		
Titanium	X		
Uranium	X		
Manganese	X		
QA/QC	X		
Anion/Cation Ratio	X		
VOC's			
PAH's			



Table 7
West Lake Regional Landfill (closed)
Semi-Annual Groundwater Well Monitoring Program-
Description and Sampling Frequency

Monitoring Location	Monitoring Well	Description	Sampling Frequency
West Lake Landfill	MW04-01	Down gradient (deep)	Semi-annual
West Lake Landfill	MW04-02	Down gradient (deep)	Semi-annual
West Lake Landfill	MW05-04	Decommissioned	N/A
West Lake Landfill	MW05-06	Down gradient (deep)	Semi-annual
West Lake Landfill	MW17-01	Background (deep)	Semi-annual

Note: Deep refers to all wells greater than 15 meters in depth.

Note: Semi-Annual refers to 'Spring' (March to May) and 'Fall' (September to November).



Table 8
West Lake Regional Landfill (closed)
Groundwater Well Monitoring Program-
Parameters

	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Field Observations			
Conductivity	X		
Dissolved Oxygen	X		
Oxygen Reduction Potential (ORP pH (Field))	X		
Temperature	X		
Odor	X		
Water Elevation	X		
pH (Field)	X		
General Chemistry			
Alkalinity (Total)CaCO3	X		
Biochemical Oxygen Demand (BOD)	X		
Chemical Oxygen Demand (COD)	X		
Chloride	X		
Conductivity (lab)	X		
Cyanide (WAD)	X		
Flouride (Dissolved)	X		
Manganese (Total)	X		
Bicarbonate HCO3	X		
Bromide	X		
Carbonate CO3	X		
Hydroxide (CaCO3)	X		
Calcium (Total)	X		
Hardness (CaCO3)	X		
Magnesium (Total)	X		
pH (lab) @25c	X		
Phenols (Total)	X		
Sulfate	X		
Total Dissolved Solids (TDS)	X		
Total Organic Carbon (TOC)	X		
Total Suspended Solids (TSS)	X		
Sulfide (as H2S)	X		
Potassium (Total)	X		
Sodium (Total)	X		
Iron (Total)	X		
Nutrients			
Ammonia-n	X		
Nitrate (as N)	X		
Nitrite (as N)	X		
Orthophosphate	X		
Total Kjeldahl Nitrogen (N)	X		



	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Metals			
Dissolved	X		
Total	X		
Aluminum	X		
Antimony	X		
Arsenic	X		
Barium	X		
Beryllium	X		
Bismuth	X		
Boron	X		
Cadmium	X		
Calcium	X		
Chromium Total	X		
Cobalt	X		
Copper	X		
Iron	X		
Lead	X		
Lithium	X		
Magnesium	X		
Mercury	X		
Molybdenum	X		
Nickel	X		
Phosphorus	X		
Potassium	X		
Selenium	X		
Silicon	X		
Silver	X		
Sodium	X		
Strontium	X		
Sulphur	X		
Tellurium	X		
Thallium	X		
Thorium	X		
Tin	X		
Vanadium	X		
Zinc	X		
Titanium	X		
Uranium	X		
Manganese	X		
QA/QC	X		
Anion/Cation Radio	X		
VOC's			
PAH's			



Table 9
Valemount Regional Landfill (closed)
Semi-Annual Groundwater Well Monitoring Program-
Description and Sampling Frequency

Monitoring Location	Monitoring Well	Description	Sampling Frequency
Valemount TS	TH-2	Western Boundary (shallow)	Semi-annual
Valemount TS	TH-2A	Western Boundary (deep)	Semi-annual
Valemount TS	TH-3	Southern Boundary (shallow)	Semi-annual
Valemount TS	TH-3A	Southern Boundary (deep)	Semi-annual
Valemount TS	TH-4	Eastern Boundary (shallow)	Semi-annual
Valemount TS	TH-5	Test Pit (abandoned)	N/A
Valemount TS	TH-6	North-west Boundary (deep)	Semi-annual
Valemount TS	TH-7	North boundary (deep)	Semi-annual
Valemount TS	MW21-02	Southeast boundary (deep)	Semi-annual
Valemount TS	MW21-03	North boundary (deep)	Semi-annual

Note: Deep refers to all wells greater than 15 meters in depth.

Note: Semi-Annual refers to 'Spring' (March to May) and 'Fall' (September to November).



**Table 10
Valemount Regional Landfill (closed)
Groundwater Well Monitoring Program-
Parameters**

	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Field Observations			
Conductivity	X		
Dissolved Oxygen	X		
Oxygen Reduction Potential (ORP pH (Field))	X		
Temperature	X		
Odor	X		
Water Elevation	X		
pH (Field)	X		
General Chemistry			
Alkalinity (Total)CaCO3	X		
Biochemical Oxygen Demand (BOD)	X		
Chemical Oxygen Demand (COD)	X		
Chloride	X		
Conductivity (lab)	X		
Cyanide (WAD)	X		
Flouride (Dissolved)	X		
Manganese (Total)	X		
Bicarbonate HCO3	X		
Bromide	X		
Carbonate CO3	X		
Hydroxide (CaCO3)	X		
Calcium (Total)	X		
Hardness (CaCO3)	X		
Magnesium (Total)	X		
pH (lab) @25c	X		
Phenols (Total)	X		
Sulfate	X		
Total Dissolved Solids (TDS)	X		
Total Organic Carbon (TOC)	X		
Total Suspended Solids (TSS)	X		
Sulfide (as H2S)	X		
Potassium (Total)	X		
Sodium (Total)	X		
Iron (Total)	X		
Nutrients			
Ammonia-n	X		
Nitrate (as N)	X		
Nitrite (as N)	X		
Orthophosphate	X		
TKN	X		



	Groundwater Monitoring Well	Surface Water	Leachate/ Condensate
Metals			
Dissolved	X		
Total	X		
Aluminum	X		
Antimony	X		
Arsenic	X		
Barium	X		
Beryllium	X		
Bismuth	X		
Boron	X		
Cadmium	X		
Calcium	X		
Chromium Total	X		
Cobalt	X		
Copper	X		
Iron	X		
Lead	X		
Lithium	X		
Magnesium	X		
Mercury	X		
Molybdenum	X		
Nickel	X		
Phosphorus	X		
Potassium	X		
Selenium	X		
Silicon	X		
Silver	X		
Sodium	X		
Strontium	X		
Sulphur	X		
Tellurium	X		
Thallium	X		
Thorium	X		
Tin	X		
Vanadium	X		
Zinc	X		
Titanium	X		
Uranium	X		
Manganese	X		
QA/QC	X		
Anion/Cation Radio	X		
VOC's			
PAH's			



Appendix “G”
WELL DEPTH AND APPROXIMATE WATER LEVELS

Approximate water levels and well depths for the deep and shallow wells at each site on the table below.

<i>Site</i>	<i>Well Type</i>	<i>Well Depth (m btor)</i>	<i>Water Level (m btor)</i>
Foothills Boulevard Regional Landfill	Deep	96 m	88 m
Mackenzie Regional Landfill	Deep	18 m	14 m
	Shallow	59 m 18 m	32 m 12 m
Closed West Lake Regional Landfill	Deep	18 m	16 m
Legrand Demolition and Construction Waste Landfill	Shallow	12 m	9 m
Valemount Regional Transfer Station	Deep	23 m	19 m
	Shallow	15 m	12 m