



**PROTOCOL FOR THE CONTAMINATED SITES REGULATION
UNDER THE ENVIRONMENT ACT**

**PROTOCOL No. 7:
Groundwater Monitoring Well Installation, Sampling and
Decommissioning**

Prepared pursuant to Part 6 – Administration, Section 21,
Contaminated Sites Regulation, OIC 2002/171

GROUNDWATER MONITORING WELL INSTALLATION, SAMPLING AND DECOMMISSIONING

1.0 Introduction

Groundwater monitoring wells are installed at known or suspected contaminated sites in order to sample groundwater for contaminant analysis, determine groundwater levels and/or determine the direction of groundwater flow. These measurements are important for site monitoring and remediation. To ensure that groundwater measurements and samples are representative of actual conditions, monitoring wells must be installed correctly and appropriate sampling procedures must be followed. Proper decommissioning of monitoring wells is required once the end of their effective life has been reached, or once they are no longer required, to prevent future contamination of the aquifer.

The following protocol is designed to ensure that appropriate and consistent standards are used for groundwater monitoring wells in the Yukon. This protocol has been adopted in accordance with Section 21(1)(b) of the *Contaminated Sites Regulation*, OIC 2002/171, which authorizes the Minister or his/her delegate to approve or adopt protocols for sampling soil, sediment, water, snow and other environmental media.

2.0 Standard for Installation of Groundwater Monitoring Wells

The following standard shall be used when installing a groundwater monitoring well: American Society of Testing and Materials (ASTM) standard **D5092-04e1 Standard Practice for Design and Installation of Ground Water Monitoring Wells**. This standard can be purchased on-line from the ASTM website www.astm.org.

3.0 Standard Sampling Practices

The following standard shall be used when obtaining samples from a groundwater monitoring well: ASTM standard **D4448-01 Standard Guide for Sampling Ground-Water Monitoring Wells**. This standard can be purchased on-line from the ASTM website www.astm.org.

The United States Environmental Protection Agency (USEPA) website also has some useful guidance documents pertaining to monitoring well sampling:

- a) **Practical Guide for Ground-water Sampling** – by Barcelona *et al.*, Illinois State Water Survey, 1985. 103pp. Available at: <https://www.orau.org/ptp/PTP%20Library/library/EPA/samplings/pracgw.pdf>
- b) **Low Stress (low flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells** – US EPA. July 1996. 13pp. Available at: <http://pubweb.epa.gov/region1/lab/qa/pdfs/EQASOP-GW001.pdf>

4.0 Well Decommissioning

Groundwater monitoring wells must be properly decommissioned once they are no longer required for monitoring purposes, or if they are damaged or compromised in any way.

The following standard shall be used when decommissioning a groundwater monitoring well: American Society of Testing and Materials (ASTM) standard **D5299-99 Standard Guide for Decommissioning of Ground Water Wells, Vadose Zone Monitoring Devices, Boreholes and Other Devices for Environmental Activities**. This standard can be purchased on-line from the ASTM website www.astm.org.

5.0 Special Considerations

If someone wishes to install or decommission a monitoring well to a different standard than that described above, they must first obtain approval from Environment Yukon's Standards & Approvals section.

Some consultants have established their own sampling protocols or may wish to use certain sampling methods that are not part of the ASTM standard. These may be used if they are equal to or better than the ASTM standard listed above, and if the relevant scientific literature regarding the change in sampling procedure or method has been submitted to and accepted by the Standards & Approvals section. Additionally, such deviations from the ASTM standard must be documented in reports produced for the site.

6.0 Failure to Comply

When a monitoring well installed or decommissioned after the effective date of this protocol fails to meet the requirements described herein, the Standards & Approvals section may reject any data derived from that well.

When groundwater sampling conducted after the effective date of this protocol fails to meet the requirements described herein, the Standards & Approvals section may reject those sample results.

7.0 Effective Date

The effective date of this protocol shall be **March 1, 2011**, and it shall remain in effect until replaced or rescinded by the Standards & Approvals section.

8.0 Additional Information

For more information on installation and sampling of groundwater monitoring wells, please contact:

Standards & Approvals Environmental Programs Branch (V-8) Environment Yukon Box 2703, Whitehorse, YT Y1A 2C6	T: 867-667-5683 or 1-800-661-0408 ext. 5683 F: 867-393-6205 E: envprot@gov.yk.ca
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Approved: _____ Date: March 1, 2011
Manager, Standards and Approvals Section
Environmental Programs Branch
Environment Yukon