CA-06.1100

PROJECT ANNEX #7 //

Between the:

GEOLOGICAL SURVEY OF CANADA of the Earth Sciences Sector, Department of Natural Resources, Canada, represented by the Groundwater Program (hereinafter referred to as the "GSC"),

and the:

U.S. GEOLOGICAL SURVEY of the Department of the Interior, United States of America (hereinafter referred to as the "USGS"),

concerning:

THE STUDY OF THE HYDRAULIC PROPERTIES OF THE SEDIMENTARY ROCKS OF THE ANNAPOLIS VALLEY AND CHÂTEAUGUAY AQUIFER SYSTEMS, CANADA - PHASE#1
(hereinafter referred to as the "Project")

Authority: This is an Annex to the Memorandum of Understanding (MOU) signed on the 9th day of April, 1999, between the Earth Sciences Sector of the Department of Natural Resources, Canada, and the USGS, hereinafter jointly referred to as the "Parties". This Annex is approved in accordance with Article VI of the MOU.

Correspondents: USGS: Roger H. Morin, PO Box 25046, MS 403, Denver, CO 80225, phone: (303) 236-5915, fax: (303) 236-5968, e-mail: rhmorin@usgs.gov.
GSC: Yves Michaud, 880 chemin Ste-Foy, C. P. 7500, Sainte-Foy, Qc, G1V 4C7, phone: (418) 654 2673, fax: (418) 654 2615, e-mail: ymichaud@nrcan.gc.ca.

Responsible Senior Managers: USGS: P. Patrick Leahy, Associate Director for Geology, phone: (703) 648-6600; GSC: Dr. Jan Boon, Director General SMGB GSC, phone: (613) 995-2340.

Scope: This Project Annex #7 // ("PA") is intended to enhance the understanding of regional hydrogeology in the Annapolis and Châteauguay regions and expand upon the collaboration between the Parties carried out under the "Assessment of Regional Aquifers: Towards a National Inventory" project of the GSC. Past years' participation of Roger H. Morin to the characterization of various fractured rocks in Québec and in the Maritimes (Eastern Canada) has been extremely useful. Dr. Morin would again conduct geophysical logging within numerous selected boreholes in different hydrogeologic formations where information is lacking. His work will allow for the evaluation of hydraulic properties, and provide information on stratigraphy and water bearing fracture features, complementary to pumping tests and drilling. Moreover, these data also often represent the only information available on stratigraphy and potential yield when no other data are available. By systematically combining all data acquired into a broad interpretative scheme, a conceptual understanding of the groundwater system at the macroscale can be developed, bringing valuable insight into aquifer hydrodynamics at the regional scale.

Work Plan:

The USGS will provide the expertise of Dr. Roger H. Morin and one technician for the service of geophysical logging for a period of one week in each of the regions between the beginning of June and the end of July of 2004, and advice in log analysis and interpretation techniques. The GSC will provide

complementary information on the geology and the stratigraphy of sedimentary rocks in order to identify and characterize the aquifer formations. The USGS will provide a report including field results from geophysical logging and their interpretation, in both digital and hard format.

The GSC will be responsible for ensuring that any permits and/or authorizations required for the entry of the geophysical logging equipment to Canada are processed.

Funding Arrangements: GSC will provide funding for living accommodations and for travel expenses incurred by Dr. Morin and one technician up to a maximum of US$3,500. According to the Treasury Board of Canada Secretariat policy, USGS shall submit on Canadian federal government claims forms (including all original invoices) , to the attention of Dr. Yves Michaud for the verification of expenditures. USGS's final invoice shall be marked "Final" and submitted to GSC not later than October 31st 2004.

Intellectual Property: As per the "Agreement on the Allocation of Intellectual Property Rights, Interests and Royalties for Intellectual Property Created or Furnished under Certain Scientific and Technological Cooperative Research Activities" between the Government of Canada and the Government of the United States of February 4, 1997, Parties to this PA shall retain existing intellectual property that they bring to the Project. Intellectual property arising as a result of this Project shall be owned in equal parts by the GSC and USGS.

Duration and Termination: Notwithstanding the date of execution of the Agreement, this Agreement shall be effective as of the 1st day of June 2004 and shall terminate upon the earlier of: (a) March 31, 2005, this being the completion date of the Project, unless extended by the mutual written agreement of the Parties; or (b) one month subsequent to the receipt of written Notice of Intent to Terminate from one Party to the other Party.

Either Party may, by giving the other Party thirty (30) days written notice, terminate this Agreement. Either Party shall immediately upon termination, return the other Party's papers, materials or other property held for the purpose of carrying out the Project. In the event of termination of this Agreement, any expenses and costs incurred by USGS in support of the Project and costs for non-cancelable commitments outstanding as of the date of termination shall be paid for by the GSC.

Representing the U.S. Geological Survey:

Representing the Geological Survey of Canada:

Signatures were removed for privacy

P. Patrick Leahy
Associate Director for Geology
United States Geological Survey
Department of the Interior

May 13, 2004
Date

Jan Boon
Director General
Sedimentary and Marine Geoscience Branch
Geological Survey of Canada
Earth Sciences Sector
Natural Resources of Canada

May 4 2004
Date