

Curriculum Vitae of Wilf Ruland

(Professional Geoscientist)

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Education:

1988 Master of Sciences in Earth Sciences,
University of Waterloo.
Supervisor: Dr. John Cherry

Master's project focussed on the hydrogeological properties of fractured clay deposits in Lambton County. 15 courses provided a broad background in hydrogeology.

1982 Honours Bachelor of Science in Geography and Geology,
McMaster University.

30 courses provided a broad background in natural science, geography and geology.

Experience:

since 1988 Environmental Consultant, as head of own consulting firm
(Citizens' Environmental Consulting).

Active as advisor and consultant on issues related to groundwater or surface water contamination or depletion for private citizens, citizens' groups, environmental groups, First Nations, companies and public agencies from across Ontario.

Specialization in addressing landfill-related groundwater and surface water contamination problems through review of hydrogeological impact studies, field investigations, and participation in public meetings and hearings. Ongoing contracts include investigations of water contamination at landfills near St. Catharines, Brockville, Kingston, Waterloo, and Windsor.

Other significant areas of work include review of pit and quarry proposals and applications for Permits to Take Water, investigations of well interference resulting from quarries, and groundwater contamination emanating from major industrial properties and gas stations.

Experience: continued

- 1988-1993 Research Associate, Waterloo Centre for Groundwater Research,
University of Waterloo
- Work included research into the hydrogeology of fractured clays and into the impacts of landfills on groundwater.
- 1983-1985 Hydrogeologist, Ingenieur-Geologisches Institut, Westheim, Germany.
- Work included hydrogeological field work, supervision and evaluation of drilling programs, supervision and evaluation of pumping tests, research and preparation of hydrogeologic reports, and supervision of environmental monitoring for a major railway construction project.

Publications, Papers and Research Reports:

Worthington, S.R.H., Smart, C.C., and Ruland, W.W. 2012. Effective Porosity of a Carbonate Aquifer with Bacterial Contamination: Walkerton, Ontario, Canada. Published in the Journal of Hydrology, Vol. 464-465 (2012), p. 517-527.

Ruland, W.W. 2005. Presentation on Source Water Considerations and the Walkerton Setting. Presented at the Canadian Water Network's Walkerton Water and Public Health Training Workshop, May 28 - June 2, 2005.

Worthington, S.R.H., Smart, C.C., and Ruland, W.W. 2002. Assessment of Groundwater Velocities to the Municipal Wells at Walkerton. Paper presented at the 3rd Joint IAH-CNC/CGS Conference, October 20 - 23, 2002 in Niagara Falls, Ontario.

Worthington, S.R.H., Smart, C.C., and Ruland, W. 2001. Karst Hydrogeological Investigations at Walkerton. Report prepared for and submitted as evidence at the Walkerton Inquiry.

Ruland, W.W., Schellenberg, S.S., and Farquhar, G. 1993. The Fate of Landfill Leachate in Waste Water Treatment Plants and in Groundwater at Attenuation Landfills. Report prepared for the Ontario Ministry of Environment and Energy.

Ruland, W.W., Cherry, J.A., and Feenstra, S. 1991. The Depth of Fractures and Active Ground Water Flow in a Clayey Till Plain in Southwestern Ontario. Published in the Journal of Ground Water, Vol. 29, No. 3, p. 405-417.

D'Astous, A.Y., Ruland, W.W., Bruce, R.J., Cherry, J.A., and Gillham, R.W. 1989. Fracture Effects in the Shallow Groundwater Zone in Weathered Sarnia Area Clay. Published in the Canadian Geotechnical Journal, Vol. 26, No. 1, p. 43-56.

Fracture Depths and Active Groundwater Flow in a Clayey Till in Lambton County, Ontario. 1988. Unpublished M.Sc.Project, University of Waterloo.

Cherry, J.A., MacQuarrie, K.T.B., and Ruland, W.W. 1987. Hydrogeologic Aspects of Landfill Impacts on Groundwater and Some Regulatory Implications. Paper presented at the PCAO/MOE Seminar on Landfill Regulations May 13, 1987.

Wilf Ruland (P. Geo.) - Partial List of Consulting Experience:

1) Investigations/Reviews of Landfill-Related Water Contamination:

Niagara Road 12 Landfill, near Grimsby, Ontario.

- Peer Review for the Niagara Road 12 Litizen Liaison Committee (2008-2010).

Humberstone Landfill in Welland, Ontario.

- Peer Review for the Humberstone Public Liaison Committee (since 2007).

City of Owen Sound's Derby Landfill site, near Owen Sound, Ontario.

- investigation and review for the Ledingham family (2004-2006)

Town of Northeastern Manitoulin and the Islands Landfill, near Little Current, Ontario;

- investigation and review for Mr. Raeburn Smith and Mrs. Virginia Smith (since 2004).

Rennie and Brampton Street Landfill Sites, Hamilton, Ontario;

- Peer Review for the Rennie/Brampton Citizens' Liaison Committee (2001-2005).

Town of Thessalon Landfill Site, near Thessalon, Ontario;

- investigation for Mr. Mark Petingalo and Mrs. Wendy Petingalo (in 2000).

City of Brockville Landfill Site, Brockville, Ontario;

- review for Brockville Public Liaison and Monitoring Group (since 1997).

Fletcher Tile Landfill Site, near Chatham, Ontario;

- investigation for Citizens Opposed to Landfill Development (1996-1997).

Bracebridge Landfill Site, Bracebridge, Ontario;

- investigation for Dr. David Kent (1995-1996).

Waterloo Sanitary Landfill Site, Waterloo, Ontario;

- review for Waterloo Waste and Water Watchers (since 1995).

Innisfil Landfill Site, Innisville, Ontario; investigation for Mrs. Helen Hodgson (1995 - 1999).

Tom Howe Landfill Site, near Hagersville, Ontario;

- review for the Mississaugas of the New Credit First Nation (since 1994).

Wolfe Island Waste Disposal Site, Wolfe Island, Ontario;

- investigation for Ms. Theresa James (since 1994).

Bensfort Road Landfill, near Peterborough, Ontario;

- investigation for Mr. Gary McCarrell and Mrs. Lori McCarrell (1991-1993).

Orillia Landfill Site, in Orillia, Ontario; investigation for Citizens Acting Now (1991).

Storrington Landfill near Kingston, Ontario;

- investigation for Storrington Committee Against Trash (1990-1997).

Glenridge Quarry Landfill in St. Catharines, Ontario;

- review for Glenridge Landfill Citizens' Committee (since 1989).

Warwick Landfill near Watford, Ontario;

- investigation for Watford Warwick Landfill Committee (1989-1996).

Brow Quarry Landfill near Dundas, Ontario;
- investigation for Greensville Against Serious Pollution (1988-1989).

Essex County Landfill No. 3 in Maidstone Township, Ontario;
- reviews for Maidstone Against Dumping and Maidstone Township (1988-2008).

Town of Cobourg Landfill, in Haldimand Township, Ontario;
- investigation for Mr. Joe Sherman (1988-1991).

2) Reviews of Proposals to Site New or Expand Existing Landfills

Proposal to massively expand the Richmond Landfill near Napanee, Ontario;
- review for the Concerned Citizens Committee of Tyendinaga Twp. (2004 - 2006, and since 2010).

Proposal to expand and significantly alter the Edwards Landfill
(including excavation of hazardous wastes, and relocation of other wastes) near Cayuga, Ontario;
- review for Haldimand Against Landfill Transfers (2004 - 2006)

Proposal to massively expand the Warwick Landfill near Watford, Ontario;
- Peer Review for the Township of Warwick (1998-2008).

Proposal to site a landfill near Cochrane, Ontario;
- review for the Fournier Action Committee (1997 -1999).

Proposal to site a landfill in the abandoned Adams Mine Site near Kirkland Lake;
- review for the Coalition of Temiskaming Concerned Citizens (in 1995).

Proposal to site a landfill in the Taro East Quarry near the Niagara Escarpment
in Stoney Creek, Ontario;
- review for Stoney Creek Residents Against Pollution (in 1995).

Proposal to develop a perimeter-berm landfill around the Lake Ontario Steel Company Limited
property in Whitby, Ontario; Peer Review for the Lasco Berm Liason Committee (1991-1995).

Proposal to build a landfill in a Class 2 Wetland near Cayuga, Ontario;
- review for Haldimand-Norfolk Organization for a Pure Environment (1989-1990).

Proposal to site a landfill in the Acton Quarry near Milton, Ontario;
- review for Protect Our Water and Environmental Resources (in 1989).

3) Review of Landfill Closure and End Use Plans

Closure Plan for the Tom Howe Landfill Site, for the Mississaugas of the New Credit First Nation
(2005, and 2009/2010).

Closure Plan for the Richmond Landfill near Napanee, Ontario;
for the Concerned Citizens Committee of Tyendinaga Twp. (2007).

End Use Plan for the Glenridge Quarry Naturalization Site (formerly the Glenridge Laandfill), for the
Glenridge Landfill Liaison Committee (2002).

Closure and post-Closure Care Plan for the Brockville Landfill Site, for the Brockville Public Liaison
and Monitoring Group (2000-2001).

Closure and End Use Plan for Essex County Landfill No. 3, for Maidstone Against Dumping (1996).

4) Other Landfill-Related Projects

Peer Review of proposal to expand the Clean Harbors Hazardous Waste Landfill Facility near Sarnia, Ontario (since 2010); for the Township of St. Clair.

Investigation and review of groundwater and surface water contamination being caused by a cement kiln dust landfill near Bath, Ontario. Negotiated an agreement with Lafarge Cement to remediate the existing landfill and use an industry-standard design on a go-forward basis. For Lake Ontario Waterkeeper (2007-2010).

Member of the Expert Panel (appointed by the Minister of the Environment) to look into potential health and environmental impacts from the Taro East Landfill in Stoney Creek, Ontario (in 2000). The final report of the Expert Panel was released in October 2000, and the Addendum Report was released in December 2000.

Technical advisor to private citizens who successfully prosecuted the City of Hamilton (which pleaded guilty) for contamination by PCB-laden leachate of Redhill Creek (in 2000). The resulting \$450,000 fine was a record for fines paid under such prosecutions.

5) Reviews of Waste Management Master Plan (WMMP) Studies

Region of Haldimand-Norfolk Waste Management Master Plan (WMMP);
- review for the Mississaugas of the New Credit First Nation (1995-1996).

South Simcoe County Waste Management Master Plan;
- review for the South Simcoe Waste Action Network (since 1994).

Leeds and Grenville Waste Management Master Plan;
- review for Sabourins Crossing Residents Against Megadumps (in 1994).

Pembroke and Area Waste Management Master Plan;
- review for the Snake River/Micksburg Anti-Dump Association (1991-1992).

Northumberland County Waste Management Master Plan;
- review for Mr. and Mrs. J. Sherman (1989-1991).

Wellington County Waste Management Master Plan;
- review for the Concerned Alma Citizens (1988-1991).

6) Nuclear-Related Peer Review Work

Review of the Draft Environmental Impact Statement for the proposed Darlington 'B' New Nuclear Power Plant Project;
- review for Lake Ontario Waterkeeper (2010-2012).

Review of the proposed remediation of the Cameco Nuclear Waste Processing Facility in Port Hope, Ontario;
- review for Lake Ontario Waterkeeper (starting in 2010).

Review of the Draft Guidelines for the Environmental Impact Statement for the proposed Darlington 'B' New Nuclear Power Plant Project;
- review for Lake Ontario Waterkeeper (2008).

7) Other Investigations of Groundwater Contamination

Contamination by petroleum hydrocarbons of a greenhouse property from an adjacent Hydro One maintenance center in Kenora, Ontario; investigation for the Schmidt Family (2008)

Impacts of residual contamination on a former industrial property, which is now the site of St. Mary's High School; investigation for Environment Hamilton (2002 - 2004).

Contamination by petroleum hydrocarbons and volatile organic chemicals (VOCs) from a former service center near High Park, Toronto; investigation for Mr. Gerard Kennedy, MPP (in 2002).

Contamination of municipal water supply wells by E-coli bacteria in Walkerton, Ontario;
- investigation for Concerned Walkerton Citizens (2000 - 2002).

Contamination by petroleum hydrocarbons and volatile organic chemicals (VOCs) from an Imperial Oil fuel and liquid transfer facility in Kapuskasing, Ontario; investigation for the Schlechter family (in 2000).

Contamination by petroleum hydrocarbons from a Gulf Canada gas station in Port Loring, Ontario;
- investigation for People Against Contaminated Water (PACW); (1999 - 2001).

Contamination by petroleum hydrocarbons from a gas station in Bamberg, Ontario;
- investigation for the Bush and Fink families (1997 - 1998).

Groundwater contamination in Cambridge, Ontario caused by Ciba-Geigy Canada Ltd;
- investigation for Thomas Construction Company Ltd. (1993 - 1997).

Groundwater contamination from the Bristol Aerospace Plant near Lockport, Manitoba;
- investigation for Mrs. Elizabeth Andresen and Miss Ursula von Krogh (in 1993).

Extensive water contamination in Elmira, Ontario caused by Uniroyal Chemical Ltd;
investigation for various clients, most recently the Region of Waterloo (since 1989).

8) Permits to Take Water and Drinking Water Systems

Preparation of applications to the Ministry of the Environment to upgrade the drinking water systems for Camp NeeKauNis near Waubaushene, Ontario (since 2012).

Review of an application for a Permit to Take Water for a Water Bottling Operation (to be operated by CJC Bottling Limited), with water to be taken from a well which feeds the headwaters of Colborne Creek; for the Concerned Citizens of Northumberland (2001 - 2004).

Review of an application for a Permit to Take Water for a municipal water supply project (for the Village of Woodville), with water to be taken from pumping wells near 5 families' homes;
- for the Mariposa Aquifer Protection Association (2000 - 2004).

Review of an application for a Permit to Take Water for a Water Bottling Operation (to be operated by Artemesia Springs Limited), with water to be taken from a springwell which feeds a headwater stream of the Rocky Saugeen River;
- for the Water Protection Coalition of South Grey (1999 - 2001).

Review of an application for a Permit to Take Water for a Water Bottling Operation (to be operated by Aquafarms 93 Limited), with water to be taken from a spring and 3 pumping wells situated near the headwaters of the Beaver River;
- for Ms. Samantha Wickens and other local residents (in 1999).

Preparation of an application for a Permit to Take Water for a fish farming operation (to be operated by Van Aqua Inc.), with water to be taken from a pumping well near the Town of Burford in Brant County; for Mr. Peter Van Kruistum (in 1988).

9) Reviews/Investigations Related to Impacts of Major Water-Takings

Impacts of ongoing pumping of municipal supply wells K50/K51 in Wilmot Township;
- review for Wilmot Center Monitoring Program Public Liaison Committee (since 2003).

Impacts of ongoing dewatering of the Canadian Gypsum Company mine near Hagersville Ontario;
- review for residents of 3rd Line, Six Nations Indian Reserve (1999-2003).

10) Reviews/Investigations related to Impacts from Pits, Quarries, and Mines

Investigation of potential impacts from the Miller Braeside Quarry near Braeside, Ontario;
- review for Friends Addressing Concerns Together in McNab/Braeside (since 2008).

Investigation of potential impacts from the unlicensed Nichol Quarry near Hagersville, Ontario;
- review for the Mississaugas of the New Credit First Nation (since 2007).

Impacts of the proposed expansion of the Nelson Aggregates Quarry near Mount Nemo, Ontario;
- review for Protecting Escarpment Rural Land (2005-2007).

Cumulative impacts of the proposed Halminen Quarry and Lafarge Quarry near Buckhorn, Ontario;
- review for Friends of Life in the Kawarthas (2004 - 2006).

Impacts of the proposed expansion of the Graham Brothers Aggregates Limited gravel pit near Caledon, Ontario; review for Dr. David Sylvester (2000 - 2001).

Impacts of the proposed Nichol Gravel Limited quarry near Hagersville, Ontario;
- review for the Mississaugas of the New Credit First Nation (1999 - 2001).

Impacts of well interference from the Canadian Gypsum Company mine near Hagersville;
- investigation for several families on the Six Nations Reserve (1999 - 2003).

Impacts of well interference from the Dunnville Rock Products Quarry near Dunnville;
- investigation for Mr. Ken Ricker and Mrs. Ethel Ricker (1997 - 2000).

Impacts of water takings associated with the Acton Quarry near Acton, Ontario;
- review for Protect Our Water and Environmental Resources (1997-2007).

Impacts of a quarry proposed adjacent to Mitchell Lake, near Victoria Road, Ontario;
- review for the Northern Victoria Ratepayers Association (1997 - 1999).

Impacts of a quarry, proposed to be located on the Bruce Peninsula;
- review for Mr. Ziggy Kleinau (1996).

Impacts of a proposed gravel pit, to be sited near Grippen Lake, Ontario;
- review for Township Residents Against Pit Pollution (1995 - 1998).

Impacts of a gravel pit to be built in an Earth Science Area of Natural Interest (ANSI);
- review for Ms. Jeanette Mazur (1995 - 1996).

Impacts of the proposed Seeley and Arnill Quarry near Orillia, Ontario;
- review for Mr. David Lowry (1993 - 1997)

Impacts of a proposed expansion of the Walker Brothers Quarry, near St. Catharines;
- review for Mrs. Ronnie DeMeel (1992).

Impacts of six (6) proposed gravel pit operations in Oro Twp., Ontario;
- review for Dr. E.J. Beaton and Dr. A.C. Beaton (1990 - 1992).

11) Participation in Public Hearings

An application to site a quarry in a Provincially Significant Wetland Complex near Duntroon, Ont;

- before the Ontario Municipal Board;
- Decision dated August 24, 2012.

A hearing into the proposed Darlington 'B' New Nuclear Power Plant Project;

- before the Canadian Nuclear Safety Commission;
- Decision dated August 17, 2012.

An application to develop a quarry in the Niagara Escarpment Plan area near Duntroon, Ontario;

- before the Joint Board;
- Decision dated June 18, 2012.

An application to develop a gravel pit in the Municipality of Grey Highlands, Ontario;

- before the Ontario Municipal Board;
- Decision dated April 30, 2008.

An application to massively expand the Dufferin Aggregates Milton Quarry;

- before the Joint Board;
- Decision dated June 8, 2005.

An application for conversion of 81 cottages into permanent homes adjacent to a World Biosphere Reserve, Class 1 Wetland and Wilderness Area in Turkey Point;

- before the Ontario Municipal Board;
- Decision dated August 13, 2002.

An application to develop a quarry near Mitchell Lake and Victoria Road, Ontario;

- before the Ontario Municipal Board;
- Decision dated January 22, 1999.

An application to develop a gravel pit adjacent to a Class 1 Wetland along the shore of Lake Katchewanooka near Lakefield, Ontario;

- before the Ontario Municipal Board;
- Decision dated June 4, 1998.

An application to develop a quarry near Kinmount, Ontario;

- before the Ontario Municipal Board;
- Decision dated August 18, 1995.

An act (Bill 62) to amend the Environmental Protection Act to phase out landfilling in the Niagara Escarpment Plan Area;

- before the Standing Committee on the Administration of Justice;
- Bill 62 received Royal Assent June 23, 1994.

An application to expand the Eastview Road Landfill Site near Guelph, Ontario;

- before the Environmental Assessment Board;
- Decision EP 92-02 dated September 22, 1993.

An application to develop six (6) gravel pits on the Oro Moraine in Oro Twp.;

- before the Ontario Municipal Board;
- Decision dated July 23, 1993.

An application to expand the Storrington Landfill Site;

- before the Environmental Assessment Board;
- Decision EP 91-01 dated March 31, 1993.

An amendment (No. 52/89) to the Niagara Escarpment Plan to delete waste disposal sites as a permitted land use in lands protected by the Plan;

- before a Niagara Escarpment Commission Hearing Officer;
- Decision dated Oct. 22, 1991.

An appeal against a zoning bylaw and a proposed plan of subdivision (which allowed construction of a golf course on a Class 1 Wetland);

- before the Ontario Municipal Board;
- Decision dated August 29, 1990.

An application to expand the Seeley and Arnill Aggregates Ltd. gravel pit in Oro Twp.;

- before the Ontario Municipal Board;
- Decision dated May 29, 1990.

An application to expand Essex County Landfill No. 3;

- before the Environmental Assessment Board;
- Decision EP 89-02 dated December 12, 1989.

An application to expand the Town of Cobourg landfill;

- before the Environmental Assessment Board;
- Decision EP 89-01 dated October 16, 1989.