

Ontario Research Fund “Sustainable Bedrock Water Supplies for Ontario Communities”

Annual Progress Meeting: April 12-13, 2011

University of Guelph, OAC Centennial Arboretum Centre

Presenters Please Allot 3-5 Minutes of your Timeslot for Questions

Day 1: Tuesday, April 12th

8:30 – 8:40 Welcome and Opening Remarks

Session 1: Aquifer and Wellhead Protection in Bedrock Moderator: John Cherry

8:40 – 9:10 Beth Parker, UG Scientific Basis For Analysis of Contaminant Transport and Fate in Bedrock

9:10 – 9:35 Paul Martin, AquaResource Use of 3-D Numerical Models for Flow Simulation in Fractured Bedrock Aquifers

9:35 – 10:00 Richard Wootton, RMOW Optimizing Bedrock Water Supplies at Existing Municipal Well Sites in Cambridge, Ontario

10:00 – 10:25 Dwight Boyd, GRCA Grand River Conservation Authority's Role in Regional Groundwater Management

10:25 – 10:45 **Break**

Session 2: Surface Water Groundwater Interactions Moderator: Andrea Bradford

10:45 – 11:10 Andrea Bradford, UG Groundwater Dependent Ecosystems (GDE)

11:10 – 11:30 Hailey Ashworth, UG Identification of Restoration Opportunities for GDE, with a Focus on the Hyporheic Zone

11:30 – 11:55 John Parish, Parish Geomorphic Geomorphology of Rivers in the Guelph Study Area

11:55 – 12:15 Celia Kennedy, UG Methodology for the Study of Bedrock Discharge to Local Rivers

12:15 – 1:15 **Lunch:** The Arboretum

1:15 – 1:45 **Discussion:** Groundwater and surface water: towards integrated management of this single resource

Session 3: Bedrock Aquifer Characterization Moderator: Beth Parker

1:45 – 2:10 Ross Kelly, OGS An Overview of the OGS Regional Bedrock Aquifer Mapping Program

2:10 – 2:30 Jonathan Munn, UG Characterization of Fracture Networks in Bedrock Aquifers

2:30 – 2:50 Pat Quinn, UG Hydraulic Characterization of Fractures and Fracture Porosity

2:50 – 3:10 Pete Pehme, UG Evidence of Hydraulically Active Fractures Using High Resolution Temperature Logging in Boreholes

3:10 – 3:30 **Break**

3:30 – 3:50 Adam Gilmore, UG 535/537 Woolwich Street Plume Characterization Results

3:50 – 4:15 John Cherry, UG Small Field Well Pumping Test Results and Implications for Groundwater Travel Time

4:15 – 4:40 John Piersol, Golder Associates Variability of Bedrock Aquifer Conditions

4:40 – 5:15 **Discussion:** Role of high resolution methods in water supply hydrogeology decision-making

5:15 – 6:30 **Cash Bar:** The Arboretum (Poster Displays)

6:30 – 8:30 **Group Dinner:** For those interested, a group reservation will be made off-site. The cost of dinner will not be covered by the meeting organizers.

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Day 2: Wednesday, April 13th

Session 4: Overburden (Quaternary Deposits) Contaminant Hydrogeology Moderator: E. Arnaud

8:30 – 8:55	Emmanuelle Arnaud, UG	Overburden Heterogeneity in the Guelph Region
8:55 – 9:15	Mike McGill, UG	Overburden Mapping of the Paris Moraine in the Guelph Area
9:15 – 9:35	Kelsey MacCormack, UG	The Impact of Data Quality and Distribution on Interpolation Accuracy: A Case Study from the Paris Moraine
9:35 – 10:00	Abigail Burt, OGS	Surficial Aquifer Mapping: Orangeville Moraine Study
10:00 – 10:25	Gary Parkin, UG	Measuring Groundwater Recharge with the Water Table Fluctuation Method
10:25 – 10:45	Break	
10:45 – 11:10	Aaron Berg, UG	Identification of Recharge Features Using Remote Sensing: Progress and Next Steps
11:10 – 11:30	Kathryn Powell, UG	Combining Synthetic Aperture RADAR (SAR) and LiDAR-derived Terrain Indices for Evaluation of Soil Moisture Variability
11:30 – 11:55	Stewart Sweeney, OMAFRA	Detailed Agricultural Resource Inventory (AgRI) Geospatial Information for the Guelph Area
11:55 – 12:30	Discussion: Challenges in establishing the spatial variability of overburden and recharge characteristics at various scales	
12:30 – 1:30	Lunch: The Arboretum	

Session 5: Groundwater Contamination Threats Moderator: Ed McBean

1:30 – 1:55	Bahram Gharabaghi, UG	Characterization of Urban Water Balance and Recharge
1:55 – 2:15	Andrew Betts, UG	Quantification of Chloride Loadings to Groundwater Due to Winter De-icing Operations in Urban Watersheds
2:15 – 2:40	Stan Denhoed, Harden Environmental	Compromised Aquitards: Unwelcome Transport Pathways
2:40 – 3:05	Ed McBean, UG	Implications of Leaking Sanitary Sewer Infrastructure
3:05 – 3:25	Break	
3:25 – 3:45	Cam Farrow, UG	Viral Contamination of Groundwater and Removal Efficiency of Biofilms in Fractured Bedrock
3:45 – 4:10	Sarah Dickson, McMaster	Biocolloid Retention Mechanisms in Fractured Rock
4:10 – 4:30	Maggy Burke, McMaster	Identification of the Mechanisms Governing the Transport of Bacteria and Viruses in Fractured Rock
4:30 – 4:55	Hamid Salsali, UG	Fate of β -Blockers in Municipal Wastewater Treatment
4:55 – 5:30	Discussion: Utility of alternative methods to estimate near-surface sources to groundwater contamination	
5:30	Closing Remarks	
	END OF MEETING	
6:00 – 8:00	Dinner & Scientific Advisory Committee Meeting (Committee & Principal Investigators only)	

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Abbreviations:

UG	University of Guelph
RMOW	Regional Municipality of Waterloo
GRCA	Grand River Conservation Authority
OGS	Ontario Geological Survey
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
McMaster	McMaster University