

APPENDIX E TO FIELD SERVICES SUBMISSION

WALTER J. CEROICI, M.Sc, P.Geol.

[REDACTED], Edmonton, Alberta T6J 7A8 ♦ Phone [REDACTED]
E-mail: walter.ceroici@nrcb.ca

PROFESSIONAL EXPERIENCE

Director, Science and Technology Division

2007- Present

Natural Resources Conservation Board (NRCB)

- Ensure the division has adequate resources to provide comprehensive and timely scientific expertise to NRCB field staff involved in regulating the confined feeding industry.
- Lead the technical review of environmental impact assessment reports for proposed natural resource projects submitted to the NRCB for public interest decisions pursuant to the *Natural Resources Conservation Board Act (NRCBA)*. (Note – not involved in the Sci-Tech technical review of the Springbank Off-Stream Reservoir Project application)
- Provide science and technical support to the board and executive relating to regulatory activity under the *Agricultural Operation Practices Act (AOPA)* and project reviews under the NRCBA.
- Manage Sci-Tech staff involvement in the development of operational policies and guidelines to support AOPA regulatory activities, and in collaborative research with other agencies to study environmental impacts of confined feeding operation developments.
- Successfully led the development of the NRCB environmental risk screening tool used for all AOPA regulatory activity.
- From September 2014 to April 2017, managed the NRCB Compliance Division - responsible for the development and implementation of provincial compliance monitoring and enforcement programs to ensure that livestock operations in the province understand and comply with the requirements of AOPA.

Acting Board Member

July 2019 – Present

Natural Resources Conservation Board

- Member of the NRCB panel reviewing the Springbank Off-Stream Reservoir Project application from Alberta Transportation to determine if the project is in the public interest.

Acting Chief Executive Officer

January 2018 – October 2019

Natural Resources Conservation Board

- Responsible for all aspects of NRCB operations, including strategic direction and business planning.
- Responsible for ensuring that resources are in place for the effective delivery of AOPA regulatory functions, and to effectively review non-energy project applications submitted to the NRCB for public interest determinations pursuant to the NRCBA.
- Provided operational updates and advice to the Board at regular Board meetings.

- Maintained a leadership/advisory role in the development of operational policies intended to clarify the intent of AOPA.
- Co-chaired the Policy Advisory Group, comprised of livestock industry groups, ENGOs, municipal associations, that provides advice to the NRCB on the delivery of AOPA.
- In partnership with the Chair, participated in NRCB governance reviews and in updating of the NRCB Mandate and Roles Document.
- Participated in regular meetings with NRCB stakeholders to maintain positive relationships and trust in the work of the NRCB.

Head, Science and Innovation Branch

2005-2007

Alberta Environment

- Led a multidisciplinary group of scientific professionals and managers that provided high-quality science and technical expertise to support policy and environmental systems development.
- Provided technical support to Alberta Environment Regional Services on regulatory approvals, environmental impact assessment reviews, and compliance issues related to the *Water Act* and *Environmental Protection and Enhancement Act*.
- Provided expert scientific, technology and policy advice to Executive on a wide range of environmental issues, including water quality/quantity, soil and air quality, and waste management.
- Led the Alberta Environment coalbed methane program. Successfully established teams for policy development, environmental research, and for preparation and delivery of public education/awareness programs.
- Led development of an Energy Environment Fund, in partnership with Innovation and Science, to provide funding for research on environmental aspects of energy development.
- Represented Alberta's interests at multi-level government, industry and non-government committees/discussions on development of national science products and environmental policy (e.g., Canadian Council of Ministers of the Environment).

Head, Industrial Program Development Branch

1993-2005

Alberta Environment and Sustainable Resource Development

- Managed the development of science-based standards, guidelines and policies in the reclamation/remediation, geo-environmental, waste management, and air and water pollution prevention areas.
- Member of interdepartmental committee charged with developing a proposal for the transfer of the jurisdictional responsibility for reclamation/remediation at upstream oil and gas sites from Alberta Environment to the Energy and Utilities Board.
- Managed the provincial contaminated sites and industrial site decommissioning programs. Involved the development of relevant regulations, guidelines, Codes of Practice.
- Managed the development of environmental criteria and environmental risk assessment policy. Involved extensive consultation/negotiation with other governments and industry.

- Represented the department at Environmental Appeal Board hearings on Notices of Objection to contaminated sites designations and industrial sites decommissioning approvals.
- Led development of a Memorandum of Understanding between Alberta Environment and the Energy Utilities Board to clarify jurisdictional responsibilities for the suspension, abandonment and reclamation of upstream oil and gas sites.
- Technical expert on special environmental projects related to energy development. For example, authored section of an Alberta Cattle Commission report, which reviewed interaction between the cattle and petroleum industries and made recommendations for further research.
- Represented department on information exchange initiatives with regulators from other countries on contaminated sites management issues. Notably, was invited to Taiwan to present on Alberta approaches to contaminated sites assessment and environmental risk assessment processes.

Manager, Groundwater Protection Branch

1985-1993

Alberta Environmental Protection

- Managed the Alberta municipal/regional landfill siting and monitoring program.
- Represented Alberta Environment in a Canadian Association of Petroleum Producers sponsored study to evaluate contamination significance, and remediation options at sour gas processing plants.
- Chaired a Canadian Council of Ministers of the Environment committee charged with developing a national standard for the assessment of contaminated properties.
- Project manager of the *Help End Landfill Pollution* program to inventory provincial industrial landfill sites, conduct environmental assessments, and develop remedial options, as required.
- Department lead for establishment of a provincial fund to clean-up contaminated underground petroleum storage tank sites in the Province in cooperation with the *Petroleum Tank Management Association of Alberta* and the petroleum industry.

Engineer III

1982-1985

Alberta Environment, Soil Protection Branch

Involved in the development of “base of groundwater protection” maps for the province and in the provision of hydrogeological technical support to regulatory activities of the department.

Senior Hydrogeologist

1980-1982

Monenco Consultants Limited, Calgary

Led a project to assess the impact of large open-pit coal mines on groundwater quality/quantity using field assessments and computer modelling. Also involved in the preparation of environmental impact assessments for several large projects in the province to support regulatory applications.

Research Officer**1976-1980****Alberta Research Council**

Led several major hydrogeological mapping projects in the province which involved field investigation, extensive literature reviews, and the preparation of published reports with accompanying detailed hydrogeological maps. Also involved in collaborative research with other government agencies in a variety of studies such as the role of groundwater in the genesis of salt-affected soils and the impact of seismic surveys on groundwater quality/quantity.

EDUCATION

- Senior and Executive Managers Development Program, University of Alberta (2006)
- Management Development Certificate, University of Alberta, 1993.
- M.Sc., Earth Sciences, University of Waterloo, 1978.
- B.Sc. (Honours), Geology, University of Alberta, 1976.

PROFESSIONAL AFFILIATION

- Member, Association of Professional Engineers and Geoscientists of Alberta

Michael J. Iwanyshyn, Ph.D., P.Ag.

1910, 250 – 5 St SW, Calgary, Alberta, Canada, T2P 0R4
[REDACTED], mike.iwanyshyn@nrcb.ca

EDUCATION

- Doctor of Philosophy (Ph.D.), Civil Engineering: Environment Specialization** **2008**
University of Calgary, Calgary, Alberta. Thesis: River water quality and total loading management in an urban river reach. NSERC IPS I and II.
- Bachelor of Science (B.Sc.), Environmental and Conservation Sciences** **2004**
University of Alberta, Edmonton, Alberta. Specialization: Land Reclamation and Remediation, with Distinction. First Class Standing and Dean's List.
- International Baccalaureate and High School Diplomas** **1996**
Harry Ainlay Composite High School, Edmonton, Alberta. Honours.

EXPERIENCE

- Natural Resources Conservation Board, Senior Environmental Specialist** **Present - Feb. 2008**
Calgary, Alberta
- Review and assess technical, scientific and engineering information in environmental impact assessments for natural resource projects under the *NRCBA*
 - Provide technical and scientific support and decision report writing for the panel on hearings and decisions related to the *NRCBA*
 - Assist in advancement of knowledge and understanding of technical, scientific and engineering environmental issues
 - Review and assess technical, scientific and engineering information related to environmental issues under the *AOPA*
 - Provide technical and scientific support to the board and operations staff on issues related to the *AOPA*
 - Assist in development of *AOPA* associated technical guidelines, research initiatives, staff learning, policy initiatives, and technical information and understanding
 - Provide senior leadership on organizational initiatives and objectives related to policy, legislation, and direction of the organization and division
 - Collaborate with other government departments (on various levels) and stakeholder groups
 - Represent the organization on professional groups and agencies
 - Lead training sessions and provide presentations to board and staff
 - Office Fire Warden and Emergency Responder
- University of Calgary/City of Calgary, Civil Engineering/Water Services, Researcher** **Feb. 2008 - Sept. 2004**
Calgary, Alberta
- Conducted research associated with Ph.D. thesis
 - Supervised research assistants
 - Assisted city employees with operations planning and management of monitoring and sampling programs

**University of Calgary, Civil Engineering and Environmental Science,
Teaching Assistant**

Feb. 2008 - Aug. 2004

Calgary, Alberta

Environmental Field Courses I and II

- Taught 3rd and 4th year undergraduate students about field and laboratory techniques related to water chemistry, hydrogeology, geology, hydrology, water microbiology, soil hydrocarbon contamination and heavy metal toxicity
- Assessed and graded assignments
- Assisted in organization and scheduling of Field Course II

Teaching Assistant, Engineering Economics

- Supervised tutorials, assisting with assigned and practice problems
- Administered and marked quizzes

Special Problems in Environmental Management

- Assisted in organizing and administering courses investigating impacts from wastewater treatment plant effluent to rivers and the effects of flooding on rivers and river ecosystems
- Mentored groups in water quality, chemistry, and microbiology, hydrology/hydrogeology, vegetation, and sediments and geochemistry
- Assisted in grading of presentations and exams and grade determination

University of Calgary, Geology and Geophysics, Researcher

Aug. 2004 - May 2004

Calgary, Alberta

- Conducted and assisted with research associated with graduate thesis as undergraduate student researcher
- Organized monitoring and sampling programs and laboratory analysis

Komex International, Soil Scientist

Apr. 2004 – May 2003

Edmonton, Alberta

- Conducted field and office duties associated with Phase I, II, and III site assessments and remediation projects
- Field work included organization and implementation of Phase II assessments including drilling location determination, sample collection, logging of boreholes, chain of custody completion, and supervision of drilling crew
- Office work included writing Phase I and II reports, editing of reports, assessment of laboratory data, laboratory data entry, borehole log entry, field book production, and organizing of files
- Obtained PSTS, First Aid, H2S Alive, WHMIS, TDG, and Ground Disturbance training

Borden Chemical, Shipper/Receiver (Summer Student)

Aug. 2002 – Jul. 1996

Edmonton, Alberta

- Loaded and unloaded trucks and railcars with liquid resin and liquid and solid raw materials including phenol, formaldehyde, caustic, and stearic acid
- Handling of dangerous goods duties, trained in handling protocols (TDG and WHMIS certifications)
- Supervision of man power employees/contractors
- Warehouse management, organizing loading schedule and entering product information into computer system (SAP, excel, word)
- Operated forklift and trackmobile and obtained certifications
- Various general cleanup and maintenance duties

SCIENTIFIC PAPERS

- Kohn, J., Iwanyshyn, M., and Olson, B. 2021. Groundwater nitrogen and chloride following closure of an earthen manure storage in southern Alberta. *Journal of Environmental Quality* 50: early view 1-11.
- Bourke, S., Iwanyshyn, M., Kohn, J., and Hendry, J. 2019. Sources and fate of nitrate in groundwater at agricultural operations overlying glacial sediments. *Hydrology and Earth System Sciences* 23(3): 1335-1373.
- Iwanyshyn, M. 2017. Groundwater study looks at impact of livestock manure on Alberta farms. *Progressive Dairyman* 8: 60-62.
- Kohn, J., Iwanyshyn, M., Miedema, L., Olson, B., and Kalischuk, A. 2016. Shallow groundwater quality at a beef feedlot in southern Alberta. *Canadian Biosystems Engineering* 58(1): 11-19.
- Kohn, J., Soto, D., Iwanyshyn, M., Olson, B., Kalischuk, A., Lorenz, K., and Hendry, J. 2016. Groundwater nitrate and chloride trends in an agriculture-intensive area in southern Alberta, Canada. *Water Quality Research Journal* 51(1): 47-59.
- Iwanyshyn, M., Ryan, M.C., and Chu, A. 2009. Cost-effective approach for continuous major ion and nutrient concentration estimation in a river. *Journal of Environmental Engineering* 135: 218-224.
- Robinson, K., Valeo, C., Ryan, M.C., Chu, A., and Iwanyshyn, M. 2009. Modelling aquatic vegetation and dissolved oxygen after a flood event in the Bow River, Alberta, Canada. *Canadian Journal of Civil Engineering* 36: 492-503.
- Iwanyshyn, M., Ryan, M.C., and Chu, A. 2008. Separation of physical loading from photosynthesis/respiration processes in rivers by mass balance. *Science of the Total Environment* 390: 205-214.
- Iwanyshyn, M., Ryan, M.C., and Chu, A. 2013. Fecal coliform variation and disinfection by daily pH variations in a river. In submission
- Iwanyshyn, M., Ryan, M.C., Chu, A., and Gannon, V. 2012. Pathogen and pathogen indicator monitoring in a river through a major urban centre. In development.
- Vandenberg, J.A., Iwanyshyn, M., Ryan, M.C., and Chu, A. 2013. Real-time and event-initiated monitoring of nutrients and major ions in the Bow River. In development.

Additional publications are also expected on current research.

CONFERENCE PROCEEDINGS

- Iwanyshyn, M. 2020. Nitrate in shallow groundwater at CFOs in south and central Alberta. *Proceedings at GeoConvention 2020*. Calgary, AB (virtual).
- Bourke, S., Iwanyshyn, M., Kohn, J., and Hendry, J. 2018. Understanding agricultural nitrate in groundwater using stable isotopes of nitrate to constrain an ion-based mixing model. *Proceedings of the Australian Geoscience Convention*. Adelaide, Australia.
- Iwanyshyn, M. 2017. Livestock manure impacts on groundwater quality in Alberta. *Proceedings at the Alberta Manure Management Update*. Lethbridge, AB.
- Iwanyshyn, M. 2016. Investigating the effects of manure management on groundwater in Alberta. *Proceedings at Towards Sustainable Groundwater in Agriculture – An International Conference Linking Science and Policy*. San Francisco, California.
- Kohn, J., Iwanyshyn, M., Miedema, L., Olson, B., and Kalischuk, A. 2015. Nitrate and chloride in groundwater under a beef feedlot in southern Alberta. *Proceedings at the Canadian Society for Bioengineering 2015 Annual Conference*, Edmonton, AB.
- Iwanyshyn, M. and Ceroici, W. 2012. Impacts of manure management activities on groundwater quality in Alberta, Canada. *Proceedings at the Association for Environmental Health and Sciences Foundation 22nd Annual International Conference on Soil, Water, Energy, and Air*. Poster Presentation. San Diego, California.
- Iwanyshyn, M. 2011. Investigating the effects of manure management activities on groundwater quality in Alberta. *Proceedings at the Environmental Services Association of Alberta Water Technologies Symposium 2011 (WaterTech 2011)*. Banff, Alberta.

- Lorenz, K., Iwanyshyn, N., Pentland, J., and Turchenek, J. 2011. Livestock impacts on groundwater in Alberta project. Proceedings at the Canadian Water Resources Association, Alberta Chapter Annual Conference. Red Deer, Alberta.
- Iwanyshyn, M., Lorenz, K., Ceroici, W., and Patterson, B. 2010. Investigating long-term effects of manure management activities on groundwater quality in Alberta. Proceedings at Towards Sustainable Groundwater in Agriculture Conference. San Francisco, California.
- Robinson, K., Iwanyshyn, M., Valeo, C., Ryan, C., and Chu, A. 2007. Aquatic vegetation and dissolved oxygen in the Bow River, Alberta, Canada. Proceedings at the 2007 National Canadian Water Resources Association Conference. Saskatoon, Saskatchewan.
- Iwanyshyn, M., Ryan, M.C., Chu, A., and Valeo, C. 2006. Pollutant loading in the Bow River Calgary, Alberta. Proceedings at Alberta Ingenuity Centre for Water Research Annual Meeting. Edmonton, Alberta.
- Iwanyshyn, M., Ryan, M.C., and Chu, A. 2006. Estimating point and non-point source river mass loadings in a major river. Proceedings at American Water Resources Association 2006 AWRA Summer Specialty Conference: Adaptive Management of Water Resources. Missoula, Montana.
- Ryan, M.C., Vandenberg, J.A., Chu, A., and Iwanyshyn, M. 2004. Real-time monitoring in the TMDL context. Proceedings at Canadian Water Resources Association Conference: Monitoring in a changing environment: recent advances in automatic electronic water quality monitoring and assessment. Vancouver, British Columbia.

Numerous other presentations, including but not limited to: NRCB staff, Alberta Agriculture and Rural Development, Alberta Environment and Sustainable Resource Development, the Policy Advisory Group, University of Calgary classes and lectures, and various stakeholder groups (e.g., watershed groups, municipal representatives, and the public).

ASSOCIATIONS and CERTIFICATES

- Professional Agriologist (P.Ag.), Alberta Institute of Agriologists.
- Certificate of Achievement for Subsoil Salinity Tool (SST). Government of Alberta.
- Certificate in Professional Management, in progress. University of Calgary.
- First Aid

Scott Cunningham, P.Eng., P.Ag.

[REDACTED] Red Deer, AB, T4N 2E7
Red Deer, Alberta, T4N 2E7
Phone [REDACTED]
[REDACTED]

QUALIFICATIONS

Professional Engineer (APEGA).
Professional Agrologist (AIA).
Strong leader responsible and accountable for actions.
Personable, outgoing and a team player.
Strong financial management understanding.
Self motivated, show initiative and meet deadlines.
Strong problem solving skills yet seek advice when needed.
Understand importance of engaged stakeholders.
Excellent public speaker.
Good active listener.
Comfortable working with the media.
Excellent technical writer.
Strong computer skills.
Clean class 1 drivers licence.

WORK EXPERIENCE

January 2015 – current
Environmental Specialist, Natural Resources Conservation Board, Red Deer, Alberta

NRCB's Co-chair of Technical Advisory Group (TAG - a partnership between the Agriculture and Food ministry, NRCB and Alberta's livestock industry)
Manage technical guideline development by seeking consensus between stakeholders.
Communicate with NRCB Chief Executive Officer about TAG progress.
Keep Policy Advisory Group updated through presentations and written updates.

Board member on Parkland Airshed Management Zone.
Review and approve financial statements (annual budgets and year end actuals).

Review Environmental Impact Assessment (EIA) project progress and contribute to preparation of Board decision reports.
Prepare and deliver presentations to the Board on current EIA projects.
Provide the Board with timely scientific information, as they request it.
Participate in hearings on EIA projects.
Manage outside expertise EIA review contracts.

Provide scientific and technical advice to NRCB approval officers and inspectors.
Conduct field work to assess potential impacts on groundwater and surface water.
Review leak detection monitoring reports and data from consultants.
Review water well monitoring data.

Organize staff training sessions as part of a team.
Present to NRCB approval officers and inspectors on technical topics – concrete, groundwater, risk screening and subsoil.

May 2002 – December 2014

Approval Officer, Natural Resources Conservation Board, Red Deer, Alberta

Reviewed applications for new and expanding confined feeding operations and manure storage facilities under Agricultural Operation Practices Act and its regulations.

Reviewed consultant reports that support applications and, when necessary, seek clarification from the consultant.

Issued clear, concise written decisions on applications.

Worked on multiple applications at once while meeting required deadlines.

Provided information on regulations and the approval process to multiple stakeholders - applicants, consultants, municipalities, neighbours and referral agencies.

Participated in drafting new approval policy.

Led a team drafting new application forms and guides for stakeholders.

Represented the approvals division in database development.

Participated in development of partial automation of decision writing.

Participated in oral Board reviews of approval officer decisions (testified under oath).

Reviewed materials filed with the Board prior to hearings.

Prepared questions for other witnesses.

WORK HISTORY

May 2010 – November 2011

Owner, The Garden Shedde, Lacombe, AB

Jan 2002 – April 2002

College Instructor, Agricultural Sciences, Lakeland College, Vermilion, AB

Oct 2001 – Nov 2001

Truck Driver, Agricore United, Vermilion, AB

Apr 1998 – Sep 2001

Manager, Embryo Seeds Inc., Mannville, AB

Jan 1995 – Mar 1998

Wireline Supervisor, Computalog Ltd., Medicine Hat, AB

May 1994 – Aug 1994, May 1993 – Aug 1993

Engineer's Assistant, Alberta Farm Machinery Research Centre, Lethbridge, AB

May 1992 – Aug 1992

Engineer's Assistant, Prairie Farm Rehabilitation Administration, Agriculture Canada, Calgary, AB

May 1991 – Nov 1991
Farm Equipment Operator, Ors Prastgard, Mellerud, Sweden

Jun 1990 – Aug 1990, Jul 1989 – Aug 1989
Mechanic's Helper, Webb's of Vermilion, Vermilion, AB

EDUCATION

May 2008 Professional Agrologist, Alberta Institute of Agrologists

May 1998 Professional Engineer, Association of Professional Engineers and Geoscientists of Alberta

Dec 1994 Bachelor of Science in Agricultural Engineering, University of Alberta

Jun 1989 High School Matriculation Diploma, Mannville School

CONTINUED EDUCATION and ACCOMPLISHMENTS

Feb 2021 Lac La Ronge Dam – Potential Dam Failure, Canadian Dam Association.

Feb 2021 Advanced Permeable Pavement Design and Construction, EPIC,
David Hein, P.Eng.

Jan 2021 Presented hydraulic conductivity training to co-workers.

Feb 2021 Aboriginal Consultation Office – Overview of Consultation in Alberta,

Dec 2020 Muskrat Falls Hydroelectric Facility Construction, Canadian Dam Association.

Jul 2020 Fugitive Dust Management course, EPIC, Steven Lamming, Ph.D.

May 2020 EXERM 4280 Wetland Delineation, Classification & Assessment, U of A.

Mar 2020 Introductory Indigenous Training, GOA, Leduc.

Feb 2020 Advanced Vehicle Control, AMA Driver Training, Calgary.

Dec 2019 Alberta Wetlands: From Classification to Policy course, Jay White, Edmonton.

Sep 2019 First Aid Certificate, St. Johns, 2 day Standard First Aid – Level C CPR/AED.

Jul 2019 Alberta Wetland Rapid Evaluation Tool – Actual (2019) Training Course.
Dr. Paul Adamus.

May 2019 Presented Concrete to co-workers.

Feb 2019 Presented Protective Layers and Compacted Soil Liners to co-workers, Red Deer.

Feb 2019 Participated in “mock” AOPA hearing, Red Deer.

Feb 2019 Feedyard Particulate Matter and Mitigation Strategies, Dr. Brent Auvermann.

Sep 2018 Presented Environmental Risk Screening Tool Training to co-workers.

Apr 2018 Writing at Work, Virginia Durksen, Calgary, 2 days.

Nov 2017 Design for Hydro Electric Power Projects, Vancouver, Dr. Ammar Taha, 2 days.

Oct 2017 Presented Concrete to co-workers.

Sep 2017 Master of Ceremonies for NRCB training in Red Deer.

Jun 2017 Mentored NRCB's NAIT Intern, on site and in the office.

Apr 2017 Group Processes for Collaborative Decision Making, Dr. Ian Montgomerie, 2 days.

Mar 2017 Challenges in Air Emission Requirements, Edmonton, Dr. Stephen Lamming, 3 days.

Mar 2017 Fundamentals of Acoustics and Noise Control, Steven Bilawchuk, M.Sc., 2 days.

Jan 2017 Presented How to use Water Well Information with the Environmental Risk Screening Tool to co-workers, Lethbridge.

Sep 2016 Difficult Conversations, Vik Maraj, Calgary, 1 day.

May 2016 Land Use 2016, Edmonton, 2 days.

Feb 2016 Trained co-workers on new concrete guideline.

Sep 2015 Introduction to River Ice Engineering, Calgary, Dr. Karl Lindeschmidt, 2 days.

Sep 2015 to Jun 2016 Led NRCB staff team that developed the NRCB's Water Well Exemption Screening Tool.

Jun 2015 Joined Parkland Airshed Management Zone (PAMZ) as a Board member and the PAMZ Issues Response Group.

May 2015 Trained co-workers on Environmental Risk Screening Tool history and a case study, Red Deer and Lethbridge.

Mar 2015 Chaired an NRCB operations discussion on grandfathered (pre 2002) confined feeding operations, Red Deer.

July 2014 Media Training, Red Deer, 1 day.

Feb 2014 Assigned as NRCB's co-chair of Technical Advisory Group (TAG).

Jan 2014 Geotechnics for Construction Professionals, soil mechanics and geotechnical engineering, instructed by Dr. Gamal Abdelaziz, P. Eng.

May 2013 Master of Ceremonies for NRCB retreat in Canmore.

Sep to Nov 2012 Management Skills for Supervisors course, Red Deer College.

Mar 2012 Received "Certificate in Interpersonal Conflict Resolution" from the Alberta Arbitration and Mediation Society.

Nov 2011 Presented Environmental Risk Screening Tool updates to co-workers.

Oct 2011 Environmental Risk Screening Tool, version 1.2, is published by NRCB. Working Group editor and member.

Sep 2011 Premier's Award of Excellence – Gold – A Risk Management Approach to Groundwater Protection at Confined Feeding Operations in Alberta

Feb 2009 Environmental Risk Screening Tool for manure facilities at confined feeding operations, version 1.1, is published by NRCB. Working Group member.

2009 start Participation in the following Technical Advisory Group (TAG) committees

- Decommissioning (2009 to 2012)
- Concrete (2009 to 2015)
- Geotechnical (2009 to current)

2007 – 2008 Risk Screening Tool (version 1.0) development by NRCB, working group member and small group member

Feb 2008 Introduction to Applied Environmental Geochemistry, Dr. Rob Donahue and Dr. Terry Fonstad, Red Deer.

Nov 2007 Introduction to Hydrogeology, Walter Ceroici, Director of Science and Technology, NRCB.

Sep 2006 The Complete Groundwater Monitoring Field Course, David and Gillian Nielsen of Nielsen Environmental Field School.

Sep 2005 Soil Science and Mapping, Ron McNeil of Landwise Inc.

Jun 2005 Design and Construction of Concrete Manure Storage Facilities Workshop, sponsored by Canadian Society for Bioengineering

Mar 2005 Fundamentals of Geotechnical Engineering for Earthen Manure Storages, Russell Johnson, M.Sc.

Feb 2005 Effective Environmental Monitoring, Sampling and Modelling, presented by Education Program Innovations Center

Aug 2004 Introduction to Hydrogeology, Dr. Ben Roston of the University of Alberta

UNIVERSITY PROJECTS

Mechanical, Chemical and Microwave Conditioning for Drying Alfalfa. Submitted for Agricultural Engineering 510: Agricultural Engineering Project.

Decommissioning and Reclamation of the Suncor Inc. Oil Sands Operation. Submitted for Soils Science 485: Land Reclamation and Remediation.

Computer Control of a Simulated Barn. Submitted for Agricultural Engineering 503: Instrumentation in Agricultural Engineering.

Finite Element Project. Submitted for Agricultural Engineering 430: Structural Design of Agricultural Buildings.

Irrigation System Design. Submitted for Agricultural Engineering 413: Irrigation and Drainage.

VOLUNTEER

2019 Canada Winter Games – Minor Official (Freestyle Skiing)

2003 – 2017 Community soccer coach - Coached girls Tier 4 teams (U12 to U18) and mixed house league teams (U6 to U10)

2015 – 2017 Central Alberta Freestyle Ski Club – Bingo and Casino coordinator

2009 – 2011 Wolf Creek Outdoor Pursuits 4-H club leader

2008 – 2009 Minor hockey coach – Atom

2007 – 2009 United Church, Ministry and Personnel committee (one year as chair)

2006 – 2007 Basketball coach – Junior High school girls

STEPHANIE FLECK, P.GEO

Edmonton AB

EXPERIENCE

AUGUST 2018 – PRESENT

ENVIRONMENTAL SPECIALIST, NATURAL RESOURCES CONSERVATION BOARD

- Provide technical support to NRCB staff on *Agricultural Operation Practices Act* permit applications and compliance activity
- Support the Board in the review of environmental impact assessments of proposed major natural resource projects under the *Natural Resources Conservation Board Act* (NRCBA)
- Direct and supervise work of contract consultants that may be required from time to time when the Board requires technical expertise that cannot be provided in-house
- Assist with development of technical guidelines and other strategic technical documents including the required consultation with other government departments and stakeholders
- Conduct field work, as required, including groundwater and surface water sampling and electromagnetic surveys

JANUARY 2018 – AUGUST 2018

REGULATORY AFFAIRS ADVISOR, APEGA

- Lead and delivered internal regulatory audits for statutory boards and committees
- Developed, implemented and maintained internal audit process
- Assisted in the design and delivery of regulatory policy and procedures
- Supported APEGA's Joint Boards and Committee operations and management
- Provided support and backfill as required to APEGA's Appeal Board

MARCH 2015 – JANUARY 2018

APPROVAL OFFICER, NATURAL RESOURCES CONSERVATION BOARD

- Worked with operators, municipalities, and industry in Alberta to ensure environmentally sound and socially acceptable siting of confined feeding operations as part of regulatory permitting requirements
- Reviewed and assessed technical information on the planning, siting, and development of confined feeding facilities
- Completed environmental risk screening of confined feeding operation facilities
- Prepared decision summary reports and permits under the *Agricultural Operation Practices Act*
- Completed project work on environmental tool development for water well risk screening

JUNE 2012 – MARCH 2015

GEOLOGIST, TRANSALTA UTILITIES INC

- Organized and executed subsoil suitability drilling programs for reclamation purposes
- Conducted geotechnical site assessments, including sampling, field tours and reports
- Completed regulatory submissions of coal exploration activities and licensing applications (annual permitting and new pit license applications)
- Oversaw dewatering, piezometer installations and pit dewatering programs
- Managed and executed coal exploration drilling programs, including work plans, cost estimates, budgeting and management of contractors
- Interpreted wireline logs and geological data for input into MineSight modelling software

MAY 2009 – SEPTEMBER 2009, MAY 2011 – JUNE 2012

ENVIRONMENTAL SCIENTIST, MATRIX SOLUTIONS INC

- Prepared technical reports for soil and groundwater assessments
- Developed work plans and prepared costs estimates for environmental programs
- Completed interpretation of groundwater data to create groundwater flow maps and chemistry distribution maps
- Conducted environmental projects such as Phase II site assessments, electromagnetic surveys, groundwater monitoring programs and groundwater and dewatering well installation

JANUARY 2012 – APRIL 2012

TEACHING ASSISTANT, UNIVERSITY OF ALBERTA

- Conducted laboratory preparation, graded assignments and acted as a mentor for undergraduate and graduate students registered in EAS 456 Advance Applied Hydrocarbon Geoscience

EDUCATION

OCTOBER 2017

MASTER OF SCIENCE IN ENVIRONMENTAL PRACTICE, ROYAL ROADS UNIVERSITY

- Course project “Fate and Transport of Nitrate in Groundwater at Confined Feeding Operations”

APRIL 2011

BACHELOR OF SCIENCE, SPECIALIZING IN GEOLOGY, UNIVERSITY OF ALBERTA

- Named on the Dean’s list for outstanding academic achievement and graduated with distinction

COURSES

- EXERM 4280 Wetland Delineation, Classification and Assessment, University of Alberta
- EXERM 4267 Environmental Audits, University of Alberta
- EAS 544 Hydrogeology Regional Groundwater Flow, University of Alberta

VOLUNTEER ACTIVITIES

- Licensure Administration Subcommittee, APEGA, June 2020 – Present
Committee Member
- Enforcement Review Committee, APEGA, January 2019 – Present
Board Member
- Appeal Board, Chartered Professional Accountants of Alberta, September 2018 – Present
Public Member Roster
- Chimo Animal Assisted Wellness and Learning Society, December 2019 – February 2021
Board Member
- Board of Examiners, APEGA, January 2019 – January 2020
Experience Examiner
- Alberta Science Network, June 2016 – December 2017
Classroom Presenter