

Tyler Elizabeth Ball, P Eng, MScA

Expert/Project Manager, Water Treatment

Professional Summary

Ms. Tyler Ball has 20+ years of experience in project management and process/environmental engineering. She is a qualified water treatment engineer, with experience in managing and designing mine, industrial and municipal water treatment solutions. Ms. Ball has designed a variety of treatment approaches, from the high-density sludge process for mine water treatment, to biological wastewater treatment systems, to UV disinfection for small drinking water systems. Her energy, drive and vision take projects to the finish line.

She has experience working in several countries, namely Germany, Bolivia, Guinea (Conakry) and the Dominican Republic.

Qualifications

Education

- Masters of Applied Science in Environmental Engineering, École Polytechnique de Montréal, Quebec, 2008
- Bachelor of Applied Science in Engineering Chemistry and BA in Business German, Queen's University, Ontario, 2002

Registrations / Certifications / Licenses

- Ordre des ingénieurs du Québec, Member No. 132573, since 2003
- Professional Engineers of Ontario, Licence No. 100650538

Training

- Academic exchange, Universität Karlsruhe, Germany (2000-2001)

Professional History

- Indigenous Water Partnership – Co-founder and Executive Director (2024 -)
- Veolia Water Technologies & Solutions – Senior Project Manager (2023 - 2024)
- ArcelorMittal Mining Canada s.e.n.c. - Project and Engineering Manager, Construction of a mine water treatment plant, Mont Wright (2020-2022), as employee of MSH Group.
- Wood, Project Manager and Mine Water Treatment Team Manager (2014 – 2020).
- SNC-Lavalin Inc., Water Treatment Engineer – Transportation, Infrastructure and Building Division, Water & Sanitation Group (2008 – 2013).
- SNC-Lavalin Inc., Engineer, Environmental Division; Junior Engineer, Socodex Division, SNC-Lavalin Construction (2003 – 2006).
- Queen's Project on International Development, On-site Technical Support (seasonal), Sucre, Bolivia (2002).

Experience

Golden Triangle Polymers Project, Water Treatment System, Orange, Texas (2023-2024)

- Lead multi-discipline team (including engineering design, procurement and commissioning) for Ultrafiltration and Demineralization Package on Plastics Plant greenfield project. The system includes Ultrafiltration membranes, Reverse osmosis and MBIX (mixed bed ion exchange) packages.
- Challenges leading the team through adaptation to oil & gas specifications, and supply chain challenges.

Years of Experience

20+

Office of Employment

Montreal, Quebec, Canada

Languages

- English (native)
- French (native)
- Spanish (professional)
- German (intermediate)

Areas of Expertise

- Project Management
- Design
- Drawings and specifications
- Studies

Contact Information

tyler@tylereball.com

(514) 216-1390

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Construction

ArcelorMittal, UT-HS-2 Mine Water Treatment Plant, Mont Wright, Fermont, Quebec (2021 – 2022)

- Project and Engineering Director. Construction of \$60-million 30,000 usgpm lamella clarifier-based physico-chemical treatment plant, Mont Wright site, Fermont, Quebec. Delivery for Q2/Q3 2022.
- Delivery of plant was divided by the client into 4 major construction packages (civil/concrete, building, mechanical, and electrical) and almost 20 prepurchased equipment packages, all managed by the project.
- Built up and led construction management team while coordinating offsite technical support
- Working closely with client on “Operational Readiness” program

Design

Ascot Resources Ltd., Senior Review of Premier Gold Project Water Treatment Plant Design and Laboratory Testing Protocol (2021)

- Senior review of design criteria, drawings, calculations, process components and details.
- With design team, development of laboratory testing protocol and review of preliminary and final results to interpret findings that could be used in process refinement.

ArcelorMittal, Detailed design of two mine water treatment plants, Mont Wright, Fermont, Quebec (2018 – 2020)

- Project Director. Detailed design of 2 mine water treatment plants, Mont Wright site, Fermont, Quebec. Four and two Densadeg (proprietary lamella clarifier) units in two separate red water treatment plants, at 2.75 m³/s and 1.8 m³/s, respectively. The process includes chemical dosing systems, sludge management, TSS and metals removal in the clarifier, floating water intake barge and more. Process design and coordination of multi-disciplinary team (partially subcontracted) for fast-track project. Ms. Ball planned and carried out the following related to the project, among others: Design review sessions, risk evaluation, constructability sessions, HAZOP, construction planning using P6, and constant coordination with the client to achieve project success.

Atlantic Richfield (British Petroleum), HDS Pre-Feasibility Plant Design, Berkeley Pit Mine, Butte, Montana, 2019-2020.

- Process Engineering Manager, Design of a two-stage high density sludge pit water treatment plant to be combined with an existing reverse osmosis (membrane) polishing plant.
- Evaluation of different treatment technologies with preparation of an 8-week pilot study.

Playground Poker, Design of sewage treatment system for a casino, Kahnawake, Quebec (2017 – 2018).

- Preparation of design criteria and preliminary design report for a tertiary sewage treatment system at a casino and restaurant on Kahnawake territory.

Confidential client, Upgrade for a lead-laden-water treatment plant, Sainte-Catherine, Quebec (2017).

- Project management, preliminary engineering and permitting for a wastewater treatment system (Pb and SO₄) for an acid battery recycling facility (ongoing).

Goldcorp, Preliminary design for mine-water treatment systems, North Porcupine, Ontario (2015, 2017).

- Preliminary design of mine-water neutralization system for the Borden mine (2017).
- Preparation of conceptual design documents including calculations, rough price estimating, PFDs and a GA for several water treatment options in order to manage arsenic in surface runoff from the Pamour mine waste rock (2015).

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Teck Resources Limited, Val-d'Or, Quebec (2017).

- Application for a certificate of authorization from Quebec's Ministry of the Environment (MELCC) for the new water treatment plant project on the former Louvem Mine site.

UK Coal Authority, Design of water treatment system for historical mine sites, United Kingdom (2015 – 2018).

- Preliminary evaluation of active point-source treatment system options for historical contaminated sites, for removal of Zn, Cd and Pb.

Vale, Preliminary design of a mine-water treatment plant for the Voisey's Bay Mine, Labrador (2014 – 2015).

- Preparation of design documents including calculations, price estimating, PFDs, P&IDs and a GA for the conceptual design of a mine service-water treatment plant at an operating nickel-copper mine.

Pretium Natural Resources, Bruce Jack mine water treatment, British Columbia (2015).

- Reviewed and overhauled reports for mine permitting documents describing bench scale testing of a mine-water treatment process for the Bruce Jack mine.

New Brunswick Department of Natural Resources, Review of capital and operational costs for mine-water treatment, New Brunswick (2015).

- High-level review of mine-water treatment capital and operational costs selected for the Sisson Brook Mine, for operations and post-closure.

Municipality of Senneterre, Dry hydrants, Senneterre, Quebec (2014).

- Managed a project for the design of three dry hydrants on municipal lands, and application for a certificate of authorization.

Trois Lacs School Board, Water treatment system upgrade for the Immaculée-Conception school, Saint-Télesphore, Quebec (2014).

- Managed project to design and install upgrade to small-scale disinfection system on drinking water system.

Vale, Water management for the Voisey's Bay mine, Labrador (2014).

- Risk evaluation of use of thiosalt-laden reclaim water as underground service water, with emphasis on H₂S production, corrosion and scaling, at an operating nickel-copper mine.

Sucrerie de la Montagne, Wastewater treatment system for a restaurant and sugar refinery, Rigaud, Quebec (2014).

- Communications with the Ministry of the Environment for a Certificate of authorization for a small wastewater treatment system (Bionest).

City of Vaudreuil-Dorion, Well-water treatment verification, Quebec (2014).

- Verification of the disinfection system at the Hudson Acres well and calculation for the removal of virus logs.

Le Troupeau Béné Cheese Factory, Wastewater treatment system upgrade, Brownsburg-Chatham, Quebec (2014).

- Preparation of application for a certificate of authorisation to upgrade the wastewater treatment system.

City of Penal, Biological wastewater treatment plant, Trinidad (2013).

- Plans and specifications for a biological wastewater treatment plant for a future hospital. Pumping station, sequencing biological reactor (SBR) system, UV and sludge drying system with Geotube®.

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City of Châteauguay, Wastewater treatment plant upgrade, Quebec (2013).

- Upgrading study for the sewer network, pumping stations and wastewater treatment plant for 2023 and 2033, and preparation of plans and specifications for Phase 1 for the mandate granted following this study, including biofiltration, TSS management and plant automation and controls.

RAEBL, Wastewater treatment plant upgrade, La Prairie, Quebec (2011).

- Installation of dewatering equipment (centrifuges) in the wastewater treatment plant for the Régie d'assainissement des eaux du bassin La Prairie. Preparation of plans and specifications.

Viau Kraft Cookie Factory, Industrial wastewater treatment, Montreal, Quebec (2011).

- Wastewater treatment equipment design. Preparation of plans and specifications for the proposed treatment system.

Instituto Nacional de Aguas Potables y Alcantarillados (INAPA), Environmental management plan, Barahona, Dominican Republic (2009).

- Environmental management plan for the Barahona potable water treatment plant. Preparation of an environmental management plan based on a site visit and meetings with the client at the new treatment plant and headquarters.

City of Montreal, Upgrade of potable-water treatment plants, Quebec (2009).

- Upgrading project for the Montreal potable water treatment plants (MNU). Preparation of specifications for the installation of UV reactors at the Atwater plant as well as preparation of specifications for the supply and installation of conventional or membrane type treatment system for the Pierrefonds plant.

Operation, as Wood Water Treatment Systems Operation Team Lead

Municipality of Saint-Édouard, Wastewater treatment system operation, Quebec (2018).

- Supervision of operators for the control, maintenance and sampling program required to ensure the proper functioning of wastewater treatment system facilities for the municipality of Saint-Édouard. The facilities consist of several pumping stations and an aerated lagoon.

Municipality of Saint Polycarpe, Operation of potable and wastewater treatment systems, Quebec (2017 – 2018).

- Supervision of operators for the control, maintenance and sampling program required to ensure the proper functioning of the drinking water and wastewater systems for the municipality of Saint Polycarpe. The facilities consist of several sewage pumping stations, two aerated lagoons and a drinking water treatment plant.

MTQ Rest stops, Operation of potable and wastewater treatment systems, Quebec (2017 – 2018).

- Supervision of operators for the control, maintenance and sampling program required to ensure the proper functioning of the drinking water and wastewater treatment system at several provincial highway rest stops, including those in Saint-Jérôme, Lavaltrie and Rivière-Beaudette for which Wood has been subcontracted.

Trois-Lacs School Board, Operation of potable-water treatment systems, Saint-Télesphore, Quebec (2017).

- Supervision of operators for the control, maintenance and sampling program required to ensure the proper functioning of drinking water systems for one school.

Galderma, Operation of an industrial wastewater treatment system, Baie-d'Urfé, Quebec (2017 – 2018).

- Supervision of operators for operation of an industrial wastewater treatment system. The system consists of a dissolved air flocculator and pH adjustment. The wastewater comes mainly from rinse-water used in packaging of the production units of various creams and is characterized by a high concentration of oil and fats with a low pH.

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Les Gestions Ferro, Operation of potable and wastewater treatment systems, Quebec (2017 – 2018).

- Supervision of operators for the control, maintenance and sampling program required to ensure the proper functioning of the drinking water and wastewater treatment facilities.

Municipality of Saint Lazare, Operation of potable and wastewater treatment systems, Quebec (2017).

- Supervision of operators for the control, maintenance and characterization required to ensure the proper functioning of the drinking water and wastewater systems for the municipality of Saint Lazare. The facilities consist of several sewage pumping stations, two aerated lagoons and two drinking water treatment plants.

Other Projects

Vietnam Provincial Environmental Governance for the Government of Vietnam, Hanoi, Vietnam (2008 – 2009).

- Planning for a \$15 million project over 5 years with the Primavera project management software.

SNC-Lavalin, Coordination and preparation of a construction-site environmental management plan (CEMP), Montreal, Quebec (2006).

- Research, collect and integrate critical information to guide SNC-Lavalin Project Managers during environmental management on construction sites. This was to develop a Directive for the production of CEMPs to be applied to each project and the production of specific CEMPs adapted to the needs of the site.

Synthesis of engineering documents to produce comprehensive and succinct descriptions of projects for environmental impact studies on three projects:

- Port for liquefied natural gas tankers for Rabaska, Lévis, Quebec (2006).
- Phosphate mine and chemical complex in Al Jalamid for Saudi Arabian Mining Company (Ma'Aden), Saudi Arabia (2005).
- Sangarédi alumina plant project for Guinea Alumina Corporation, Conakry, Guinea (2005).

CAASD, Rio Haina dam and water treatment station project, Santo Domingo, Dominican Republic (2003 – 2004).

- Project Coordinator. Managing with the Project Manager each component of the project: engineering, hydrogeological and environmental studies and cost estimates.

Other Experience

Expertise for Litigation/Court Cases

- 2025: Expertise for confidential client, water treatment plant construction management
- 2024-25: Expertise report, Design of water supply, storage and distribution systems, for confidential client providing equipment to northern mine site

Committees

- Indigenous Relations Committee, Co-founder, VWTS. Establishing corporate policy and actions around collaboration with Indigenous peoples in Canada at Veolia. Partnership with CCAB (Canadian Council for Aboriginal Business).
- Women's Network, Quebec, Co-founder, VWTS. Objectives include Provide managers with tools proven to increase the percentage of women in leadership positions in a sustainable way; and Promote a corporate culture and working environment in which women can count on being welcomed and respected the same way men are."
- Quai34 Winning Project Design: With an architect and an urban designer, the project was selected out of 620 projects by public vote (over 20,000 votes cast). Redevelopment and greening of historical Lachine quai on the Saint-Lawrence River. Quai34 was one of seven projects to share the \$10 million reserved by the City of

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Montreal for “participatory projects” aiming to contribute to the social and ecological transition of the City, and serving a collective interest (2020 – 2022). Construction spring 2024.

- Director, High School Outreach Program (Engineers Without Borders/EWB). Organizing and leading presentations about water treatment to high-school and CEGEP students (2006 – 2008).
- Project Manager, Solar Cookers, Conakry, Guinea: Engineers Without Borders Quebec. Coordinate, motivate and guide team of engineers to develop optimum solar cookers for the needs of Guinean families, including project planning, budgeting, design, fundraising, construction and implementation. Travelled to Guinea and maintained close communication with contact in Conakry to bring the project to life on a very small budget and under challenging conditions (2004 – 2006).

Additional Qualifications

Publications / Presentations

- Opinion Piece: Now is the time for Canada to assume its infrastructure responsibilities to First Nations, October 9, 2024, The Hill Times.
- Discussor at Technical Mining Session, “Novel Chemical Solution Leads to Water Savings in Mining Operations”, IWC All-Virtual Annual International Water Conference, Nov 11 2020.
- “Comparison of two online flocculation monitoring techniques for predicting turbidity removal by granular media filtration”, Ball, T., Carrière, A., Barbeau, B. Environmental Technology, vol. 32, no 10, pp. 1095-1105 (2011).
- “Optimisation de la flocculation pour l’application de la filtration directe à l’usine Atwater” Tyler Ball & Benoit Barbeau, Réseau Environnement – 19th Workshop on drinking water, Saint-Hyacinthe - 16 & 17 October 2007