

Gillian Allen, B.Sc., P.Eng

Environmental Engineer

Education

B.Sc., Environmental Engineering, University of Saskatchewan, Saskatchewan Canada, 2011.

Professional Associations

Professional Engineer (APEGGS)

Professional Summary

Gillian Allen is a Senior Engineer based in Saskatoon, Saskatchewan, Canada. Gillian has experience in a range of technical experience involving mining reclamation projects throughout Canada, South America, Africa, Europe, and Australia. She is currently part of Okane's core modelling group and provides technical assistance on various other project aspects. Gillian has significant project experience with cover system design modelling, seepage modelling, and site-wide water and solute balance modelling, as well as in project coordination, construction quality assurance, and risk management. Recent project work includes project coordination of a multi-phase waste rock storage facility construction project, including identifying risks, coordinating targeted studies (numerical modelling) to mitigate identified risks, designing monitoring systems to manage risk, and supervising development of IFC designs and operations and maintenance manuals.

Experience

2013 - Present	Okane Consultants (Saskatoon, Canada)
2012 - 2013	Okane Consultants (Brisbane, Australia)
2011 - 2012	Okane Consultants (Saskatoon, Canada)

Selected Project Experience

Cover System and Landform Design

- Surface Water Management Design – Kearl Oil Sands Project, Alberta, Canada. Supervision of surface water management design modelling and flood mapping.
- Surface Water Management Design – Mt. Nansen Mine, Yukon, Canada. Supervision of updated background hydrology, calibrated runoff modelling, and surface water design

event development for surface water management design.

- Landform Design – Amaruq Project, Nunavut, Canada. Supervision of IFC landform design.
- Cover System Modelling – Amaruq Project, Nunavut, Canada. Supervision of thermal and soil-plant-atmosphere modelling of cover systems to verify closure designs.
- Cover System Modelling – Kevitsa Mine, Finland. Thermal and soil-plant-atmosphere modelling of cover systems to verify closure designs.
- Seepage Modelling – Faro Mine, Yukon, Canada. Seepage modelling of historic waste rock stockpiles.
- Cover System Modelling – Meadowbank Mine, Nunavut, Canada. Thermal and soil-plant-atmosphere modelling of cover systems to verify closure designs.
- Seepage and Cover System Modelling – Cantung Mine, Northwest Territories, Canada. Seepage and cover system modelling of active and closed tailings facilities.
- Seepage and Groundwater Modelling – Rum Jungle Mine, Northern Territory, Australia. Seepage and groundwater modelling of historic tailings facilities.

Water and Solute Balance Modelling

- Site-Wide Water and Solute Balance – Rainy River Mine, Ontario, Canada. Development of site-wide water and solute balance model.
- Solute Transport Assessment – Gunnar Mine, Saskatchewan, Canada. Solute transport assessment at historic tailings facilities.
- Site-Wide Water and Solute Balance – Cantung Mine, Northwest Territories, Canada. Development of site-wide integrated load balance.

Construction Quality Assurance

- Operations, Monitoring and Surveillance Manual – Amaruq Project, Nunavut, Canada. Development of OMS Manual for mine rock stockpiles.
- Technical Specifications – Amaruq Project, Nunavut, Canada. Development of construction technical specifications for mine rock stockpiles.
- Construction QA/QC – Gunnar Mine, Saskatchewan, Canada. Development, implementation and site QA/QC of design technical specifications.
- Cover Trial Supervision – Kevitsa Mine, Finland. Supervision of site compaction and cover system field trials.
- Performance Monitoring Installation – Smoky Canyon Mine, Idaho, USA. Installation of a large-scale lysimeter and soil monitoring stations.

Regulatory Permitting

- Water License Approvals – Amaruq Project, Nunavut, Canada. Support of updated water license and construction approval documents and responses for regulatory approvals.
- Environmental Compliance Approvals – Rainy River Mine, Ontario, Canada. Development of updated environmental compliance approvals documents for regulatory approvals.
- Closure Plan Development – Rainy River Mine, Ontario, Canada. Development of updated closure plan document for regulatory approvals.

Risk Management

- Failure Modes and Effects Analysis – Amaruq Project, Nunavut, Canada. Multi-disciplinary failure modes and effects analysis of a mine rock stockpile.
- Failure Modes and Effects Analysis – Rainy River Mine, Ontario, Canada. Multi-disciplinary failure modes and effects analysis of a tailings management area.
- Failure Modes and Effects Analysis – Cantung Mine, Northwest Territories, Canada. Multi-disciplinary failure modes and effects analysis of the mine site.
- Failure Modes and Effects Analysis – La Coipa Mine, Chile. Development of site-wide conceptual model through review of available site studies and data gap identification. Screening-level failure modes and effects analysis.
- Risk Management Tool – Keno Hill Mine, Yukon, Canada. Development of closure planning tool for selecting suitable cover system options for several mine rock stockpiles

Field Investigations

- Drilling Investigations – Faro Mine, Yukon, Canada. Planning and supervision of mine rock drilling program.
- Groundwater Program – Aurora Mine, AB, Canada. Annual groundwater sampling program.

Cost Analysis

- Constructability and Cost Analysis – Geita Mine, Tanzania. Constructability and cost comparison of progressive and end of mine life reclamation.
- Constructability and Cost Analysis – Antamina Mine, Peru. Constructability and cost analysis for a mine rock stockpile cover system pilot study.

Publications, Presentations

- Allen, G., Tallon, L., Flemming, D., Shaw, S. 2015. Evaluation of cover systems for closure of tailings storage facilities at North American Tungsten Corporation's Cantung Mine in proceedings of Mine Closure Conference 2015, Vancouver, Canada
- Bonstrom, K., Allen, G., O'Kane, M., Christensen, D. 2012. Evolution of cover system design and waste rock management at a mine in the Pilbara region of Western Australia in proceedings of Mine Closure Conference 2012, Brisbane, Australia.