

Resume

Name:	Joseph (Joe) Michael Seery
Country of Citizenship:	Australia
Educational Qualification:	BEng (Hons): Mineral Exploration and Mining Geology Curtin University Western Australian School of Mines, Kalgoorlie, Australia, 1996. MEngSc: Mining Geomechanics Curtin University Western Australian School of Mines, Kalgoorlie, Australia, 2004
Professional Associations:	Member of the Australian Geomechanics Society. Member of the Australian Institute of Mining and Metallurgy.
Publications:	12
Languages:	English Spanish and Portuguese (conversational)
Software:	Vulcan, GEM4D, Micromine, Map3D, RocLab, Dips, Slide, Survey123, Phase2, SWedge, RocPlane, SQL Server, 3DF Zephyr.

Joe Seery graduated from the Curtin University – Western Australian School of Mines in 1996 with a Bachelor of Engineering (Honours) in Mineral Exploration and Mining Geology and subsequently completed a Masters of Engineering Science in Mining Geomechanics at the Curtin University Western Australian School of mines in 2004. Joe has over 25 years of geotechnical and geological experience in a diverse range of underground and open cut mining projects in commodities including iron ore, gold, lithium/tantalum and coal in both Australia and internationally in Brazil, Argentina, Colombia, Papua New Guinea, Mali, Ghana and Tanzania. In late 2019, Joe founded Bastion Geotechnical Pty Ltd. He has authored /co-authored a large number of technical reports, published 11 technical papers and presented at several international conferences. Joe's expertise extends to the development and implementation of geotechnical data management systems and he has a keen interest in advancing efficiencies in the discipline through the use of developing technologies.

Fields of Expertise:

Joe specialises in operational geotechnical management and geotechnical data and systems. Fields of competence include:

- Geotechnical design and reporting for open pit and underground excavations
- Facilitation of geotechnical hazard and risk management assessments
- Expert review and technical audits
- Peer and technical reviews
- Geotechnical database setup, maintenance and review
- Photogrammetric model construction
- Large structure modelling
- Forensic back-analysis of falls-of-ground
- Geotechnical laboratory sample selection, preparation, results interpretation and reporting
- Data compilation, conversion, validation and review
- Core-photo logging
- Structural and rock mass domaining

- Rock mass and structural (Large scale and fabric) characterization
- Preparation of histograms, empirical charts and borehole logs
- Mentoring and training of professionals and workforces
 - Geotechnical hazard awareness training
 - Core logging training
 - Cell and scanline mapping training
 - Photogrammetry interpretation training
 - Software training (Dips, Slide, Phase2, Map3D, Vulcan, GEM4D, Survey123, SQL Server)
- Preparation of video and competency/training material
- Supervision of geotechnical data collection activities
- Geotechnical data collection and interpretation
 - Cell, scanline and large structure mapping
 - Geotechnical and structural core logging
 - Geophysics
- General contract works and leave coverage
- Review of procedures, documentation and management plans
- Fall of Ground incident investigations
- Review of monitoring and data

Experience

October 2019 – Present:	Director and Principal Geotechnical Engineer Bastion Geotechnical Pty Ltd, Perth, Australia
June 2014 – October 2019:	Manager: Geotechnical Engineer AngloGold Ashanti, International Operations
April 2011 – June 2014:	Associate Geotechnical Engineer Pells Sullivan Meynink Engineering Consultants, Perth, Australia
March 2010 – April 2011:	Superintendent Geotechnical Data Systems Rio Tinto Iron Ore, Perth, Australia
December 2007 – March 2010:	Specialist Geotechnical Engineer Rio Tinto Iron Ore, Perth, Australia
June 2006 – November 2007:	Superintendent Geotechnical Engineering Pilbara Iron, West Pilbara Operations, Australia
July 2002 – June 2006:	Geotechnical Engineer Hamersley Iron/Pilbara Iron, Paraburdoo, Australia
May 2000 – August 2001:	Geotechnical Engineer Delta Gold Limited, Kalgoorlie, Australia
July 1998 – May 2000:	Underground Geologist North Limited/Delta Gold Limited, Kalgoorlie, Australia
March 1997 – July 1998:	Open Pit Mine Geologist North Limited, Kalgoorlie, Australia
August 1994 – July 1996	Various roles in the capacity of vacation works and university assistance

Independent or Expert Reviews

Absolute Geotechnics Western Australia	Independent technical peer review of a Geotechnical Review of Northern Star Resources Fimiston South Expansion Feasibility Study. Two (2) reviews.
South32 Boddington Bauxite Mine	Technical Assurance Review of bowtie risk assessment.
Norton Goldfields Paddington Operations Western Australia	Independent advice on Ground Control Management Plan, Ground Support Standards and other operational activities.
Absolute Geotechnics Western Australia	Independent technical peer review of a Geotechnical Design Review for Galaxy Resources Mt Cattlin Open Pit.
Absolute Geotechnics Western Australia	Independent technical peer review of a Geotechnical Site Assessment for Galaxy Resources Mt Cattlin Mine Site.
AngloGold Ashanti Australian and Global Operations and Projects	Provision of technical assurance and internal peer review support for the Principal Geotechnical Engineering and global operational teams. Operations and Projects included: <ul style="list-style-type: none">• Colombia Projects (Gramalote, La Colosa, and Quebradona)• Brazilian Operations (Córrego do Sítio, Cuiabá, Lamego)• Argentina Operations (Cerro Vanguardia)• Guinea Operations (Siguirí Gold Mine)• Mali Operations (Sadiola Gold Mine)• Ghana Operations (Iduapriem Gold Mine and Obuasi Gold Mine)• Tanzania Operations (Geita Gold Mine)• South African Corporate Office• Australian Operations (Sunrise Dam Gold Mine and Tropicana Gold Mine)
Talison Lithium Greenbushes Mine Western Australia	Geotechnical Risk Assessment Workshop for the Ground Control Management Plan.
Rio Tinto Iron Ore Western Australia	Provision of technical assurance and internal peer review support for operational geotechnical teams of the West Pilbara operations.

Major Mining Investigations

Endeavour Mining	Fetekro Open Pit DFS Geotechnical Design Specification.
Endeavour Mining	Houde Gold Mine Back-Analysis and Geotechnical Design Specification.
Endeavour Mining	Kalanako Project Geotechnical Design Specification.
OM (Manganese) Ltd.	Shekuma Stage 8 Geotechnical Design Specification.
OM (Manganese) Ltd.	Chugga Far North Geotechnical Design Specification.
OM (Manganese) Ltd.	Masai2B Stage 2 Geotechnical Design Verification.

Major Mining Investigations (Continued)

Red Rock Geotechnical	Limit Equilibrium Slope Stability Analyses for a major Pilbara Iron Ore Open Pit Mine.
AngloGold Ashanti Siguiri Remote Lease Project Guinea	Geotechnical design for the Pre-Feasibility Study for 7x <80m deep pits. Collation of geotechnical data, compilation of a geotechnical model, kinematic and probability of undercutting analyses and 2D slope stability analyses (LE).
AngloGold Ashanti Butcher Well Project Scoping Study Western Australia	Training of field personnel in the collation of geotechnical data, evaluation and contribution of geotechnical inputs into the Scoping Study report assessing open pit and underground designs.
AngloGold Ashanti Tropicana Gold Mine Long Island Study Western Australia	Collation of geotechnical data, completion of validation activities and reporting.
AngloGold Ashanti Iduapriem Gold Mine Highwall Steepening Project Ghana	Implementation of a photo-logging campaign on resource geology drilling photographs. Implementation of a Point Load Testing and geomechanics laboratory testing (UCSE, TCS, DST) campaign. Interpretation of fabric and large structure data derived from geo-referenced photogrammetry and aerial photographs.
AngloGold Ashanti La Colosa Project Colombia	Revision and update of geotechnical design for a proposed ~900m deep open pit.
AngloGold Ashanti Gramalote Project Colombia	Geotechnical design for the Pre-Feasibility Study for 4x <450m deep staged pits. Collation of geotechnical data, compilation of a geotechnical model, kinematic and probability of undercutting analyses.
AngloGold Ashanti Quebradona Project Colombia	Collation of geotechnical data, completion of validation activities and reporting.
BHP Billiton Iron Ore Mining Area C Project Western Australia	Geotechnical design for multiple open pits in the Mining Area C deposit. Collation of geotechnical data, compilation of a geotechnical model, kinematic and probability of undercutting analyses and 2D slope stability analyses (LE).
Pells Sullivan Meynink Pilbara Operations Western Australia	Geotechnical design for multiple open pits in the Paraburdoo, Eastern Range, Brockman and Western Turner Syncline Mining Areas. Collation of geotechnical data, compilation of a geotechnical model, kinematic and probability of undercutting analyses and 2D slope stability analyses (LE).
<ul style="list-style-type: none"> • Paraburdoo • Eastern Range • Western Turner Syncline • Brockman 2 • Brockman 4 	

Major Mining Investigations (Continued)

Rio Tinto Iron Ore Pilbara Operations Western Australia	Design and project management of diamond drilling for geotechnical logging and hydrogeological testing in the Paraburdoo, Eastern Range, Channar, Brockman 2, Hope Downs 4, Marandoo and Yandicoogina (Open pits) Mining Areas.
<ul style="list-style-type: none">• Paraburdoo• Eastern Range• Channar• Brockman 2• Hope Downs 4• Marandoo• Yandicoogina	Geotechnical design for multiple open pits. Management of multiple consultants including Snowden, Coffey Mining and Pells Sullivan Meynink.
Delta Gold Limited Kanowna Belle Gold Mine Western Australia	Investigation using numerical modelling of the stress re-distribution as a result of mining the Kanowna Belle underground orebody.

Systems and Data Management

Bastion Geotechnical Pty Ltd	Collaboration with industry partners including Minalyze, Imago amongst others to advance efficiencies in the discipline through the use of developing technologies.
AngloGold Ashanti Global Operations and Projects	Implementation and maintenance of the GeotAgg Database and reporting/visualization tools. Geotechnical and hydrogeological data management (SQL Server Database: Geotechnical logging for rock and soil, window/cell, scanline, large structure and photogrammetric mapping, laboratory testing, inspections). Software systems included GEM4D, SQL Server, 3DF Zephyr, Esri Survey123.
Pells Sullivan Meynink	Implementation and maintenance of a SQL Server Database. Geotechnical and hydrogeological data management (SQL Server Database: Geotechnical logging for rock and soil, laboratory testing).
Rio Tinto Iron Ore	Implementation and maintenance of the acQuire Database and reporting/visualization tools. Geotechnical and hydrogeological data management (acQuire Database: Geotechnical logging for rock and soil, scanline, large structure and photogrammetric mapping, laboratory testing, inspections, Fall of Ground events).

Mining Operational Support and Management

Nathan River Resources Roper Bar Iron Ore Mine Northern Territory Australia 2021	Inspections of operational area, review of slope instabilities, provision of technical advice.
OM (Manganese) Ltd. Bootu Creek Mine Northern Territory Australia 2020	Large structure mapping of the Tourag open pit highwall. Provision of advice regarding geotechnical drilling, logging and sampling of three diamond cored boreholes. Provision of advice regarding prism monitoring.
Nathan River Resources Roper Bar Iron Ore Mine Northern Territory Australia 2020	Inspections of operational area, review of mine design in the context of historical advice. Provision of advice and documentation for a Ground Control Management Plan.
Hawthorn Resources Trouser Legs Open Pit Western Australia 2019	Provision of operational geotechnical advice regarding working in the vicinity of a Fall of Ground. Inspection of the geotechnical conditions of the remainder of the open pit.
Iduapriem Gold Mine Ghana 2019	Facilitation of a Geotechnical Risk Assessment Workshop regarding undercutting of bedding planes. Duties included compilation of a 3D geo-referenced photogrammetry model and interpretation in the context of prism monitoring data and assessment of the impact on anticipated slope stability. Review of operational geotechnical conditions of a hard rock slope adjacent to a Tailings Storage Facility. Duties included compilation of a 3D geo-referenced photogrammetry model and interpretation for fabric and large structure and assessment of the impact on anticipated slope stability.
Córrego do Sítio Gold Mine Brazil 2017 – 2019	Provision of operational geotechnical support for the management of geotechnical hazards in the underground and open pit mines. Duties included mentoring on the use of Map3D models, technical site visits, inspections and reporting.
Premier Coal Mine Western Australia 2014	Provision of operational geotechnical support for the management of a Fall of Ground adjacent to a public highway. Duties included review and interpretation of monitoring data in the context of visual observations of the Fall of Ground.
Talison Lithium Greenbushes Mine Western Australia 2013	Provision of operational geotechnical support for the management of mining in the vicinity of a Fall of Ground. Duties included review and interpretation of monitoring data in the context of visual observations of the Fall of Ground.
Rio Tinto Iron Ore West Pilbara Operations • Paraburdoo • Eastern Ranges • Channar • Marandoo • Tom Price • Brockman 2 2002 – 2007	Provision of operational geotechnical & hydrogeological support to multiple open pits. Manage & mentor team of geotechnical engineers & technicians. Duties included scanline mapping for optimisation of slope design, management of geotechnical hazards and Fall of Ground events, management of external consultants and contractors.

Mining Operational Support and Management (Continued)

Kanowna Belle Gold Mine
Western Australia
2000 – 2001

Provision of operational geotechnical support for the underground mine. Duties included quality control of ground support standards, cable bolt designs for intersections and stopes, stope and pillar designs, intersection audits and management of geotechnical hazards.

Training, Mentoring and Competency Development

Geotechnical Core Logging
and Sampling
2020

One on one session upskilling on geotechnical logging methodology and sampling for laboratory testing.

Map3D Training
2019

Tailored training course in the use of Map3D (BEM) Software for Geotechnical engineer as part of continued professional development.

AngloGold Ashanti
2014 – 2019

Provision of training, mentoring and competency development for the Principal Geotechnical Engineering and global operational teams including:

- Colombia Projects (Gramalote, La Colosa, and Quebradona)
- Brazilian Operations (Córrego do Sítio, Cuiabá, Lamego)
- Argentina Operations (Cerro Vanguardia)
- Guinea Operations (Siguiri Gold Mine)
- Mali Operations (Sadiola Gold Mine)
- Ghana Operations (Iduapriem Gold Mine and Obuasi Gold Mine)
- Tanzania Operations (Geita Gold Mine)
- Australian Operations (Sunrise Dam Gold Mine and Tropicana Gold Mine)

Shotcrete QA/QC workshop – Belo Horizonte.

Geotechnical block modelling workshop – Belo Horizonte.

Pells Sullivan Meynink
2011 – 2014

Provision of training, mentoring and competency development to junior engineers.

Delivery of training courses to Rio Tinto Iron Ore (Perth) for the use of Maptek Vulcan and acQuire software.

Rio Tinto Iron Ore
2007 – 2011

Provision of training, mentoring and competency development to junior engineers and operational teams at the Paraburdoo, Tom Price, Marandoo, and Brockman operations.

Invited Speaker Presentations and Journal Reviews

1. **Australian Centre of Geomechanics Second International Slope Stability in Mining Conference (2021)**. Invited Technical Reviewer.
2. **Australian Centre of Geomechanics Second Underground Mining Technology Conference (2020)**. Invited Technical Reviewer.
3. **Australian Centre of Geomechanics Slope Stability (2020)**. Invited Technical Reviewer.
4. **BHP Billiton (2019)**. Invited Speaker. Management of Geotechnical Data – AngloGold Ashanti Experience, Perth, Western Australia.
5. **Western Australian Ground Control Group (2019)**. Invited Speaker. Considerations for Digital Transformation in the Geotechnical Engineering Discipline, Perth, Western Australia.
6. **Congreso Internacional de Energía y Recursos Minerales (2018)**. Invited Speaker. Management of Geotechnical Data – AngloGold Ashanti Experience, Seville, Spain.
7. **The South African Institute of Mining and Metallurgy (2015)**. Invited Speaker. Limit Equilibrium Analysis of a Planar Sliding Example in the Pilbara Region of Western Australia – Comparison of Modelling Discrete Structure to Three Anisotropic Shear Strength Models, Cape Town, South Africa.
8. **The South African Institute of Mining and Metallurgy (2015)**. Invited Technical Reviewer.
9. **Western Australian Ground Control Group (2015)**. Invited Speaker. Introduction to the GeotAgg database and reporting/visualization tools, Perth, Western Australia
10. **Australian Centre of Geomechanics Slope Stability (2007)**. Invited Speaker. Use of an Excavation Compliance Indicator to Assess Conformance to Slope Design, Perth, Western Australia.

Publications

1. **Ramires, J.E.F., Batista, G.A.P., Da Silva, J.H., Campos, M.P., and Seery J. (2020).** Classificação de Sistema Q Aplicado a Mapeamento de Domínio Geotécnico-Estrutural. Proceedings of Revista Brasileira de Geologia de Engenharia e Ambiental (RBGEA) – Volume 10, no. 1, 2020..
 2. **Ramires, J.E.F., Batista, G.A.P., Da Silva, J.H., Campos, M.P., and Seery J. (2019).** Q-system Classification applied to Geotechnical-Structural Domain Mapping. (in preparation) Proceedings of ISRM 14th International Congress on Rock Mechanics, Foz do Iguaçu.
 3. **Ramires, J.E.F., Campos, M.P., Batista, G.A.P., Da Silva, J.H., Carvalho, A.S. and Seery J. (2019).** RQD Block Modelling for the Identification of a Shear Zone at a Narrow Vein Underground Gold Mine. Proceedings of 53rd US Rock Mechanics/Geomechanics Symposium, New York.
 4. **Seery, J.M., Franklin, C. and Hamman, E.C.F. (2018).** Management of Geotechnical Data – AngloGold Ashanti Experience. Proceedings of Slope Stability 2018, Seville.
 5. **Hamman, E.C.F., du Plooy, D.J. and Seery, J. (2017).** Data Management and Geotechnical Models. Proceedings of Deep Mining 2017: Eighth International Conference on Deep and High Stress Mining, Perth.
 6. **Seery, J. (2015).** Limit Equilibrium Analysis of a Planar Sliding Example in the Pilbara Region of Western Australia – Comparison of Modelling Discrete Structure to Three Anisotropic Shear Strength Models. Proceedings of SAIMM Slope Stability 2015, Cape Town.
 7. **Savage, N., Nicholas, L., Wilson, A. and Seery, J. (2013).** Visual Communication of Geological Confidence – A Move Toward a Less Subjective Approach. Proceedings of Iron Ore 2013, pp. 169-174.
 8. **Pere, V, Seery, J, de Graaf, P. and Mould, R. (2011).** Development of an acQuire Based Geotechnical Data Management System. Proceedings of the 2011 International Mining Geology Conference, Melbourne, pp. 353-360.
 9. **Day, A. and Seery, J. (2007).** Monitoring of a large wall failure at Tom Price iron ore mine. Proceedings of the 2007 International Symposium on Rock Slope Stability in Open Pit Mining and Civil Engineering, Perth, pp. 333-340.
 10. **Seery, J. and Lapwood, J. (2007).** Use of an Excavation Compliance Indicator to assess conformance to slope design. Proceedings of the 2007 International Symposium on Rock Slope Stability in Open Pit Mining and Civil Engineering, Perth, pp. 431-437.
 11. **Seery, J. (2004).** Stress Re-distribution as a Result of Mining of the Kanowna Belle Orebody, Kalgoorlie, Western Australia. Master's dissertation, Curtin University School of Mines.
 12. **Seery, J. (1996).** The Petrology, Geochemistry and Alteration Mineralogy of the Lateral Extensions of the Scuddles Orebody, Murchison Region, Western Australia. Undergraduate thesis, Curtin University School of Mines.
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