

15 May 2024

Attn: Department of Planning, Industry and Housing (DPHI)

Via: Submitted through the Major Projects Planning Portal

RE: Endorsement Request – Delta Coal Extraction Plan Amendment

To whom it may concern, Delta Coal is seeking to revise the current approved 'Miniwall S5 and NPA Extraction Plan'.

As part of the amendment, a subsidence prediction report is being prepared to provide detail on subsidence impact anticipated from the amended mining design.

Byrnes Geotechnical has been engaged as an independent consultant to prepare the subsidence prediction report, as part of the process, it is understood that endorsement of the persons preparing the report is required. Two authors, Ross Seedsman and Roger Byrnes will be preparing the subsidence predictions report.

Administrative changes are also intended including updates to the Subsidence Monitoring Program. It is proposed these administrative changes will be completed internally by Lachlan McWha, Environmental Compliance and Approvals Coordinator for Delta Coal.

Delta Coal is requesting endorsement from the Planning Secretary for the persons identified to complete the amendment of the Extraction Plan.

Curricula Vitae (CVs) for each endorsement request is presented in **Attachment A**.

Attachment A – Curricula Vitae

1. Ross Seedsman
2. Roger Byrnes
3. Lachlan McWha



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Ross Seedsman

Qualifications & professional affiliations

Bachelor of Science (Hons), University of Melbourne
Master of Science, University of Melbourne
Doctor of Philosophy, University of Queensland
Fellow, Australasian Institute of Mining and Metallurgy
Chartered Professional (Mine Geotechnical) – AusIMM
Member, Australian Geomechanics Society
Registered Professional Engineer Queensland

Ross has more than 40 years' experience working in mining consulting and research. He has expertise in mine planning for surface operations and underground coal mines, the design and specification of ground support for underground coal mines, pit-wall stability, and mine subsidence.

In the underground coal sector, Ross has published a strength criterion that can be used for laminated low strength rock and has made significant contributions to the understanding of boundary crushing in the roof and sides of excavations. Ross has also combined his understanding of boundary crushing in coal with his experiences in pitwall stability to make better correlations between coal and rock bursts.

Ross has also worked extensively on the prediction of mine subsidence in both NSW and Queensland coal fields. He introduced the influence function prediction method (SDPS) to Australia and adapted its use to better suit Australian mining geometries. He has had success in redesigning pillar and longwall panel widths so as to better balance surface impacts with mine economics – this has involved both narrowing and widening of extraction panels and specific design of the chain pillars. His experiences with the prediction of mine water inflows in the NSW and Bowen Basin coalfields have led to the formulation of a fracturing model that substantially differs from currently accepted views. He recently led the geotechnical component of ARENA funded research into the feasibility of using longwall goafs as the lower reservoirs of pumped hydro schemes. He is currently consulting to the pillar mines that extract under lake Macquarie.

Ross has published both locally and internationally. As well as presenting case studies in local and international conferences, he was invited by the SME (USA) to write the rock mechanics chapter of the 2010 edition of the Mining Engineering Handbook. He contributed a chapter in an AusIMM Monograph on geotechnical modifying factors for longwall reserves. More recently he has focussed on publishing new insights into ground control and mine water inflow in international journals. Such publications include:

- The viability of a pumped hydro scheme using abandoned longwall mines. Proceedings of the 14th Australia and New Zealand Conference on Geomechanics, Cairns 2023 (ANZ2023).
- Prediction of the height of caving and fracturing above an isolated longwall extraction panel. Mining Technology, 129:2, 95-103.
- Interpretations of mine water pumpout data and revisions to caving and fracturing models for longwalls. Mine Water And The Environment, 38,3,67-685.
- On the deception in requiring and providing singular accurate predictions for surface subsidence, tilt, and strain. Proceedings of the 9th Triennial Conference on Mine Subsidence. Pp 449 - 459.
- Calibrated parameters for the prediction of subsidence at Mandalong Mine. Coal 2010 - 10th Australasian Coal Operators' Conference, Wollongong

Roger Byrnes – Principal Geotechnical Engineer



Qualifications & professional affiliations

Bachelor of Science (Hons), University of Sydney
Master of Engineering Science, University of NSW
Member, Australasian Institute of Mining and Metallurgy
Chartered Professional (Geotechnical)
Registered Professional Engineer of Queensland (RPEQ)
Committee Member and Past Chairman, NSW Underground Geotechnical Society
Member Bowen Basin Underground Geotechnical Society

Roger has more than 30 years' experience working in technical and leadership roles, focussing on geology and geotechnics for coal mines. Roger's expertise includes:

- Geotechnical investigations, drilling programmes, interpretation of borehole geophysics
- Geotechnical assessment
- Pillar design
- All aspects of strata control for underground coal mines
- Design of roof and rib support
- Longwall strata management
- Geotechnical monitoring instrumentation, both surface and underground
- Geological and geotechnical mapping
- Hazard assessment
- Subsidence assessment
- Risk management including design of controls and performance standards, risk assessment
- Management, mentoring and coaching of geology, geotechnical and mining professionals
- Training of workforce in principles of strata control and monitoring
- Auditing of strata control processes and support installation effectiveness
- Investigation, research and development of controls for coal burst phenomena

Roger started his career in the Bowen Basin at German Creek Mine gaining valuable experience in underground and opencut mine geology and geotechnics and exploration. As Geotechnical Engineer with Anglo in NSW he worked at South Bulli Mine and Dartbrook. At South Bulli he was responsible for designing and monitoring of a mine layout that allowed longwall extraction underneath a Sydney water catchment reservoir without any loss of water from the reservoir, as well the design of long-term stable pillars.

Between 1998 and 2004, he worked in geotechnical consultancy with NSA Engineering, Coffey Geosciences and Seedsman Geotechnics, consulting to or visiting the majority of longwall mines in NSW and Queensland as well as some in the US, and gained civil tunnelling experience in Hong Kong.

Between 2005 and 2019 he worked at Illawarra Coal in various roles including Geotechnical Engineer, Technical Services Manager, Principal Geotechnical Engineer and Geotechnical Manager. This time included managing the challenging geotechnical environments at Appin, the deepest longwall coal mine in Australia, and Dendrobium, a thick seam mine which operates with a coal roof.

He now operates Byrnes Geotechnical providing consulting services to the Australian coal mining industry.

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Delta Coal – Curriculum vitae

Lachlan McWha – Environmental Compliance Coordinator

1. Introduction

Lachlan commenced the role of Environmental Compliance Coordinator at Delta Coal in May 2020, their role involves both environmental approvals for Delta Coal as well as managing the environmental performance of Delta coal sites. Prior to their current role, Lachlan has worked in the environmental management industry since 2016 as an environmental consultant, practicing predominately in contaminated land management and remediation. Lachlan has completed projects for a wide range of industries including infrastructure, government, energy and mining sectors.

Lachlan has extensive experience project managing environmental assessments, providing expert advice regarding contaminant remediation and preparing reports in accordance with Australian and NSW environmental legislation throughout their career. A summary of Lachlan's career in environmental management is presented in **Table 1**.

Table 1: Summary of Professional Career

Organisation	Role	Dates
Great Southern Energy Pty Ltd t/a Delta Coal	Environmental Compliance Coordinator	2020 – Current
SLR Consulting Pty Ltd	Senior Land Quality and Remediation Consultant	2018 – 2020
PRENSA Pty Ltd	Health, Safety and Environmental Consultant	2015 – 2018

2. Qualifications

Qualifications held and being undertaken by Lachlan are presented in **Table 2**.

Table 2: Qualifications

Institution	Qualification	Date Completed
University of Technology Sydney (UTS)	M. Environmental Engineering Management	2016-current (ongoing)
Macquarie University (MQ)	B. Science (Geophysics/Geology)	2015
First Choice Training Pty Ltd	Cert IV – Work Health and Safety	2016

3. Technical Experience

Lachlan has managed all facets of environmental compliance and approvals at Delta Coal, with a comprehensive understanding of regulatory and site requirements.

Lachlan has previously undertaken numerous environmental assessments, typically focusing on human health and ecological impacts deriving from soil, vapour/gaseous and groundwater

contamination, preparing detailed site investigation reports, remediation management/action plans (RAPs), long-term environmental management plans (LTEMPs) and construction environmental management plans (CEMPs). Notable projects Lachlan has worked on and his role in the projects are detailed in **Table 3**.

Table 3: Summary of Notable Projects

Project(s)	Role	Dates
Delta Coal Environmental Management	Environmental Compliance Coordinator - Maintaining the sites environmental management system (EMS) - Preparing and reviewing site management plans - Project managing environmental works - Managing compliance to approvals (EPL's, Development Consent, Mining Leases) - Regulatory reporting (Annual reviews, Annual Returns, NGERs) - Community consultation	2020-current
Vales Point Power Station Biannual Contamination Investigation (Sunset Power International t/a Delta Electricity)	Senior Land Quality and Remediation Consultant (project manager). Preparation of: Detailed Site Characterisation Assessments to the satisfaction of the NSW Treasury and independent review	2020
Former Illawarra Gun Range Remediation (Bong Bong Town Centre Development)	Senior Land Quality and Remediation Consultant (project manager). Preparation of: - Site Validation - LTEMP	2019/2020
Vales Point Power Station Ash Dam Unregulated Waste Clean-up Notice Investigations (Sunset Power International t/a Delta Electricity)	Senior Land Quality and Remediation Consultant (project manager). Preparation of: - Detailed Site Characterisation Assessments to the satisfaction of the NSW EPA - RAPs	2019
Jennifer Street, Little Bay NSW Redevelopment	Senior Land Quality and Remediation Consultant. Preparation of: - RAP - CEMP - Site Validation - LTEMP	2019
Sydney Water, Fuel and oil Spill Remediation (Downer EDI Pty Ltd)	Senior Land Quality and Remediation Consultant. Preparation of:	2019