SMI Knowledge Transfer
Presents an
ACMER Short Course on
Practical Monitoring for Improved Environmental Performance for the Minerals Industry

ACMER

Promoting leading practice through delivery of a quality professional development program, addressing the practical challenges of sustainable development in the minerals industry

20-22 October 2009
Quest, Singleton NSW

Mining operations today are committed to continual improvement in implementing leading practice and ensuring that monitoring and auditing are conducted to evaluate and improve environmental performance.
Local communities are increasingly monitoring closely the performance of mines, quarries and processing sites, all of which have the potential to impact the lifestyle and well-being of the communities in which they are situated. This closer scrutiny and increased expectations for a higher standard of environmental performance (and transparency) require personnel who have responsibilities for environmental monitoring to be adequately trained and competent in many different aspects of monitoring, including the design and conduct of monitoring programs, and the ability to interpret and report on data produced in such programs. Similar training is required by personnel in government agencies with responsibility for assessing industry environmental performance.

This is the second monitoring course for 2009 and follows on from the successful Brisbane course with its focus on water monitoring. In Singleton, the focus is on monitoring of site emissions and rehabilitation success. The presentations, while emphasising practical aspects of performance monitoring are supported by an appropriate level of theory, they include:

(1) a generic introduction on the objectives of monitoring and the development of a monitoring program;
(2) air emissions monitoring including emission sources, ambient air quality, modelling plume dispersion and dust deposition, and integrating measurement, reporting and impacts;
(3) noise and blast monitoring including noise and vibration characteristics and sources, meteorological monitoring and impact on results and Interpretation of results prepared by consultants;
(4) essential information on characterisation of soils and spoils and their critical role in good rehabilitation;
(5) assessment of rehabilitation success including vegetation monitoring through life-of-mine, fauna monitoring, biodiversity, riparian restoration and understanding successional processes;
(6) techniques in gathering, analysis and interpretation of information for the assessment of performance.
(7) a site checklist for designing a rehabilitation monitoring program;
(8) case studies on auditing rehabilitation success, challenges encountered in designing a rehabilitation monitoring program, and, role of research and monitoring in leading practice rehabilitation outcomes;

The course will also include a work group exercise, where participants will have an opportunity to apply their knowledge to a practical situation and to experience some of the communication issues with data analysis, interpretation and reporting involved in air emissions and community stakeholders.
Attendance at the course will provide participants with an opportunity to substantially enhance their practical skills, quality control, and ability to interpret data derived from environmental monitoring programs and consultants reports when dealing with community concerns.

SHORT COURSE AUDIENCE

The short course will benefit personnel in industry, government, consulting groups and regional authorities with an involvement or interest in management of emissions, environmental management and monitoring, air, noise and dust monitoring, rehabilitation monitoring and auditing.

- Environmental Managers
- Government Regulatory Agencies
- Sustainability Managers
- HSE Managers
- Environmental Coordinators or Advisors
- Rehabilitation Practitioners
- EPA Officers
- Emissions Consultants

JKTech JKMRC Technology Transfer

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WORKSHOP PROGRAM

DAY 1 (Tuesday 20 October)

Monitoring Overview

- Understanding the purpose of monitoring
- Categories of monitoring (operational, environmental, social, OHS)
- Environmental management plan and monitoring program

Legislative Requirements for Assessment and Monitoring

- Compliance with legislation/licence commitments
- Trigger values for surface waters, ground waters, sediments (metals etc)
- Other key monitoring and reporting issues for rehabilitation

The Business Case for Monitoring

- Early warning of potential impacts
- Assess effectiveness of environmental management
- Detect and measure environmental trends
- Basis for decision making

Air Emissions Monitoring

- Why regulate emissions? Health and nuisance aspects of air pollution
- Overview of legislation on emissions and air quality, including Ambient Air NEPM, NPI and NSW guidelines
- Estimating emissions of dust and other pollutants
- Controlling emissions
- Monitoring ambient air quality
  - modelling plume dispersion and dust deposition
  - cumulative impacts
  - impact assessment: how reliable?
  - real time and proactive air quality management
  - integrating measurement, reporting and impacts including community issues

Group Work Session

- How to Respond to Community Issues
- Dealing with community concerns
- Interpreting consultants reports
- Communicating results to with community stakeholders

Monitoring of Dust – Case Study

Noise and Blast Monitoring

- Legislative requirements
- Basic theory
- Noise & vibration characteristics and sources
- Operational Noise
- Blast noise and vibration
- Practical issues with monitoring
- Noise and vibration monitoring instruments
- Noise and vibration monitoring procedures
- Meteorological Monitoring and impact on results
- Interpretation of results prepared by consultants
- Dealing with community concerns

DAY 2 (Wednesday 21 October)

Introduction to Monitoring of Rehabilitation

- Monitoring in the different stages of a mining operation: baseline, operations, initial rehabilitation establishment, long-term rehabilitation performance, and post-closure

Characterisation of Soils, Overburden and Wastes – Sampling Methodologies

- Role in Life-of-mine planning
- Baseline approach
- Survey, sampling sites, parameters, frequency
- Properties of soils and wastes (physical, chemical and biological)

Assessment of Rehabilitation Success

- Vegetation Monitoring
  - Developing the end land-use plan
  - Setting sustainable rehabilitation objectives
  - Monitoring during stages of a mining operation: baseline, operations, initial rehabilitation establishment, long-term rehabilitation performance, and post-closure
  - Determining what to monitor, selecting key indicators
  - Correct design of monitoring programs
  - Understanding successional processes
  - Assessing pasture development and corridors
  - Whole of lease and biodiversity monitoring
  - Riparian restoration
  - Ecosystem Function Analysis (inc. advantages and limitations)
  - Dealing with problems that might arise

Case Study – Rio Tinto Coal's Hunter Valley Operations - Alluvial Land Project - 'Rehabilitation of Class One Agricultural Land'

Assessment of Rehabilitation Success

- Fauna Monitoring
  - Setting sustainable fauna management objectives
  - Selecting which faunal groups to monitor
  - Deciding what aspects to monitor - numbers, wellbeing, communities or habitat?
  - Tailoring the techniques to suit groups being monitored
  - Linking results to habitat - how to better cater for the needs of fauna

Case Study – Auditing Rehabilitation Performance – Xstrata Coal

Checklist for Designing a Rehabilitation Monitoring Program - Group Work Session

- Design considerations and typical elements of a mining project monitoring programs
- Risk based approach
- Performance evaluation criteria

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WORKSHOP PROGRAM (cont)

DAY 3 (Thursday 22 October)

The Role of Research and Monitoring in Leading Practice Rehabilitation Outcomes Xstrata's Mt Owen Coal Mine

- Good on-site research in conjunction with planning, preparation and monitoring in the different stages of a mining operation are essential elements of leading practice rehabilitation programs
- Focus on both waste dump monitoring and offsets - emphasise the importance of integrating mined and unmined areas to optimise outcomes

Baseline Data Collection from Analogue Sites (Includes two site visits)

KEYNOTE SPEAKERS

Emer Prof Clive Bell – former ACMER Executive Director
Mr Bill Baxter - RTCA
Mr Mike Cole - Director - CSER
Mr Michael Lloyd – NSW DPI
Mr Matthew Newton – Umwelt
Dr Owen Nichols – Principal EMRC Consultants
Mr Mark Nolan – Rio Tinto Coal Australia
Dr Yvonne Nussbaumer - CSER
Mr Robin Ormerod – PAE Holmes
Dr Simone Simpson - Post-Doctoral Research Fellow - UNE
Mr Martti Warpenius - Noise and Blast Consultant
Mr John Watson – Xstrata Coal
Mr Aleks Todoroski - PAE Holmes

BENEFITS OF ATTENDING

This short course provides an opportunity for mining and processing companies, port authorities, site personnel and regulators involved in environmental management and monitoring, air, noise and dust monitoring, rehabilitation monitoring and auditing, to:

- gain a better understanding of the characteristics of emissions and the regulations governing them at the state and level,
- better manage particulate emissions on site,
- compare and share case studies on successful approaches to managing air emissions and community concerns,
- improve their awareness of dust management practices,
- improve their communication skills when responding to community concerns,
- understand how essential good planning and preparation are in leading practice rehabilitation programs,
- appreciate the importance of characteristics of soils, overburden and wastes in rehabilitation success, data quality and data management system design,
- examine options for improving vegetation and fauna monitoring and auditing,
- come away from the course with a useful 'checklist' as a tool for designing a rehabilitation monitoring program
- network with, environmental personnel , government regulatory agencies, sustainability managers and engineers, rehabilitation practitioners, technical managers, and consultants.

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DELEGATE DETAILS

Title: .....

First Name: .....

Surname: .....

Position: .....

Organisation: .....

Postal Address: .....

Suburb/Postcode: .....

State/Country: .....

Phone: .....

Fax: .....

Email: .....

Dietary Requirements: .....

REGISTRATION (Due 9th October 2009)

☐ Full (2.5 Days) Workshop Registration - $2295

☐ **Early-bird Registration for 2.5 Day Workshop - $2095 - if registration received before 16th September**

☐ Two Day Workshop Registration only - $1950

☐ Workshop Dinner (included in registration costs)

All prices include GST. Registration costs include morning/afternoon refreshments, lunches, workshop dinner on Tuesday, and a comprehensive set of notes. Limited places available.

PAYMENT DETAILS

☐ Cheque - made payable to JKTech Pty Ltd

☐ Company Purchase Order No: .....
Company ABN No: .....
Mailing address for invoice: .....

☐ Bankcard ☐ MasterCard ☐ Visa

Card Number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Name of Cardholder: .....

Expiry Date: .....

Signature: .....

SHORT COURSE INFORMATION

Course days will commence at 8.30am and generally conclude at 5.00pm. Please note these times may be subject to slight variations. For more information please go to: www.acmer.uq.edu.au/training/program.html

ACCOMMODATION

Delegates can book their accommodation at their own expense at the following hotels:

Quest Singleton
5-7 Civic Avenue
Singleton NSW 2330
Tel: +61 2 6570 3800
Fax: +61 2 6570 3899
Email:questsingleton@questapartments.com.au

Quality Inn - Charbonnier Hallmark
44 Maitland Road
Singleton NSW 2330
Ph: +61 2 6572 2333
Fax: +61 2 6572 4975
Email: charbonnier@bigpond.com.au

Country Motor Inn Singleton
Crn George & Hunter Streets
(New England Highway)
Singleton NSW 2330
Ph: +61 2 6572 2388
Fax: +61 2 6572 2662
Email: info@countrymotorinn.com.au

For further accommodation options and information about Singleton visit: http://www.singletontourism.com.au/

VENUE

Quest Hotel Singleton
5-7 Civic Avenue
Singleton NSW 2330
Tel: +61 2 6570 3800
Fax: +61 2 6570 3899
Email:questsingleton@questapartments.com.au
Web: http://www.questsingleton.com.au/

ACMER COMMUNICATION

☐ Tick here if you do not wish to receive our electronic ProgramUpdates

Where did you learn about this workshop?

☐ ACMER Emailing ☐ ACMER Website

☐ Colleague ☐ Other (please specify): .....

CANCELLATION

ACMER reserves the right to cancel any course at its discretion. Whilst we endeavour to make every effort not to do this, there could be circumstances beyond our control (e.g. insufficient numbers) that may prevent us from going ahead. In the light of this, if you need to fly, we suggest that you purchase a fully flexible airline ticket.
Delegates cancellations 14-8 days before course commencement incur an administration fee of $110. Cancellations 7 or less days before course commencement and non-attendance of the course are liable for the full registration fee. Substitutions accepted when advised.

FOR OFFICE USE ONLY

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PAID DATE: ..... INVOICE NO: ..... ENTRY DATE: .....

REGISTRATION FORM - SHORT COURSE ON PRACTICAL MONITORING FOR IMPROVED ENVIRONMENTAL PERFORMANCE FOR THE MINERALS INDUSTRY, 20-22 OCTOBER 2009, QUEST HOTEL, SINGLETON NSW

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