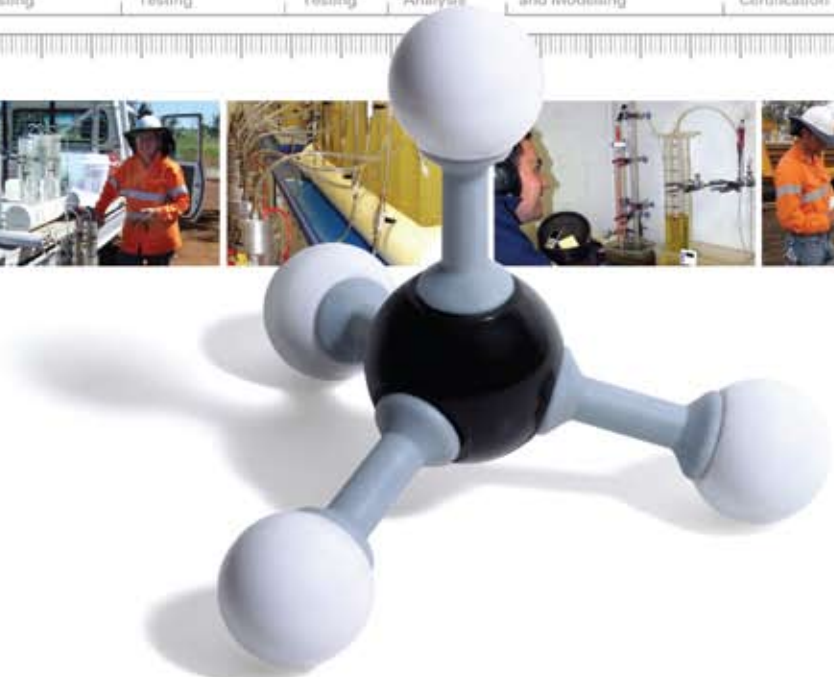


The Only End-to-End Continuum of

Coal Seam Gas Management Services

for the Coal and
Coal Bed Methane Industry

Core Logging | Rig and Project Supervision | Field and Laboratory Gas Content Testing | Gas Composition Testing | Isotherm Testing | Coal Quality Analysis | Reservoir Characterisation and Modelling | Resource Certification | Training and Short Courses | Due Diligence | Production Analysis



GeoGAS

A RUNGE LIMITED COMPANY



GeoGAS, a leader in Coal Seam Gas Management services for more than 20 years, is

the only company in Australia that can offer an end to end continuum of services to the Coal and CBM industry.

GeoGAS, a leader in Coal Seam Gas Management services for more than 20 years, is the only company in Australia that can offer an end to end continuum of services to the Mining and CBM industry. From rig supervision and gas content testing to coal reservoir characterisation, modelling and resource certification, GeoGAS provides the highest quality service with single source convenience. Our years of consulting experience has resulted in development of vast domain knowledge and a large gas database which can provide customers with data validation and confidence in understanding of coal seam gas

reservoirs. High quality resource and reserve reports are generated through a standardised approach, providing transparency, and fast global access. This approach has been pioneered through a combination of Runge technology and GeoGAS knowledge.

GeoGAS is part of Runge Limited, the principal resource planning, equipment optimisation and financial analysis software provider in the industry. GeoGAS specialist strategic capability, combined with Runge's resource planning expertise, create a unique integrated offering that improves safety while increasing your economic return.

THE GEOGAS ADVANTAGE



- Unparalleled, professional services
- One stop shopping for all your CBM service needs
- One representative will manage your account for all GeoGAS services
- Increased efficiency by not having to contract with multiple suppliers
- Our end to end service means we're familiar with your entire operation
- Commercial efficiencies

CORE LOGGING*

Detailed lithological, structural & geo-technical core logging, core photography & core sampling.

- Detailed coal quality logging and sampling to strict mining plies.
- Geological evaluation, mud & hydrocarbon analysis (Binocular microscope).
- Geological and geotechnical core logging and the onsite interpretation of down hole geophysical logs.

RIG AND PROJECT SUPERVISION*

Through a special agreement with Geological Solutions, Australia's premier provider of quality driven professional field personnel, GeoGAS now offers rig and project management, safety and supervision services. Geological Solutions' onsite rig management combined with the GeoGAS testing and analysis services provides customers with unparalleled service, convenience and quality.

* Services provided through an exclusive agreement with:



GAS CONTENT TESTING

Since its inception GeoGAS has undertaken more than 20,000 gas content determinations. GeoGAS offers both slow and fast desorption methods of gas content testing and both tests are carried out in accordance with AS3980-1999.

- Q1 Testing in the field (including canisters and mobile laboratory equipment)
- Q2 Testing in the lab using either the slow desorption method at reservoir temperatures or fast desorption method
- Q3 Testing in the lab

GAS COMPOSITION TESTING

Gas composition testing forms part of the standard gas content testing suite, with samples taken for gas analysis during the Q2 and Q3 stages of gas content testing. Helium flushing is used to overcome reporting of excess nitrogen due to coal oxidation.

We also offer gas composition analysis of samples from general body airways, in-seam boreholes, surface to seam boreholes and gas drainage ranges.

COAL QUALITY ANALYSIS

Coal quality analysis is done by sending the samples to accredited laboratories such as SGS or any other laboratory of our customer's preference.

GAS SORPTION ISOTHERM TESTING

Since 1999, we have undertaken gas sorption testing in support of our gas reservoir modelling for customers across Australia, New Zealand and China.

Our Wollongong laboratory has the capacity to undertake:

- 15 tests concurrently
- CH₄ or CO₂ testing
- Tests up to 10,000 kPa and up to 80°C.

Tests are conducted at "as received" (moisture conditions in the coal at the time of gas content testing) and "Equilibrium" moisture.

RESERVOIR MODELLING

At GeoGAS, we employ the gas domain approach to reservoir definition in order to identify and map regions of similar gas reservoir properties. This method is underpinned by our laboratory services, in conjunction with geological exploration programs.

Gas reservoir modelling forms the basis of gas emission, gas management, and gas production assessments. The gas reservoir is primarily characterised by:

- Basic geology: seam thickness, continuity, coal rank and type, mineral matter, banding, depth
- Gas content and composition distribution and variation
- Pore pressure
- Gas reservoir size
- Deliverability parameters
 - Gas saturation
 - Permeability.



COAL RESERVOIR CHARACTERISATION

Reservoir characterisation includes evaluation of geological and engineering data leading to development of a geological model. Our services include petrography (Macerals analysis) and geotechnical (strength, porosity, bulk compressibility and permeability).

DUE DILIGENCE OF CBM PROPERTY

Evaluation of geological and engineering data including data gap analysis, reservoir description and development of geological models for CBM resource assessment

RESOURCE CERTIFICATION

The estimation of coal bed methane resources and reserves is a highly complex process as coal seams are highly variable in their thickness, coal properties, and lateral variations in gas content, gas saturation and permeability. Currently there are no guidelines available in the JORC code for CBM resource estimation. In the absence of specific Australian guidelines, GeoGAS follows the Canadian guidelines as specified in "COGEH Vol 3" especially designed for resource evaluation of CBM reservoirs. These guidelines are a combination of NI 43-101, NI-51-101, COGEH Vol 1, COGEH Vol 2 and CBM technical literature which is widely followed by Canadian and US companies.

GeoGAS and our parent, Runge Limited, have developed a standardised approach for preparing CBM resource/reserve reports which provides check points to the evaluator ensuring regulatory and audit compliance by stock exchanges globally. Our methodology integrates spatial data management from applications and enterprise solutions, such as SAP/Oracle into a coherent management system that assures consistent high quality regulatory reporting, data quality, transparency, repeatability and fast, global information access.

TRAINING AND SHORT COURSES

For over 20 years our parent company, Runge Limited has been providing high quality training courses to the Coal Industry worldwide. Our courses are recognised as being unique in the Industry and can be customised to meet your specific requirements. The knowledge and challenges that Runge and GeoGAs consultants deal with daily in project work and software implementations is captured and reflected in our high quality training courses. Courses specifically designed for the CBM industry include:

- Coal Seam Gas and Reservoir Assessment
- Q1 Testing Certification

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