

# DIGBY WELLS

## ENVIRONMENTAL

Digby Wells Environmental's multidisciplinary team of integrated in-house professionals provides comprehensive environmental and social solutions for the resources industry.

Focusing on the Mineral Resources and Energy sectors in Africa, Digby Wells' clients include the largest multi-national, mid-tier, and junior mining companies.

Projects are undertaken to both in-country legal requirements and international standards such as the Equator Principles, IFC Performance Standards and World Bank Group Guidelines.

Digby Wells' services are provided over the entire life cycle of an operation from early engagement prior to exploration, securing of exploration rights, services during the exploration phase, pre-feasibility studies, definitive feasibility studies, construction, operational phase, closure planning and implementation, as well as post closure monitoring.

[www.digbywells.com](http://www.digbywells.com)



## ➤ Biophysical Services

Digby Wells Environmental's integrated team of fauna, flora, aquatic and wetland ecologists provide ecologically sustainable solutions throughout a project's life cycle, by assessing all biophysical / ecological components such as landscapes, communities, species, populations and individual organisms to determine the ecological processes taking place within a certain environment.

Findings and conclusions from the specialist studies are incorporated into a management strategy, which provides mitigation and action plans for biodiversity management.

- Fauna and Flora Assessments:
  - Nursery, Game and Alien Invasive Species Management;
  - Biodiversity Offset Reporting; and
  - Biodiversity Actions Plans (in conjunction with other specialists).
- Aquatic Assessments:
  - Aquatic Biomonitoring;
  - Bioaccumulation Assessments;
  - Monitoring of Invertebrates;
  - River integrity (Health) Assessments; and
  - Toxicity Testing.
- Ecological Wetland Assessments:
  - Wetland Delineations;
  - Wetland Rehabilitation and Management Plans;
  - Wetland Offset Strategies; and
  - Constructed wetlands for passive water treatment.
- High Conservation Value (HCV) Assessments; and
- Reserve Determination.



## ➤ Rehabilitation, Closure and Soils

Planning for mine closure is a critical component of environmental management in the mining industry. Nationally and internationally, industry leading practice requires that planning for mine closure should start before mining commences and should continue throughout the life of the mine until final closure and relinquishment.

Digby Wells' integrated team of rehabilitation and closure specialists will assist and provide cost effective, sustainable solutions to clients over all phases of the project life-cycle.

- Rehabilitation Plans;
- Closure and Liability Assessments;
- Soil Surveys;
- Land Capability and Land Use Assessments; and
- Predictive Soil Mapping.



## ➤ Environmental and Legal Services

The Environmental Legal Services (ELS) team focuses on management of environmental processes, co-ordination of projects, compilation of environmental documentation and product development, including the management of specialist teams required to conduct large scale environmental and social projects, as well as the compilation of the environmental reports to be submitted to the relevant authorities for authorisation.

In-house Legal advisors proactively assess the environmental legal requirements throughout a mining project's life cycle by:

- Determining project environmental design criteria and emission limits and standards;
- Detailing all environmental permitting requirements and licences to operate in conjunction with project timelines; and
- Guiding professional teams in respect of environmental impact assessment processes and adaptation of project designs to minimise environmental impacts.

- EIAs AND EMPs;
- Environmental Compliance Services:
  - EMP Performance Assessments;
  - Environmental, Water and Waste Management Audits;
  - Compliance Audits, and
  - Due Diligence Assessments.
- Regulatory authorisations:
  - Prospecting Right Applications;
  - Integrated Water Use Licence Applications (IWULA); and
  - Mining Right Applications;
- Environmental Control Officer;
- Integrated Project Co-Ordination and Management;
- Environmental Legal Registers and Legal Updates;
- Environmental Reporting:
  - Climate Change Studies; and
  - Carbon Footprinting – Organisational and Project Accounting.
- Risk Assessments; and
- Appeal Submissions.



## ➤ Social and Heritage Services

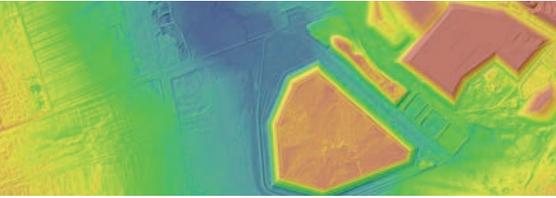
The Social and Heritage Department within Digby Wells recognises that the viability and sustainability of a project often depends on the extent to which the needs and concerns of local communities are taken into account, and whether the negative impacts of the project on these communities are adequately mitigated, and the project benefits are enhanced.

Our multidisciplinary team of Social Scientists and Heritage Practitioners delivers and adds value to the paradigm of "social license" to operate by providing appropriate social services and facilitating the interactions between the client, project host communities, regulators and other stakeholders to develop and ensure long-term sustainable solutions for the project under consideration.

- Social Services:
  - Socio-Economic Impact Assessments (SIAs);
  - Resettlement Planning - Resettlement Action Plans (RAPs) and monitoring;

- Social and Labour Plans (SLPs);
- Social Surveys;
- Human Rights Impact Assessments (HRIA);
- Community Health Impact Assessments (cHIA);
- Public Participation Processes and Plans;
- Strategic Communication Plans;
- Grievance Mechanisms;
- Stakeholder Risk Analysis;
- Stakeholder Engagement Audits; and
- Community Conflict Management.
- **Heritage Services:**
  - Heritage Assessments;
  - Heritage Resource Mitigations; and
  - Heritage Stakeholder Engagement, including Burial Grounds and Grave Consultations.

- Hydrological and Hydrogeological Assessments:
  - Baseline Assessments;
  - Impact Assessments and Management Planning;
  - Monitoring, including Quality Monitoring;
  - Flood Volume and Flood Line Calculations;
  - Integrated Water Management Plans;
  - Storm Water Management Plans;
  - Water Use Licence Compliance Audits;
  - Treatment Assessments;
  - Monitoring Network Auditing and Design;
  - Monitoring and Compliance Auditing;
  - Hydrogeological Field Investigations;
  - Numerical Modelling;
  - Field / Sub-contractor (drilling/pump testing) Supervision;
  - Well Field and Water Supply Investigations;
  - Water Balance Modelling; and
  - Geophysical Investigations.
- Environmental Geochemical Investigations:
  - Basic AMD Assessments;
  - Full Geochemical Studies and Assessments including Static and Kinetic Test Programs; and
  - Geochemical Reaction Modelling.
- Hydrocarbon Assessments:
  - Hydrocarbon Monitoring and Impact Assessments; and
  - Hydrocarbon Remediation.



## ➤ Geographic Information Systems

The value of Geographic Information Systems (GIS) lies in:

- Cost saving achieved from greater efficiency;
- Greater project insight therefore enhancing decision making;
- Real-time information and archived record keeping improves overall communication; and
- Sound environmental management and planning.

By harnessing the power of GIS, combined with the highly-skilled and dedicated multi-disciplinary team of Digby Wells Environmental professionals, clients are provided with superior and holistic, pragmatic solutions throughout the project life-cycle.

- Visual Impact Assessments (VIAs);
- Site Selection;
- Sensitivity Analyses;
- 3D Modeling;
- Spatial Data Management;
- Interactive Maps and Management Tools; and
- Remote Sensing:
  - Land Cover and Vegetation Indices;
  - Mineral Exploration; and
  - Hyperspectral Remote Sensing.



## ➤ Noise and Air Quality Services

Digby Wells Environmental provides tailor made Air Quality solutions to address complex environmental challenges.

Digby Wells Environmental has the in-house capability to provide noise monitoring and modelling services in support of environmental noise impact assessments. With internationally recognised equipment and software, Digby Wells Environmental is able to provide qualitative and quantitative noise assessments.

- Dust Monitoring;
- PM10 and PM2.5 Monitoring;
- Fugitive Dust Control Plans;
- Chemical Analyses of Airborne Samples;
- Exposure and Risk Assessment of Airborne Pollutants;
- Passive Monitoring of Gases;
- Baseline Assessments;
- Air Emissions Licences;
- Dispersion Modelling;
- Air Quality Management and Mitigation Plans;
- AEL Application;
- Setting up Meteorological Stations;
- Assistance with Stack Emissions Testing;
- Baseline Noise Monitoring;
- Noise Dispersion Mapping; and
- Noise Compliance Monitoring.

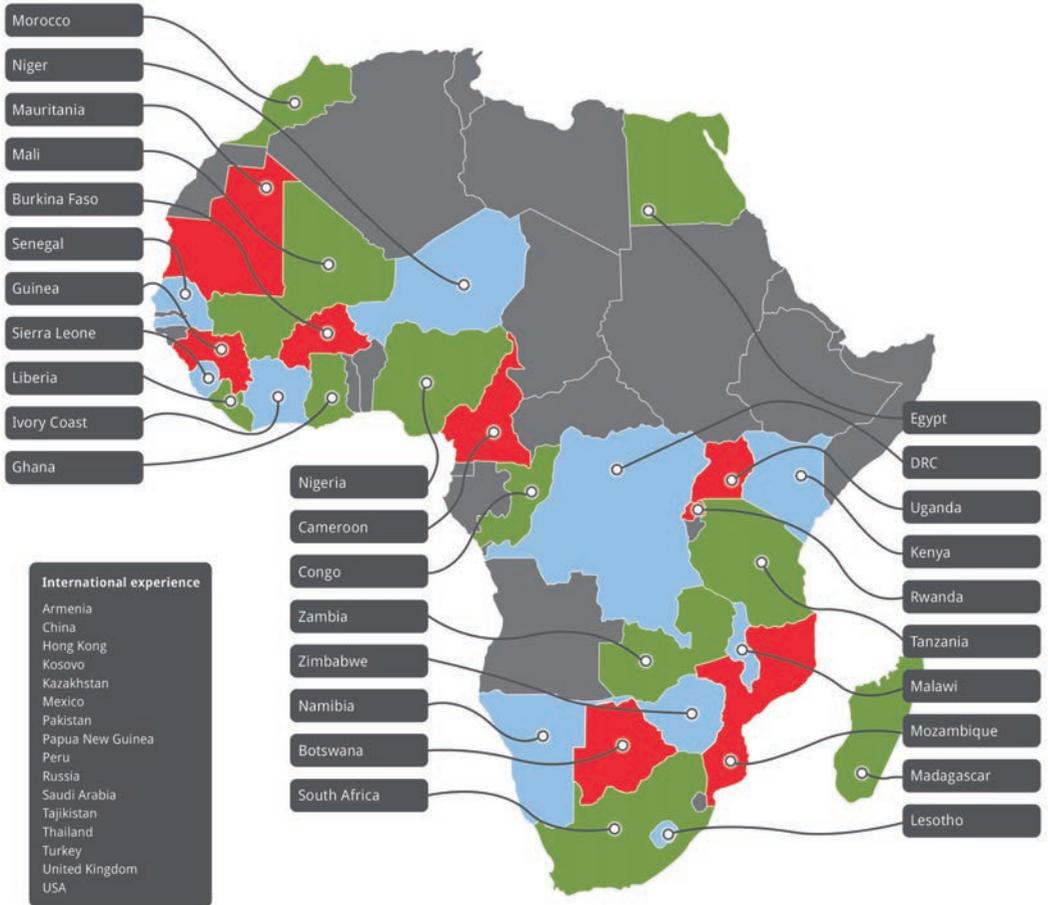


## ➤ Water Geosciences

Digby Wells' integrated hydrology, hydrogeology and geochemistry specialist team offers sustainable solutions for water quality and quantity management ensuring overall compliance to international best practice and local legislative standards.

Given our extensive experience and expertise, Digby Wells offers practical, cost effective solutions in ground and surface water management from the operational to post closure phases for numerous industries. This also includes environmental geochemical assessments, waste classification, as well as hydrocarbon impact assessments and remediation services, including the delineation of vapour and dissolved plumes in the unsaturated and saturated zones.

# Project Experience



Gold • Coal • Diamonds • Platinum • Base Metals • Energy • Rare Earths • Oil and Gas • and many more

## Inspired by the mission:

To be the preferred partner offering Environmental and Social Services to the Resources Industry with a focus on Africa.

## Driven by the vision:

To move us from the world we live in to the world we seek.



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  **Digby Wells Environmental**

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