Geovale Services
Hydrogeology Capability
Solutions to the Global Mineral Exploration and Mining Industry
Geovalextract

Help you extract and create value, not just for mineral resource, but from every aspect of your project

Geovalexperience

Collaborative experience of field and project management in multi-commodities in different geographies

Geovaleenvision

Solving problems, generating ideas and conceptualizing project milestones
OUR HYDROGEOLOGY SERVICES

- Basin Analysis
  - Geoinformatics Application
  - Hydro-Geomorphological Mapping
  - Catchment study

- Exploration
  - Groundwater Exploration
  - Geophysical Investigation

- Reservoir Assessment
  - Numerical and Analytical Modelling
  - Aquifer Characterization

- Development
  - Feasibility – Mining/Industrial/Residential
  - Comprehensive Watershed Management Plan
  - Detailed EIA & EMP
  - Water Quality Management
**Geoinformatics, Hydro-Geomorpholoical Mapping and Catchment Study** - Geovale provides truly independent due diligence assessment by advanced remote sensing and GIS to demarcate the potential areas of groundwater occurrences.

**Our Services**

- Digital Elevation Model generation
- Watershed mapping, basin analysis and stream ordering
- Stream flow and stream base flow record, River Profile
- Soil hydrologic group identification
- Detail geomorphologic mapping with all sedimentary structures
- Water source identification
- Slope morphometric analysis
- Ground water and Stream Water contamination study
**Groundwater Exploration and Geophysical Investigation** - The team members of Geovale Services had been actively involved in number of hydrogeological Exploration Projects and groundwater development in India and abroad. To maximise client’s chances for a successful exploration project we offer a complete management package through all phases of exploration, from regional exploration programs to development drilling.

**Our Services**

- Groundwater exploration.
- Drillsite management services.
- Well and borefield installation and optimization
- Packet test, pumping test, standpipe development
- Piezometric installation and monitoring
- Geochemical sampling and analysis
- Resistivity survey with different configuration and profiling
- Electro logging
- Follow standard procedures of work and maintain best HSEC practice
Numerical and analytical modelling and Aquifer Characterization - Groundwater is an important component of water resource systems which is extracted from aquifers through pumping wells and supplied for domestic use, industry and agriculture. Our highly experienced hydrogeologists create modeling of groundwater by number of advanced software techniques to predict expected artificial or natural changes in the system and to generate a hypothetical system that will be used to study principles of groundwater flow associated with various general or specific problems.

Our Services

- Modelling (numerical/ analytical)
- Monitoring program design/ implementation
- Network and flow analysis
- Cone of depression assessment
- Recharge estimation
- Preparation of hydrograph
- Sustainable yield assessment
- Resource Evaluation & Development
- Reporting
- Feasibility studies
- Aquifer identification and parameter characterization
### Feasibility, Comprehensive Watershed Management Plan, EIA-EMP and Water Quality Management

Geovale team understand the key factors to maintain reasonable balance between the costs and benefits of management activities and interventions during the production period and they design the set possible management interventions in the context of the normal evolution of groundwater development.

#### Our Services

- Water quality and management plan
- Ground water –surface water interaction
- Salinity assessment
- Production efficiency estimation
- Environmental impact, risk and assessment plans
- Environmental auditing and performance reporting
- Contamination assessment and management
- Rainwater harvesting scheme
- Water balance assessment throughout the production period
- Policy and planning support

---

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Tasks</th>
<th>Focus</th>
</tr>
</thead>
</table>
| **SITUATION ANALYSIS** | Groundwater Status & Required Services | • Resource Assessment  
• Quality Characteristics  
• Required Services |
|  | Current Management Arrangements | • Water allocation and usage  
• Monitoring Networks |
| **STRATEGY CHOICE** | Future Management Options/reforms | • Economic Analysis  
• Definition of options |
| **IMPLEMENTATION** | Implementation Programme | • User/Stakeholder participation  
• Monitoring & review Requirements  
• Economic/Financial Analysis  
• Information system |
| **EVALUATION** | Assess Progress & revise plan | • Resources review  
• Water use efficiency  
• Cost recovery  
• Regulatory instruments |
Geovale adheres to the highest standards in HSEC management at par with globally accepted norms. Initial workplace risk assessment, take 5, job safety analysis, routine inspection and implementation of HSEC policies are followed by all Geovale consultants. Geovale also maintains with relevant environmental norms wherever it operates in the world. Rigorous site rehabilitation, liaison with local community and encouraging CSR programs are an integral part of Geovales work ethics.

Our Services

- Initial Workplace Risk Assessment and Control (WRAC)
- What is an ‘acceptable level of risk’? – As Low As Reasonably Achievable (ALARA)
- Safety awareness process development – Take 5, Job Safety Analysis, Hazard Report
- On site risk assessment for exploration and mining projects
- Drill Site Safety Audit
- Mine Safety Audit
- Safety Training – First Aid Training, Fire Safety Training, Mine Site Safety Training, Standard 11
Sumanta is an M.Sc. Gold Medalist from ISM Dhanbad and has 7 years’ experience in project management, 3D resource estimation in different commodities in India, Australia, Indonesia and many other places in the world. His wide range of experience across the industry starts from geological mapping, hydrogeological borehole designs and development, geochemical water quality assessment and interpretation and resource Modelling of target deposits. Sumanta is also a designated minesite safety supervisor.

### Project Experience

- Hydrogeological borehole design, execution, development and monitoring
- Water quality measurement and stand pipe development
- Piezometric test, packet test and pump test design, execution and assessment
- Carmichael Coal Exploration Project, QLD, Australia: Exploration planning and on-site execution of nearly 100,000 meter of drilling and established 10 Bt of resource for 250 sq km area,
- Ichhapur Coal Exploration Project, India: Exploration planning and on-site execution of 38,000 m drilling and established 735 MT of thermal coal in 10 sq km
- Kulti-Sitarampur Exploration Project, India: Exploration planning and on-site execution of 80,000 m drilling and established 350 MT of coking coal in 15 sq km area
- PT SSKB and PT Minemex Coal Exploration Projects, Indonesia: Geological map preparation, Minex resource model and structural interpretation of Indonesian coal and Talcher coal projects, database preparation of Barakar coal project.
Mr. Deb has 39 years of experience in Hydrogeology, Ground Water Exploration and Water Resources Management. His skills include systematic hydrogeological investigations, water well inventory, preparation of water table/isopiestic maps, flow-net analysis, hydrogeochemistry and preparation of hydrogeochemical maps, ground water exploration, pilot-hole drilling, borehole logging, borehole geophysics, water well design, water well development, pumping tests and analysis and delineation of aquifer parameters, ground water development planning, study of surface water resources, preparation of hydrographs, conjunctive water resources management, study of ground water pollution etc.

**Project Experience**

- Trans Damodar Coal Block, Raniganj Coal field, India: Mine Hydrogeological studies, preparation of dewatering plan and assessment of environmental impact on the hydrogeological regime
- Kathautiya opencast coal mine, Daltongunj, Jharkhand, India: Mine Hydrogeological studies and suggestion of dewatering plan
- Systematic hydrogeological investigations and Ground water Exploration in Jharkhand, Odisha, Tripura, Nagaland, Chhattisgarh and Rajasthan states of India.
- Sonadih Limestone Mine area, Raipur, Chhattisgarh, India: Detailed Hydrogeological studies, Electrical Resistivity Survey and pumping tests
- Study of ground water pollution in and around valley area due to acid waste injection in sub-surface wells by the industries, Bichhri, Udaypur, Rajasthan.
- Prepared Project proposal for prevention of ground water pollution arising out of Red Mud Slime disposal in 1 Mtpa Alumina Project of Indal-Tata Steel-Hydro-Aluminium, Norway
- Author of Reference Book titled “An Introduction to Mine Hydrogeology“ which has been highly appreciated and published by Springer Publisher, Switzerland.
Dr. Bodhokar has 25 years of experience in hydrogeology system assessment, quality investigation and basin analysis in India and abroad. His high end academic and technical arc of knowledge ranges from geomorphological mapping to groundwater resource estimation and production management. Dr Ninad’s skill also touches the area of environmental impacts, assessment and development of management strategy for uninterrupted flow of production.

**Project Experience**

- Hydrogeochemical identification of groundwater system in karstic terrain” funded by Chhattisgarh Council of Science & Technology, Government of Chhattisgarh, Raipur.
- Hydrogeology and water quality investigations of Bilaspur city for evaluation of groundwater quality in urban perspective.
- Flood Inundation Mapping of Indrawati River Basin, Chhattisgarh; funded by Department of Revenue & Disaster Management, Government of Chhattisgarh.
- *Nuclear Sciences Project*, Department of Atomic Energy, Government of India; Groundwater recharge study in the western part of Chhattisgarh Basin using isotope techniques.
- *IAEA/CRP Project*, by International Atomic Energy Agency; Assessment of aquifer systems near major urban centres such as Calcutta and Raipur in India using isotope techniques.
- *UNDP/IAEA/RCA Project*, Application of isotope techniques to investigate impact of urbanisation on the karstic aquifer around Raipur city, Madhya Pradesh.

**Educational Qualification:**
PhD (Hydrology)

**Previous Companies:**
- Chhattisgarh State Institute of Rural Development
- Ravishankar Shukla University

**Ninad Bodhankar**
Associate Hydrologist
Arshinder is a professional with 16 years of experience in environmental governance, health, safety and community issues with Public Sector and Corporate Sector. Her skills include quantitative and qualitative analysis, documentation, Reporting on environmental and social impact assessment, strategic advice along with preparation of Feasibility reports for Industry and Development programs, Creating networks and alliances with non governmental organizations, Strengthening civil society groups etc.

**Project Experience**


- Preparation of detailed Environment & Community baseline reports for the purpose of Environmental Impact assessment, risk and rehabilitation, Livelihood database management for planning Corporate Social responsibility initiatives.

- Conducted primary assessment of a project on Iron ore in Odisha state for design of a sustainability framework

- Preparation of pre-feasibility report for Diamond mining project through primary and secondary research within international and domestic environment norms, regulations and protocols

- Analysis of the built environment, drill-site restoration, devising carbon reduction and energy efficiency strategies for the base office

- Preparation and Implementation of Standard Operational Procedures and imparting regular trainings to the Operation staff on Community and Environmental issues
Mr Ranjit Kumar Dey has over 25 years of experience as a hydrogeologist, comprehensive ground water survey, exploration and development. He has carried out exploration for more than 15,000 ground water sites and drilled and developed more than 10,000 ground water drillholes. Mr Ranjit has done groundwater survey, exploration and development for UNICEF in Madagascar, all over Chhattisgarh, Madhya Pradesh and Orissa. He is highly experience in handling of turnkey projects like ground water development for more than 500 villages in Nowrangpur, Odisha for Odisha, Lift Irrigation Corporation Limited, involving development of over 2000 drillholes.

Mr. S.K. Bhatia is one of the most well known Engineering Geologist in the country. He joined Geological Survey of India (GSI) in 1971 and continued till 2009. He spent approximately 15 years of his career in GSI as an Engineering Geologist. Mr Bhatia has worked as consultant to many large super civil engineering projects in North Eastern and Western India, including large dam construction, road construction and hydrology projects. Mr. Bhatia is also extremely conversant with the geology of Western Ghats, where he has carried out geological mapping and mineral exploration for many years.

Mr Manish Pilliwar, Civil Engineer, has 22 years of experience in designing of infrastructure projects including roads, drain, water supply, S.T.P. Etc., many housing projects, institutional building likes hospitals, schools, colleges, recreation & commercial buildings, urban planning for small towns including layout preparation of institutional projects asset mapping (data base, evaluation, monitoring and web based applications) and valuation of immovable properties for income tax surveys, govt. Organizations, public sectors and corporate clients. He is member of several prestigious association like Institution of Engineers, Council of Architecture etc.
Mayuri implements Remote Sensing and integrated GIS techniques in Land-use and land-cover (LULC) change analysis; Spatial modelling for environmental, hydrologic, and climatic challenges; Urban planning and infrastructure development; Hazard planning; predicting mineral association, potential occurrences of materials for exploration like gold, copper, iron, chromite, silver, coal, limestone, laterite, bauxite, clay, beach sand, graphite, etc., and alteration extraction; mapping geology and structure; digital elevation (DEM) and terrain modelling; generating targets of exploration, tenement planning, mine site reclamation; soil and vegetation dynamics, preparation of 2-D Thematic Maps, creation of digital large database and providing solutions for numerous cartographic applications. She specializes in preparing, processing, and analysing of ASTER, Landsat TM 5, Landsat 7+ETM, Landsat 8, QuickBird, IKONOS, SPOT, MODIS, Hyperion, GeoEye, Worldview, Radar, LiDAR and other high resolution satellite data, and in writing reports explaining remote sensing and GIS based aspects implemented to accomplish the results.

Craig Raynes is a geophysicist with over 25 years of experience in the mineral exploration and related industry, ranging from green-fields exploration through feasibility studies and successfully incorporating geophysics in all stages of the geological exploration process. Over the course of his career, Craig has worked in Australia, North and Central America, Eastern Europe, Africa and South Asia. He is one of the best known specialists of applications of electrical, electromagnetic and gravity methods in India. The early formative years of Craig’s career were spent at the Rio Tinto group.

In 2001, Craig established a geophysical consultancy, IndiGEO Consultants Pvt Limited, at Bangalore.
For any query, please contact

Mr Biplob Chatterjee  
CEO & Director (Consulting)  
M: +91 9007706145  
Skype: biplob.chatterjee

Mr Loknath Rath  
Director  
M: +91 9830 880688  
Skype: Lnrrath7070

56, Ideal Villas, Kochpukur, Near Aquatica, Rajarhat Kolkata 700156, West Bengal India