RPA Capabilities
RPA Services

RPA is a global mining consultant, with offices in Canada, the United States, and United Kingdom. The company provides services to the mining industry at all stages of project development from exploration and resource evaluation through scoping, prefeasibility and feasibility studies, financing, permitting, construction, operation, closure and rehabilitation.

RPA advises major mining companies, mid-caps, junior mining and exploration companies, financial institutions, governments, law firms, and individual investors on the technical and commercial aspects of mineral property development.

RPA has extensive experience in all commodities and mining areas of the world. Professional staff includes Senior Geologists, Mining Engineers, Metallurgists, and Geotechnical Engineers with extensive experience in the mining and exploration industries. Capabilities include:

- Mineral resource and mineral reserve estimates and audits, compliant with all worldwide reporting codes
- Mine design and optimization
- Metallurgical assessment and process review
- Estimation of project capital and operating costs
- Preliminary Economic Assessments, scoping, prefeasibility, and feasibility studies
- Valuation of mineral properties
- M&A due diligence reviews of mining and exploration projects
- Lender advisory services
- Project financial modeling and analysis
- Expert witness services
- Design and management of exploration programs
- Reporting for public disclosure, including NI43-101 Technical Reports, Competent Persons Reports, and Mineral Expert Reports
- QA/QC audits and reporting
- Operations benchmarking, optimization programs and troubleshooting
- Strategic planning and advice for boards and senior management.

Through associated companies RPA offers:

- Process design and engineering
- Infrastructure design and engineering, including railways, roads, power, and ports
- Tailings design and management
- Geotechnical services
- Environmental and social management planning
- Closure and remediation studies and implementation
- EPCM.
Mineral Resource and Mineral Reserve Appraisal

RPA has extensive experience in estimating, auditing, and reviewing Mineral Resources and Mineral Reserves using both manual and geostatistical methods. Reports are written in compliance with applicable securities regulations.

RPA classifies Mineral Resources and Mineral Reserves according to the definitions published by the main worldwide regulatory bodies - the CIM in Canada, PERC in the UK, SAMREC in South Africa, JORC in Australasia, and the US Securities and Exchange Commission. Mineral Resources are classified into Measured, Indicated, and Inferred categories based upon the density of data and confidence level on the resource estimate. Mineral Reserves are classified into Proven and Probable categories based upon the corresponding resource category and economic mining parameters.

RPA geologists and mining engineers use Gemcom, Whittle, Surpac, and Vulcan geological and mining software packages and have facilities to deal with data produced in most other commercial systems.

Scoping, Prefeasibility and Feasibility Studies

RPA offers the services of experienced senior industry professionals with executive level experience in bringing mineral properties into production. Property evaluations of all levels are carried out for clients from all commodity sectors of the mining industry and range from early stage scoping level studies up to and including full feasibility studies. We have a core group of senior people to provide overall management and direction of studies, supported by in-house and associate specialist experts providing the best possible expertise geared to meet the needs of each project.

Mining Engineering

RPA offers the services of experienced mining engineers who have worked in production and engineering roles. We have facilities to produce detailed open pit and underground mine designs. The company also provides onsite mining engineering support including detailed design services, production and equipment scheduling, and operations benchmarking performance reviews.

RPA provides mining engineering services backed up by in-house geological, metallurgical, geotechnical, and environmental management experience to provide the optimum solutions for cost-effective mine development and operation.

Metallurgical Assessment and Process Review

RPA offers design and assessment of metallurgical investigation programs ranging from the early conceptual stage through testing and flowsheet design. Experience ranges from pilot plant work to heap leach, flotation, hydrometallurgy, and pyrometallurgy processes.

Services provided by RPA and associated companies include deposit mineralogy assessment, sampling program design, metallurgical testing design, process design, equipment selection, plant layout and design, tailings characterization, capital cost estimation, construction scheduling, and operating cost forecasting.

Independent Consultant Services for Banks

RPA acts as Independent Engineers on bank financing of mining projects. In this role we work cooperatively with, and in support of, the project sponsor’s design and engineering team and provide the project lenders with independent review and opinion on the project as it advances to completion and start-up.
Securities Regulation Compliance Services
RPA provides Qualified Persons assessments for securities exchange listings, IPOs, and reporting requirements for most mineral commodities. A Qualified Person (or Competent Person, depending on the jurisdiction) is a regulated professional who brings the application of professional standards and responsibility into the technical reports for public disclosure. Typically these assessments are in the form of National Instrument 43-101 Technical Reports under Canadian securities law or Competent Persons/Mineral Expert Reports under UK securities law.

M&A and Financing Due Diligence Reviews
RPA performs independent technical due diligence reviews in support of mergers and acquisitions and debt and equity financings. Our due diligence reports provide opinions on the technical aspects of the target mining project including the overall project design and performance forecasts as well as specific discussion of key project characteristics and risks. Due diligence reviews examine the project’s technical, cost, and environmental and social impact aspects. Overall project performance forecasts are reviewed and compared and contrasted with similar operations.

Litigation and Arbitration Support Services
RPA has acted as expert witness in litigation and arbitration related to both commercial and technical aspects of mining and exploration projects, including the valuation of expropriated mineral properties.

Mineral Property Valuation Services
RPA has carried out valuations and independent assessments of hundreds of mineral properties situated in most worldwide geological environments. The company provides independent valuations of mineral properties from the early exploration stage through to producing mine properties.

QA/QC and Property Assessment
RPA provides independent reviews of property exploration programs designed to ensure that comprehensive exploration and engineering data is collected for the full range of project assessment and design requirements. This work provides assurance that information collected will be reliable for public disclosure, resource estimation, and project design and permitting requirements.

RPA provides independent reviews of quality control/quality assurance procedures in exploration programs including sample collection, preparation and analytical protocols, check assay statistical compilations, and database validation.
Services Offered Through Associated Companies

Infrastructure Design and Construction

RPA and associated companies offer access to a wide range of specialist engineering capability for the mining industry, including the civil and mechanical engineering of project support infrastructure including access roads, bridges, conveyors, air strips, railways, port facilities, power generation and distribution, and dam designs. The company offers specialist expertise and worldwide experience in the following areas:

• Roads and railways design and construction
• Administration and industrial building design and construction
• Water supply and waste effluent treatment
• Electrical power generation and reticulation
• Port facilities including storage and ship loading facilities

Environmental Impact Assessment

Environmental Impact Assessment (EIA) involves the systematic evaluation of the potential impacts of a proposed development on the environment. RPA and associated companies have experience with EIA in a wide range of international locations. RPA is recognized as having specialist expertise with Equator Principles and the guidelines published by international funding agencies.

Geomechanics

RPA and associated companies have an extensive background in the investigation and design of rock slopes for open pit mines. The company has engineered a number of open pits for the safe and economic extraction of ore and has provided engineering designs for remedial measures to address slope instability.

Services provided by RPA and associated companies for the design, operation, and monitoring of open pit facilities include site investigations, geological/geotechnical mapping and testing, advanced rock mechanics modelling, conceptual design, detailed design, design of ground control systems and ground monitoring systems.

RPA and associated companies provide ground engineering investigation and design of underground excavations.

Construction Management

RPA and associated companies provide multidisciplinary construction management services utilizing highly experienced project managers who plan projects and coordinate specialist engineers, procurement organizations and all site activities to ensure meeting target completion dates, efficient budget control, and construction to required specifications.
Heap Leach Design
RPA and associated companies offer extensive engineering and design capabilities for heap leach operations. The company personnel have been involved in the development of heap leach technology and design from its earliest stages and the company is now recognized as a top industry specialist in this area. The development of effective heap leaching techniques has permitted large, low grade, deposits to be mined economically.

Services provided by RPA and associated companies include site investigation and foundation assessment, pad design and construction specification, construction supervision and engineering, liner installation and quality control services, materials handling systems design and pad closure design.

Waste and Tailings Storage Design
RPA and associated companies offer a comprehensive consultancy service covering all aspects of the management and disposal of surplus materials at mine sites, including overburden, waste rock, tailings, wastewater treatment, hazardous wastes, waste oils, boiler ash and furnace slag, etc.

Environmental Audit, Monitoring and Analysis
The independent appraisal of environmental management systems through an Environmental Audit is widely used to ensure that operations are being conducted in a manner consistent with the policies of owners, operators, and regulators.

RPA and associated companies offer a fully independent environmental auditing service, which is tailored to meet the particular requirements of individual clients. Professional staff are experienced in the design, implementation and interpretation of monitoring programs in areas such as hydrogeology and groundwater quality, surface water hydrology and water quality, terrestrial and aquatic ecology, particulate and gaseous emissions, soil quality, and radiation.

Pollution Control and Environmental Analysis
RPA and associated companies have extensive expertise in pollution control and environmental protection engineering covering all aspects of the aquatic, atmospheric, and terrestrial environments and offers proven capability in the following key areas:

- Surface water management
- Mine water management
- Process effluent management
- Dust control systems
- Occupational health and safety
- Acid rock drainage
- Heap leach systems

The company is recognized for its capabilities in the fields of groundwater protection and surface water quality, where commissions have been undertaken in a range of climatic conditions.
Water Management

RPA and associated companies’ experience in water engineering covers a broad spectrum of activities including all aspects of water conservation and management, including river basin studies, hydrological studies, river engineering, irrigation, water supply and waste-water disposal. Specifically for mining, the company offers hydrological and hydrogeological assessments, aimed at determining the nature, origin, and control of infiltration or providing access to mine water supply.

Mine Closure and Rehabilitation

RPA and associated companies have experience with decommissioning and rehabilitation of abandoned mine sites and tailings disposal facilities. Closure and rehabilitation plans are designed to ensure the long-term stability and environmental performance of abandoned mine sites. RPA and associated companies have the capability to address all aspects of closure and rehabilitation programs covering the individual requirements of proposed, existing, and historic mine sites.
## Selected Clients

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Contacts

Deborah McCombe, P.Geo.
President and CEO
Suite 501 – 55 University Ave
Toronto, Ontario
M5J 2H7
Canada
Tel.: 1 (416) 642 1476
Mobile: 1 (647) 407 7840
deborah.mccombe@rpacan.com
www.rpacan.com