















# Nickel

CSA Global's Nickel Consulting team has long been recognised as leaders in resource management and exploration for nickel laterite and sulphide deposits. With over 50 years combined experience in the field at senior management level, team members have played an active role in new deposit discovery and resource evaluation in the great majority of the world's key nickel belts.

## Recent Projects

NATION	PROJECT	DEPOSIT TYPE	WORK COMPLETED	
	Western Australia	Windarra Nickel	Sulphide	Exploration management, database evaluation and expert assessment of nickel sulphide targets at Mount Windarra and on surrounding exploration ground.
		Ravensthorpe	Laterite	Member of due diligence team reviewing the project as part of the sale process, mentoring of mine staff under new owners.
	Vietnam	Ban Phuc	Sulphide	Exploration consulting and expert review of massive sulphide resource and its geological environment, NI 43-101 technical report.
	Philippines	Country review	Laterite	Country review of nickel laterite resources.
	PNG	Country review	Laterite	Country review of nickel laterite resources.
			Laterite	Independent Expert Report of deposit for listing.
	Indonesia	Country review	Laterite	Country review of nickel laterite resources.
			Laterite	Reviews of nickel laterite exploration programs from drilling through to resource estimation to ensure JORC-compliance, including site visits.
			Laterite	Site reviews of laterite projects for a number of clients for possible investment / acquisition.
	Madagascar	Nickel-copper-PGE exploration	Sulphide	Research, exploration planning and field activities exploring for intrusive-hosted nickel-copper sulphides.
		Ambatovy	Laterite	Technical due diligence of Bankable Feasibility Study including site visits, technical review of mining operations.
	Brazil	Piaui	Laterite	Due diligence of project data, independent resource estimation.
	Poland	Szklary	Laterite	Development of a JORC-compliant database and resource statement.
	Turkey	Hakkari	Laterite	Project generation.
	Greece		Laterite	Project generation.
	Albania		Laterite	Project generation.
	Canada	Thompson Nickel Belt (Manitoba)	Sulphide	Review of exploration potential.
		Baffin Is. (Nunavut)	Sulphide	Regional targeting, prospecting and review.
		Rainy River Project (NW Ontario)	Sulphide	Review of existing geophysical, geochemical and drill hole data, and 3D inversion of airborne magnetic data.
		Central Raglan Belt (Quebec)	Sulphide	Management of a \$23 million drilling and exploration program that led to the discovery of the "Echo 1 Ni-Cu-PGE zone".
		West Raglan Belt (Quebec)	Sulphide	Operation of a \$4.8 million exploration program which included drilling, prospecting, geophysics and geochemistry.
	USA	Cheyenne Belt (Wyoming)	Sulphide	Technical support for regional stream sediment program, airborne geophysical surveys and preparation of in-house technical review.
		Duluth Complex (Minnesota)	Sulphide	QA/QC review of historical assay data, management and interpretation of airborne geophysical and regional geochemical surveys, and preparation of in-house technical review.
		Oregon Projects	Laterite	Data evaluation and JORC assessment.
	Zambia	Trident	Sulphide	Project review and NI 43-101 technical report.



Resource  
Industry  
Consultants

We draw on our collective experience to customise exploration and mining solutions to each client's requirements. Our advice and services are tailored to respond to the individual advantages and constraints of each geographical region. This approach helps us to provide a holistic approach to operating on nickel projects.

We have worked with all sizes of companies from small businesses to international majors, as well as with governments and NGO's. We make it our business to get to know and understand the region's cultural diversity, political background, sovereign risk, workforce and technical capability. We identify with each region's approach to sustainability and its level of support for our industry.

## About CSA Global

We are a leading geological, mining and management consulting company with 30 years experience in the international mining industry. We cover all stages of the exploration and mining cycle, all mineral commodities, all extraction methods, across all regions:

### EXPLORATION

- Mineral systems targeting & project generation
- Remote sensing & geophysics
- Geochemistry (traditional & non-destructive methods)
- Mapping & field investigations
- Drill program planning & supervision
- Exploration strategy & project management

### MINING

- Mining & engineering studies (concept to feasibility)
- Reserve assessment reviews
- Mine optimisation, scheduling & design
- Ore Reserve estimation & reporting
- Grade control & reconciliation
- Productivity improvement & project management

### CORPORATE

- Project reviews
- Due diligence
- Expert valuations
- Independent reports
- Geo-corporate advice
- Secure information hosting (Spring portals & data rooms)

### RESOURCES

- Review of data collection techniques & QAQC of data
- Geological & geo-metallurgical modelling
- Geostatistical analysis & variography
- Mineral Resource estimation, validation & classification
- Resource reporting in accordance with international codes
- Resource audits & risk analysis

### DATA

- Sourcing, capture, validation & QAQC of data
- Database design, setup, management & hosting
- Cartography, GIS & web-mapping
- Production databases & management tools
- Online information management systems (Spring portals & data rooms)
- IT support, systems administration & training

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

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