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# **Rajapalot Property Mineral Resource Estimate** NI 43-101 Technical Report dated December 14, 2018 as amended on 20 February 2020

Mawson Resources Limited

## Location Ylitornio - Rovaniemi Finland

In accordance with the requirements of National Instrument 43-101 "Standards of Disclosure for Mineral Projects" of the Canadian Securities Administrators

Qualified Persons: R Webster B.app.Sc. MAusIMM, MAIG K Forrester CEng, MIChemE, MAusIMM (QP Metallurgy)

AMC Project 118056 Effective date 14 December 2018

Unearth a smarter way

## 1 Summary

#### Introduction

AMC Consultants Pty Ltd (AMC) was commissioned by Mawson Resources Ltd (Mawson) to report the results of a Mineral Resource estimate for the Rajapalot Gold-Cobalt Project (Property located in Lapland Finland. This Mineral Resource has been reported according to the CIM Definition Standards (2014) and the report is written in accordance with the requirements of National Instrument 43-101 (NI 43-101) "Standards of Disclosure for Mineral Projects" of the Canadian Securities Administrators.

A site visit was carried out in October 2018 by Rod Webster Principal Geologist who is acting as the qualified person (QP) for reporting of the Mineral Resource estimate.

The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to AMC at the time of preparation of this report.
- Assumptions, conditions, and qualifications as set forth in this report.
- Data, reports, and other information supplied by Mawson.

Mr. Rodney Webster of AMC Consultants Pty Ltd is acting as the qualified person (QP) for reporting of the Mineral Resource estimate. The Mineral Resource is reported in accordance with the NI 43-101 requirements.

#### Tenements

On April 30, 2010, Mawson entered into an agreement with AREVA Finland (AREVA) whereby the Company acquired 100 % of AREVA's mineral properties and exploration database in exchange for  $\leq 1$  million.

The Rompas-Rajapalot property consists of two granted exploration permits in legal force. Three exploration permits are under standard bi-or tri-annual renewals. Also, the property includes 8 exploration permit applications.

#### Location and ownership

The Property is centred roughly at coordinates 3,408,600E by 7,373,000N of the Finnish national coordinate system (KKJ), Zone 3.

The project is located approximately 35 km west-southwest of the city of Rovaniemi in southern Lapland, Finland. Access by road from Rovaniemi is via highway E75 south-westerly for 24 km to the junction of highway 930, just past the town of Muurola.

The topography is gently rolling to almost flat, heavily glaciated and inundated with numerous post-glacial lakes, till, eskers, lacustrine and fluvial deposits. The climate is classified as subarctic with an average temperature of  $+0.2^{\circ}$  C.

#### Geology and mineralization

The Project lies within the Karelia tectonic province in a Paleoproterozoic supracrustal sequence known as the Peräpohja Belt (PB). This is comprised of quartzites, mafic volcanics and volcaniclastics, carbonate rocks, black shales, mica schists and greywackes that unconformably overlies Archean rocks of the Pudasjärvi Complex (PuC). Granitoid intrusions ranging from 2.05 to 1.78 Ga occur throughout the project.

#### **Exploration and drilling**

All core recoveries were excellent and averaged close to 100% in fresh rock. Photographing and logging were conducted in Mawson's Rovaniemi facilities and in those of the GTK. Core intervals, averaging 1 metre for mineralized samples and 2 m for barren samples, were cut in half at the GTK core facilities in Rovaniemi. Drill core orientation was completed on PAL drill holes with the bottom of hole marked with a continuous line. This line on the remaining half core was retained for verification and reference purposes.

#### Assay data

Samples were prepared at Kempele and analyzed for gold at Raahe where the PAL1000 technique was used. This involves grinding the sample in steel pots with abrasive media in the presence of cyanide, followed by measuring the gold in solution with flame AAS equipment. Fire assay techniques follow ALS laboratory standard procedures.

Where fire assay techniques have been used as the primary or verification method for gold analysis, these samples have been submitted to ALS preparation facilities either in Piteå or Sodankylä.

Whilst on site form the 8 and 9 October 2018 the QP carried out the following:

- Compared some laboratory assay certificates with the assay database and found no errors.
- Observed the geological logging and sampling of the core.
- Reviewed the core against core logs for a number of drillholes.
- Observed the drilling, logging, sampling, subsampling and core cutting operations.
- Visited the project area.

The QP considers the drillhole data is suitable for estimation and reporting Mineral Resource estimates.

Based on quality control and quality assurance results the QP is satisfied about the adequacy of the sample preparation, security and analytical procedures. The procedures follow industry best-practice guidelines and are reviewed frequently.

A preliminary metallurgical analysis of the Project was carried out by SGS Minerals Services UK Limited for four gold samples and reported on 28 October 2014.

#### Mineral processing and metallurgical testing

To date a single campaign of mineral processing and metallurgical testing has been conducted by SGS Minerals UK (Gopalakrishnan, 2014). This campaign is preliminary in nature and limited to the recovery of gold on material sourced from the Palokas deposit. The testwork programme was conducted prior to the broader discovery of the Raja deposit as well as the inclusion of cobalt as a potentially economic metal.

Gravity release analysis tests reported recoveries of between 26 % and 48 %. Further, cyanidation of the gravity tails demonstrated the recovery of leachable gold not recovered during gravity concentration. The combined gravity concentration and cyanidation test resulted in an overall gold recovery of between 95 %. There was good reconciliation between the gold grades as calculated from testing assays and the expected grades provided by Mawson.

#### **Mineral Resource estimate**

A Mineral Resource was estimated using a block model and ordinary kriging to estimate the gold and cobalt block grades.

Based on pit optimization the Inferred Mineral Resources, estimated for both deposits is shown in Table 1. The cut-offs used within the optimized pits and below the pits, based on AuEq cut-offs (where AuEq =Au (g/t) + Co/608 (ppm)) are:

- 2 g/t AuEq below the optimal pits, potentially to be accessed by underground methods, (termed UG).
- 0.37 g/t AuEq for the both deposits within their optimal pit, (termed pit).

Zone	Cut-off (AuEq)	Tonnes (kt)	Au (g/t)	Co (ppm)	AuEq (g/t)	Au (koz)	Co (tonnes)
Raja Pit	0.37	2,499	2.4	410	3.1	197	1,021
Raja UG	2.0	356	4.8	500	5.6	55	179
Raja Total		2,855	2.7	420	3.4	252	1,201
Palokas Pit	0.37	1,306	1.4	450	2.2	60	587
Palokas UG	2.0	96	2.7	560	3.6	8	54
Palokas Total		1,402	1.5	460	2.3	69	640
Total Pit	0.37	3,805	2.1	420	2.8	257	1,608
Total UG	2.0	452	4.4	520	5.2	63	233
Total		4,257	2.3	430	3.1	320	1,841

 Table 1
 Inferred Mineral Resources Estimate as of 19 November 2018

Notes: 1. Canadian Institute of Mining (CIM) definitions were used for Mineral Resource classifications.

2. Errors in the totals are due to rounding.

3. AuEq=Au+Co/608 based on assumed prices of Co \$30/Ib and Au \$1,250/oz

4. Drilling results to July 2018

5. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability

Pit optimization was carried out for Raja and Palokas deposits using Whittle software to define the areas that could be mined by open pit methods compared to underground methods. The Mineral Resource estimate cut-offs were based on the results of this optimization. The parameters used in the pit optimization are as follows:

- Processing cost of 11.98 US\$/t
- Processing recovery of 97%
- G&A costs of US\$ 2.00 /t
- Selling cost 0.75
- Royalty 0.15% of revenue
- Processing rate 1 Mtpa
- Mining cost at the surface was \$1.50/t
- Mining cost increased by \$0.02 per 5 m bench
- Model has been regularized to an SMU of 5 m x 5 m x 2.5 m to account for dilution
- Discount rate 8%
- Overall slope angle of 50°
- No allowance for capital was included
- The additional cost for mining ore is US\$0.60/t

#### **Conclusions and recommendations**

The QP considers the drillhole data is suitable for estimation and reporting of the Mineral Resource estimates.

Based on the data provided the QP is satisfied about the adequacy of the sample preparation, security and analytical procedures. The procedures follow industry best-practice guidelines and are reviewed frequently.

A continued exploration and drilling program is recommended to expand the known gold resources and drill test further gold targets. Definition of economic mineralization outside Natura 2000 areas would allow drilling throughout the year.

Specifically, the work program should address the following items:

- Fixed-loop electromagnetics and down-hole EM to determine and refine drill targets extensions of known mineralization and test for blind targets.
- A diamond drill program of 25,000 metres is recommended. Step-out diamond drilling focusing down-plunge at Raja and downdip at Palokas and further exploration drilling on new geochemical and geophysical targets at the Kairamaat 2-3, Hirvimaa, Raja and Männistö permits during 2019.
- Additional metallurgical testwork for cobalt and gold including liberation studies, QEMSCAN to further determine the relationships of the cobalt minerals to gold, sulphide and silicate minerals. Also, gold deportment studies leading to gravity separation, flotation and cyanidation test work to develop and optimize a process flowsheet.
- Continued environmental monitoring and baseline studies for current and future permitting.
- Updated Mineral Resources, subject to 2019 winter drill results during third to fourth quarter 2019.

An exploration budget to carry out these programs is estimated at C\$ 6.3 million of which the drilling component is C\$ 5.4 million.

The recommended mineral processing and metallurgical testing work would require a budget of approximately C\$ 200,000.

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# Distribution list

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# 2 Introduction

AMC Consultants Pty Ltd (AMC) was commissioned by Mawson Resources Ltd (Mawson) to report the results from a Mineral Resource estimate according to the CIM definition Standards and report in National Instrument 43-101 Technical Report (NI 43-101 Technical Report or Report) for the Rajapalot Gold-Cobalt Project (Project) located in Lapland Finland.

All data used in this report were valid as of 1 October 2018.

Recent studies completed for the Project includes:

• National Instrument (NI) 43-101 Technical Report – Mawson 27 August 2018.

A site visit was carried out in 8 and 9 October 2018 for 2 days by Rodney Webster Principal Geologist of AMC. Persons responsible for the reports are listed in Table 2.1.

Table 2.1Persons who prepared or contributed to this Technical Report

Qualified Person	Position	Employer	Indep. of Artmin	Date of Site Visit	Professional Designation	Sections of Report
Qu	Qualified Persons responsible for the preparation and signing of this Technical Report					
Rodney Webster	Geologist	AMC Consultants Pty Ltd	Yes	8-9 October 2018	Geologist	1 to 12 14 to 27, Part 24 and Part 25
Kurt Forrester	Principal Engineer	Arn Perspective Limited	Yes	17-19 August 2018 #	Metallurgist	13, Part 24 and Part 25

Note: <sup>#</sup> On these dates, Dr. Forrester visited the core facility in Rovaniemi.

The scope of the personal inspection of the property undertaken by the Qualified Person covered:

- Interviews on site with project personnel.
- Examination of drill core, core processing and sample preparation facilities.
- On-site examination of plans, cross sections, photographs and other diagrams.
- Observation of drilling and project area.
- On those dates, Dr. K. Forrester visited the core facility in Rovaniemi.

The Technical Report is based on:

- Information provided by Mawson.
- Data collected during a site visit undertaken by the Qualified Persons.
- Discussions with Mawson personnel located in their office in Finland.

Mawson was provided with a draft of this report to review for factual content and conformity with the brief.

# 3 Reliance on other experts

The Qualified Persons have relied, in respect of legal aspects, upon the work of the Expert listed below. To the extent permitted under NI 43-101, the Qualified Persons disclaim responsibility for the relevant section of the Technical Report.

The following disclosure is made in respect of this expert:

• Mineral Deposits database which is run by The Geological Survey of Finland (GTK), and the Exploration and Mining Registry (permitting) governed by TUKES (Finnish Safety and Chemicals Agency).

Report, opinion, or statement relied upon:

• Title Opinion on the exploration permits and applications provided by the Finnish mining authority, TUKES.

Extent of reliance:

• Full reliance following a review by the Qualified Person(s).

Portion of Technical Report to which disclaimer applies:

Section 4.2

2

# 4 Property description and location

#### 4.1 Location

The project is centred roughly at coordinates 3,408,600 E by 7,373,000 N of the Finnish national coordinate system (KKJ), Zone 3. The Finnish KKJ(3) coordinate system is assigned the EPSG code 3901. The local Finnish coordinate system is being modified to a European standard and is partially implemented by the authorities, as such, agencies such as TUKES require reporting in newer the ETRS89/TM35FIN (EPSG 3067) coordinate format. All reporting in this document by Mawson remains in the KKJ3 system.

The location of the project is shown in Figure 4.1 Location of the Project



#### Figure 4.1 Location of the Project

Source Mawson

#### 4.2 Property Ownership

On April 30, 2010, Mawson entered into an agreement with AREVA Finland (AREVA) whereby the Company acquired 100% of AREVA's mineral properties and exploration database in exchange for €1 million. At that time the Rompas project had 30 grab samples collected while the Rajapalot area had not yet been discovered. There are no underlying royalties (except a statutory Finnish mining royalty of 0.15% of the value of the exploited mineral/metal payable to the landowner), back-in rights or other underlying agreements or encumbrances that this property may be subject to.

The Rajapalot property consists of two granted exploration permits in legal force. Three exploration permits are under standard bi or tri-annual renewals and 8 exploration permit applications (Table 4.1) also form part of the Property. Figure 4.2 shows the locations of the claims described above.

Details of exploration permits were obtained from the Finnish mining authority TUKES and verified on their website (accessed 2 November, 2018)<sup>1</sup>.

Permit Type	Name	Mining Registry Number	Area (hectares)
Exploration Permit	Raja	ML2014:0061-01	883
Exploration Permit	Männistö	Männistö ML2016:0046-01	
Total			3,024
Renewal	Korkiakoivikko	ML2012:0168-01	232
Renewal	Kairamaat 2-3	ML2013:0041-02	1,462
Renewal	Hirvimaa	ML2014:0033	1,007
Exploration Permit Application	Rompas	ML2014:0060-01	265
Exploration Permit Application	Kultamaat	ML2015:0005-01	529
Exploration Permit Application	Karsimaat	MI2014:0075-01	2,777
Exploration Permit Application	Uusi Rumavuoma	ML2015:0042-01	1,283
Exploration Permit Application	Kaitajärvi E-M-W	MI2014:0100-01	802
Exploration Permit Application	Mäntylaenokka N -S	ML2015:0054-01	398
Exploration Permit Application	Kuusivaara	ML2014:0077-01	4,565
Exploration Permit Application	Petäjäskoski	ML2014:0117	3,031
Exploration Permit Application	Petäjävaara	ML2014:0074	1,645
Total			17,996

#### Table 4.1Status of Claims

Finland introduced a new Mining Act ("new Act") in force from 1 July 2011. Mawson's current claim applications were submitted under an earlier Act and all permits and applications are now enforced under the new Act. Under Finnish Mining Law, prospecting is considered part of the so-called "everyman's right", a Nordic tradition, giving public access to all land, public or private. Geological mapping, as well as limited sampling, and prospecting can be carried out everywhere, provided that no damage is done to the landowner's property or to the environment. The core claims at Rompas were granted under the prior Act on October 31, 2011 and came into legal force until on October 15, 2012. All permit renewals are being made under the new Act. At the effective date Raja and Mannistö exploration permits are all granted, while Kairamaat 2/3, Korkiakoivikko and Hirvimaa area under standard bi- or tri-annual renewals according the Finnish Mining Act, while the remainder under application status with TUKES.

<sup>&</sup>lt;sup>1</sup> https://tukes.fi/karttatiedostot-rss-atomfeedina.



#### Figure 4.2 Location of Exploration Licences

Parts of the Rompas exploration permit are subject to decrees which pre-date the Nature Conservation Act 1996 (with amendments). These are the Bog Protection Decree (933/1981) and the Grove Protection Decree (522/1992). Exploration is allowed in the areas of the decrees, with landholder permission.

This Nature Conservation Act 1996 aims to maintain biological diversity, promote scientific research, and conserve the natural beauty of the area.

Certain areas of the Rompas-Rajapalot areas (namely claim areas Rompas and Kairamaat 2-3) are defined as European Union Natura 2000 designated areas. Natura 2000 sites cover about 10 % of Finland and approximately 30 % of Northern Finland. Natura 2000 is the centrepiece of EU nature and biodiversity policy.

The Natura 2000 network is in place to conserve important biotopes and species throughout Europe. The purpose of the Natura 2000 program is to preserve nature's diversity.

# 5 Accessibility, climate, local resources, infrastructure, and physiography

#### 5.1 Location and Access

The Property is located approximately 35 km west-southwest of the city of Rovaniemi in southern Lapland, Finland. Access by road from Rovaniemi is via highway E75 south-westerly for 24 km to the junction of highway 930, just past the town of Muurola. Heading westerly on highway 930 for about 28 km, the property is accessed via a secondary / tertiary gravel road that heads northerly from the village of Kaitajärvi. This is roughly the south-central boundary of the property which extends for several kilometres to the north-northwest; the project lies about 10 km south of the Arctic Circle.

Alternately, the Property is accessible by highways from either southern Finland or via Sweden as the Swedish border is approximately one-hour drive to the west.

#### 5.2 Physiography

The topography is gently rolling to almost flat, heavily glaciated and inundated with numerous post-glacial lakes, till, eskers, lacustrine and fluvial deposits. The mean elevation on the property is approximately 170 m ASL, ranging between 150 m and 200 m ASL. At Rajapalot, swamps and small creeks drain east and south into the Kemi River which in turn flows into the northern Gulf of Bothnia, while waters from Rompas drain west to the Tornio River which in turn flows into the northern full of Bothnia.

#### 5.3 Infrastructure and Local Resources

Rovaniemi is the largest city in Lapland with a population of 62,000. Several daily flights from the all-weather sealed aerodrome link with the Finnish capital Helsinki, and train travel takes from 9 to 12 hours.

Skilled labour is readily available in Rovaniemi and surrounding communities. There is adequate raw material (water, gravel, timber) and forestry roads inundate the entire area. The smaller communities along highway 930 are serviced with electricity. As mining is an established and recognized industry in Finland, there would appear to be no hindrances to surface rights. The terrain is suitable for a mine/processing plant, dumps, tailings and storage facilities.

Lapland is one of the northernmost parts of the world with a forest cover. The forests belong to the boreal coniferous forest zone. In Lapland the coniferous forest timberline is formed by Scots pine (Pinus sylvestris), in contrast to other parts of the world where the timberline usually consists of spruce and larch species (Hustich, 1952). Despite extremely northern location forestry is practised in the area.

The dominant tree species in Northern Finland is Scots pine, in southern parts of the country it is Norway spruce (Picea abies). In Finland and especially in northern part of the country there are just few commercially important tree species. In addition to pine and spruce, only birch species, downy birch (Betula pendula) and pubescent birch (B. pubescens), are commercially important in Lapland.

Low-lying shrubs are common, including for example juniper, blueberry, lingon berry, cloudberry, lichens and sphagnum moss blankets the forest floor throughout.

#### 5.4 Climate

The climate is classified as subarctic with an average temperature of  $+0.2^{\circ}$  C. Annual rainfall averages 535 mm, and snow stays on the ground 183 days per year on average. The type of work performed in the area may be dictated by the seasons, but work can be carried out throughout the year.

#### 6 History

#### 6.1 Pre Mawson

During the 1950s the GTK performed some exploration for molybdenum and uranium southwest from the general Rajapalot area, and additional exploration for copper and tungsten was undertaken in the northern part of the area during the 1970s. The Rautaruukki Company performed uranium exploration south of this area, resulting in the discovery of the Mustamaa uranium prospect, located about 15 km south of the Rumavuoma area (Vanhanen, 2010).

It is considered that the uranium deposit was initially discovered by an airborne radiometric survey. Follow-up exploration was conducted by geologists who had previous GTK experience in the area. GTK had drilled a fence of stratigraphic holes to the south, along strike from the Rumavuoma claim. Radioactivity was first discovered by GTK on what is now the Rumavuoma claims (southern spur of Rompas) in the early 2000s.

Rompas was a new discovery made by AREVA; there is no evidence of prior exploration, development or production.

AREVA began reconnaissance exploration in June 2007, consisting of mostly ground radiometric surveys. Further work was completed in 2008 with some follow-up work done in 2009. More than 150 new, separate occurrences of high uranium and extremely high gold contents were located in bedrock. At that time, however, AREVA decided to reduce activities in Finland and started negotiations with Mawson.

There have been no historical Mineral Resource or Mineral Reserve estimates nor any production from the property.

# 7 Geological setting and mineralization

#### 7.1 Regional Geology

The Project lies within the Karelia tectonic province in a Paleoproterozoic supracrustal sequence known as the Peräpohja Belt (PB). This is comprised of quartzites, mafic volcanics and volcaniclastics, carbonate rocks, black shales, mica schists and greywackes that unconformably overlies Archean rocks of the Pudasjärvi Complex (PuC) (Figure 7.1).

#### Figure 7.1 Karelian tectonic province



Source: Geological Survey of Finland, Special Paper 60

A national geological map was compiled by GTK at 1:1,000,000 scale and released in 1997. The entire area of the Koivu map-sheet and most of the Törmäsjärvi map-sheet area are composed of rocks of the Paleoproterozoic Peräpohja belt (PB). The bedrock of the northwestern part of the Törmäsjärvi map-sheet belongs to the Central Lapland Granitoid Complex (CLGC). The few outcrops in the zone between the PB and CLGC consist of sheared, brecciated, and mylonitic rocks belonging to the Mellajoki Suite (MS); a large fault separates the PB to the southeast from the MS and CLGC to the northwest. The stratigraphy of the PB was first published by Perttunen (1991) who divided the belt into eight formations that unconformably overlie the Achaean Pudasjärvi complex. The stratigraphy was re-interpreted by Perttunen and Hanski (2003), who divided the supracrustal rocks of the belt into two major groups: Kivalo and Paakkola. The current stratigraphic interpretation by Hanski et al. (2005) has expanded the number of formations from eight to thirteen (Lauri, 2011).

The supracrustal rocks are cut by diabase sills and dykes (2.2 and 2.1 Ga) as well as felsic plutons (1.88–1.90 Ga), which are comprised mainly of granodioritic, and in lesser amounts, syenitic rocks. The felsic intrusives indicate that all of the lower part of the Lapland Triangle, or PB, are older than 1.9 Ga. Correspondingly, the sedimentation and volcanism of the lower part of the PB took place between 2.44 and 2.1 Ga, as manifested by the ages of the layered intrusions and mafic dykes (Vanhanen, 2010).

The bulk of the Rajapalot permits underlie KKJ sheets 2632 and 2634 which were not mapped in detail by the GTK.

Adjacent to the quartzite to the east and straddling the central part of the claims is a unit described as "carbonate and calc-silicate rocks, black schists and metavolcanic" rocks on the 1:1,000,000 scale map. Mica schist, black schist, conglomerate and arkosite occur central to this unit, but lie mostly north and south of the property. Both of these units are collectively mapped on the 1:100,000 scale maps as part of the Martimo Formation belonging to the Paakkola Group. The Martimo is described as a mica schist containing intercalations of graphite- and pyritebearing phases (suggested by airborne electromagnetic data). The Väystäjä Formation is described as pillowed tholeiitic basalts with minor tuffites, some dolomite and mica schists plus a felsic volcanic rock among the mafic volcanics (refer to Figure 7.2).

Figure 7.2 Published Peräpohja Belt stratigraphy from Ranta et al. (2018; Bulletin of the Geological Society of Finland)

LITHOSTRATIGRAPHY		LITHOLOGY	INTRUSIVES GRANITOIDS	AGE
GROUP	FORMATION		GRANITOIDS, INCLUDING TOURMALINE RICH PEGMATITES	ca. 1.79 - 1.77 Ga (U-Pb and Sm-Nd) <sup>1</sup>
			HAAPARANTA SERIES	ca. 1.88 Ga (U-Pb)²
	MARTIMO	Mica and black schist, qraywacke		<1920 Ma (U-Pb) <sup>3</sup>
PAAKKOLA	PÖYLIÖVAARA	Mica and black schist		
	KORKIAVAARA	Felsic and mafic tuff		<1973 ± 11 Ma (U-Pb) <sup>4</sup>
			KIEROVAARA	1989 ± 6 Ma (U-Pb) <sup>5</sup>
	VÄYSTÄJÄ	Pillowed basalt, dolomite and felsic porphyry		2050±8 Ma (U-Pb) <sup>6</sup>
	LAMULEHTO	Mafic tuffite		
	RANTAMAA	Dolomite, quartzite		
	HIRSIMAA	Mafic tuffite		2106 ± Ma 7 (U-Pb)7
	POIKKIMAA	Dolomite, phyllite		
KIVALO	TIKANMAA	Mafic tuffite		
	KVARTSIMAA	Quartzite, dolomite		
	SANTALAMPI	Agglomerate, pillowed basalt		
	JOUTTIAAPA	Amygdaloidal basalt		$2105 \pm 50 \text{Ma}(\text{Sm-Nd})^8$
	PETÄJÄSKOSKI	Mica-albite schist, dolomite, quartzite, breccias		>2140 ± 11 Ma (U-Pb)9
	KAISAVAARA	Quartzite, conglomerate		
		Quartzite, arkosic quartzite, orthoquartzite, mica gneisses,		- 0000 M - (U DI )10
	PALOKIVALO and MELLAJOKI SUITE	mica schists		>2220 Ma (U-Pb)**
	RUNKAUS	Amygdaloidal basalt, agglomerate		2250±30 Ma (U-Pb) <sup>11</sup>
	SOMPUJÄRVI	Conglomerate, arkose, quartzite		<2440 Ma (U-Pb) <sup>12</sup>

Deposition of volcanics and sediments of the Peräpohja commenced after 2.44 Ga (Kuovo, 1977; Huhma et al, 1990) with the youngest rocks deposited after approximately 1.91 Ga based on inherited zircon populations in the Martimo Formation. It is generally interpreted as a continental rift fill sequence that failed to progress to oceanic crust. It is likely that the bulk of the mapped lowermost PB was deposited on a relatively low gradient surface, either emergent (regionally extensive quartz sandstones) or shallow water (stromatolitic carbonate rocks). Also, within the sequence are inferred evaporites of the Petäjäskoski Formation (Kyläkoski et al., 2012b). Towards the end of the history of the PB however, traction current related sediments, reflecting basinal development, dominate the sequence (Korkiavaara, Pöyliövaara and Martimo Formations). The nature of the depositional environment and the interpreted long history of the PB makes the likelihood of regional unconformities very high.

Correlation of rocks of the PB sequence with the apparently similar Russian stratigraphy described in the Far Deep Project volumes (Melezhik et al., 2013) has been made by Prave (2013, internal company reporting) who proposed three major basin stages. Firstly, a continental margin dominated by non-marine siliciclastic rocks and mafic volcanism with potentially two glacial episodes included - the Sompujärvi and the younger Kaisavaara glacials. The second basinal stage involves a change to shallow to non-marine deposition of carbonate rocks and quartzites and is recognised as including the Lomagundi-Jatuli episode of enhanced 13C deposition (Karhu, 1993; Huhma et al., 2011). The third depositional stage involves development of considerable topographic relief. Basinal deepening with arkosic and quartzose turbidite fans are synchronous with mafic and felsic volcanism (for example, Hanski et al., 2005). The proposition that strike-slip tectonics are driving both transpressional and transtensional stress regimes resulting in both the uplift and the basin formation during this third depositional stage is the best fit hypothesis to date. This is likely synchronous with metamorphism and the emplacement of igneous intrusives. Metamorphism ranges from mid or upper greenschist facies in the south of the PSB to amphibolite facies conditions in the northern part of the belt. The Sm-Nd data on tourmaline granites intruding the migmatites give ages of approximately 1.78 Ga (Ranta, 2012).

Deformation in the Peräpohja Belt varies in style, largely related to the metamorphic grade. In the southern, greenschist facies portions, open to tight folds dominate, with a strong indication of thrust related folding where axial surfaces are commonly broken by small thrust faults. As metamorphic grade increases to the north towards the Central Lapland Granitoid Complex, the fold intensity and strain increase dramatically and is typified by isoclinal to tight folds, with the highest strain occurring in the upper parts of the sequence that is dominated by thinly bedded sediments, mafic and carbonate rocks (Figure 7.3).





Source: Prave 2013

### 7.2 Local Geology

#### 7.2.1 Rajapalot Area

The host sequence comprises an isoclinally folded package of amphibolite facies metamorphosed Paleoproterozoic rocks. At a local scale Mawson has divided this package into two parts, a siliciclastic, dolomitic carbonate and albite-altered metasedimentary sequence interpreted as forming in a platformal to continental margin setting, followed by a second metasedimentary sequence (Sequence 2; the Shunga equilvent event) of pelitic turbidites, arkosic sands, carbonates, impure and pure quartzitic sandstones and sulphidic bituminous rocks. An unconformity between the two sequences representing a boundary between largely oxidised rocks of Sequence 1 and reduced rocks of Sequence 2 represent the most likely interpretation, although this may also now represent a thrust surface. Mafic rocks, ranging from lava flows, volcaniclastic sediments to dykes and differentiated sills form up to 20 % of the total package. Rare, but significant magnetite iron formations up to 20 metres thick occur towards the top of Sequence 1.

Outcrop in the Rajapalot area is sparse, with swamps, bouldery till and lakes dominating the terrain. Outcrops where present are dominated by resistant rock types such as quartzite, albitic metasediments and amphibolite which represent more than 99% of exposures. The boulder types reflect the same resistant rock types. A single mineralized outcrop of weathered pyrrhotite bearing Mg-amphibole chlorite rock was found to contain up to 80 g/t gold at Palokas.

Metamorphic grade is largely amphibolite facies throughout the project area, from near the greenschist-amphibolite facies boundary in the south with increasing grade towards the north into sillimanite stability field. Retrograde alteration to chlorite or epidote is relatively common adjacent to quartz veins and fractures. Tourmaline-bearing granitoids (ca. 1.8 Ga) are exposed within 3 kilometres to the north, and recent drilling at "Boardwalk" has revealed albitised granitoids and diorites interpreted to be 2.05 Ga in the core of the project area (Mawson, internal reporting).

#### 7.2.2 Mineralization

The Rajapalot project is where high-grade gold-cobalt system have been drilled within an area approaching 3 km by 2 km in area. Additionally, mineralized boulders and outcrops have been discovered within a 4 km by 3 km area.

Mawson's primary target type consists of disseminated gold and cobalt mineralization at Rajapalot. Early core holes at Palokas were drilled with hand-portable JKS4M and Winkie equipment (25 mm core diameter) which were then validated by NQ diamond drilling in 2017. (Figure 7.4). Gold mineralization throughout Rajapalot is associated with pyrrhotite in a variety of host compositions, but generally of a sulphidic Fe-K or sulphidic Fe-Mg type.



#### Figure 7.4 Rajapalot Area showing the location of better drilling results

Source: Mawson

The mineralization at Rajapalot is in strong contrast to the earlier vein-hosted and nuggety Rompas discoveries as it is sulphidic with strong potassic or Fe-Mg alteration and is predominantly of a disseminated, replacement style and is therefore directly targetable by IP chargeability/resistivity and electromagnetic geophysical methods. The main prospect areas have been defined by drilling to date are known, from north to south(east) as Hirvimaa, Palokas, South Palokas, Boardwalk, The Hut, Rumajärvi and Raja. The prospects lie around the hinge of a kilometer scale open fold including earlier 10 to 100 m scale tight to isoclinal folds. Mineralization includes a Bi-Te association and the presence of tourmaline in spatial association with the mineralization.

Two distinct styles of gold mineralization dominate the Rajapalot area. The first, is a variably sulphidic magnesian iron formation, previously referred to internally as "Palokas" style. This forms in the uppermost part of Sequence 1 within approximately 100 vertical metres of the inferred unconformity, that is, the incoming of pelites, calc-pelites and quartz muscovite rocks. A largely retrograde mineral alteration assemblage includes chlorite, Fe-Mg amphiboles (anthophyllite and cummingtonite series), tourmaline and pyrrhotite commonly associated with quartz-veining. Subordinate almandine garnet, magnetite and pyrite occur with bismuth tellurides, scheelite, ilmenite and gold, cobalt pentlandite and cobaltite. Metallurgical testing at Palokas reveals the gold to be non-refractory and 95 % pure (with minor Ag and Cu) with excellent recoveries by gravitational circuit with conventional cyanidation. QEMSCAN studies also show that the gold occurs as native grains, found both on grain boundaries and within minerals. Detailed work by Jukka Pekka Ranta of the University of Oulu (plus co-workers) on fluid inclusions and the host rocks to the Fe-Mg mineralization at Palokas indicates weakly saline, methane-bearing fluids at depths as shallow as 5 km and temperatures of approximately 250 degrees were responsible for deposition of the gold.

The second style of gold-cobalt mineralization at Rajapalot, a potassic-iron (K-Fe) style (formerly referred to internally as "Rumajärvi" type) is characteristically associated with muscovite and / or biotite and chlorite in a diverse range of fabrics. Gold grades of more than 1 g/t Au are associated with pyrrhotite and contained within muscovite-biotite schists, muscovite and biotite-bearing albitic granofels and brecciated, variably micaceous albitic rocks. Magnetite is a common mineral, but not a necessity for anomalous gold grades. The host rocks are grey to white owing to their reduced nature and may be enclosed by light pink to red calcsilicate-bearing albitites. To date, the K-Fe gold-cobalt mineralization style has been intersected near the muscovite-bearing quartzite at Raja and Rumajärvi, but as other rocks types are also mineralized and the clear strong structural control on grade, stratigraphic constraints may locally not be relevant.

The relationship between the Fe-Mg and K-Fe gold-cobalt systems are not immediately apparent. Pyrrhotite, scheelite, bismuth-tellurides, weak U anomalism (generally less than 100 ppm U) and fabrics indicative of a late structural event (at least after the first two isoclinal to tight fold and high temperature events) are all features that are common between the two mineralization styles. Some of the differences in mineral assemblages, such as chlorite, Fe-Mg amphiboles and tourmaline can be related to variations in bulk rock composition and different structural styles reflect competency contrasts from ductile in schistose micaceous rocks to brittle sulphide matrix breccias in albitic granofels. These bulk rock compositional variations are reflected by the host rocks. The Fe-Mg systems are contained wholly within albitic granofels host rocks and pelites are the dominant host to the K-Fe style.

The Rajapalot gold mineralizing system now covers more than 12  $\text{km}^2$  based on diamond drill results, and, is most likely to extend much further based on anomalous gold values in base of till (BOT) data.

Gold mineralization uncovered in boulders and drilling at the "Boardwalk" prospect is a variant on the Palokas style – drilling has not revealed the main source of the boulders. However, zones up to 20 metres thick of above-detection Au in iron formations has been intersected. Throughout the entire 10 x 10 square kilometre Rajapalot project area, variants of this iron formation have been recorded, included in a drill section at South Rompas (some 8 km west of Palokas). New interpretation of the lithogeochemistry with the airborne and ground magnetics is allowing the exploration footprint to broaden.

Exploration for Palokas and Rumajärvi style gold prospects is not restricted to the Rajapalot area. Recognition of both Sequence 1 and 2 as a package enclosing the 6 km long vein- hosted Rompas Au-U system increases the search space for the pyrrhotite-gold systems. The geochemical characteristics of the iron formations and their low-iron equivalents are not only present in the southern drill section at South Rompas but have more than 50 km of strike length in Rompas-Rajapalot. It is the interaction of this reactive rock package with late, sulphur and gold-bearing hydrothermal systems driven by ca. 1.8 Ga granitoids, that now form the most highly prospective targets away from the Rajapalot area.

Gold and uranium distribution within the initial discovery area at Rompas is nuggety. Thin and very high-grade drill intercepts are common, matching the many hundred surface trench exposures of significant grades found over the six-kilometre trend. The drilling and trenching at North and South Rompas show strong host rock control on mineralization – a distinctive metabasalt. Uraninite and gold are found within or marginal to carbonate-calcsilicate-quartz veins in metabasaltic host rocks. Vein densities in the adjacent metasedimentary rocks are similar to the metabasalt, but to date lack any significant Au or U intersections. Therefore, wall rock interaction with the basalt is inferred to be the key control on uraninite formation.

The following is a copy of the Molnar et al., 2016 Mineralium Deposita abstract.

Textural evidence suggests that metamorphic recrystallization of uraninite bearing guartzdolomite veins into calc-silicate mineral assemblages was followed by a hydrocarbon- bearing fluid flow event and subsequent radiolytic polymerization of hydrocarbons around grains of uraninite. Gold precipitated during a later hydrothermal process in the fractures of uraninite, as well as in the cracks and on the botryodal surfaces of uraninite- pyrobitumen nodules. Gold is associated with galena, altaite, hunchunite, nickeline and rare cobaltite, Pb-bearing maldonite, pyrite, pyrrhotite, chalcopyrite, molybdenite and titanite. Concentration of lead in uraninite is depleted along the gold mineral filled fractures whereas the radiogenic lead contents of galena, altaite and hunchuite deposited in the same fractures are extremely high. Raman spectra show disordered structure of undeformed pyrobitumen nodules in contrast with the well-ordered graphite in calc-silicate veins. Mean random reflectance data for pyrobitumen suggest to 270-340°C maximum temperature of thermal maturation: this temperature range is also considered as the temperature of gold deposition. Results of quadruple sulphur isotope analyses of organic material-, pyrite- and acid-volatile-bound sulphur show distinct ranges of  $\delta^{34}$ S values for Sorg and SCRS in uraninite-pyrobitumen (from -6.99 to -3.55 ‰ and from -10.02 to -4.41 ‰, respectively) and uraninite-pyrobitumen-gold mineral associations (from +1.36 to +6.87 ‰ and from +0.42 to +9.7 ‰, respectively).  $\Delta^{33}$ S and  $\Delta^{36}$ S data indicate non mass-dependent sulphur isotope fractionation due to interaction of fluids with organic material.

The sulphur and tellurium removal by radiogenic lead released by uraninite appears to be an important mechanism in the strongly localized deposition of gold minerals. Scavenging of sulphur by pyrobitumen nodules from gold transporting fluids was an additional process triggering precipitation of gold. Enrichment of reducing agents due to radiolysis of water was also a possible supporting factor in formation of gold enrichments in and around uraninite grains. Carbon particles and organic functional groups in pyrobitumen acted as nucleation and adsorption centres for gold minerals.

# 8 Deposit types

The mineralization at Rajapalot comprises a disseminated, sulphide-associated structurallycontrolled gold-cobalt type known as Rajapalot style. These are generally stratabound pyrrhotite-bearing iron-potassic (K-Fe) or iron+/-magnesium (Fe-Mg) systems with a Cu, Mo, W, B, Bi-Te (Se) association. On a global scale, these styles of structurally upgraded stratabound systems are not uncommon between 1.75 and 1.85 Ga and are closest to the "orogenic" category.

The precipitation mechanism for the sulphidic Fe-K or sulphidic Fe-Mg type styles of mineralization and their relationship is still unclear and debate continues as to the exact genesis of this deposit. The Rajapalot style shows many of the characteristics of larger Proterozoic gold deposits, including examples such as Homestake and Tanami, having a predominance of structurally controlled, stratabound occurrences commonly with best grade intercepts associated with fold hinges. The age of the gold at Rajapalot appears to be within analytical error of the age of the tourmaline-bearing granite intrusives. Evidence is also emerging suggesting that organic matter also plays an important role in precipitating the high-grade potassic sulphidic gold-cobalt mineralization at Raja. These observations are especially relevant when considering the carbonaceous matter within the Kittilä gold mine operated by Agnico Eagle a system regarded as falling in the same age bracket (1.75–1.85 Ga).

A series of Au-bearing, sulphidic hydrothermal systems driven by 1.75-1.85 Ga shallowly emplaced granitoids is thought to be responsible for the gold prospects discovered to date. Gold mineralization is interpreted to be controlled by a combination of the locations of granitoids and structurally-controlled fluid flow systems either interacting with strata-bound iron-magnesium rocks (Palokas type), or in the potassic-iron style where an as-yet indeterminate sulphidation mechanism in schistose, breccia and fractured rocks has enabled gold precipitation. Given the wide variety of controls on gold formation, Mawson is aware that many opportunities exist for more gold mineralized host rocks.

## 9 Exploration

#### 9.1 Rajapalot Disseminated Style

The style of mineralization at Rajapalot is predominately sulphidic and of a disseminated or replacement style. Rajapalot is the primary target area for Mawson. Rajapalot is located seven kilometres to the east of the Rompas vein trend.

A total of 160 boulders and outcrops with >0.1 g/t gold have been discovered within a 4 kilometre by three-kilometre area at Rajapalot. Gold grades range from 0.1 g/t gold to 3,870 g/t gold, with an average of 74.9 g/t gold and median of 0.71 g/t gold. All samples collected are selective by nature and are unlikely to represent average grades on the property.

Discovery grab samples from the Rajapalot project returned gold mineralization from three distinct areas, namely the Palokas, Joki and Rumajärvi prospects. The areas were targeted with regional geophysics and surface soil geochemistry. Rumajärvi lies 1.5 kilometres south of Palokas, while Joki is located one kilometre southeast of Palokas. Each prospect area is characterized by minor outcrops on a topographic high, within a predominantly swampy terrain and therefore very little in-situ bedrock has been located. Little outcrop has been found between the prospect areas. Glacial boulders sampled and reported are considered to be proximal to their source as the glacial transport distances in the Rajapalot area are rather short, from tens of meters and hundreds of meters, as the area was located in an ice-divide area during the most recent glaciation.

Fine disseminated gold mineralization at Palokas occurs within chlorite—Fe-Mg amphiboletourmaline-pyrrhotite rocks in a contact zone between mafic rocks and relatively oxidized quartzites. The true thicknesses of the mineralized intervals are interpreted to be approximately 80% of the sampled thickness.

Mawson announced the extension of the Rajapalot mineralized system with the collection of high grade gold and uranium surface grab-samples, located immediately along strike and approximately two kilometres from Palokas in February 2014.

Note the grab samples are selective by nature and are unlikely to represent average grades on the property.

Mineralization from the new area is hosted in sulphide and biotite rich metasedimentary and volcanic rocks, with gold occurring as a disseminated or replacement style. The glacial boulders sampled and reported are the same lithologies as nearby outcrops and appear to form boulder trains, and therefore are considered to be proximal to their source. Of note are the higher uranium grades discovered in these new areas, suggesting the presence of gold only and uranium- dominant mineralized styles at Rajapalot. Like most of the Rajapalot area, the new prospect areas are within a predominantly swampy terrain and therefore very little in-situ bedrock has been located.

A 26-line kilometre survey by Geovista AB of Lulea, Sweden of gradient array induced polarization ("IP"), 480 metres of pole-dipole IP and 27-line kilometres of ground magnetic surveys were reported by Mawson at Rajapalot during March 2014.

Chargeable, low resistive and magnetic anomalies define multiple high priority target areas, for follow-up, beneath the predominant thin two to five-metre-thick glacial soils, for more than four kilometres of strike. Chargeable and low resistive anomalies discovered below drilled gold mineralization extend beyond the 150 metre nominal depth limits of the survey technique. Airborne electromagnetic ("VTEM") anomalies generated from a survey flown late 2017 similarly shows conductors that extend immediately below drilled near-surface mineralization, to at least 400 metres depth. The VTEM conductors correlate well with many of the IP chargeable and low resistive anomalies.

In October 2013, Mawson announced the first core test from the Palokas prospect. Drilling intersected nine metres at 10.2 g/t gold from surface, including three metres at 27.5 g/t gold in drillhole PRAJ0003. Palokas is part of the Rajapalot area, located seven kilometres east of Mawson's drilling in the vein style mineralization at Rompas.

Multi-element analyses from all core sample holes from the Palokas Prospect at Rajapalot (holes PRAJ0003 to PRAJ0025) shows consistently low uranium (weighted average through quoted intersections is 36 ppm uranium and 5.2 g/t gold) and high cobalt grades associated with gold mineralization. Cobalt also forms broader halos around lower (>0.1 g/t) grade gold mineralized zones. The low uranium grades drilled at Palokas also support the concept of both gold-rich and uranium-rich styles occurring within the Rajapalot mineral field.

A total of 120 drill holes were completed by independent drilling contractor Ludvika BorrTeknik AB, within an area of 2.5 kilometres by 0.5 kilometres during April-May 2014 at the Hirvimaa prospect. It is located 600 to 1,300 metres along strike to the north-east of the Palokas prospect drill area. The aim of the program was to map and define gold anomalous bedrock beneath glacial soils that cover 98% of the area and to refine targets for deeper drilling. The average depth of each drill hole was 7.3 metres and the average thickness of glacial soil overburden was 3.9 metres. An additional in-house diamond drill rig with capacity to drill deeper was mobilized at the end of the program to complete 16 holes for 116.65 metres.

In September 2014, Mawson was permitted to drill across the entire Palokas trend at Rajapalot with a hand portable core sampler capable of drilling depths up to 35 to 40 metres below surface. The program consisted of 33 holes for 1160.5 metres with an average hole depth of only 35.1 metres. Four additional holes did not drill through to basement. The results extended drilled gold mineralization over 1.2 kilometres from Palokas. Across strike width of mineralization increased up to 120 metres, suggesting possible multiple horizons across strike (previous drilled thickness was 20 metres true width at Palokas). All discoveries are blind and covered by 2 to 5 metre thick glacial till deposits, and are open along strike and at depth.

The bulk weighted average of geochemical data show consistently low-grade uranium within all intervals greater than 0.5 g/t gold with averages of 2.9 g/t gold and 26 ppm uranium for drill holes PRAJ0070-PRAJ0096. The true thickness of the mineralized interval is interpreted to be approximately 80% of the sampled thickness. Drilling was performed with a Company-owned and operated, hand portable, low impact rig, below 2-5 metres of glacial till overburden in the vicinity of gold bearing glacial boulders and subcrop.

In March 2015 the results from a pseudo-3D pole-dipole induced polarization ("IP") and resistivity survey at Palokas defined a 600-metre-long conductive anomaly extending down plunge from drilled near-surface gold. The thickness of the conductive body increases with depth and is open below the 250-metre investigative depth of the survey. The IP area surveyed commenced more than 250 metres north of Palokas to 500 metres south of the Palokas prospect. Gold at Palokas is associated with pyrrhotite which forms the conductive and chargeable anomaly associated with drilled gold mineralization and has been confirmed by petrophysics. The thickness of the conductive body increases with depth and is open below the 250-metre investigative depth.

# 10 Drilling

Hand-portable drill rigs (winkie and JKS4M; PRAJ drillholes PRAJ0001-PRAJ00120) were operated by Mawson and contract staff and obtained diamond drill core of 25.2 mm diameter. The "PRAJ" series of holes were drilled from 2013-2016 with EW (25.2 mm) diameter core. The "Ludvika" series of short diamond drill hole tails were completed during 2014 by Ludvika Borrteknik AB with a GM100 drill rig. The Ludvika drill holes were short, averaging only 7.3 m depth, with a core diameter of 36.4 mm. The "PAL" series of drillholes were drilled from 2013 onwards. Drillholes PAL0001-PAL0007 were completed in 2013 by Arctic Drilling Company (ADC) with a core diameter of 47.6 or 63.5 mm. Later programs (drillholes PAL0008-PAL0147) were operated with larger drill rigs (NQ2, NTW and WL-76 size) provided by multiple contractors.

Energold completed drill holes PAL0008-PAL0025 drilled during the winter of 2015-16. During the winter 2016-17 drillholes PAL0026-PAL0084 were completed. Four diamond drill rigs were utilized (two diamond drill rigs (K1 & K2) from the Arctic Drilling Company OY (ADC), one diamond drill rig from KATI OY and a single diamond drill rig from Mason and St John (MSJ). Water recirculation and drill cuttings collection systems were used. Core diameter was NQ2 (50.6 mm), NTW (56.0 mm) and WL-76 (57.5 mm). During the winter of 2017-18 up to six drill rigs with water recirculation and cuttings collection systems were utilized (two diamond drill rigs from MK Core Drilling OY; two from ADC; two from KATI OY).

From mid-2011 to August 2018, Mawson has drilled 34,234.4 m in 388 diamond drill holes at Rajapalot with an average depth of 88.2 m (Table 10.1).

Drill program	Number of holes	Year	Drilled (m)	Average hole length (m)	Core diameter	Drill company
PAL0001- PAL0007	8	2013	757.1	94.6	NQ=47.6 mm, HQ=63.5 mm	ADC
PRAJ0001- PRAJ0120	120	2013- 2016	3431.4	28.6	EW=25.2 mm	Mawson
LD0001- LD0120	120	2014	873.8	7.3	BQ=36.4 mm	Ludvika Borrteknik AB
PAL0008- PAL0025	18	2015- 2016	3290.1	182.8	NTW=56.0 mm	Energold
PAL0026- PAL0082	57	2017	11139.2	195.4	NQ2=50.7 mm, NTW=56.0 mm	ADC, MSJ Drilling, KATI Oy
PAL0083- PAL0147	65	2018	14742.8	226.8	NQ2=50.7 mm, WL-76=57.7 mm	ADC, MK Core Drilling Oy, KATI Oy
Total	388		34,234.4	88.2		

Table 10.1Total Rajapalot drill programs to August 2018

The QP considers there are no issues with core recovery, drilling conditions, or sampling that will have material impact on the reported results.

In December 2016 large scale and deep test of the area commenced with a large diamond drill (PAL0026-PAL0082) and base of till drilling.

The 2016-17 winter drill program confirmed the presence of a large, gold-mineralized hydrothermal system at Rajapalot.

Key points from the 2016-17 program included:

- The winter exploration program represented the first large scale drilling on the project undertaking the following work:
  - 55 diamond drill holes for 11,056 m of diamond drill core, averaging 210 metres.
  - 1,801 BOT holes, for 7,983 m, averaging 4.4 m.
  - 105 km of infill and extension ground magnetics collected on lines spaced at 50 m.

The 2017 diamond drill program consisted of a broad area of 4 by 6 kilometres being drilled by a program of 1,801 base-of-till ("BOT") drill holes during winter 2017. The program was successful in defining known mineralization and also defined multiple new drill targets over a wider area.

A total of six diamond drill rigs were used for the 2018 winter program at Rajapalot. Sixty-five drill holes were completed for a total of 14,740.15 m with an average hole depth of 227 m. Drilling successfully delineated extensions to known gold areas, including the Raja prospect where gold mineralization is now recorded over 470 metres down plunge.

The drillhole locations used in the Mineral Resource estimate for the Raja deposit is shown in Figure 10.1 and for the Palokas deposit in Figure 10.2.









#### **10.1** Core recovery

Core recovery was generally greater than 95% or greater for the samples below the surface sediments. There is no relationship between core recovery and grade or core recovery and mineralization.

# 11 Sample preparation, analyses, and security

Based on the following data the QP is satisfied about the adequacy of the sample preparation, security and analytical procedures. The procedures follow industry best-practice guidelines and are reviewed frequently.

#### 2013 to 2018

#### **11.1 Sample logging and preparation**

Core recoveries were excellent and averaged close to 100% in fresh rock. Photographing and logging were conducted in Mawson's Rovaniemi facilities and in those of the GTK. Core intervals, averaging 1 metre for mineralized samples and 2 metres for barren samples, were cut in half at the GTK core facilities in Rovaniemi. Drill core orientation was completed on PAL drill holes with the bottom of hole marked with a continuous line. This line on the remaining half core was retained for verification and reference purposes.

Samples were prepared at Kempele and analyzed for gold at Raahe when the PAL1000 technique was used. This involves grinding the sample in steel pots with abrasive media in the presence of cyanide, followed by measuring the gold in solution with flame AAS equipment. Fire assay techniques follow ALS laboratory standard procedures.

Where fire assay techniques have been used as the primary or verification method for gold analysis, these samples have been submitted to ALS preparation facilities either in Piteå or Sodankylä.

#### 11.2 Sample handling protocols and security

Normal security measures were undertaken throughout the sampling and shipping processes. Analytical samples were transported by commercial transport or Mawson personnel from site to the CRS Minlab Oy facility in Kempele, Finland (PAL1000 technique) or to Sodankylä and Piteå for fire assay samples.

Drill core was transported from the rig to the drill core collection site/parking lot by gravel road by the drill crew twice a day after each 12 hour work shift (6 am to 6 pm, 6 pm to 6 am). Then transported by a subcontractor or Mawson crew to Mawson core logging and office facilities in Rovaniemi once or twice a day. The drillhole number and box numbers are marked in the core boxes with dates (drilling started and ended) in the first and last core box.

Core boxes containing the samples with the sample numbers marked were delivered by Mawson crew for cutting in the Geological Survey of Finland core logging and cutting facility in Rovaniemi. Core is cut either by Geological Survey of Finland or Mawson personnel.

Cut samples were placed in plastic bags with sample identification tickets. Samples were then delivered to the laboratory by a courier or by Mawson personnel. Sample lists and assay orders were emailed to the laboratory. The laboratory confirms the samples received by email.

#### 11.3 Certified standard, blanks and field duplicate submission

The quality assurance / quality control (QA/QC) program consisted of the systematic insertion of certified standards of known gold content, duplicate samples by quartering the core, and blanks within interpreted mineralized rock. Inter-laboratory comparisons were also conducted using fire assay techniques. In addition, CRS inserts blanks and standards into the analytical process.

#### **11.4** Assay laboratory sample preparation and analysis protocols

Four certified laboratories have been used for the primary sample analysis:

- CRS Laboratory Kempele, Finland (ISO 9001) used PAL1000 procedure.
- ALS Laboratory, Piteå (Sweden: sample preparation), Sodankylä (Finland: sample preparation), Loughrea (Ireland) and Vancouver (Canada) (ISO 9001:2015 and ISO 17025:2005).
- Labtium Laboratory, Rovaniemi (FINAS-accredited testing laboratory TO25 (EN ISO/IEC 17025:2005)).
- MS Analytical Laboratory, Langley (Canada) (ISO/IEC 17025:2005).

Typical processes conducted are shown in Figure 11.1 and Figure 11.2 using the Winkie (25 mm drill core) as an example. The larger diameter drill core produces a much larger sample size, and therefore better sample.





#### Source: Mawson





Source: Mawson

Gold has been analysed by two different main methods. The PAL1000 method in CRS Laboratory in Kempele, Finland and fire assay method Au-ICP22 is done at ALS Laboratory. Multi-element assays are mainly done by method ME-MS61 in ALS Laboratory or by method IMS-230 in MS Analytical Laboratory.

CRS laboratory method PAL1000 involves grinding the sample in steel pots with abrasive media in the presence of cyanide, followed by measuring the gold in solution with flame AAS equipment. PAL1000 detection limit for gold is 0.05 ppm. In order to improve the detection limit of the PAL1000 technique from 0.05 g/t to 0.01 g/t gold for a 1 kg sample, gold concentration using the DiBK (di-isobutyle ketone) extraction method was also used.

ALS Laboratory method Au-ICP22 is a fire assay and ICP-AES method with 50 g subsample. Method detection limit for gold is 0.001 ppm. ALS fire assay method Au-ICP21 with a 30 g subsample was used in for some holes during the Rajapalot early exploration phases. Gold detection limit for Au-ICP21 is 0.001 ppm. Upper limit of methods Au-ICP22 and Au-ICP21 is 10 ppm and over-limit samples were re-assayed by Au-GRA method which is fire assay with gravimetric finish (50 g subsample).

Labtium laboratory gold assay methods 705P and 704P are fire assays with 50 g and 25 g subsamples, respectively, and ICP-OES finish. Gold detection limits for 705P is 0.005 ppm and 704P, 0.01 ppm. Method 704P was used only if the sample amount was too small for 705P or the 705P assay failed.

Some single samples were assayed for gold at ActLabs by methods FA-AA (fire assay with AA finish) and it's over limit method FA-GRA.

ALS multi-element method ME-MS61 is a four-acid digest with ICP-MS finish (0.25 g subsample). 48 elements are reported. Part of the multi-element assays were done by ME-MS61u which is the same method as ME-MS61 but optimized for uranium with specific laboratory CRMs for superior quality.

MS Analytical multi-element method IMS-230 is a four-acid digest followed by ICP-AES/MS finish (0.2 g subsample). IMS-230 analyzes 48 elements.

Single multi-element assays were also done at Labtium, by method 175X. This method is a whole rock XRF method using pressed powder pellet.

All four laboratories are independent of the Issuer.

#### **11.5 Quality control data**

ALS generally inserted 2 standards each for the multi-element ICP and gold determinations. Normally just 1 blank and 1 duplicate were inserted, but on sample submissions containing more than 10 samples, 2 duplicate checks were included. For fire assay methods, pulp duplicates are also used on regular intervals (CDUP refer to coarse crush duplicates and PDUP refers to pulp duplicates). Figure 11.3 shows a scatter plot comparing then original sample gold grade with the crushed duplicates. Figure 11.4 shows a scatter plot comparing then original sample gold grade with the pulp duplicates.









Figure 11.4 Laboratory pulp duplicates

The internal duplicate, standard and/or blank introduction done by Labtium Oy, is not known.

#### 11.5.1 Standards and blanks

The procedure for insertion of standards and blanks was as follows:

- After visible gold and expected high gold values a blank was inserted.
- Quarter core duplicates are taken roughly every 50 samples resulting in two core duplicates every 100 samples.
- Spiked standards as described below are used every 25 samples.

Due to the lack of suitable standards of a reasonable size for the PAL1000 analysis, "spiked" samples were prepared. Spiking of samples and blanks is a standard technique used to determine concentrations in various geochemical techniques, including in isotope dilution mass spectrometry.

The process of preparing the spiked gold standard samples suitable for the PAL1000 assaying technique was:

- Obtain a stable, relatively high gold content standard (over 2 g/t).
- Coarse crush a blank standard (in this case olivine diorite sold as "sauna rock" in bulk in Finland at hardware stores).
- Accurately weigh around 500 g of blank and mix with accurately weighed certified standard (e.g. OREAS 12a) to create a Spiked sample in same sense as in mass spectrometry.
- Calculated expected value of gold in sample.
- Assigned a code to standard on basis of mass of blank and standard.
- Use variable proportions of blank and standard to ensure a linear fit to variable, but predictable concentrations.
- Submit with sample batches with sequential sample numbers.

Figure 11.5 and Figure 11.5 show the assay results for the Spiked assays.

Figure 11.7 shows the results of the inserted gold blanks and Figure 11.8 the laboratory gold blanks. Based on the results of the blanks the QP considers the equipment cleanliness is appropriate.

Figures 11.9 to Figure 11.15 show the results of the certified gold standards inserted by Mawson. The red dotted line is the expected values, green dotted lines are plus and minus one standard deviation and the black dotted lines are plus and minus two standard deviations. The QP considers a standard has failed if two consecutive samples are greater than three standard deviations from the expected value.

The results for the standard and blanks show good laboratory assay accuracy.

Figure 11.5 Spiked gold assays – Palokas deposit














Figure 11.9 Mawson Standard OREAS 15H









Figure 11.11 Mawson Standard OREAS 201









Figure 11.13 Mawson Standard OREAS 206







Figure 11.15 Mawson Standard OREAS H3



The QP is satisfied about the adequacy of the sample preparation, security and analytical procedures. The procedures follow industry best-practice guidelines and are reviewed frequently.

### 12 Data verification

Whilst on site during the 8 and 9 October 2018 the Qualified Person carried out the following:

- Compared approximately 10 percent laboratory assay certificates with the assay database and found no errors.
- Observed the geological logging and sampling of the core.
- Reviewed the core against core logs for a number of drillholes.
- Observed the drilling, logging, sampling, subsampling and core cutting operations.
- Visited the project area.

The QP considers the drillhole data is suitable for estimation and reporting of the Mineral Resource estimates.

### 13 Mineral processing and metallurgical testing

To date a single campaign of mineral processing and metallurgical testing has been conducted by SGS Minerals UK (Gopalakrishnan, 2014). This campaign is preliminary in nature and limited to the recovery of gold on material sourced from the Palokas deposit. The testwork programme was conducted prior to the broader discovery of the Raja deposit as well as the inclusion of cobalt as a potentially economic metal.

The objectives of the test programme were to establish the amenability of the samples to recover gold by means of gravity concentration as well was establish the leachability of the gold via cyanidation. Testing was conducted on quarter-core material derived from four discrete intervals sourced from the exploration diamond drilling programme (drillholes PRAJ0001-PRAJ0120). Below is a brief geological description of the material employed in the testing programme:

- PRAJ0003: randomly oriented hydrothermal rock comprising pyrrhotite-Mg-Fe amphibolechl-bi qtz-tour.
- PRAJ0006: hydrothermal rock largely randomly oriented minerals which is dominated by pyrrhotite-MgFe amphibole-chl-tour-qtz.
- PRAJ0009: more calcic sample, MgFe amphiboles and calcic ones, visible gold, major tourmaline.
- PRAJ0026: variable Mg/Ca ratio, pyrrhotite-MgFe amphibole-actinolite-tour-chl-bi-qtz.

The as-received material was comminuted and split into aliquots to conduct a head analysis, diagnostic gold leach testing and gravity release analysis. Tailings material from the gravity release tests where subsequently used to conduct cyanide leachability testing.

Gold, silver and sulphur head analyses were conducted on the crushed composited material and are reported in Table 13.1. Total sulphur content was assessed by LECO and the gold and silver by wet chemistry followed by ICP-AES.

Hole ID	S (%)	Au (g/t)	Ag (g/t)
PRAJ0003	4.26	2.39	0.3
PRAJ0006	5.72	20.65	0.7
PRAJ0009	1.82	1.09	0.2
PRAJ0026	3.43	0.75	0.3

 Table 13.1
 Head analysis of comminuted composite material (Gopalakrishnan, 2014)

The gravity release analysis tests reported recoveries of between 26 % and 48 %. Refer to Figure 13.1 and Table 13.2 for a summary. Further, cyanidation of the gravity tails demonstrated the recovery of leachable gold not recovered during gravity concentration. The combined gravity concentration and cyanidation test resulted in an overall gold recovery of between 95% to 99% (Table 13.2). There was good reconciliation between the gold grades as calculated from testing assays and the expected grades provided by Mawson.

Figure 13.1 Recoverable gold deportment for each sample subjected to (left) gravity concentration and (right) cyanidation





Source Mawson

Table 13.2Recoverable gold deportment (kg/kg)

Product	PRAJ0003	PRAJ0006	PRAJ0009	PRAJ0026
Concentrate 1	0.11	0.13	0.06	0.04
Concentrate 2	0.06	0.08	0.02	0.03
Middlings	0.18	0.27	0.34	0.19
Cyanidation	0.63	0.51	0.53	0.71
Tailings	0.02	0.01	0.05	0.03
Total – gravity	0.35	0.48	0.42	0.26
Total – recoverable	0.98	0.99	0.95	0.97

Mawson's QEMSCAN studies show that cobaltite (CoAsS) is by far the most abundant cobalt mineral with lesser cobaltpentlandite (Co,Ni,Fe) $_9S_8$ ) and linnaeite (CoCo $_2S_4$ ). The QEMSCAN work has demonstrated that the cobalt minerals are non-refractory (not locked within other sulphides) and potentially separable. The high density of cobaltite compared to the light silicate gangue and coarse grain size of the cobaltite make it a good candidate for future gravity separation studies.

However, given the lack of metallurgical testwork available for cobalt at this early stage, this study has assumed a similar 97% recovery for cobalt (the same as applied for gold) for pit optimization estimations. The sensitivity of this assumption was tested by applying a 50% recovery to cobalt for pit optimization by Whittle software analysis. The shape and form of the open pit did not vary, indicating that the economics around this assumption are less critical, given the pit optimization study was driven by gold at both cobalt recovery assumptions.

### 14 Mineral Resource estimates

Mr. Rodney Webster (MAusIMM and MAIG) of AMC Consultants Pty Ltd is the qualified person (QP) for reporting of the Mineral Resource estimates. The Mineral Resource is reported in accordance with the Canadian National Instrument for the Standards of Disclosure for Mineral Projects (NI43-101) requirements.

The QP is not aware of any known environmental, permitting, legal, title, taxation, socioeconomic, marketing, political or other similar factors that could materially affect the stated Mineral Resource estimate.

A Mineral Resource was estimated using a block model and ordinary kriging to estimate the gold and cobalt block grades.

Pit optimization was carried out for both deposits using Whittle software to define the areas that could be mined by open pit methods compared to underground methods. The Mineral Resource estimate cut-offs were based on the results of this optimization. The parameters used in the pit optimization are as follows:

- Processing cost of 11.98 \$/t
- Processing recovery of 97%
- G&A costs of 2.00 \$/t
- Selling cost 0.75
- Royalty 0.15% of revenue
- Processing rate 1 Mtpa
- Discount rate 8%
- Overall slope angle of 50°
- No allowance for capital was included

Based on pit optimization the Inferred Mineral Resources, estimated for both deposits is shown in Table 14.1. The cut-offs used within the optimized pits and below the pits, based on AuEq cut-offs (where AuEq =Au (g/t) + Co/608 (ppm)) are:

- 2 g/t AuEq below the optimal pits, potentially to be accessed by underground methods, (termed UG).
- 0.37 g/t AuEq for the both deposits within their optimal pit, (termed pit).

Zone	Cut-off	Tonnes (kt)	Au (a/t)	Co (nnm)	AuEq (a/t)	Au (koz)	Co (tonnes)
Raja Pit	0.37	2,499	2.4	410	3.1	197	1,021
Raja UG	2.0	356	4.8	500	5.6	55	179
Raja Total		2,855	2.7	420	3.4	252	1,201
Palokas Pit	0.37	1,306	1.4	450	2.2	60	587
Palokas UG	2.0	96	2.7	560	3.6	8	54
Palokas Total		1,402	1.5	460	2.3	69	640
Total Pit	0.37	3,805	2.1	420	2.8	257	1,608
Total UG	2.0	452	4.4	520	5.2	63	233
Total		4,257	2.3	430	3.1	320	1,841

#### Table 14.1Inferred Mineral Resources Estimate as of 14 December 2018

Notes: 1. Canadian Institute of Mining (CIM) definitions were used for Mineral Resource classifications.

3. AuEq=Au+Co/608 based on assumed prices of Co \$30/lb and Au \$1,250/oz.

- 4. Drilling results to July 2018.
- 5. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

<sup>2.</sup> Errors in the totals are due to rounding.

#### 14.1 Data provided

AMC was provided with following drillhole data for the Raja and Palokas deposits by Mawson in either Excel .xlxs or Excel .csv format:

- raja\_assay.csv Drillhole assay file for the Raja deposit.
- raja\_collar.csv Drillhole collar file for the Raja deposit.
- raja\_survey.csv Drillhole survey file for the Raja deposit.
- raja\_lith.csv Drillhole lithology file for the Raja deposit.
- raja\_SG.xlsx Drillhole bulk density file for the Raja deposit.
- palokas\_s\_palokas\_assay.csv Drillhole assay file for the Palokas deposit.
- palokas\_s\_palokas \_collar.csv Drillhole collar file for the Palokas deposit.
- palokas\_s\_palokas \_survey.csv Drillhole survey file for the Palokas deposit.
- palokas\_s\_palokas \_lith.csv Drillhole lithology file for the Palokas deposit.
- palokas\_s\_palokas \_sg.xlsx Drillhole bulk density file for the Palokas deposit.

AMC was also provided with the following geology and mineralization wireframes in .DXF format:

- Raja\_aueq\_below \_cs\_marker.dxf The modelled ore zone below the cs marker for the Raja deposit.
- Raja\_aueq\_lower.dxf The modelled lower ore zone for the Raja deposit.
- Raja\_aueq\_upper.dxf The modelled upper ore zone for the Raja deposit.
- Raja\_ovb\_base.dxf The base of the overburden for the Raja deposit.
- S\_palokas\_au\_eq\_min\_lower.dxf The modelled lower mineralized zone for the S\_Palokas deposit.
- S\_palokas\_au\_eq\_min\_upper.dxf The modelled upper mineralized zone for the S\_Palokas deposit.
- Palokas\_au\_eq\_min\_lower.dxf The modelled lower mineralized zone for the Palokas deposit
- Palokas\_au\_eq\_min.dxf The modelled upper mineralized zone for the Palokas deposit.

AMC uses Datamine mining software for grade estimation. When loading and combining the drill data into Datamine no data errors were identified.

AMC was also provided with a topographic surface Dem10\_T4321cut.dxf.

#### 14.2 Bulk density

AMC was provided with 211 bulk density measurements (file raja\_SG.xlsx) taken at intervals from fresh rock for 10 drillholes in the Raja deposit. A total of 736 bulk density measurements were provided for the Palokas deposit.

The bulk density was measured using the classical water immersion method.

The formula used was:

Bulk density = mass in air / (mass in air- mass in water).

#### 14.2.1 Raja Deposit

For the Raja deposit there was no correction between bulk density with lithology or gold or cobalt grades. Figure 14.1 shows a histogram of the bulk density measurements. The maximum value measured was  $3.30 \text{ t/m}^3$  with a minimum of  $2.59 \text{ t/m}^3$  and mean of  $2.77 \text{ t/m}^3$ .

For the Mineral Resource estimate, AMC used the average bulk density measurement of 2.8 t/m<sup>3</sup>.





Source: AMC Consultants Pty Ltd

### 14.2.2 Palokas Deposit

For the Palokas deposit there was no correction between bulk density with lithology or gold or cobalt grades. Figure 14 1 shows a histogram of the bulk density measurements. The maximum value measured was  $3.46 \text{ t/m}^3$  with a minimum of  $2.33 \text{ t/m}^3$  and mean of  $2.83 \text{ t/m}^3$ .

For the Mineral Resource estimate, AMC used the average bulk density measurement of 2.8 t/m<sup>3</sup>.





Source: AMC Consultants Pty Ltd

#### 14.3 Sample statistics

#### 14.3.1 Raja Deposit

For the Mineral Resource estimate, assay data for the drillholes, up to hole PAL0124, were available. Details of the raw drillhole sample statistics that were assayed are shown Table 14.2.

Element	Number of Samples	Mean	Median	Minimum	Maximum	СЛ
Length (m)	4,049	1.69	1.00	0.03	6.7	0.82
Au (g/t)	3,250	0.30	0.03	0.001	115.0	10.34
Co (ppm)	3,246	94.2	18.1	0.4	3860.0	2.94

Table 14.2 Raw drillhole sample statistics – Raja Deposit

Figure 14.4 shows the gold grade distribution as log probability plots for the main lithological units. This figure indicates the higher-grade gold mineralization is mainly located within the MNZ (intense mineralization) and KMSED (k metasediment) lithologies.



Figure 14.3 Log Probability Plot – Gold (g/t) Raja deposit

Source: AMC Consultants Pty Ltd

Figure 14.4 shows the cobalt grade distribution as log probability plots for the main lithological units. This figure indicates the higher-grade gold mineralization is mainly located within the MNZ (intense mineralization) and KMSED (k metasediment) lithologies.





Source: AMC Consultants Pty Ltd

#### 14.3.2 **Palokas Deposit**

For the Mineral Resource estimate, assay data for the drillholes, up to hole PAL0122, were available. Details of the raw drillhole sample statistics that were assayed are shown in Table 14.2.

Table 14.3	Raw drillhole sa	ample statis	tics – Palokas	s Deposit	
Element	Number of	Mean	Median	Minimum	Max

Element	Number of Samples	Mean	Median	Minimum	Maximum	CV
Length (m)	4,971	1.68	1.00	0.08	5.04	1.40
Au (g/t)	4,320	0.51	0.03	0.001	189.0	9.14
Co (ppm)	4,275	152.2	36.5	0.4	4,100	1.99

Figure 14.5 shows the gold grade distribution as log probability plots for the main lithological units. This figure indicates the higher-grade gold mineralization is mainly located within the CLAPR (chlorite amphibole rock), BXHY (hydrothermal breccia) and PAR (pale amphibole rock) lithologies.





Source: AMC Consultants Pty Ltd

Figure 14.6 shows the cobalt grade distribution as log probability plots for the main lithological units. This figure indicates the higher-grade gold mineralization is mainly located within the PAR (pale amphibole rock), ACS (albite calc-silicate rock) and CLAPR (chlorite amphibole rock) lithologies.





Source: AMC Consultants Pty Ltd

#### 14.4 Drillhole compositing

The drillhole sample lengths were composited to one metre lengths for Mineral Resource estimation, based on a histogram of the sample lengths (Figure 14.7 and Figure 14.8). This showed that more than 50 % of the samples had a length of one metre for both deposits. Two metre sample composites were selected to avoid splitting of the longer (>1 m) samples during compositing. Samples were composited within each grade domain.











Source: AMC Consultants Pty Ltd

#### 14.5 Estimation domains

#### 14.5.1 Raja Deposit

Block grades were estimated into the same domains for cobalt and gold separately. Wireframes were prepared above a cut-off of 0.1 ppm AuEq (where AuEq = Au + Co/608). These wireframes where based on the following .dxf files provided by Mawson.

- Raja\_aueq\_below \_cs\_marker.dxf
- Raja\_aueq\_lower.dxf
- Raja\_aueq\_upper.dxf

#### 14.5.2 Palokas Deposit

Block grades were estimated into the same domains for cobalt and gold separately. Wireframes were prepared above a cut-off of 0.1 ppm AuEq (where AuEq = Au + Co/608). These wireframes where based on the following .dxf files provided by Mawson.

- Palokas\_au\_eq\_min\_lower.dxf
- Palokas\_au\_eq\_min.dxf
- S\_Palokas\_au\_eq\_min\_lower.dxf
- S\_Palokas\_au\_eq\_min\_upper.dxf

A high-grade gold domain was used within the Palokas\_au\_eq\_min.dxf wireframe to model the area with gold grades above 1 g/t gold.

#### 14.6 Top Caps

The gold and cobalt 1 m sample composites for each mineralized domain were top-capped, based on the results of log probability plots. Top cuts were applied to the composites as discussed below.

No top caps were required for the Raja deposit.

For the low-grade gold domain within the Palokas deposit a gold top cap of 15.9 g/t was used. For the high-grade gold domain within the Palokas deposit a gold top cap of 50 g/t was used.

#### 14.7 Drillhole sample statistics

The top-capped 1 m composite drillhole sample statistics for the different domains are shown in Table 14.4. All samples not assayed were given a zero gold and/or cobalt grade.

Domain	No. of Samples	Mean	Median	Minimum	Maximu m	Co-efficient of Variation
Gold – Raja below	36	0.53	0.07	0.003	3.93	1.81
Cobalt- Raja below	36	413	189	10.4	1,590	1.07
Gold – Raja upper	151	1.09	0.13	0.003	10.72	2.04
Cobalt – Raja upper	151	382	212	3.6	3,180	1.25
Gold – Raja lower	224	2.60	0.27	0.0	87.40	3.58
Cobalt -Raja lower	223	568	297	0.0	3,230	1.08
Gold – Palokas lower	127	0.36	0.03	0.001	6.0	2.73
Cobalt – Palokas lower	127	274	130	0.0	2,240	1.34
Gold – Palokas min	443	0.35	0.08	0.002	6.0	2.93
Cobalt – Palokas min	724	517	426	0.0	2,957	0.78
Gold – S Palokas lower	171	0.98	0.23	0.003	15.9	2.41
Cobalt – S Palokas lower	171	309	194	0.0	1,240	0.91
Gold – S Palokas upper	59	0.15	0.07	0.003	1.17	1.50
Cobalt – S Palokas upper	59	179	151	41	779	0.79
Gold – Palokas high grade domain	299	4.28	1.84	0.011	50.0	1.63

Table 14.4 Top-capped composited drillhole sample statistics

#### 14.8 Block model parameters

Block models with parameters listed in Table 14.5 were used to model the Raja and Palokas deposits separately and estimate the block gold and cobalt grades. The block sizes were selected based on the general drillhole spacing.

	East	North	Vertical
	(m)	(M)	(m)
Raja			
Origin	3,408,500	3,409,000	-210
Block size	25	10	5
Number of blocks	20	57	85
Minimum sub-block size	5	2	1
Palokas			
Origin	3,408,310	7,373,425	-152.5
Block size	20	10	5
Number of blocks	27	63	69
Minimum sub-block size	4	2	1

#### Table 14.5 Block model parameters

#### **14.9 Estimation parameters**

Block gold and cobalt grades were estimated using ordinary kriging with discretization of 5 E x 5 N x 5 RL points. The parameters used are shown in Table 14.6. Due to the limited data within each separate domain semi-variogram analysis and hence search parameters were based on the results for all the domains combined for the Raja deposits. For the Palokas deposit, due to the increased number of samples, the domains of Palokas and South Palokas used different semi-variogram parameters and therefore search parameters.

The search ellipse was increased for the second search pass by a factor of 1.5 and for the third search pass by 3, to ensure all blocks had grades estimated. There was no octant search.

The search ellipse radii and orientation were based on the results of a two-structured spherical variogram analysis. The variogram parameters are listed in Table 14.7.

Zone	S	earch Rad	ii		Rotation			mples	Maximum	
	East (m)	North (m)	Vert. (m)	Z (°)	Y (°)	X (°)	Min.	Max.	Samples Per Drillhole	
Raja Au	150	10	40	-115	-40	-90	3	16	2	
Raja Co	100	10	100	-115	-35	-90	3	16	2	
Palokas Au	50	100	3	60	50	-180	3	16	2	
Palokas Co	100	25	13	53	48	163	3	16	2	
S Polakas Au	33	60	3	45	60	180	3	16	2	
S Polakas Co	100	40	10	69	48	149	3	16	2	
Polakas high Au	33	60	3	45	60	180	3	16	2	

#### Table 14.6 Estimation parameters

### Table 14.7Variogram parameters

Zone	0	Orientation Nugget			t Range 1		Range 1 Sill 1 Range 2			Sill 2		
	Z (°)	Y (°)	X (°)		East (m)	North (m)	Vert. (m)		East (m)	North (m)	Vert. (m)	
Raja Au	95	-75	-180	0.33	47	107	73	0.27	194	149	375	0.40
Raja Co	-60	-30	0	0.39	24	20	7	0.33	105	36	19	0.28
Palokas Au	60	50	-180	0.14	33	31	2.5	0.55	51	105	3	0.29
Palokas Co	53	47	162	0.31	7.5	25	5.5	0.21	100	26	13	0.48
S Polakas Au	45	60	180	0.09	10.5	11	2.5	0.81	11	28.5	3.5	0.1
S Polakas Co	69	48	149	0.15	27	33	3	0.32	96	41	8.5	0.53
Polakas high Au	45	60	180	0.09	10.5	11	2.5	0.81	11	28.5	3.5	0.1

#### 14.10 Gold equivalent

The gold equivalent formula was calculated as:

AuEq= Au + (Co\*30\*22.0462/10000)/(1250/31.10348)

Resulting in:

AuEq = Au+(Co/608)

Where:

- Converting cobalt weight in pounds to tonnes = 22.0462.
- The value of gold per ounce = \$1250.
- The value of cobalt per pound = \$30.
- Converting the gold weight from grammes to ounces = 31.10348.
- No allowance has been made for recovery and payable values.

The gold equivalent has been calculated after estimation of cobalt and gold grades.

#### 14.11 Mineral Resource classification

Both deposits Mineral Resources were classified as Inferred based on the wider drillhole spacing limiting the number of sample available for semi-variogram an analysis.

#### 14.12 Pit Optimization

Pit optimization was carried out for both deposits using Whittle software to define the areas that could be potentially mined by open pit methods compared to underground methods. The Mineral Resource estimate cut-offs were based on the results of this optimization. The parameters used in the pit optimization are as follows:

- Processing cost of 11.98 US\$/t.
- Processing recovery of 97%.
- G&A costs of US\$ 2.00 /t.
- Selling cost 0.75.
- Royalty 0.15% of revenue.
- Processing rate 1 Mtpa.
- Mining cost at the surface was \$1.50/t.
- Mining cost increased by \$0.02 per 5 m bench.
- Model has been regularized to an SMU of 5 m x 5 m x 2.5 m to account for dilution.
- Discount rate 8%.
- Overall slope angle of 50°.
- No allowance for capital was included.
- The additional cost for mining ore is US\$0.60 /t.

Based on the optimization the Mineral Resource estimated above the following cut-offs is shown in Table 14 1:

- 0.37 g/t AuEq (where AuEq =Au (g/t) + Co/608 (ppm)) for the both deposits within the optimal pit, (termed pit).
- 2 g/t AuEq below the optimal pit for the both deposits potentially to be accessed by underground methods, (termed UG).

Mawson's QEMSCAN studies show that cobaltite (CoAsS) is by far the most abundant cobalt mineral with lesser cobaltpentlandite (Co,Ni,Fe) $_9S_8$ ) and linnaeite (CoCo $_2S_4$ ). The QEMSCAN work has demonstrated that the cobalt minerals are non-refractory (not locked within other sulphides)

and potentially separable. The high density of cobaltite compared to the light silicate gangue and coarse grain size of the cobaltite make it a good candidate for future gravity separation studies. However, given the lack of metallurgical testwork available for cobalt at this early stage, this study has assumed a similar 97% recovery for cobalt (the same as applied for gold) for pit optimization estimations. The sensitivity of this assumption was tested by applying a 50% recovery to cobalt for pit optimization by Whittle software analysis. The shape and form of the open pit did not vary, indicating that the economics around this assumption are less critical, given the pit optimization study was driven by gold at both cobalt recovery assumptions.

Figure 14.9 and Figure 14.10 are cross-sections showing the location of the optimized pits and modelled mineralized zones.





Note: 1. Red outline is optimized pit boundary.

2. Green blocks are the modelled mineralization zones.

3. Map units are in metres.

4. Source; AMC Consultants Pty Ltd.



Figure 14.10 Cross-section showing the Raja deposit mineralization, drilling and optimized pit outline

Note: 1. Red outline is optimized pit boundary.

2. Green blocks are the modelled mineralization zones.

- 3. Map units are in metres.
- 4. Source; AMC Consultants Pty Ltd.

#### 14.13 Mineral Resource estimate

The Inferred Mineral Resource estimated above open pit and underground cut-offs is shown in Table 14.8.

Table 14.8 Inferred Mineral Resour	rces Estimate as of 14 December 2018
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Zone	Cut-off (AuEq)	Tonnes (kt)	Au (g/t)	Co (ppm)	AuEq (g/t)	Au (koz)	Co (tonnes)
Raja Pit	0.37	2,499	2.4	410	3.1	197	1,021
Raja UG	2.0	356	4.8	500	5.6	55	179
Raja Total		2,855	2.7	420	3.4	252	1,201
Palokas Pit	0.37	1,306	1.4	450	2.2	60	587
Palokas UG	2.0	96	2.7	560	3.6	8	54
Palokas Total		1,402	1.5	460	2.3	69	640
Total Pit	0.37	3,805	2.1	420	2.8	257	1,608
Total UG	2.0	452	4.4	520	5.2	63	233
Total		4,257	2.3	430	3.1	320	1,841

Notes: 1. Canadian Institute of Mining (CIM) definitions were used for Mineral Resource classifications.

2. Errors in the totals are due to rounding.

3. AuEq=Au+Co/608 based on assumed prices of Co \$30/Ib and Au \$1,250/oz.

4. Drilling results to July 2018.

5. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

#### 14.14 Validation

The block model grades were compared to the drillhole sample data along cross sections and long-sections. Good correlation was noted. Swath plots were prepared for the gold and cobalt block grades compared to the drillhole sample grades (Figure 14.14 to Figure 14.14 for the Raja deposit, Figure 14.17 to Figure 14.20 for the Palokas deposit). These showed good correlation.





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd



Figure 14.14 Cobalt West-east Swath plot – Raja deposit

Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd



Figure 14.18 Gold South-north Swath plot – Palokas deposit

Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd





Source: AMC Consultants Pty Ltd



Figure 14.22 Cobalt Elevation Swath plot – Palokas deposit

Source: AMC Consultants Pty Ltd

# 15 Mineral Reserve estimates

There are no Mineral Reserves on the Property.

# 16 Mining methods

There is no discussion on mining methods as there are no Mineral Reserves on the Property.

# 17 Recovery methods

Potential recovery methods are discussed in Section 13, but as there are no Mineral Reserves or formal studies there is nothing to add here.

# 18 Project infrastructure

Logistics and infrastructure are discussed in a summary fashion in Section 5. Market studies and contracts.

# 19 Market studies and contracts

As this is not an advanced property this section is not addressed.

### 20 Environmental studies, permitting and social or community impact

The Project is still in the exploration phase and significant work is required before progression to an advanced exploration project. Finland has rigorous regulatory processes with strict environmental standards and Mawson are committed at this early project stage to work with the regional and national authorities and broader stakeholder groups to develop the project in a responsible way. Mawson has completed ten years of flora and water base line studies and environmental impact assessments at the Project. The Company continues to ensure its work is conducted according to sustainable and global best practice methods.

In November 2014, Mawson announced the appointment of environmental specialist, Ms. Noora Ahola to the position of Environmental Leader, Finland. Ms. Ahola is a Forestry Engineer with a Masters Degree in Landscape Management. She has developed strong experience within the Finnish environmental administration, applying environmental legislation towards nature protection. Her most recent role has been with The Centre for Economic Development, Transport and the Environment for Lapland (ELY-Centre) in the Nature Protection Unit as a project manager for a program based on developing biodiversity and ecological connections between Natura 2000 sites.

On September 14, 2016, Ms. Ahola was appointed as a director of the Company and as a member of the Environmental, Health and Safety Committee of the Company. Ms. Ahola advises the Company on the monitoring and management of key environmental plans and risks associated with Mawson's projects to ensure that environmental factors are effectively addressed and managed. Working closely with local communities and government, Ms. Ahola manages consultants and ensures that environmental criteria are integrated into the design of exploration projects. The role is a key member of the exploration team and she is responsible for ensuring all environmental requirements are delivered on time and within scope.

Mawson carries out its exploration activities in large areas, including areas with a conservation status. Natural regeneration capacity in the northern regions is slower than in the southern regions due to the cold climate and short growing season. All the activities must therefore be carefully and thoughtfully planned to maintain and achieve sustainability.

The Company is committed to carry out all the research measures implemented with special care, according to the national legislation, guidelines and recommendations provided by the environmental administration authorities. In addition, international legislation, in particular, the Habitats and Birds Directives guide the Company's operations. As a part of Company's development, it also invests in new exploration methods and techniques with less significant impacts. The Company's aim is to carry out all their activities with ecologically, socially and economically sustainable manners. The Company also requires its subcontractors adhere to the corresponding accountability in all their activities.

The main areas of Company's operations, Rompas and Rajapalot, are located on the border of Rovaniemi and Ylitornio municipalities in northern Finland. The Company has completed a variety of nature studies, and also implemented multiple Natura 2000 impact assessments related to the future and ongoing exploration activities. Currently there exists little scientific research on the impacts of different kinds of exploration methods on nature and the environment in these areas and therefore the Company's exploration activities and their impacts on the natural environment, species and water is monitored continuously. Monitoring activities will provide long-term research information on how sampling and exploration work should be carried out in a sustainable way without causing damage to environmental values. For diamond drill programs in Natura 2000 areas at Rajapalot (Kairamaat 2-3), Mawson has completed extensive biological mapping over the last 7 years on all areas where drilling will take place, and worked together with all authorities to minimize its impacts, including drilling on snow only, the capture of all drill cuttings, reduction in total machine weight and the placement of walkways to reduce foot traffic. Diamond drilling with tracked vehicles is conducted on snow cover (winter) within Kairamaat 2-3.

Certain areas of the Project area (namely claim areas Rompas and Kairamaat 2-3) are defined as European Union Natura 2000 designated areas. Natura 2000 sites cover about 14.6% of Finland and approximately 30% of Northern Finland. Natura 2000 is the centre piece of EU nature and biodiversity policy. It is an EU-wide ecological network of nearly 26,000 sites in the 27 EU countries, established under the 1992 Habitats Directive and covering almost 18% of the EU's land area. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. Natura 2000 is now a system of strict nature reserves where all human activities are excluded with the emphasis on ensuring that future management is sustainable, both ecologically and economically.

# 21 Capital and operating costs

Due to not being an advanced property this section is not considered relevant.

# 22 Economic analysis

Due to not being an advanced property this section is not considered relevant.
## 23 Adjacent properties

There are a few properties nearby controlled by other parties but none that appear to be owned by public companies that report on an exchange. There are no properties with drill intersections matching the Property.

Information on five nearby showings was obtained from a website maintained by GTK:

http://en.gtk.fi/Geoinfo/DataProducts/latest/

This includes:

- Vinsa: (Mawson OY) is an orogenic copper-gold occurrence with no Mineral Resource estimate available. It comprises a 0.5-2 m wide, >250 m long quartz vein and enveloping alteration halo in a dolerite. Native gold (?) associated with chalcopyrite, pyrite and pyrrhotite. Mawson holds an exploration permit application over this area.
- Petäjävaara: (Mawson OY) is an orogenic copper-gold occurrence with no Mineral Resource estimate available. It comprises a set of quartz veins in a sheared, SW-trending, contact zone between dolerite and quartzite, and is chiefly hosted by the dolerite. Gold is possibly only within quartz veins. Mawson holds an exploration permit application over this area.
- Kivimaa: (Endomines Oy, owner) is an orogenic copper-gold deposit. In 1969, 18,600 t of ore was mined by Outokumpu Oy, and only 37 kg gold and 223 t Cu recovered. Kivimaa comprises a 1-6 m wide, >350 m long quartz vein and enveloping alteration halo in an E-W trending dip-slip fault in a dolerite. Native gold as inclusions in arsenopyrite and, possibly, as free gold. All gold appears to be in the quartz vein.
- Sivakkajoki: (Endomines Oy, owner) close to the Kivimaa deposit, is an orogenic gold occurrence with no resource estimate available. It comprises a set of carbonate-quartz veins and enveloping alteration halo in an E-W trending fault in a dolerite. Apparently, gold only in the quartz veins.

# 24 Other relevant data and information

To the authors knowledge, there is no other relevant data or information related to the Property required to make the report more understandable or not misleading.

### 25 Interpretation and conclusions

The QP makes the following conclusions:

- The results from the blank assays and standards indicate good equipment cleaning and assaying procedures.
- The drilling, sampling, subsampling and assaying are appropriate.
- Based on the Mineral Resource tonnes and grade a preliminary economic assessment to be considered.
- The deposit geology and style of mineralization is reasonably well understood.

The drillhole data are suitable for the estimation and reporting of the Mineral Resources to comply with the CIM Definition Standards 2014 and be reported in accordance with the requirements of National Instrument 43-101 "Standards of Disclosure for Mineral Projects" of the Canadian Securities Administrators

Metallurgical conclusions are:

- Metallurgical testing completed to-date is preliminary in nature and covers only a small fraction of the mineralised material which is reported in this maiden mineral resource statement. Additionally, the investigated recovery methods have only examined the concentration and extraction of gold.
- Notwithstanding the tests have demonstrated that part of the gold mineralization is amenable to recovery by gravity concentration with the remainder amenable to cyanidation with overall gold recoveries in the range of 95 % to 99 %.
- Further mineralogical definition is required to establish the geochemical, textural and mineralogical variability with the anticipated mineralised domains for both gold and cobalt with a view to establish a viable recovery schema.

Mawson's QEMSCAN studies show that cobaltite (CoAsS) is by far the most abundant cobalt mineral with lesser cobaltpentlandite (Co,Ni,Fe)9S8) and linnaeite (CoCo2S4). The QEMSCAN work has demonstrated that the cobalt minerals are non-refractory (not locked within other sulphides) and potentially separable. The high density of cobaltite compared to the light silicate gangue and coarse grain size of the cobaltite make it a good candidate for future gravity separation studies. However, given the lack of metallurgical testwork available for cobalt at this early stage, this study has assumed a similar 97% recovery for cobalt (the same as applied for gold) for pit optimization estimations. The sensitivity of this assumption was tested by applying a 50% recovery to cobalt for pit optimization by Whittle software analysis. The shape and form of the open pit did not vary, indicating that the economics around this assumption are less critical, given the pit optimization study was driven by gold at both cobalt recovery assumptions.

### 26 Recommendations

The maiden Mineral Resource estimate has outlined a high-grade resource that is open along strike and at depth with electromagnetic geophysical survey outlining strong conductors below the modelled deposit. Many geochemical and geophysical gold targets with similar characteristics to known mineralization remain untested on the property. Therefore, a continuing program is recommended to expand the known gold resources and drill test further gold targets. Definition of economic mineralization outside Natura 2000 areas would allow drilling throughout the year.

Specifically, the work program should address the following items:

- Further geophysical surveys including fixed-loop electromagnetics and down-hole EM to determine and refine drill targets extensions of known mineralization and test for blind targets.
- A diamond drill program of 25,000 metres is recommended. Step-out diamond drilling focusing down-plunge at Raja and downdip at Palokas and further exploration drilling on new geochemical and geophysical targets at the Kairamaat 2-3, Hirvimaa, Raja and Männistö permits during 2019.
- Additional metallurgical testwork for cobalt and gold including liberation studies, QEMSCAN to further determine the relationships of the cobalt minerals to gold, sulphide and silicate minerals. Also, gold deportment studies leading to gravity separation, flotation and cyanidation test work to develop and optimize a process flowsheet.
- Continued environmental monitoring and baseline studies for current and future permitting.
- Updated Mineral Resources, subject to 2019 winter drill results during third to fourth quarter 2019

The budget to carry out these programs is estimated at CDN\$ 6.4 M as shown in Table 26.1.

#### Table 26.1Recommended budget for 2019

Task	CDN\$ M
Diamond drilling – 25,000 metres NQ-NQ2 drilling, plus geochemical assays – Kairamaat 2-3, Hirvimaa, Raja, Männistö permits (both resource definition and new target definition drilling)	5.4
Metallurgical testwork	0.2
Geophysical surveys	0.2
Contingency (10%)	0.6
Total	6.3

On the basis of the established Mineral Resource the following metallurgical programmes of work are recommended:

• Quantitative mineralogical assessment of each geological domain to characterize the chemical, textural and mineralogical variability within the mineralized zones.

Further, based on the quantitative mineralogical characterization:

- Enhanced gravity recovery assessment to determine the ability to improve gold recovery as well as assess the ability to enrich cobalt bearing minerals.
- Preliminary flotation testing targeting the recovery of free-gold and cobalt bearing minerals.

The recommended mineral processing and metallurgical testing work would require a budget of approximately CDN\$ 200,000.

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#### **CERTIFICATE OF QUALIFIED PERSON**

I, Rodney Webster, M.AIG., as an author of this report entitled "Rajapalot Project Mineral Resource Estimate NI 43-101 Technical Report" dated 14 December 2018, prepared for Mawson Resources Limited (the "Issuer") do hereby certify that:

- 1 I am currently employed as Principal Geologist with AMC Consultants Pty Ltd. with an office at Level 29, 140 William Street, Melbourne, Victoria 3000, Australia.
- 2 This certificate applies to the technical report "Rajapalot Project Mineral Resource Estimate NI 43-101 Technical Report", dated 14 December 2018 (the "Technical Report").
- I am a graduate of the Royal Melbourne Institute of Technology in Melbourne, Australia (Bachelor of Applied Science in Applied Geology in 1980). I am a registered member of the Australian Institute of Geoscientists Registration No 4818. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101"). I have been continuously and actively engaged in the assessment, development, and operation of mineral projects since 1980. I have had over 38 years' experience within the mining industry in relation to gold and base metal deposits. My roles have included design, supervision and implementation of resource definition drill programs including QA/QC sampling, geological interpretation and resource modelling aspects. I underwent training in geostatistics at the Leeds University and resource estimation at a number of courses. My experience is sufficiently relevant to vein style gold and cobalt mineralization to enable me to sign off to the NI43-101 guidelines for the Rajapalot mineralization;
- 4 I am familiar with National Instrument 43-101 *Standards of Disclosure for Mineral Projects* ("NI 43-101") and by reason of education, experience and professional registration I fulfill the requirements of a "qualified person" as defined in NI 43-101.
- 5 I visited the Project area on 8 and 9 October 2018.
- 6 I am responsible for Parts 1 to 12, 14, 15 to 27 and the relevant sections of Parts, 24 and 25 of the Technical Report.
- 7 I am an independent qualified person as described in section 1.5 of NI 43-101.
- 8 I have not had prior involvement with the property that is the subject of the Technical Report.
- 9 I have read NI 43-101 and the Technical Report has been prepared in compliance with NI 43-101.
- 10 As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signature:

Name: Rodney Webster, M.AIG.

- Date: 14 December 2018.
- Position: Principal Geologist
- Company AMC Consultants Pty Ltd.

#### **CERTIFICATE OF QUALIFIED PERSON**

- I, Kurt Simon Forrester, MAusIMM CP(Metallurgy) CEng MIChemE, do hereby certify that:
- 1 I am Managing Director and Principal Engineer of: Arn Perspective Ltd
  - 12 Carisbrooke House, Sheen Road, Richmond Surrey, TW10 5AZ United Kingdom
- 2 I graduated with a Bachelor degree in Engineering (Chemical) from the

University of Sydney in 2001. In addition, I have obtained a Doctor of Philosophy (Engineering) from the University of Sydney in 2008.

- 3 I am a member of the:
  - Australasian Institute of Mining and Metallurgy (MAusIMM(CP)) Member Number: 318015
  - Institute for Chemical Engineering (CEng MIChemE) Member Number: 99946432
- 4 I have worked as a consulting engineer and extractive metallurgist for a total of 12 years since my graduation from university. I have the following relevant experience for the purpose of this Technical Report:
  - completed a number of consulting assignments including process design and metallurgical testing, feasibility studies and detailed design and construction of mineral processing and extractive metallurgical facilities.
- 5 I have read the definition of "qualified person" set out in National Instrument 43-101 ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a "qualified person" for the purposes of NI 43-101.
- 6 I am responsible for the preparation of section 13, section 24 (part) and section 25 (part) of the technical report titled "Rajapalot Project Mineral Resource Estimate NI 43-101 Technical Report" and dated 14 December 2018 (the "Technical Report") relating to the Rajapalot property. I have not visited the property which is the subject of this Technical Report.
- 7 I have not had prior involvement with the property that is the subject of the Technical Report, however, I am less than 1% shareholder of Mawson Resources.
- 8 I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
- 9 I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.
- 10 I have read National Instrument 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.
- 11 I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Signature: /s/ K S Forrester

- Name: Dr Kurt Simon Forrester
- Date: 14 December 2018
- Position: Managing Director

Company: Arn Perspective

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