



## ANOTHER HIGH GRADE GOLD INTERCEPT 575 METRES NORTH OF FIRST HIT IN DEEPER DRILLING AT AARNIVALKEA

### Key Points

- Assays received for the lower zone of the northernmost diamond hole (FAVD0064) recently drilled at the Aarnivalkea gold prospect, Finland
- Significant intercept of 20.4 metres @ 2.3g/t gold in hole FAVD0064, including 8.0 metres @ 4.8g/t gold, located 575 metres north along strike from previous high grade intercept of 6.85 metres @ 11.8g/t gold in FAVD0062, and 75 metres down dip of nearest hole on section
- These two holes are the only holes testing the depth potential beneath the main Aarnivalkea zone previously discovered in shallow reconnaissance drilling
- Nearest diamond drill lines to FAVD0064 are 320 metres north and 120 metres south, with the former including hole FAVD0030 with 3.0 metres @ 1.3 g/t gold from 47.9 metres followed by 3m of core loss in heavily weathered bedrock
- Planning underway to follow up these significant results

S2 Resources Ltd (“S2” or the “Company”) advises that assays received from the lower portion of diamond hole FAVD0064 confirm a second high grade gold zone located 575 metres north of the high grade intercept hole FAVD0062 reported on 8<sup>th</sup> December 2020. This was the northernmost of four holes drilled in October 2020 to test for dip and plunge extensions to the gold mineralisation discovered in previous shallow reconnaissance drilling at the Company’s 100% owned Aarnivalkea prospect in Finland.

Hole FAVD0064 returned a high grade gold intercept within a broader zone of mineralisation comprising:

- 20.40 metres @ 2.3g/t gold from 193.1 metres, including 8.0 metres at 4.8g/t from 198.0 metres

This follows the previously reported high grade intercept in hole FAVD0062 (*refer to previous S2 ASX announcement on 8<sup>th</sup> December 2020*), located 575 metres to the south of FAVD0064, comprising:

- 6.85 metres @ 11.8g/t gold from 223.0 metres, including 4.0 metres @ 18.1g/t gold from 223.0 metres

Commenting on the drill results, S2's Chief Executive Officer Matthew Keane said "S2 has barely scratched the surface at Aarnivalkea after making a virgin gold discovery in 2019. The majority of holes to date have been drilled to less than 110 metres below surface on broad, 80 to 240 metre spaced section lines. The four deeper holes drilled in October 2020 were designed to test the depth potential of the "smoke" identified in this earlier shallow reconnaissance drilling. The fact that two of the four holes identified high grade gold, some 575 metres apart, is highly encouraging".

### **Aarnivalkea returns another high grade gold intercept at depth**

In 2019, S2 discovered the mineralised gold trend at Aarnivalkea beneath shallow glacial cover in a previously unexplored area (*refer to previous S2 ASX announcement on 1 May 2019*). The discovery followed a systematic regional targeting approach comprising sequential ionic leach geochemistry, structural interpretation of geophysics, and base of till (BOT) drilling. Follow-up broad spaced shallow reconnaissance diamond drilling defined a broad zone of basement mineralisation over a +1,200 metre strike extent (*refer to previous S2 ASX announcement on 5 August 2019*).

In October 2020, the Company drilled four very widely spaced diamond holes to test for a range of possible down-dip and down-plunge extensions to the gold mineralisation defined in the earlier shallow drilling. Most assay results have now been received with all four holes intercepting gold mineralisation. One batch of samples from hole FAVD0063 are still awaiting assays. The latest results from hole FAVD0064 returned a high grade intercept within a broad zone of gold mineralisation. Better intercepts included:

- 1.8 metres at 0.9g/t gold from 160 metres downhole,
- 4.0 metres at 0.9g/t gold from 167 metres downhole,
- 20.40 metres at 2.3g/t gold from 193.1 metres downhole,
  - including 8.0 metres at 4.8g/t from 198.0 metres downhole,
    - including 4.2 metres at 6.6g/t gold from 198 metres downhole

Hole FAVD0064 is located 575 metres north of the previously reported high grade intercept in hole FAVD0062 which included:

- 6.85 metres at 11.8g/t gold from 223.0 metres downhole, including 4.0m at 18.1g/t from 223.0 metres downhole

Mineralisation at Aarnivalkea remains open in all directions and there is no drilling below a depth of 120 metres between the intercepts in holes FAVD0062 and FAVD0064. The nearest shallow drill lines adjacent to FAVD0064 are located 120 metres south and 320 metres north.

Importantly, FAVD0030, a shallow diamond hole located on the northernmost section line (7,552,720mN), intersected 3.0 metres @ 1.3 g/t gold from 47.9 metres within strongly oxidised bedrock with 3 metres of core loss immediately after. This intercept may reflect the presence of a deeply weathered and potentially leached sulphidic zone situated on the near surface strike projection of the new intercept in hole FAVD0064.

While S2's understanding of the controls on mineralisation is in its infancy, the scale of this system (+1,200 metres total strike) and its propensity to generate high grade mineralisation is highly encouraging and warrants further drilling.

Aarnivalkea is located only 24 kilometres from Agnico Eagle's (AEM.TSX) Kittilä mine, the largest producing gold mine in Europe. The Central Lapland Greenstone Belt (CLGB) remains underexplored and highly prospective, as highlighted by both S2's and Rupert Resources' (RUP.V) recent successes. S2's substantial 595 square kilometre land holding in the CLGB (Figure 1) is strategically positioned proximal to major structures prospective for both orogenic/mesothermal gold and magmatic intrusive base metal mineralisation.

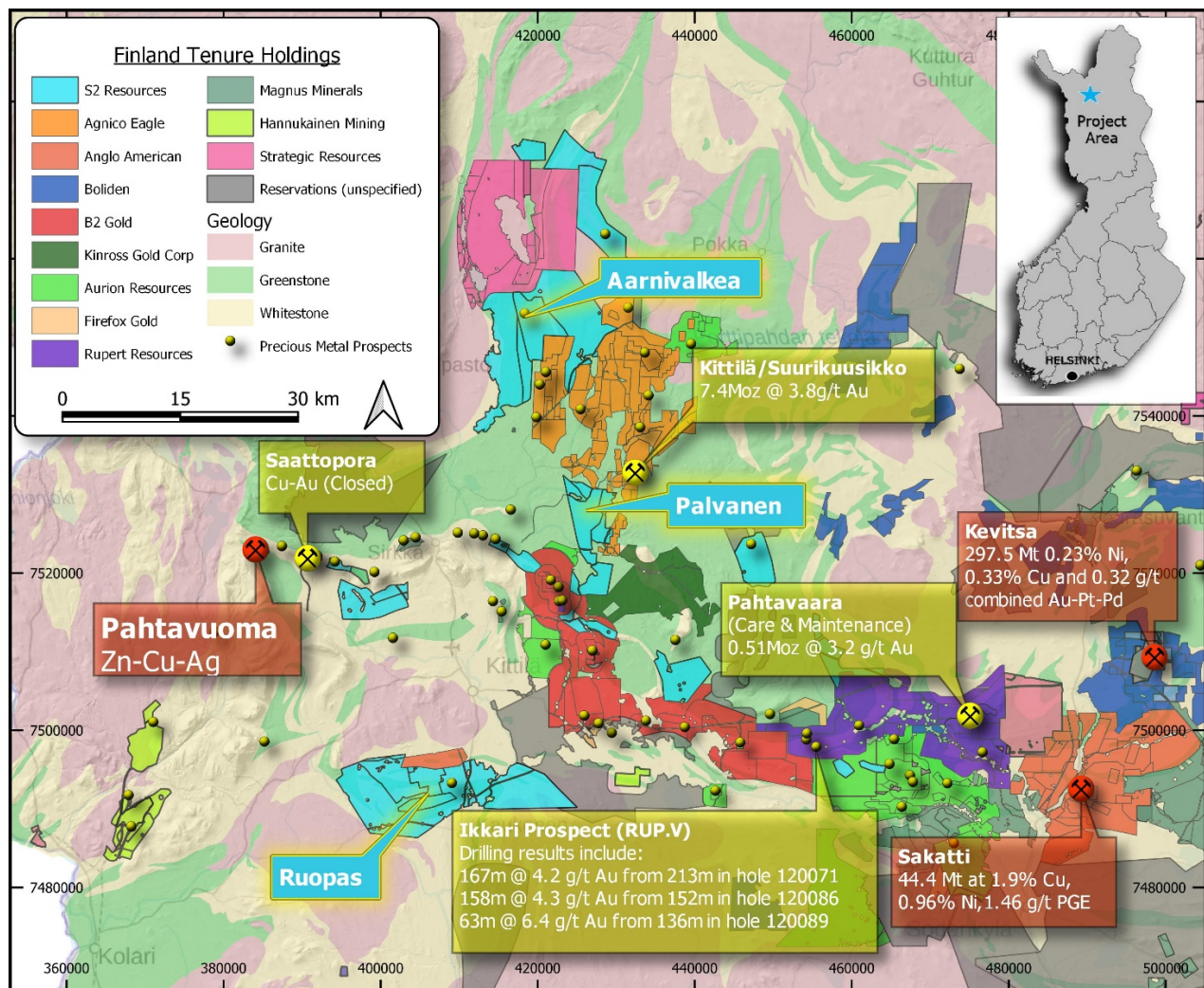


Figure 1. Aarnivalkea prospect location map showing S2's landholding in Lapland, Finland, including neighbouring companies, mines, defined resources and recent drill intercepts. Resources and drill intercepts are sourced from public company statements.



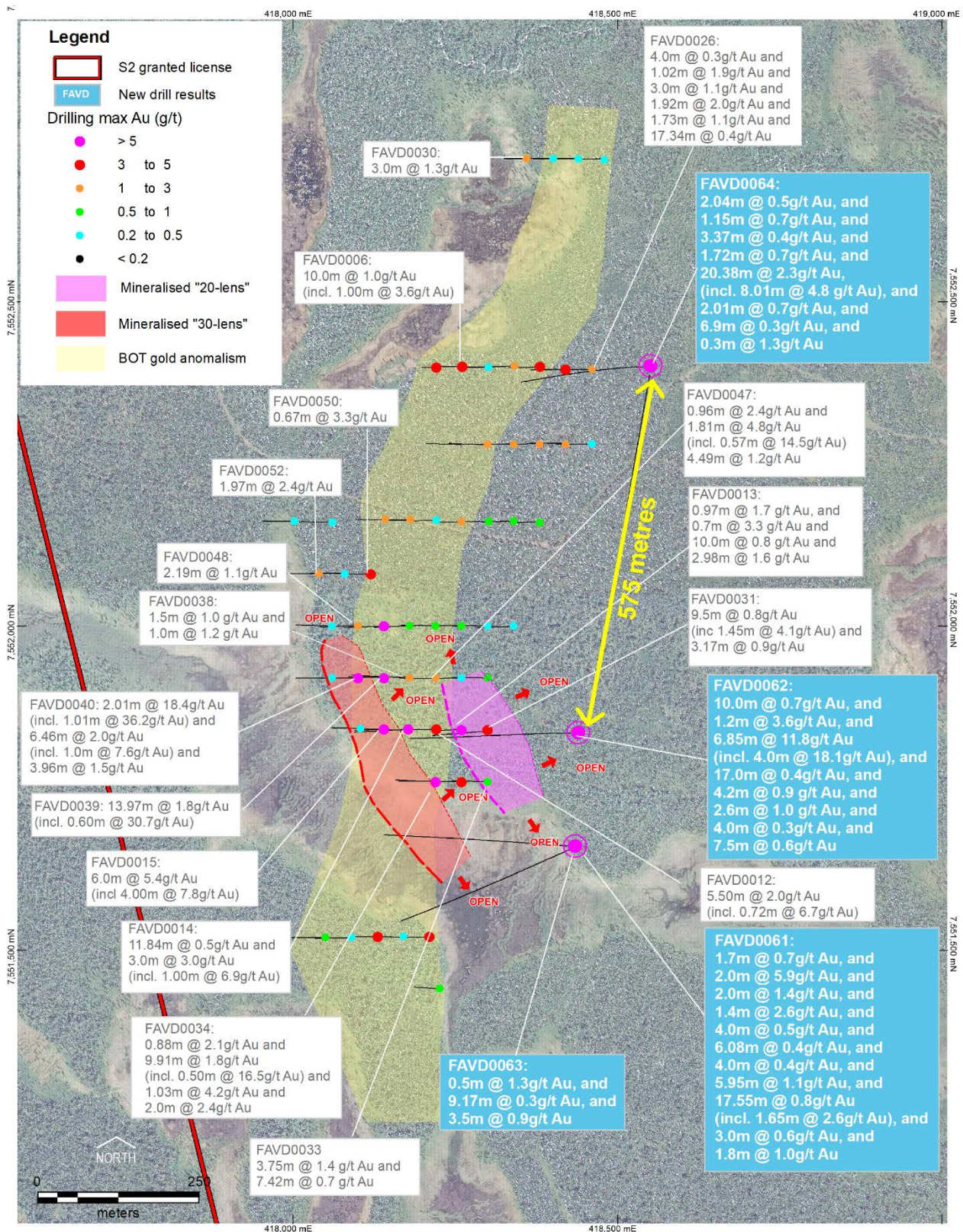


Figure 2. Plan projection of drilling at Aarnivalkea, showing the location of recent diamond drillholes (blue), key section lines and the northwest striking BOT gold mineralised zone (yellow shading), including higher grade lenses (red and magenta shading).



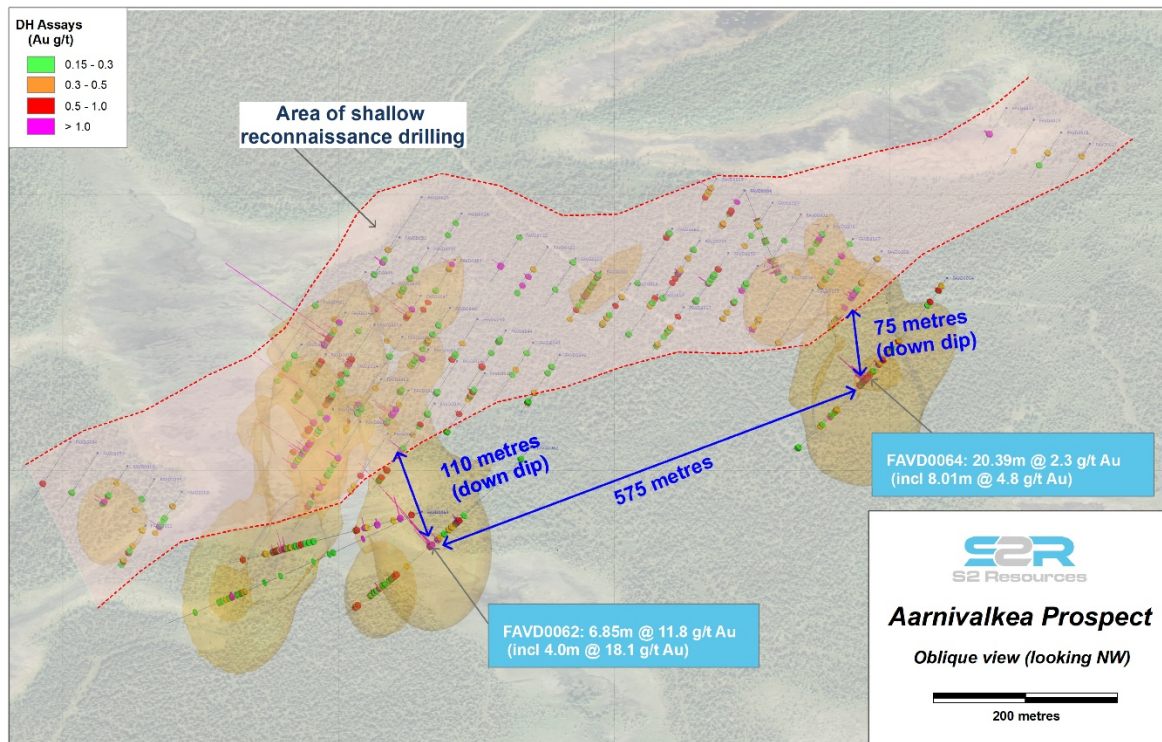


Figure 3. Isometric view showing drilling to date at Aarnivalkea, highlighting the lack of deeper drilling between, below, and north of holes FAVD0062 and FAVD0064.

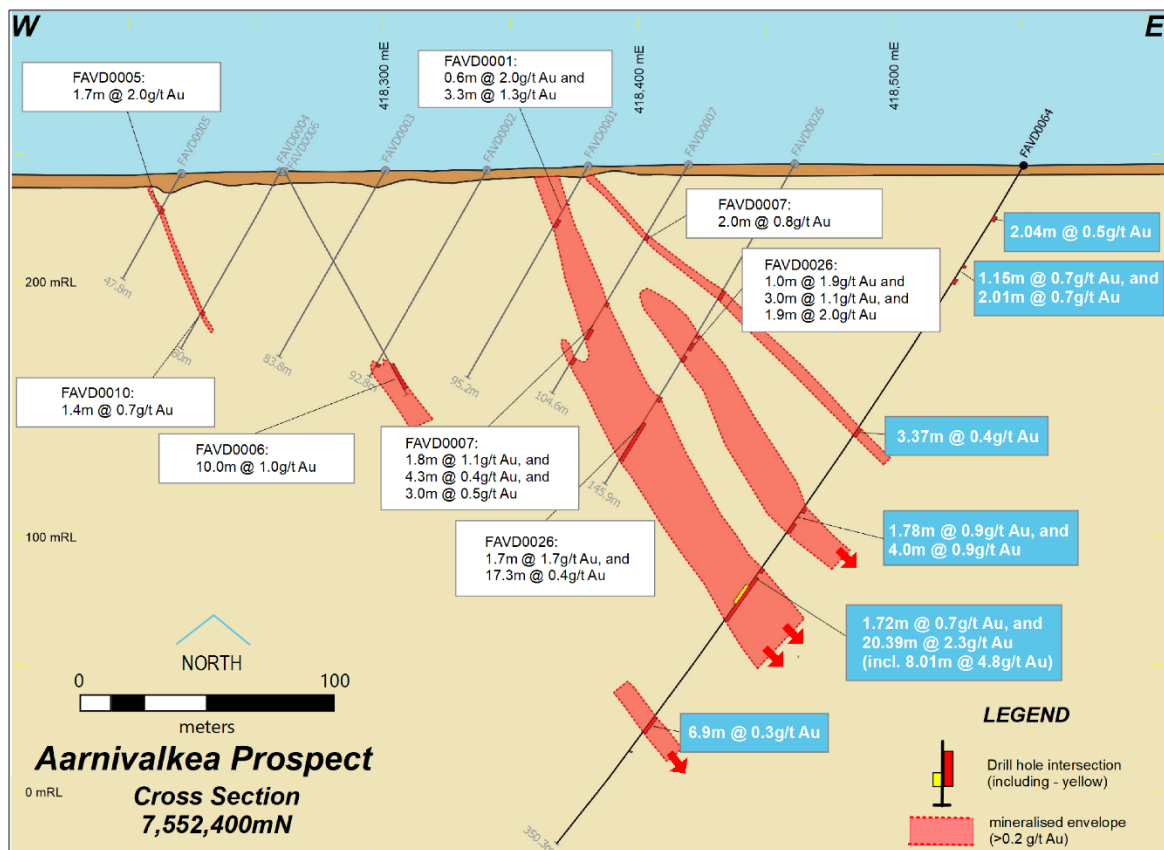


Figure 4. Cross section through section line 7,552,400mN showing drill hole FAVD0064.

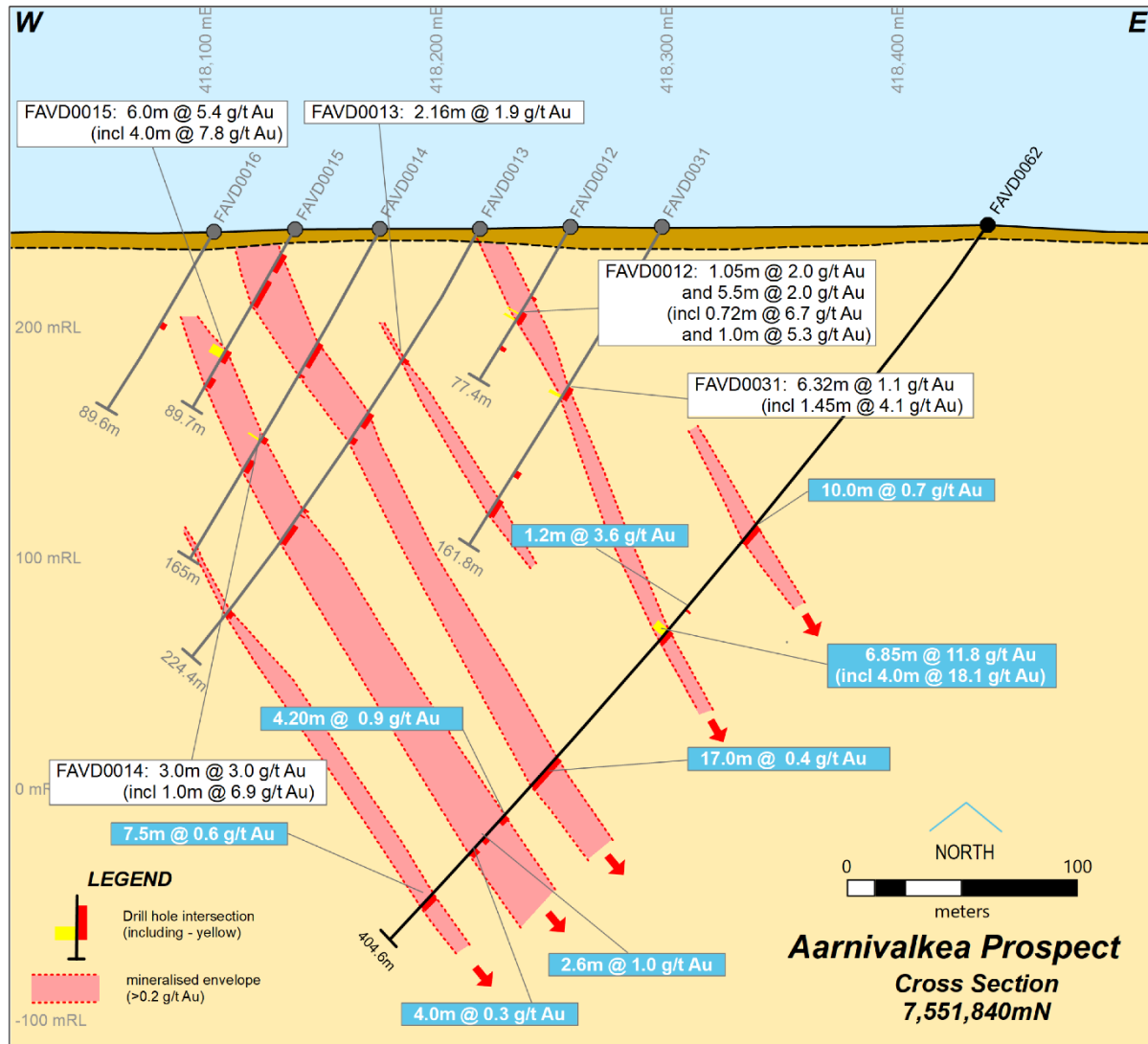


Figure 5. Cross section through section line 7,551,840mN showing drill hole FAVD0062.



Mineralisation in hole FAVD0064 is hosted within fine to medium grained intermediate dacite-andesite volcanics with interfingering porphyritic rhyodacite. The interval has varying levels of albite-sericite alteration and contains numerous thin quartz-carbonate-pyrite veinlets with pronounced sericite alteration halos. Disseminated pyrite is evident throughout the interval (Figure 6).



Figure 6. Core photographs of higher grade mineralisation in hole FAVD0064 showing 2m composite gold assay results.

### **Next steps for Finland Exploration**

At Aarnivalkea, S2 is undertaking a detailed geochemical and structural study of the mineralised system to gain a better understanding of the key controls on high grade mineralisation to optimise follow-up drilling to test along strike and down-dip of the recent intersections. The timing of this drilling will be dependent on diamond rig availability, which is currently constrained due to heightened exploration interest in the CLGB and peak seasonal demand (drilling is most active in the winter months due to ground freezing). Importantly, large portions of Aarnivalkea can be drilled all year round, including the zone between holes FAVD0062 and FAVD0064.

At the Palvanen exploration licence, located to the south of Aarnivalkea and adjacent to Agnico Eagle's Kittilä gold mine, regional BOT drilling is planned across prospective stratigraphic / structural corridors to identify areas for follow-up infill BOT and diamond drill testing.

The Company is also anticipating the grant of licences on the Ruopas area in the first half of 2021. Ruopas is prospective for magmatic intrusive style nickel-copper-PGE mineralisation, being located 85 kilometres west of Anglo American's (AAL.LSE) 44.4Mt Sakatti copper-nickel-PGE deposit and 95 kilometres west of Boliden's (BOL.STO) 297.5Mt Kevitsa nickel-copper and precious metal mine (Figure 1). Activities planned for 2021 (pending the grant of exploration licences) include diamond drilling of the Ruopas 1 conductor (*refer to previous S2 ASX announcement on 16 May 2019*), and ground electromagnetic surveying and BOT drilling of recently identified base metal targets elsewhere on the Ruopas licence.

This announcement has been provided to the ASX under the authorisation of Mark Bennett, Executive Chairman.

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Past Exploration results reported in this announcement have been previously prepared and disclosed by S2 Resources Ltd in accordance with JORC 2012. The Company confirms that it is not aware of any new information or data that materially affects the information included in these market announcements. The Company confirms that the form and content in which the Competent Person's findings are presented here have not been materially modified from the original market announcement. Refer to [www.s2resources.com.au](http://www.s2resources.com.au) for details on past exploration results.

### **Competent Persons statements**

The information in this report that relates to Exploration Results is based on information compiled by John Bartlett, who is an employee and shareholder of the Company. Mr Bartlett is a member of the Australian Institute of Mining and Metallurgy (MAusIMM) and has sufficient experience of relevance to the style of mineralization and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Bartlett consents to the inclusion in this report of the matters based on information in the form and context in which it appears.



Table 1. Details of diamond holes completed at Aarnivalkea in 2020 by S2 (refer to previous S2 ASX announcements on 8 October 2019 and 12 November 2019 for all 2019 drill results). Note, all holes have results through zones of interest only, with additional sampling yet to be reported by the laboratory.

Hole	Easting	Northing	RL	Dip	Azimuth	Depth	From	To	Width	Grade Au g/t
FAVD0061	418435	7551660	238.5	-35	275	349.1	19.15	20.85	1.70	0.7
And							40.00	42.00	2.00	5.9
And							82.00	84.00	2.00	1.4
And							105.40	106.80	1.40	2.6
And							119.00	123.00	4.00	0.5
And							219.92	226.00	6.08	0.4
And							238.00	242.00	4.00	0.4
And							245.60	251.55	5.95	1.1
And							254.35	271.90	17.55	0.8
Including							254.35	256.00	1.65	2.6
And							282.40	285.40	3.00	0.6
And							323.20	325.00	1.80	1.0
FAVD0062	418440	7551835	243.9	-55	270	404.6	164.50	174.50	10.00	0.7
And							211.80	213.00	1.20	3.6
And							223.00	229.85	6.85	11.8
including							223.00	227.00	4.00	18.1
And							297.00	314.00	17.00	0.4
And							330.80	335.00	4.20	0.9
And							343.70	346.30	2.60	1.0
And							350.00	354.00	4.00	0.3
And							377.50	385.00	7.50	0.6
FAVD0063	418434	7552280	238.5	-35	245	349.4	241.90	251.07	9.17	0.3
And							259.00	262.50	3.50	0.9
FAVD0064	418551	7552400	245.8	-60	270	350.3	23.00	25.04	2.04	0.5
And							45.48	46.63	1.15	0.7
And							52.00	54.01	2.01	0.7
And							121.85	125.22	3.37	0.4
And							160.00	161.78	1.78	0.9
And							167.00	171.00	4.00	0.9
And							188.71	190.43	1.72	0.7
And							193.09	213.48	20.39	2.3
Including							197.99	206.00	8.01	4.8
And							261.10	268.00	6.90	0.3
And							277.39	277.69	0.30	1.3

The following Tables are provided to ensure compliance with the JORC code (2012) edition requirements for the reporting of exploration results.

## SECTION 1: SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i>	The reported drilling was undertaken using Northdrill Oy of Rovaniemi, Finland drilling WL-76 rod size with a DDH size of 76.3mm and core size of 57.5 mm. Core samples are logged and marked up by S2 personnel. Unbiased core sample intervals were cut in half by diamond saw with half core sent for preparation and analysis at ALS Laboratories.
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used</i>	Sampling and QAQC procedures are carried out using S2 protocols as per industry best practice.
	<i>Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information</i>	Diamond drilling was used to obtain core samples that have been cut and sampled on intervals that are determined by lithology and mineralisation.  The drill core samples are sent to ALS Laboratories for analyses for gold and base metals. Drill core is sampled at S2's facilities in Kittila, Finland.
<b>Drilling techniques</b>	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i>	Diamond drilling with WL76 wireline bit producing a 50.7mm diameter core.
<b>Drill sample recovery</b>	<i>Method of recording and assessing core and chip sample recoveries and results assessed</i>	Diamond Drill core recoveries are recorded by the driller and written on core block markers. The exact recovery is then recorded on a metre basis after core mark-up and recorded in the database.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples</i>	Sample quality is qualitatively logged on a metre basis, recording sample condition.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	No relationship has been seen to exist
<b>Logging</b>	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	The logging uses a standard legend developed by S2 which is suitable for implicit wireframing. All diamond holes are geotechnically and structurally logged.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	All core has been photographed both dry and wet. Geological logging of the diamond drill holes is into tough books using standardised codes and templates. These logs are then imported into S2's central database
	<i>The total length and percentage of the relevant intersections logged</i>	All drill holes were logged in full.



Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	Core sawn in half and half core taken for assay.
	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Not applicable
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	Samples were delivered by S2 personnel to ALS Minerals laboratory in Sodankyla, Finland, where they are crushed with >70% <2mm (code CRU-31), split by riffle splitter (code SPL-21), and pulverised 1000g to 85% <75 um (code PUL-32). Crushers and pulverizers are washed with QAQC tests undertaken (codes CRU-QC, PUL-QC). The prepared samples are forwarded to ALS Minerals Loughrea, Ireland, for analysis.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	Full QAQC system in place to determine accuracy and precision of assays
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	For DDH's non biased core cutting through using an orientation line marked on core and cut to the line
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Samples of appropriate size
<b>Quality of assay data and laboratory tests</b>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	All samples were analysed by ALS Minerals Loughrea, Ireland. Core samples analysed for gold undergo a 50g fire assay with AA finish (code Au-AA26).
	<i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i>	No geophysical tools were used to determine any element concentrations.
	<i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i>	Full QAQC system in place including Certified Standards and blanks of appropriate matrix and levels
<b>Verification of sampling and assaying</b>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	all significant intercepts have been verified by senior S2 exploration personnel, including verifying against drill logging, core photos and/or direct visual inspection of drill core.
	<i>The use of twinned holes.</i>	No twinned diamond holes have been drilled at Arnievalkea
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Primary sampling data is collected in a set of standard Excel templates. The information is managed by S2's database manager for validation and compilation into S2's central database.
	<i>Discuss any adjustment to assay data.</i>	No adjustments made
<b>Location of data points</b>	<i>Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Diamond drill collars are pegged using a Trimble DGPS to +/- 1m accuracy. Drill rigs are aligned to Grid west using Standard Finnish National Grid ETRS-TM35FIN. The holes are downhole surveyed using a Deviflex tool.
	<i>Specification of the grid system used.</i>	The grid system used is the Standard Finnish National Grid ETRS-TM35FIN.
	<i>Quality and adequacy of topographic control.</i>	Elevation data for all collars is determined by a digital elevation model derived from public domain 2m Lidar data. Topographic control and map data is excellent.

Criteria	JORC Code explanation	Commentary
<b>Data spacing and distribution</b>	<i>Data spacing for reporting of Exploration Results.</i>	Recent drilling was not completed on a regular grid. Previous diamond drilling at Aarnivalkea has been completed on 40m drill spacings on lines between 80 – 240 metres apart.
	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	Data spacing and distribution is not sufficient at this stage to allow the estimation of mineral resources.
	<i>Whether sample compositing has been applied.</i>	No sample compositing has been applied
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	Drillhole orientation is designed to intersect the mineralised package of rocks and be perpendicular to shearing and mineralisation. Structural measurements from orientated core indicate that the main fabric and contacts are dipping steeply to the east and hence holes collared at -60dip 270deg azimuth are appropriate. The two southern holes were drilled obliquely due to the local terrain, but the hole orientations are still considered appropriate.
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	The drilling at this stage is preliminary and exploratory. It is not possible to assess if any sample bias has occurred due to drillhole orientation at this stage.
<b>Sample security</b>	<i>The measures taken to ensure sample security.</i>	Chain of custody is managed by S2 personnel. Drill samples and core is visually checked at the drill rig and then transported to S2's logging and cutting facilities by S2 personnel for logging, cutting and sampling. Bagged samples are transferred to ALS Laboratories in Sodankyla, Finland by S2 personnel.
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No audits or reviews have been conducted at this stage.

## SECTION 2: REPORTING OF EXPLORATION RESULTS

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.	The Aarnivalkea prospect is located within the Paana Central Exploration Licence. ML2018:0081 The exploration licences are 100% owned by Sakumpu Exploration Oy, a Finnish registered 100% owned subsidiary of S2
	The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	All of the Exploration Licences are in good standing and no known impediments exist on the tenements being actively explored.
<b>Exploration done by other parties</b>	Acknowledgment and appraisal of exploration by other parties.	The Aarnivalkea prospect is a greenfield discovery with historic BoT holes drilled in the region by Outokumpu not having been assayed for gold.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	The prospect is a shear zone hosted orogenic gold deposit within the Kittila Group of the Paleoproterozoic Central Lapland Greenstone belt. The primary host rocks include altered and sheared basalt, dacites and sediments Alteration assemblages include albite, sericite, carbonate, chlorite with disseminated pyrite, pyrrhotite and arsenopyrite.



Criteria	JORC Code explanation	Commentary
<b>Drill hole Information</b>	<p>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</p> <ul style="list-style-type: none"> <li>• easting and northing of the drill hole collar</li> <li>• elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>• dip and azimuth of the hole</li> <li>• down hole length and interception depth</li> <li>• hole length.</li> </ul>	Refer to sample plans in text.
<b>Data aggregation methods</b>	In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.	<p>All reported intersections of drilling undertaken by S2 have been length weighted.</p> <p>A nominal 0.2g/t lower cut-off is used for the reconnaissance diamond drill intersections. No top cut has been applied.</p>
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	High grade intervals internal to broader zones of mineralisation are reported as included intervals.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	None used.
<b>Relationship between mineralisation widths and intercept lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</p>	<p>The trend of mineralisation at the targets/prospects described is estimated to be dipping steeply to the east at approximately 75 to 80 deg.</p> <p>Refer to figures in body of text.</p>
<b>Diagram</b>	Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	Refer to Figures in body of text.
<b>Balanced reporting</b>	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	All results considered significant are reported.
<b>Other substantive exploration data</b>	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	None at present

Criteria	JORC Code explanation	Commentary
<b>Further work</b>	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	Additional multi-element geochemical analysis of the recent holes is planned. A detailed structural and geochemical study of the available data to gain a better understanding of the key controls prior to additional diamond drilling to follow-up the recent drill intercepts.