

Significant copper results at John Galt

Highlights

- Rock chip sampling returned numerous assays greater than 1% copper (Cu);
- Results up to 2.92% Cu returned;
- High grade copper results over 500m strike extent; and
- Limited sampling indicates mineralised copper zone is open north and south.

Australian heavy rare earths producer, Northern Minerals Limited (ASX: NTU) (the **Company**) is pleased to announce high grade copper assays following a selective rock chip sampling program at the Company's 100%-owned John Galt Project, located 200km south of Kununurra in the East Kimberley region of Western Australia (Figure 1).

In October 2019, the Company undertook a selective rock chip sampling program over an area of 2.0km x 0.5km at John Galt. While the project already contains a heavy rare earth prospect, this program was targeted in an area 3-4km to the south of the John Galt Heavy Rare Earth Prospect and was focused on previously identified copper occurrences.

Of the 24 samples collected and analysed, 12 returned assays of greater than 1.0% Cu. The higher grade copper samples mostly occurred in a cluster over 500m of strike length (refer Figure 2). Anomalous gold and silver assays were also observed for some of the anomalous copper samples.

While the Company has a primary focus on rare earth elements, the discovery of copper mineralisation provides significant potential for commodity diversification, particularly for a company focussed on electric vehicles and sustainable power generation.

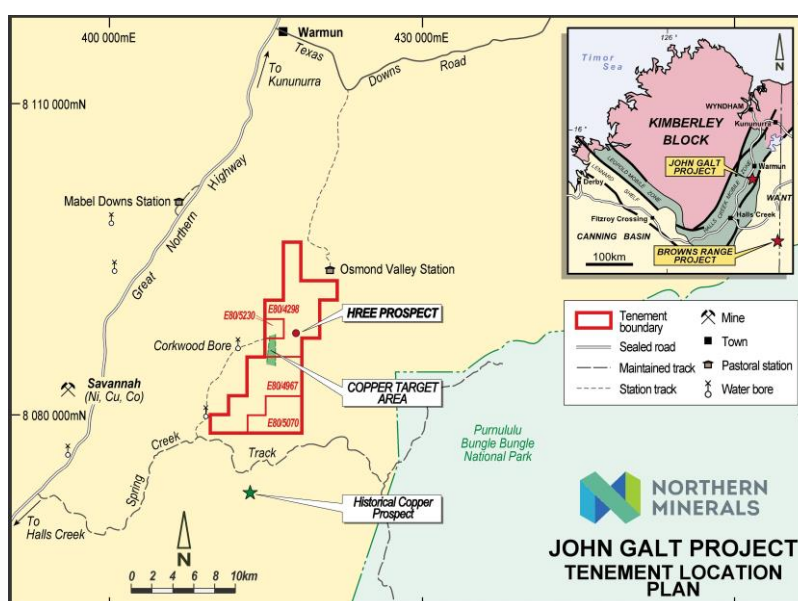


Figure 1: John Galt Location Plan
Powering Technology.

John Galt Project: Rock Chip Sampling – anomalous results (>0.7% Cu)

Sample Number	Northing	Easting	Copper (%)	Gold (ppb)	Silver (ppm)
JGRK000253	8085732	415399	1.38	3	0.88
JGRK000255	8085802	415367	1.87	9	3.14
JGRK000256	8085798	415413	0.88	4	0.9
JGRK000257	8085100	415043	1.04	3	2.13
JGRK000259	8086691	415259	0.81	27	9.46
JGRK000260	8085339	415212	1.04	3	0.39
JGRK000264	8085277	415048	0.72	15	0.21
JGRK000266	8085370	415049	0.72	1	0.39
JGRK000268	8086067	415367	1.98	3	0.17
JGRK000269	8086137	415396	2.19	22	0.82
JGRK000270	8086168	415392	2.25	11	1.82
JGRK000271	8086156	415387	1.73	4	0.16
JGRK000272	8086122	415398	1.44	7	0.18
JGRK000273	8086023	415484	1.08	5	1.54
JGRK000274	8085972	415442	2.92	16	2.53
JGRK000275	8085901	415202	1.88	77	0.17

Copper mineralisation was observed associated with quartz veins and breccias, primarily within sandstone and siltstone units of the Red Rock Formation, or along the contacts between the two lithologies. The quartz veins are believed to represent dilational features related to northwest and northeast trending faults (refer Figure 2). Mafic volcanics occur a few hundred metres to the east and south of the mineralised veins and breccias. The samples are point samples and therefore have a high potential of bias and should not be considered as being representative of the overall mineralised structure or rock type.

Historical copper exploration was carried out to the south of John Galt in the early 2000s, with one notable prospect located 15km away. Explorers were targeting stratabound hydrothermal copper mineralisation and specifically the Keweenaw-style copper orebodies of Michigan, USA.

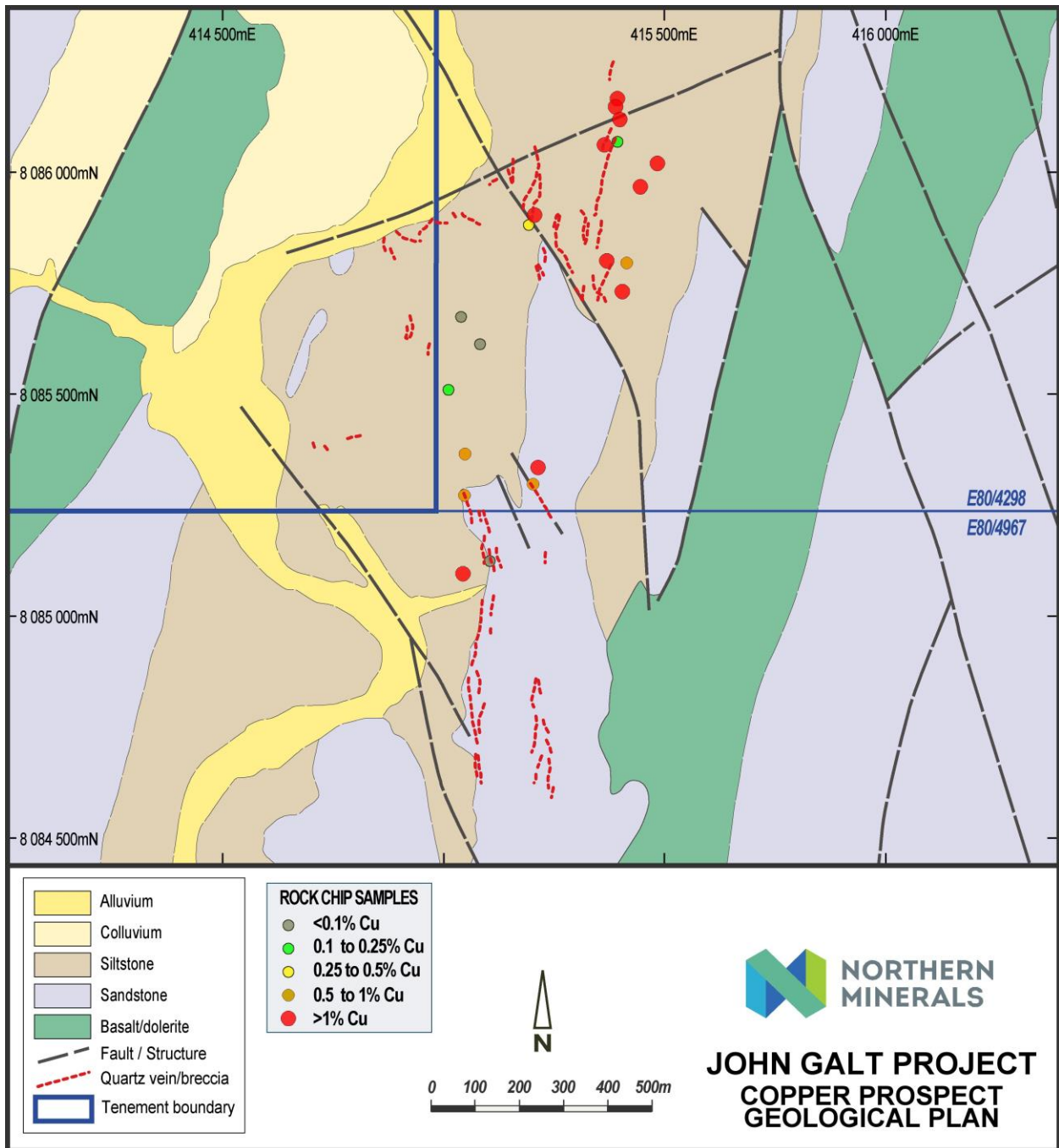


Figure 2: Geological mapping and sample location

The sampled rock chips contain visible malachite, as can be seen in Figure 3 below.



Figure 3: Photograph of malachite in outcrop from John Galt copper prospect

The Company plans to undertake further geological mapping, a follow up soil sampling program and a ground geophysics program, following the end of the wet season. Based on these results, a drilling program may be considered for the June quarter.

Northern Minerals Managing Director and CEO, George Bauk, commented *“These copper results were an unexpected bonus for our exploration program at John Galt.*

“While we are at our core a rare earth focused company, we will always look at ways to add value for our shareholders.

“As with rare earths, copper is an important element in the electric vehicle revolution given its widespread use in these vehicles.

“It is early days with respect to these copper results, however we are extremely encouraged by the widespread and high-grade nature of the results received.

“With the performance of Browns Range improving every day and nearing nameplate capacity, we are confident of a good year ahead.”

ENDS

Authorised for release by the Board.

Mark Tory

Company Secretary

ASX ANNOUNCEMENT

For further information:

George Bauk
Managing Director/CEO
Mark Tory
CFO/Company Secretary
Northern Minerals
+61 8 9481 2344

For media and broker enquiries

Andrew Rowell
Cannings Purple
+61 8 6314 6314

About Northern Minerals:

Northern Minerals Limited (ASX: NTU; Northern Minerals or the Company) is the only producer of heavy rare earth element Dysprosium outside of China via production from the Browns Range Heavy Rare Earth Project in northern Western Australia.

The Company commenced the production of heavy rare earth carbonate in late 2018 as part of a three-year pilot assessment of economic and technical feasibility of a larger scale development at Browns Range.

The current program provides the opportunity to gain production experience and surety of supply for our offtake partner, Thyssenkrupp, as well as allowing the assessment of various project enhancement initiatives including ore sorting and the separation of the product into individual rare earth oxides.

Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to build the Western Australian operation into a significant world producer of dysprosium outside of China.

The Project is 100% owned by Northern Minerals and has several deposits and prospects containing high value dysprosium and other HREs, hosted in xenotime mineralisation.

Dysprosium is an essential ingredient in the production of DyNdFeB (dysprosium neodymium iron-boron) magnets used in clean energy, military and high technology solutions.

For more information: northernminerals.com.au.



ASX Code:	NTU	Market Capitalisation:	A\$150.6m
Issued Shares:	2,596m	Cash (as at 30 September 2019):	A\$18.8m

ASX ANNOUNCEMENT

Compliance Statement

The information in this report relating to Exploration Results was compiled by Mr Robin Wilson who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wilson is a full time employee of Northern Minerals Limited and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code). Mr Wilson consents to the inclusion of this information in the form and context in which it appears.

ASX ANNOUNCEMENT

Appendix 1

John Galt Project -All rock chip sample locations and relevant assays. (all coordinates in GDA94 Zone 52)

Sample Number	Northing	Easting	Copper (%)	Gold (ppb)	Silver (ppm)
JGRK000253	8085732	415399	1.38	3	0.88
JGRK000254	8085131	415104	0.01	1	<0.05
JGRK000255	8085802	415367	1.87	9	3.14
JGRK000256	8085798	415413	0.88	4	0.9
JGRK000257	8085100	415043	1.04	3	2.13
JGRK000258	8086806	415318	0.3	1	0.46
JGRK000259	8086691	415259	0.81	27	9.46
JGRK000260	8085339	415212	1.04	3	0.39
JGRK000261	8085298	415202	0.58	0.5	<0.05
JGRK000262	8085676	415042	0.03	1	0.24
JGRK000263	8085619	415080	<0.01	0.5	<0.05
JGRK000264	8085277	415048	0.72	15	0.21
JGRK000265	8085510	415010	0.25	2	0.11
JGRK000266	8085370	415049	0.72	1	0.39
JGRK000267	8086072	415389	0.21	0.5	0.05
JGRK000268	8086067	415367	1.98	3	0.17
JGRK000269	8086137	415396	2.19	22	0.82
JGRK000270	8086168	415392	2.25	11	1.82
JGRK000271	8086156	415387	1.73	4	0.16
JGRK000272	8086122	415398	1.44	7	0.18
JGRK000273	8086023	415484	1.08	5	1.54
JGRK000274	8085972	415442	2.92	16	2.53
JGRK000275	8085901	415202	1.88	77	0.17
JGRK000276	8085883	415194	0.48	1	0.09

Table 1: JORC code, 2012 Edition

Section 1 - Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<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>	Rock chip samples were taken from in-situ mineralisation using a hand held geo-pick. Typically, samples are in excess of 1kg. The sampling targeted breccias and veins with potential mineralisation,
	<i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i>	Rock chip samples were taken for an indication of mineralisation only. As point samples they have a high potential of bias and should not be considered as being representative of the overall mineralised structure. Sample points were surveyed using a hand-held GPS. Number of samples collected:24
	<i>Aspects of the determination of mineralisation that are Material to the Public Report.</i>	Rock chip samples were taken for an indication of mineralisation only. As point samples they have a high potential of bias and should not be considered as being representative of the overall mineralised structure. The whole sample collected was crushed and pulverised prior to analysis.
Drilling techniques	<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>	Not applicable – no drilling completed
Drill sample recovery	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	Not applicable – no drilling completed
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	Not applicable – no drilling completed


Powering Technology.

Northern Minerals
Level 1
675 Murray Street
West Perth WA 6005

PO Box 669
West Perth WA 6872
northernminerals.com.au
info@northernminerals.com.au

ASX: NTU
T: +61 8 9481 2344
F: +61 8 9481 5929
ABN: 61 119 966 353

	<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>	Not applicable – no drilling completed
Logging	<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>	Not applicable – no drilling completed
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Not applicable – no drilling completed
	<i>The total length and percentage of the relevant intersections logged.</i>	Not applicable – no drilling completed
Sub-sampling techniques and sample preparation	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	Not applicable – no drilling completed
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation procedure follows industry best practice. Samples are oven dried at 120 ⁰ C for 8 hours before processing through a Boyd jaw crusher reducing the sample to 90% passing 3mm. The samples are then pulverised to achieve a grind size of 85% passing 75 micron.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	No field subsampling.
	<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>	No duplicate sampling nor analytical checks were performed for any sampling except the laboratory originated standards and repeats for internal QAQC purposed for geochemical analysis.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	Sample sizes of greater than 1kg are considered to be appropriate.
Quality of assay data and laboratory tests	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Samples assayed by Intertek Genalysis-Perth for a multi-element suite using a sodium peroxide fusion within a nickel crucible and dissolved with hydrochloric acid for analysis. Fusion digestion ensures complete dissolution of the refractory minerals such as xenotime, which are only partially dissolved if the pulp is digested in acids. The digestion solution, suitably diluted, is analysed by ICP Mass Spectroscopy (ICP-MS), for the determination of the Rare Earth Elements (La-Lu) plus Y, Th, Ba, Sr, Zr, and U. Al, Fe,



		Ti, Mg, P, Sc, and S, when analysed, use Inductively Coupled Plasma Optical Emission Spectroscopy (ICP-OES). The composition of the flux and crucible precludes the analysis of Na, Ni, Co, Cr and Mo, so these elements are not determined. These elements when requested use a four acid digest with ICP-OES finish, and this method is also used for K, Mn, V, As, Cu, Pb and Zn when analysed. Au, Ag and Bi were analysed using a 10g Aqua Regia digest with ICP-MS finish.
	<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>	Not applicable – no geophysical tools used in sampling program.
	<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>	Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.
<i>Verification of sampling and assaying</i>	<i>The verification of significant intersections by either independent or alternative company personnel.</i>	Internal verification of significant results by more than one company geologist.
	<i>The use of twinned holes.</i>	Not applicable – no drilling completed
	<i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i>	Handwritten data collected in the field was transferred into an excel template and verified by the field geologist. Location data from the GPS unit was downloaded and cross referenced against the data entry to ensure no transcription errors. All data was checked by the responsible geologist and digitally transferred to Perth. Datashed is used as the database storage and management software and incorporates numerous data validation and integrity checks using a series of defined data loading tools. Data is stored on a SQL server and electronic backups completed three times per day.
	<i>Discuss any adjustment to assay data.</i>	No adjustment to assay data made – not applicable.
<i>Location of data points</i>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	Sample sites are recorded using a hand-held GPS with an accuracy of ± 5m.



	<i>Specification of the grid system used.</i>	The grid system used is MGA94 Zone 52. All reported coordinates are referenced to this grid.
	<i>Quality and adequacy of topographic control.</i>	Topographic control is considered appropriate for early stage exploration.
<i>Data spacing and distribution</i>	<i>Data spacing for reporting of Exploration Results.</i>	Rock chip sampling was undertaken at random intervals and where copper mineralisation was observed along strike of the mineralised structures.
	<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>	Not applicable – no Mineral Resource estimation.
	<i>Whether sample compositing has been applied.</i>	No compositing
<i>Orientation of data in relation to geological structure</i>	<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>	Sampling orientation was appropriate for the early stage exploration.
	<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>	Not applicable – no drilling completed.
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	Samples are collected on site under supervision of a responsible geologist and stored in on site prior to transport by company truck or utility to Halls Creek commercial transport yard. The samples were stored in a secure area until loaded and delivered to the Intertek Genalysis laboratory in Perth.
<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	Not considered necessary for the early stages of exploration sampling and the style of sampling undertaken.

Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<i>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.</i>	The target area is located within E80/4298 and E80/4967. The tenements are located in the company's John Galt Project approximately 200 kilometres south of Kununurra (28km south of Warmun) and 20km from the Great Northern Highway. Northern Minerals owns 100% of all mineral rights on the tenement. The Marlangowen and Purnululu Native Title Claims are registered over the John Galt Project area. The eastern boundary of the John Galt Project abuts the Purnululu Conservation Reserve.
	<i>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.</i>	The tenements are in good standing and no known impediments exist.
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	No previous systematic exploration for copper mineralisation by companies before Northern Minerals has been completed at the new copper target identified. Copper and nickel exploration were carried out by Thundelarra Exploration Ltd, in JV with Panoramic Resources, at the Frank Hill Project, located 15km south of John Galt, between 2004 and 2014. Copper mineralisation was identified at the Azura Copper prospect (location shown on Figure 1 in text above) with RC drilling completed but no significant intercepts were reported. . Ni-Cu mineralisation has also been identified at the Corkwood Prospect located approximately 2 kilometres to the north west of the copper target identified in this announcement. The prospect was first discovered by Anglo-American in 1972 and has more recently been worked by Southdale Holdings Pty Ltd (2002-2003) and Pindan Exploration Company (2005-2009), a subsidiary of Panoramic Resources.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	The John Galt Project lies in the eastern portion of the Halls Creek Orogen, and to the east of the Halls Creek Fault. The area to the east of the Halls Creek Fault comprises northwards younging Proterozoic sediments. It covers rocks of the



		Red Rock Formation, with Tickalara Metamorphics to the west and Olympio Formation sediments to the east. The Red Rock Formation comprises metabasalt (amygdaloidal basalt, dolerite), sandstone, siltstone and conglomerates.
<i>Drill hole Information</i>	<i>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: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length.</i>	Not applicable – no drilling completed.
<i>Data aggregation methods</i>	<i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i>	None applied or considered necessary for the style of sampling undertaken.
	<i>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.</i>	Not applicable
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalent values are used for reporting of exploration results.
<i>Relationship between mineralisation widths and intercept lengths</i>	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	Not applicable – no drilling.
<i>Diagrams</i>	<i>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.</i>	Refer to Figures 1 & 2 in body of text.



<i>Balanced reporting</i>	<i>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.</i>	All rock chip assay results are reported in table above.
<i>Other substantive exploration data</i>	<i>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.</i>	At the John Galt Project, airborne magnetic and radiometric surveys covering the majority of E80/4298 were acquired by Northern Minerals in 2011. Publicly available lower resolution magnetic and radiometric airborne datasets were acquired by Northern Minerals in 2016, covering the remaining tenements in the project area. Hyperspectral data, airborne EM data and aerial photography that covers the project area have also been purchased. Reconnaissance geological mapping, portable XRF measurements and sporadic rock chip sampling (unreported) carried out by Northern Minerals in this area between 2011 and 2018 have indicated the presence of copper mineralisation.
<i>Further work</i>	<i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Follow-up geological mapping, geochemical soil sampling and ground geophysics is planned for later in the year, after the end of the wet season. Drill testing will depend upon the outcomes of this next phase of work..
	<i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	Refer to Figures 1, & 2 in body of text above.

Section 3: Estimation and Reporting of Mineral Resources

Not applicable

Section 4: Estimation and Reporting of Ore Reserves

Not applicable

