

ASX Announcement

30 June 2020

Scoping Study Level Metallurgical Testwork Confirms Lac Rainy Graphite Concentrate as High Purity and High Grade

Highlights:

- Scoping Study level metallurgical testwork completed on graphite mineralisation from the Lac Rainy Graphite Project
- Metallurgical testwork completed on representative composite samples collected from split drill core - including sample preparation, sample characterisation (chemical and mineralogical), comminution testing, flotation testing and static environmental testing
- Results indicate that Lac Rainy graphite can produce a graphite concentrate which is highpurity and high-carbon (total) which meets commercially accepted benchmarks and exceeds standard cut-off
 - Average head-grade of composite sample was 12.0% Ct easily beneficiated to a high-purity and high-carbon (total) graphite concentrate
 - Combined open-circuit graphite recovery of up to 86.3% within the F2 test using standard mineral processing technology in a potentially low-cost setting
 - Combined Concentrate grades of up to 96.9% Ct within the F2 test exceeding standard cut-off grades for commercial grade graphite concentrates (benchmark graphite concentrate grades of 95% Ct)
 - Total carbon grades up to 97.1% Ct in large and jumbo flake size fractions
 - Up to 22.8% of the Lac Rainy graphite concentrate can be categorised in the large and jumbo flake size fractions (+80 mesh)
 - Low levels of potentially deleterious elements results show no elevated concentrations of typical deleterious elements such as vanadium, cadmium or arsenic in the ore - graphite concentrate observed as high-purity
- Metallurgical flowsheet was based on the nearby Lac Knife graphite deposit (100% owned by Focus Graphite Inc.) - this flow sheet will now be optimised to specifically suit Lac Rainy graphite mineralisation which is expected to lead to improved results
- Optimisation of flowsheet test work to commence shortly to further enhance the results of the metallurgical testwork and mineralogical characterisation
- Initial round of product specification / downstream product test work to commence shortly including test work to determine suitability of Lac Rainy graphite concentrate for use in the Expandable Graphite, Purified Micronised Graphite and Coated Spherical Graphite markets
- Results are considered significant and highly encouraging a formal Scoping Study on Lac Rainy Graphite Project will commence shortly

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Metals Australia Ltd (ASX: **MLS**) (**Metals Australia** or **Company**) is pleased to announce the results of its Scoping Study level representative metallurgical testwork program completed at its 100% owned Lac Rainy Graphite Project located in Quebec, Canada.

SGS Canada Inc. (SGS) were selected to undertake a scoping level metallurgical program on a representative composite sample from the Lac Rainy Graphite Project. The primary objectives of the program were to quantify basic comminution properties, to determine the metallurgical response of the sample and to establish a preliminary flake size distribution and concentrate grade. Testwork included sample preparation, chemical characterisation of the feed samples, and batch cleaner flotation based on a flowsheet comparable with the process proposed for the nearby Lac Knife graphite deposit being developed by Focus Graphite Inc.

Testwork results indicate that a high-purity and high-carbon (total) graphite concentrate with high recoveries can be achieved from the graphite mineralisation at Lac Rainy. Open circuit graphite recovery of up to 86.3% and concentrate grades of up to 96.9% total carbon (Ct) were achieved. This is a significant outcome and is very encouraging as the testwork is non-optimised for the Lac Rainy graphite mineralisation and is based on the flowsheet for a separate (though geologically similar) deposit.

Total carbon grades up to 97.1% Ct was achieved in the large and jumbo flake size fractions, with up to 22.8% of the Lac Rainy graphite concentrate categorised in the large and jumbo flake size fractions.

In addition, low levels of potentially deleterious elements were achieved in the graphite concentrate, with the results showing no elevated concentrations of typical deleterious elements such as vanadium, cadmium or arsenic in the ore.

Commenting on the metallurgical testwork results at Lac Rainy, Mr Gino D'Anna, a Director of MLS stated:

"The results from our scoping study level metallurgical testwork program has confirmed that the graphite mineralisation at Lac Rainy has the ability to deliver a graphite concentrate that not only exceeds the industry standard benchmarks, but is capable of producing a high-purity and high-carbon (total) graphite concentrate.

We have been able to achieve high recoveries up to 86.3% at a concentrate grade of 96.9% Ct. This is a highly encouraging result given that the flowsheet remains to be optimised and is based on the flowsheet from Focus Graphite Inc. We consider that during closed circuit operation, significant upside exists in the performance of the graphite mineralisation for recoveries and we look forward to commencing our first round of flowsheet optimisation testwork. This proposed optimisation testwork is planned to run in parrallel with our first round of product specification / downstream product testwork as we seek to determine the applicable markets for our high-purity and high-carbon (total) graphite concentrate.

We recently delivered our maiden JORC (2012) Mineral Resource at Lac Rainy of 13.3Mt at 11.5% TGC in the category of Indicated and Inferred for 1.529Mt of contained graphite, using a 5% TGC cut-off.¹ The potential of Lac Rainy continues to exceed the expectations of the Board. Overall, this is an excellent outcome for shareholders. The Lac Rainy project has the potential to deliver attractive economics due to its potentially significant size, high grades and extensive surface outcrop that offers low strip ratios. We aim to deliver a formal Scoping Study as soon as possible."

¹ Refer the ASX Announcement dated 15 June 2020 and titled "High-Grade Maiden JORC Resource at Lac Rainy Graphite Project".



		F1 ⁻	Test	F2 Test	
Flake Size Category	Mesh Size	Distribution (%)	Purity / Ct (%)	Distribution (%)	Purity / Ct (%)
Jumbo Flake	+48	7.4	95.6	5.7	97.4
Large Flake	-48 to +80	15.4	96.3	14.3	97.0
Medium Flake	-80 to +100	7.0	96.6	8.0	96.9
Small Flake	-100 to +200	30.4	96.6	33.7	96.7
Fine	-200	39.8	96.3	38.3	96.9

The flake size distribution and the total carbon grade for each of the floatation tests completed (F1 and F2) is provided in the table below:

Table I – Flake size distribution and total carbon grade across F1 and F2 tests on Lac Rainy graphite concentrate (distribution sum totals may exceed 100% due to rounding errors)

Lac Rainy Graphite Project

The Lac Rainy Graphite Project is located in northern Quebec, approximately 20 kilometres due south of Fermont, and 10 kilometres north-east of another graphite project (Lac Knife) owned by Focus Graphite Inc. (TSX: FMS) that comprises a mineral resource of 12.7 mt @ 14.4% Cg.²

The Lac Rainy Graphite Project is located in a similar geological environment to Lac Knife comprising a complex series of principally sedimentary rocks of the Ferriman Group and described as slate and turbiditic sediments which are now metamorphosed into quartz-biotite-garnet \pm graphite gneiss, and pelitic-mica-graphite rich schists of the Nault Formation which also hosts the Lac Knife deposit. High-grade metamorphism and folding has resulted in the formation of concentrations of graphite mineralization of various sizes and form.

Significant graphite mineralisation has been identified by the Company at the Lac Rainy project, including the high-grade Carheil Graphite Prospect which is located at the south eastern corner of the Lac Rainy project area. The Main Carheil Graphitic Trend extends from south east to north west across the Lac Rainy Project tenement package. Graphite mineralisation has been mapped by the Company for approximately 4 km in a north west direction.

The current JORC (2012) Mineral Resource at Lac Rainy is contained within an area where drill testing covers only approximately 1.6 kilometres of the currently mapped 4.0 kilometres of strike. This indicates the significant exploration upside that exists at Lac Rainy, with the existing JORC (2012) Mineral Resource open along strike, at depth and down dip / plunge. The Company is confident that substantial additional graphite resources are likely to be defined with additional drilling.

In addition to the highly prospective Main Carheil Graphitic Trent, a number of high grade rock chips have also been identified over 900 metres of strike length located to the west of the higher grade South-East Carheil Graphite Deposit (known as the West Carheil Graphitic Trend). A follow up exploration program has been planned along the West Carheil Graphitic Trend as the Company seeks to further increase the current Inferred and Indicated Resources at the Lac Rainy project.

² Refer to Focus Graphite Inc. website: www.focusgraphite.com/lac-knife



Metallurgical Sample

On 17 May 2019, the Company completed its maiden diamond drilling program at the Lac Rainy Graphite Project. Magnor Exploration Inc. (**Magnor**) managed the field activities and the technical aspects of the drilling program. The drilling program initially focused on the known high-grade Lac Carheil Prospect which is at the south-east end of the mineralised trend and was subsequently expanded to include a number of step out drill holes along strike of the mineralised trend in a north-west direction. In total, the Company drilled seventeen (17) diamond drill holes for a total of 2,318m.³

Significant graphite flake mineralisation was intersected in all drill holes, with DDH LR19-09 producing a spectacular intersection within the main Carheil Graphitic Zone over a significant width of 70 metres (in apparent width) at a depth from 9.0 metres to 79.9 metres.

Other notable drill results include:4

DDH LR19-01	42.7m at 14.5% Cg from 75.85m
DDHLR19-09	70.0m at 17.1% Cg from 9.0m
DDH LR19-11	44.9m at 8.05% Cg from 63.6m
DDH LR19-08	47.5m at 16.21% Cg from 7.8m

To ensure the representivity of the metallurgical testwork, Magnor selected those drill holes which, based on the orientation of the drilling and the drill spacing, provided sufficient material for sampling purposes that was considered to be representative of the graphite mineralisation at Lac Rainy. The size of the sample collected was 85kg.

One composite was prepared from the sample that was submitted for testing. The composite was subjected to a Scoping Study level comminution and flotation program.

Summary of Results and Discussion

A Scoping Study level metallurgical program was completed on a composite sample from the Lac Rainy graphite project. The primary objectives of the tests were to develop a preliminary understanding of hardness, abrasivity, the metallurgical response of the material and to characterise the graphite concentrate in terms of flake size distribution and total carbon grades of different size fractions.

A representative head sample was extracted during sample preparation and pertinent results are presented in Table II.

Assays (%)			
C(t)	C(g)	S	
12.0	11.6	8.74	

Table II: Head Analysis – Total Carbon, Graphitic Carbon, and Sulphur

⁴ Refer to ASX announcements dated 3 July 2019, 6 August 2019, 15 August 2019, 20 August 2019, 29 August 2019 and 11 September 2019.

³ Refer the ASX Announcement dated 15 November 2019 and titled "Lac Rainy Graphite Project Update".



A Bond ball mill grindability test was completed at a screen size of 300 microns and the Bond ball mill work index of 10.6 kWh/t classifies the Lac Rainy mineralisation as very soft. A Bond abrasion index of 0.221g places the Lac Rainy material into the medium abrasive category.

Two open circuit cleaner flotation tests were carried out on the sample using the flowsheet that is depicted in Figure I. Given the proximity to the Lac Knife project and the similar composition of the Lac Rainy mineralisation, the flowsheet that was published in Focus Graphite Inc.'s Lac Knife feasibility study was selected for the scoping tests.

The first test F1 produced a low open circuit total carbon recovery of 78.6% due to elevated losses to the rougher tailings. The combined concentrate grade of 96.4% C(t) using the reconciled size fraction analysis results were well above the minimum grade target of 95% C(t).

The second test F2 employed a longer secondary grind and reduced stirred media mill (SMM) grind times in an attempt to reduce potential flake degradation. A summary of the mass balance of the cleaner flotation test F2 is presented in Table III. The open circuit total carbon recovery improved to 86.3% at a combined graphite concentrate at a grade of 96.7% C(t) (96.9% C(t) using the reconciled size fraction analysis results).



Figure I: Flowsheet of Scoping Level Flotation Tests



Dreduct	Mass	Assa	% Distr.	
Product	%	C(t)	S	C(t)
Combined Conc	11.0	96.7	0.36	86.3
+48 mesh Clnr Feed	3.7	92.4		27.6
-48 mesh Clnr Feed	8.7	87.9		62.1
3rd Clnr Conc	12.4	89.2		89.6
2nd Clnr Conc	12.9	87.5		91.1
1st Clnr Conc	14.2	80.5		92.0
Flash & Rougher Conc	31.5	38.2		97.0
Rougher Tails	68.5	0.54		3.0
Head(calc.)	100.0	12.4		100
Head (direct)		12.0		

Table III: Mass Balance of Scoping Flotation Test F2

In order to determine the flake size distribution and total carbon grades of the various flake sizes, the combined concentrates of both tests were subjected to a size fraction analysis (SFA). The mass recovery and total carbon grades of the various size fractions of the two tests are depicted in Figure II and Figure III, respectively. Overall, test F2 produced slightly higher grades in most size fractions, albeit at marginally higher flake degradation. The mass recovery into the +80 mesh size fractions ranged between 22.8% in test F1 and 20.0% in test F2. The concentrates contained 70.2% and 72.0% of -100 mesh material in tests F1 and F2, respectively. The total carbon grades were consistent with minor variation between the different size fractions and the two tests.



Figure II: Mass Recovery into Size Fractions – Tests F1 and F2





Figure III: Total Carbon Grades of Size Fractions – Tests F1 and F2

Static environmental testing was performed on the F2 Rougher Tailings. The ABA test identified the tailings as strongly "potentially acid generating" (PAG) with major sulphide (8.3%) and very little neutralisation potential. The NAG test corroborated the ABA test results confirming these samples as "potentially acid forming – high capacity (PAF-HC). Although a desulphurization circuit will likely be capable of producing a low-sulphide tailings stream, the low neutralising potential may not be sufficient to produce non-acid generating tailings. Future testwork has been recommended to evaluate potential options available, including dry-stack tailings.

Further Work

SGS made the following recommendations for future testing which will assist the Company in moving towards a feasibility level standard.

- Complete a more comprehensive comminution test program including Bond rod mill grindability, SMC, and Low Energy Impact tests.
- Carry out systematic flowsheet development to improve the conditions of the rougher, primary cleaning, and secondary cleaning circuits. While the scoping level tests produced good concentrate grades, it may be possible that grinding conditions were too aggressive, thus leading to excessive flake degradation.
- Perform desulphurisation tests on the graphite rougher tailings to quantify the mass split between high-sulphur and low-sulphur tailings and to determine if a non-acid generating tailings product can be generated.

The Company looks forward to providing shareholders with further updates as we continue to achieve our stated milestones at Lac Rainy.

This announcement was authorised for release by the Board of Directors.



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Caution Regarding Forward-Looking Information

This document contains forward-looking statements concerning Metals Australia. Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward-looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based on the company's beliefs, opinions and estimates of Metals Australia as of the dates the forward-looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

Competent Person Declaration

The information in this announcement that relates to Exploration Results is based on information compiled by Mr. Jean-Paul Barrette P.Geo, B.Sc. Mr Barrette is Project Geologist with Magnor Exploration Inc. and a consultant to Metals Australia Limited. Mr Barrette and is a member of the Ordre des Géologues du Québec (OGQ) with member number OGQ #619. Mr. Barrette has sufficient experience (35 years) that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr. Barrette consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information in this announcement that relates to Metallurgical Testwork, is based on information compiled by Mr Oliver Peters, M.Sc, P.Eng., MBA, a Competent Person who is a Professional Engineer registered with the Professional Engineers of Ontario (PEO), in Canada. Mr Peters, is the Principal Metallurgist and President of Metpro Management Inc. and a Consulting Metallurgist for SGS Canada Inc. All competent persons are independent from the issuer of this statement, Metals Australia Limited. Mr Peters has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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'. Mr Peters consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.



APPENDIX A: METALLURGICAL TESTWORK AND MINERALOGICAL CHARACTERISATION METHODOLOGY

A scoping level metallurgical program was completed on one composite sample from the Lac Rainy graphite target. The primary objectives of the program were to quantify basic comminution properties, to determine the metallurgical response of the sample, and to establish a preliminary flake size distribution and concentrate grade. The scope of work included sample preparation, chemical characterisation, comminution testing, flotation testing and static environmental tests.

Metallurgical Testwork

SGS Canada Inc. (**SGS**) based in Lakefield, Ontario were selected by the Company to complete the metallurgical testwork and mineralogical characterisation on the split drill core samples of graphite mineralisation collected from the Lac Rainy Graphite Project.

The testwork comprised:

- 1. Sample preparation;
- 2. Sample characterisation (chemical and mineralogical);
- 3. Comminution testing;
- 4. Cleaner Flotation testing; and
- 5. Static environmental testing.

The testwork parameters were selected in order to provide the Company with scoping level metallurgical information about the mineralisation at Lac Rainy and demonstrate that the graphite had mineralogical characteristics suitable for the production of a commercial concentrate. A flowsheet based on publically available information for the nearby Lac Knife graphite deposit was selected as the conditions for the testwork.

Testwork Methods and Results

SAMPLE PREPARATION

An 85 kg sample was delivered to SGS which was crushed to nominal $\frac{3}{4}$ " and homogenised. A separate 5 kg sub-sample was extracted for Bond abrasion testing and a 50 kg sub-sample was split out to prepare test charges for metallurgical testing and a Bond ball mill grindability test. The balance of the nominal $\frac{3}{4}$ " material was placed in freezer storage.

The 50 kg sub-sample was stage-crushed to -6 mesh and homogenised. A separate 10 kg sample was extracted for Bond ball mill grindability testing, and the balance of the -6 mesh material was rotary split into 2 kg test charges. A representative head sample was submitted for chemical analysis.

All test charges were placed into freezer storage to minimise the risk of sample oxidation.

SAMPLE CHARACTERISATION

The head sample that was extracted during sample preparation was submitted for chemical analysis. The results of the total and graphitic carbon analysis as well as the and sulphur analysis for the composite sample are presented in Table 1. The total carbon and graphitic carbon content of the sample was 12.0% C(t) and 11.6% C(g), which suggests that most of the carbon is associated with graphite. The total sulphur grade was 8.74% S and suggest that the flotation tailings will likely be acid generating.



Table 1: Results of Total Carbon and Sulphur Analysis

Assays (%)				
C(t)	C(g)	S		
12.0	11.6	8.74		

The results of an ICP-OES scan and whole rock analysis are presented in Table 2 and Table 3, respectively. The most abundant minerals were silicates followed by iron and aluminum oxides. Note that the whole rock analysis assumes the most common oxides and actual mineral composition would have to be determined through mineralogical analysis. The results show no elevated concentrations of typical deleterious elements such as vanadium, cadmium, or arsenic.

Table 2: Results of ICP-OES Scan

	Assays (g/t)								
Ag	As	Ва	Be	Bi	Cd	Co	Cu	Li	Мо
3	< 50	301	1.82	< 20	9	31	316	14	105
	Assays (g/t)								
Ni	Pb	Sb	Se	Sn	Sr	ті	U	Y	Zn
200	45	< 10	< 30	< 20	129	< 30	< 80	46.4	1,380

Table 3: Results of Whole Rock Analysis

	Assays (%)						
SiO ₂	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Na ₂ O	K ₂ O	
48.5	6.24	20.9	1.99	1.39	0.63	1.77	
	Assays (%)						
TiO ₂	P ₂ O ₅	MnO	Cr ₂ O ₃	V ₂ O ₅	LOI	Sum	
0.31	0.35	0.27	0.02	0.15	17	99.5	

COMMINUTION TESTING

The Lac Rainy mineralisation was submitted for comminution testing to develop a preliminary understanding of the hardness and abrasivity of the mineralisation.

Bond Abrasion Test

The Lac Rainy composite was subjected to Bond abrasion testing. The test determines the Abrasion Index (Ai), which can be used to determine steel media and liner wear in crushers, rod mills, and ball mills. The sample produced an Ai value of 0.221g. This result represents the 45th percentile of more than 2,000 samples in the SGS database, placing the sample in the medium abrasive category. The Lac Rainy Ai value is plotted in



Figure 4 together with a histogram of the results in the SGS database.



Figure 4: Lac Rainy Ai Result and Histogram of SGS Ai Database Bond Ball Mill Work Index Tests



The Lac Rainy sample was subjected to a Bond ball mill grindability test at a coarser grind size of 48 mesh (300 microns) to reflect the graphite rougher grind size target of P80 = 210 microns. The test determines the Bond Ball Mill Work Index (BWi), which can be used with Bond's Third Theory of comminution to calculate the net power requirements for sizing ball mills.

The sample produced a BWi value of 10.6 kWh/t which represents the 14th percentile of more than 6,100 samples in the SGS database, placing the sample in the very soft range of the SGS database. The Lac Rainy BWi value is plotted in

Figure 5 together with a histogram of the results in the SGS database.



Figure 5: Lac Rainy BWi Result and Histogram of SGS BWi Database

BATCH CLEANER FLOTATION



Two batch cleaner flotation tests were carried out on the composite samples. Given the proximity to the Lac Knife project and the similar composition of the Lac Rainy mineralisation, the flowsheet that was published in Focus Graphite's Lac Knife feasibility study was selected for the scoping tests.

The flowsheet that was employed in the two batch cleaner tests is depicted in Figure . The -6 mesh material was subjected to a brief primary rod grind followed by flash flotation. The flash flotation tailings were reground in a secondary rod grind, and the rod mill discharge was subjected to rougher flotation. The combined flash and rougher concentrates were ground in a polishing mill, and the mill discharge was subjected to magnetic separation. The non-magnetics were upgraded in three stages of cleaner flotation. The third cleaner concentrate was classified at 80 mesh on a vibrating screen. The screen oversize and undersize products were treated in separate secondary cleaning circuits consisting of a stirred media mill (SMM) and 3-4 stages of cleaner flotation.

The reagents that were used included fuel oil #2 (diesel) as the collector and OREPREP 549 as the frother.



Figure 6: Flowsheet Tests F1 and F2

The mass balance of the cleaner test F1 is summarized in Table 4. The open circuit carbon recovery was relatively low at 78.6% due to elevated carbon losses to the rougher tailings. It was expected that a finer primary grind size would be required to reduce the graphite losses. A visual inspection of the rougher tailings also revealed that most of the graphite losses occurred in form of small graphite flakes locked with gangue minerals. Since these small graphite flakes represent limited commercial value, future testing will have to determine if finer grinding of the flash flotation tailings is warranted.

The combined concentrate grade of 97.4% C(t) was very good and the sulphur content of 0.21% was low, especially considering the high sulphur content of 8.74% S in the feed. The combined concentrate grade using the reconciled size fraction (SFA) analysis results was slightly lower at 96.4% C(t) but still well above the minimum concentrate grade target of 95% C(t). The results of the SFA tends to be more accurate since grade differences between size fractions can be significant and it is very difficult to extract a 0.1 g sample with a representative size distribution from a combined concentrate.

Draduat	Mass	Assa	% Distr.	
Froduct	%	C(t)	S	C(t)
Combined Conc	10.2	97.4	0.21	78.6
+48 mesh Clnr Feed	4.4	84.3		29.6
-48 mesh Clnr Feed	8.3	79.2		52.3
3rd Clnr Conc	12.8	81.0		81.9
2nd Clnr Conc	13.3	79.1		83.2
1st Clnr Conc	14.5	74.0		84.6
Flash & Rougher Conc	30.1	36.3		86.3
Rougher Tails	69.9	1.83		10.1
Head(calc.)	100.0	12.6		100
Head (direct)		12.0		

Table 4: Mass Balance Summary – F1

In order to evaluate the quality of the graphite concentrate with regards to flake size distribution and total carbon grade of the various size fractions, the final cleaner concentrate of test F1 was submitted for a size fraction analysis (SFA). The mass distribution and total carbon grades of the size fractions are depicted in Figure 7 and Figure 8, respectively.

A total of 22.8% of the concentrate mass reported to the +80 mesh (180 microns) size fractions. Almost 40% of the mass reported to the smallest size fraction of 200 mesh (74 microns). The total carbon grade of the various size fractions was relatively consistent and ranged between 95.5% C(t) for the - 32/+48 mesh product and 96.8% C(t) for the-150/+200 mesh product.

Since the combined concentrate grade was well above a generally accepted minimum concentrate grade of 95% C(t), test F2 was completed with reduced SMM grind times in an attempt to reduce flake degradation. Further the secondary grind time was increased from 2.5 minutes to 4.0 minutes to reduce the graphite losses to the rougher tailings.

Figure 8: Total Carbon Grades of Size Fractions (F1)

The mass balance of the cleaner test F2 is summarized in Table 5. The open circuit carbon recovery improved from 78.6% in test F1 to 86.3% in test F2. The sulphur content of the combined concentrate of 0.36% S was slightly higher compared to test F1.

In the two tests a total of 5.7 to 6.1% of the graphite losses occurred in intermediate tailings products. These streams will be circulated during closed circuit operation, and a certain amount of the graphite units contained in these streams will report to the final concentrate. The combined concentrate grade remained high at 96.7% C(t).

Table 5:	Mass	Balance	Summary	y –	F2
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Duradurat	Mass Assays, %		ys, %	% Distr.
Floduct	%	C(t)	S	C(t)
Combined Conc	11.0	96.7	0.36	86.3
+48 mesh Clnr Feed	3.7	92.4		27.6
-48 mesh Clnr Feed	8.7	87.9		62.1
3rd Clnr Conc	12.4	89.2		89.6
2nd Clnr Conc	12.9	87.5		91.1
1st Clnr Conc	14.2	80.5		92.0
Flash & Rougher Conc	31.5	38.2		97.0
Rougher Tails	68.5	0.54		3.0
Head(calc.)	100.0	12.4		100
Head (direct)		12.0		

The combined concentrate of test F2 was also submitted for a SFA. The mass distribution and total carbon grades of the size fractions of both tests are depicted in Figure 9 and Figure 10, respectively.

Despite the shorter SMM grind times, the mass recovery into the three coarsest size fractions decreased marginally. However, the total carbon grades of these three size fractions also increased compared to test F1. The largest grade improvement was obtained for the -32/+48 mesh size fraction from 95.5% C(t) in test F1 to 97.5% C(t) in test F2.

Grade improvements of 0.3 to 0.8% C(t) were achieved for the other size fractions and only the 150/+200 mesh size fraction produced a 0.4% lower total carbon grade in test F2 compared to test F1. It should be noted that the grade differences were relatively small overall and fall within the estimated analytical measurement uncertainties.

The composite generated from drill core outperformed the near surface material tested during the 2018 program in both graphite concentrate grade and flake size distribution. This superior performance of material collected below the oxidation layer is consistent with observations made for similar projects.

Figure 10: Total Carbon Grades of Size Fractions (F1 and F2)

ENVIRONMENTAL TESTING

Scoping level environmental tests were carried out on the rougher tailings. This waste stream was subjected to a net acid generation (NAG) and modified acid-base accounting (ABA) test. No desulphurisation of the tailings was performed to develop an understanding of the extent of potential acid generation.

Table 6: Modified Acid-base Accounting Test Results for F2 Rougher Tailings

Parameter	Unit	F2 Rougher Tailings
LIMS		14626-APR20
Paste pH	no unit	5.52
Fizz Rate	no unit	1
Sample weight	g	1.98
HCI_add	mL	20.00
HCI	Normality	0.10
NaOH	Normality	0.10
Vol NaOH to pH=8.3	mL	15.36
Final pH	no unit	1.21
NP	t CaCO₃/1000 t	11.7
AP	t CaCO₃/1000 t	259
Net NP	t CaCO₃/1000 t	-247.68
NP/AP	ratio	0.05
S	% as S	11.5
Acid Leachable SO ₄ -S	% as S	3.21
Sulphide	% as S	8.30
С	% as C	0.506
CO ₃	% as CO_3	0.595
CO ₃ NP	t CaCO₃/1000 t	9.88
CO ₃ Net NP	ratio	-249.12
CO ₃ NP/AP	%	0.04
NP attributed to CO ₃	%	84.4

Table 7: Net Acid Generation Test Results for F2 Rougher Tailings

Parameter	Unit	F2 Rougher Tailings
LIMS		14627-APR20
Sample weight	g	1.48
Vol H ₂ O ₂	mL	150
Final pH	no unit	2.86
NaOH	Normality	0.10
Vol NaOH to pH 4.5	mL	4.32
Vol NaOH to pH 7.0	mL	13.80
NAG (pH 4.5)	kg H₂SO₄/tonne	14
NAG (pH 7.0)	kg H₂SO₄/tonne	46

The ABA test clearly identified the F2 Rougher Tailing as strongly "potentially acid generating" (PAG) with major sulphide (8.3%) and very little neutralisation potential. The NAG test corroborated the ABA test results confirming these samples as "potentially acid forming – high capacity (PAF-HC). It should be noted that the single peroxide addition NAG test clearly would not have completely oxidised the sulphide in these samples. Sequential NAG tests using multiple additions of hydrogen peroxide would be required to fully oxidise these samples sulphide content and determine terminal NAG results for these tailings.

While a desulphurisation circuit would reduce the acid generating potential, a low-sulphide non-acid generating tailings stream will be difficult to achieve and would require aggressive flotation and magnetic separation conditions. The mass recovery into the high-sulphide tailings stream would be quite high, thus rendering a split tailings approach less attractive. Exploratory desulphurisation flotation and magnetic separation testing during the next phase of metallurgical process development would provide an indication of the mass split into the two tailings streams. Any tailings stream from the cleaning circuit would also be included in the high-sulphide tailings product.

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	 Nature and quality of sampling (eg 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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. 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 (eg '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 (eg submarine nodules) may warrant disclosure of detailed information. 	 The sampling techniques used to explore and evaluate the graphitic carbon (Cg) content in mineralized rocks are from 13 channel lines sampling totalized 677m in length and 17 drill holes totalized 2,318m. The both exploration techniques carried out on two East and West zones of the graphite Carbeil prospect All trenches and drill holes accomplished are planned to crosscut the graphitic rock bands at right angle, or close to, in order to have results that are as close as possible to the true thickness. All trenches and channel sample lines were cleaned with high-power water jet to take out all the impurities. Exploration planning and field reconnaissance, as well as trenching, geological mapping and rock/channel sampling were supervised by certified geologist and member of Ordre des Géologues du Québec (professional Order of Geologists of Québec) which there have a large experience in graphite exploration deposit. 461 channel samples, 0.5 to 1.6m in length, were taken totalized 441.3m which were put in two plastic bags, tagged, sealed, and lived in secured warehouse until delivery to the analysis laboratory by secure transport. The channel sampling covered all graphite mineralized rocks observed in the trenches included low-grade and barren rock bands intercalated within and outside the graphitic rock bands/zones over several meters. Due to topography problems, many of the mineralized zones continue beyond the excavated trenches. 861 half drill core samples, 0.8 to 2.5m in length, were taken totalized 1 280m. All drill core samples taken for assays were cut in half with a diamond saw, bagged with two strong bags, tagged, and sealed and lived in secured warehouse until delivery to the analysis laboratory by secure transport. Drilling campaign planning and implanted drill holes as well as drilling supervising and core samples planing and implanted drill holes as well as drilling supervising and core sampling were supervised by certifi
Drilling techniques	 Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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). 	 Hydraulic diamond drill was used to drilling with NQ size core (47.6 mm or 1-7/8 in) with 3.0 metre long core rod (corer). DeviShot of the Devico company has been used for drill hole survey instrument to measures (single shot) the azimuth and the dip at each 50m until the end of hole. Casing left for all drill holes. Collar of drill holes were surveyed by certified surveyor.
Drill sample recovery	 Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the 	 Sample recovery was done for each drill holes used appropriate technics: measured the drill cores recovered from the corer and then compared with the value of 3.0m and like that until the end of the drill hole.

Criteria	JORC Code explanation	Commentary
	 samples. 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. 	 Weathered core recoveries for a few metres on the top of hole (surface weathering) and the rest of the fresh core rock is average 99.56% for the seventeen drill holes. The RQD (Rock-Quality Designation) was used with appropriate technics on all drill holes. It is a rough measure of the degree of jointing or fracture in a rock mass, measured as a percentage of the drill core in lengths of 10 cm or more.
Logging	 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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged. 	 All drill holes were geologically logged with industry standard methods including primary and secondary lithology, graphite and sulphides mineralisation visual content, alteration and structure and deformation included loss core interval. Geological units identified in core log were according with regional mapping and historical works, as well as trenching works results which were correlated with drill holes in geological sections to calculated inferred mineral resource estimates. Lithological contacts and structural features were observed and measured used industry standard methods. Rock-quality designation (RQD) was used for all drill hole to measures the degree of jointing or fracture on drill core measured as a percentage of the drill core in lengths of 10 cm or more for NQ size core. Seventeen drill holes (LR19-01 to LR19-17) were drilled with total length of 2,318 metre drilled to intersects under the surface the Carheil Graphite Zone, West and East parts. Each drill holes intersected graphite mineralisation intervals some of which are economic potential. Graphite flake sizes were not systematically visually logged. The grain size of graphite flakes varying considerably in the graphitic rock from mixed of very fine-grained to coarse-grained (0.1 to 2.0 mm). Coarse to very coarse-grained size flakes type (2.0 to 6.00 mm) occurs within fine-grained type (5-30%). It is from recrystallized fine-grained graphite flakes, in contact with other minerals such as altered minerals (mica, kyanite, garnet, quartz) and contact with massive or brecciated host rocks of the graphite mineralisation. However, the visual evaluation of grain size of graphite flake as well as graphite content within mineralized rocks (core and surface) is not accurate, metallurgical and grains size work tests should be necessary to do on core box samples.
Sub-sampling techniques and sample preparation	 If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled. 	 Sub-Sampling technics and preparation of channel and drill core samples have been made by certified ALS lab of Val D'Or, Qc, Canada which used a standard technic. All channel and half drill core samples were first drying of excessively wet samples in dry ovens, following by fine crushing to 70% passing 2mm, splitting with riffle splitter, which applied standard splitting procedure, and then after pulverized a split or total sample up to 250g to 85% passing 75µm.

Criteria	JORC Code explanation	Commentary
Quality of assay data and laboratory tests	 The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 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. Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established. 	 Total Graphitic Carbon (TCgr) and sulphur (S) from channel and drill core samples was analysed by certified ALS Labs of Val d'Or, Qc, Canada. The process of recovering all the graphical carbon (TCgr) and Sulphur (S) of the samples begins by acid leaching HCI (50%) to removes carbonate minerals, following by roasting to remove organic carbon and analysis for total Carbon by Leco furnace with 0.19 sample. The result of % Cgr ranging from 0.02 to 50% Cg rans Sulphur from 0.01 to 50% S. The sulphur (S) wasn't assayed for trench samples because the sulphides have been largely leached on the surface. A few eight (8) core samples were analysed for 52 geochemical elements including gold, silver, base metals et others. ALS lab used Aqua Regia with ICP-MS finish for all elements except gold which used Fire assay and AAS with 30g material ranging from 0.005 to 10 ppm Au. ALS lab used, for each batch of 70 to 115 assayed samples, several internal quality control analysis procedures such as blanks (2 to 5%) of each batch), several standards (2 to 5%) and duplicates pup samples (2 to 5%). All gave less of one standard deviation, rare between 1 to 2 s.d. of the normal mean. QA/QC protocols were adopted for the channel and drill programs. Total of 272 QA/QC samples were inserted into channel samples (433 sp) and drill core samples (861 sp) which represent 21.0% of total assayed (5%) included coarse blank samples, internal reference material (IRM) samples and field duplicate samples. About 28 QA/QC samples were inserted into 861 core samples (6.5%) included coarse blank samples, internal reference material (IRM) samples and field duplicate samples. About 245 QA/QC samples were inserted into 861 core samples (6.5%) included quartz vein (quartzite) with our graphite and sulphur. The results of other projects confirm its barren quartzite with average contents of 0.06% Cg rand 0.05% S. The field duplicat

Criteria	JORC Code explanation	Commentary
		 About 40 (20 x 2 patches of samples) second pulp duplicates from drill original core samples were analysed which produced by taking a second split after crushing and pulverising stage (85% passing 75µm). A good correlation coefficient occurs for the two patches of assayed samples with 0.990 and 0.997. About 20 samples of second reject duplicates from drill core original samples were analysed after pulverized a split or total sample up to 250g to 85% passing 75µm. A good correlation coefficient occurs with 0.995. About 68 second rejects duplicates from original drill core samples were selected and shipped to another laboratory (AGAT Lab) to assaying for Cgr only which used same preparation and analytical technics as A LS lab. About 58 internal reference materials (IRM) or standards of low, medium, and high grades graphitic Carbon pulp samples were inserted into assayed drill core samples. The results indicate good accuracy for data plot with less 2 standard deviation and a bias to higher grade standard with more than 2 standard deviation. This would affect 2.2% of the data and 7.7% of total QA/QC samples. About 9 medium grades (18.2% Cgr) from IRM were inserted into assayed channel samples. The results indicate good accuracy with less 2 standard deviation (-2o, +2o) of scatter plots population distribution (<i>a</i> = 0.32 % Cgr) with mean at 18.2% Cgr. The internal reference material (IRM) were prepared by Magnor Exploration. The low, med, and high grades IRM are pulp samples of graphitic carbon material from two sources : 1) the low and medium IRM are from trenches of lac Rainy and, 2) from a same Paleoproterozoic graphitic rocks deposit as lac Rainy from samples were samples to 20 kg on sites whose graphite carbon contents were known. The three small box samples were samples which were analysed. The medium IRM Ggr grades t
Verification of sampling and assaying	 The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage 	Assay data is reported as received with no data adjustment. Data is verified by the Company's consultants prior to disclosure.

Criteria	JORC Code explanation	Commentary
Location of data points	 (physical and electronic) protocols. Discuss any adjustment to assay data. 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. Specification of the grid system used. Quality and adequacy of topographic control. 	 All drill holes collar locations were picked up by certified surveyor using a Trimble DGPS which give about a dozen centimeter accuracy X, Y, and Z positions. The collar coordinates were entered into main database. The grid system used for the lac Rainy project is UTM North American Datum NAD 83, zone 19. The trench contour, channel line position, tracking, outcrop, road, etc. were pegged using hand-held Garmin GPS with about 3 meters accuracy and more than 5 meters for
Data spacing and distribution	 Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied. 	 elevation. Drill holes were drilled on sections on either 50m (east Carheil zone) and 100m (west Carheil zone) spacing. Trenches are scattered positioning and separated by 50m to 200m. Topographic constraints, as well as the presence of ponds and swamps prevented making trenches. Geological interpretation and mineralization continuity analysis indicates that data spacing is a part enough for indicated mineral resources of the west and east Carheil graphite zones, but it is insufficient to covering all both zones. Need more drill holes on NW and SE extensions of drilled holes grids and need more drill holes between drilled holes because the strong deformation of the mineralisation and the presence of barren rocks units intercalated within graphitic rock zones.
Orientation of data in relation to geological structure	 Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. 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. 	 Interpretation of the relationship between the trenches and drill holes orientation and the orientation of key mineralised structures indicates that mineralisation is likely to be perpendicular to strike continuity. Only the dip of holes was not at right angle, consequently the real thickness of the mineralized intervals was obtained by trigonometrical calculations. The orientation of trenching and drilling are not expected to introduce sampling bias
Sample security	The measures taken to ensure sample security.	• The sampling work undertaken on the trenches and on the boreholes was at all time supervised by certified geologists with more than 25 years of experience in this type of work and having respected industry protocol for sampling, sealing, storing and transporting.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	None completed by third parties. The Company's consultants vetted the database internally.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
 Mineral tenement and land tenure status 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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area. 	 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. 	Metals Australia Limited is the 100% owner of the Lac Rainy Graphite Project, pursuant to the binding acquisition agreement.
	There are no other material issues affecting the tenements.	
		Quebec Lithium Limited, a wholly owned subsidiary of Metals Australia, is the owner of 100% of the abovementioned graphite project and ownership of the individual CDC claims is with Quebec Lithium Limited.
		All tenements are in good standing and have been legally validated by a Quebec lawyer specialising in the field.
Exploration done	Acknowledgment and appraisal of exploration by other parties.	No modern exploration has been conducted by other parties.
~,		Government mapping records multiple graphitic carbon bearing zones within the project areas but no other data is available.
Geology	Deposit type, geological setting and style of mineralisation.	Lac Rainy Graphite Project
		The mineralisation at the Lac Rainy project is consistent with a crystalline flake graphite deposit hosted by metamorphic rocks of the Menihek Formation paraschist and the Sokoman Formation iron formation of the Gagnon Group of the Grenville Province. Mineralisation consists of graphite-rich bands interlayered with folded and foliated quartzo-feldspathic gneiss and schist. The graphite layers appear to be steeply dipping to subvertical and extend 100's metres to kilometres along strike. Layers trend in a NE to N direction, parallel to the principle metamorphic fabric in the rocks.
		The Lac Rainy and Lac Carheil graphite prospects were first discovered in 1989 and has been subject to some exploration over that time, however previous exploration was not conducted in a systematic manner and was focused more on the iron potential of the region which has meant that the true mineralisation and potential of the Lac Rainy Est graphite project has not been fully established.

Criteria	JORC Code explanation	Commentary
Drill hole Information	 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 collarhi If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	No drill hole information reported
Data aggregation methods	 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 	No data aggregation methods applied
	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	No metal equivalents reported
	 and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	No intercepts reported
Relationship between mineralisation widths and	 These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	 The geometry of the graphite mineralisation at the Lac Rainy Project is quite well understood and all drilling has been completed perpendicular to the strike of the mineralisation. The main hangingwall graphite unit is sub-vertical and appears to have a variable dip (~80- 90°). Several close spaced drillholes at Lac Rainy have highlighted the dip and azimuth of the mineralisedd zones
intercept lengths		 Lighter spaced drilling is required to determine the exact dip of the graphite unit but the drillhole information received to date confirms any previous interpretation, as
		modelled.
Diagrams	 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. 	Maps and tabulated data are included in body of the announcement.
Balanced reporting	 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. 	Full and representative reporting of relevant results.
Other substantive exploration data	 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. 	Material data regarding metallurgical testwork results included in report.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	 Complete a more comprehensive comminution test program including Bond rod mill grindability, SMC, and Low Energy Impact tests.

Criteria	JORC Code explanation	Commentary
	 Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. 	 Carry out systematic flowsheet development to improve the conditions of the rougher, primary cleaning, and secondary cleaning circuits. While the scoping level tests produced good concentrate grades, it may be possible that grinding conditions were too aggressive, thus leading to excessive flake degradation. Perform desulphurisation tests on the graphite rougher tailings to quantify the mass split between high-sulphur and low-sulphur tailings and to determine if a non-acid generating tailings product can be generated.