BlackEarth Minerals NL
ASX:BEM

12 August 2019

ASX Announcement

Maniry Project Produces Spherical Graphite Market Specifications

- **Spherical graphite from the Maniry project meets specifications consistent with those required by lithium-ion anode material manufacturers**
- **Spherical graphite production yields of up to 52% achieved vs industry average 40%**
- **Positive feedback received from spherical graphite producers and anode material manufacturers in China**
- **These results are a significant step toward end-user qualification**

BlackEarth Minerals NL (**ASX: BEM**) ("**BlackEarth**", the "**Company**") is pleased to announce that testing on concentrate from the Maniry Graphite Project (the "**Project**") in southern Madagascar, has confirmed its consistency with specifications required by lithium-ion anode material manufacturers.

As previously announced, Dorfner ANZAPLAN (Germany) ("**Dorfne**r") recently commenced a detailed program to test Maniry concentrate for suitability as anode material in lithium-ion batteries. The current test work aimed to target the optimised conditions for producing a spherical graphite product from a flake graphite flotation concentrate, for use in the battery industry. The testwork is being carried out on concentrate generated from the Company's first bulk sample pilot run, undertaken at ALS in Perth, and completed in December 2018.

In the interim report to BlackEarth, Dorfner ANZAPLAN stated that "the measured values for samples after optimisation are in the range of typical comparable products", a view which was reinforced by spherical graphite producers and anode material manufacturers in China who reviewed the full report. Spherical graphite production yields of up to 52% were achieved.

	Tap Density	D_{50}	Ratio D_{90}/D_{10}	BET	Yield Test
	[g/cm³]	[µm]	[-]	[m2/g]	[wt.-%]
Test Products					
BE S7	0.98	17.0	2.5	6.8	35
BE S8	0.93	15.5	2.7	6.7	46
BE S9	0.93	15.4	3.1	6.9	52

Figure 1: Spheroidization Results

The key characteristics listed above relate to the shape and roundness of the material, the particle size distribution and the specific surface area; all critical elements required by lithium-ion anode material manufacturers

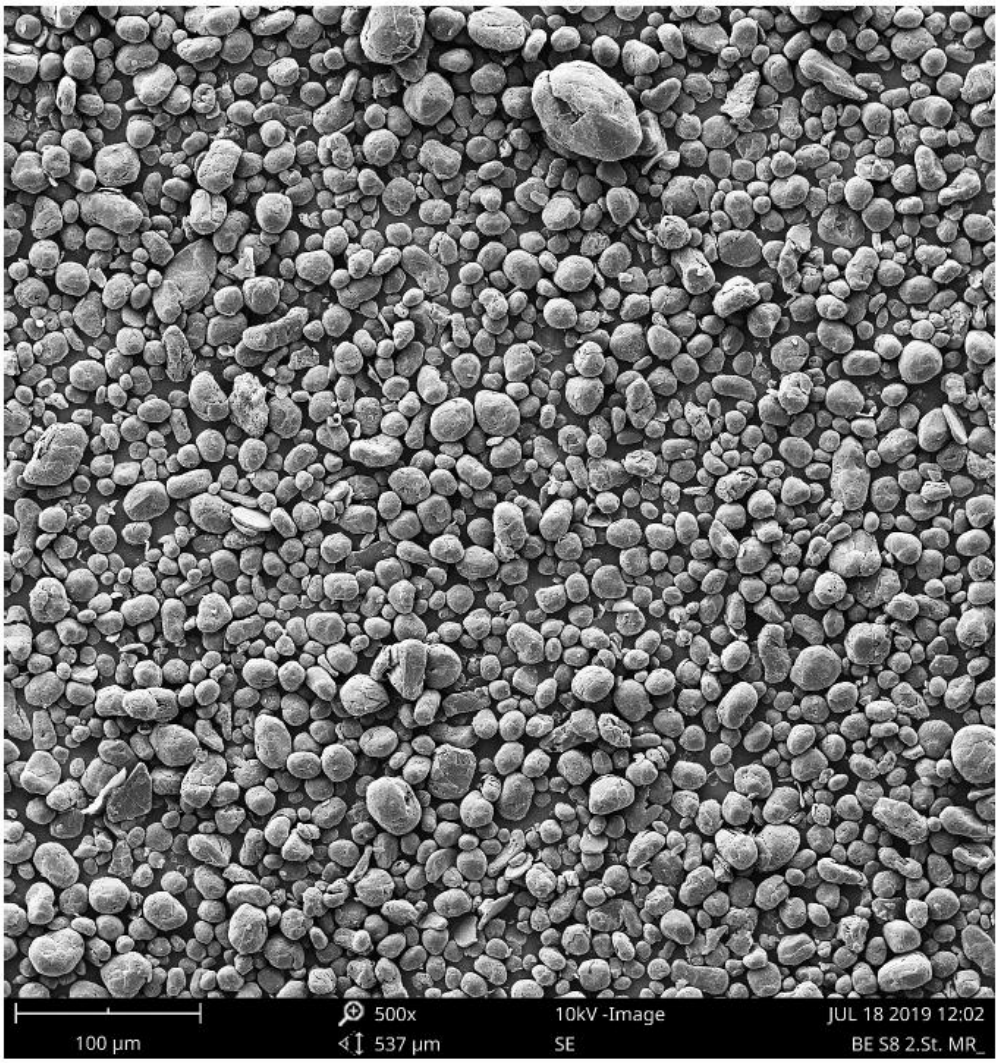

Figure 2: SEM Micrograph of Spheroidization Test BE S8; Magnification 500x

Test work is continuing at Dorfner in Germany with purification of spherical graphite (chemical, thermal, microwave assisted acid digestion) currently underway, with production of pouch cells and electrochemical characterisation work expected to start thereafter.

BlackEarth Minerals Managing Director, Mr Tom Revy, commented:

"This is a key milestone for BEM, as it highlights the Company's potential to meet the spherical graphite specifications which are favourable for offtake agreements. Based on feedback from end-users both in China and internationally, these results will greatly assist in the Company's current discussions. We look forward to continuing to advance the Maniry graphite project DFS over the coming months".

Following the release of our expandable graphite test results to the ASX on 4 June 2019, the results released today reinforce the potential for the Maniry Graphite Project to supply quality product into the growing high value global graphite markets."

CONTACTS

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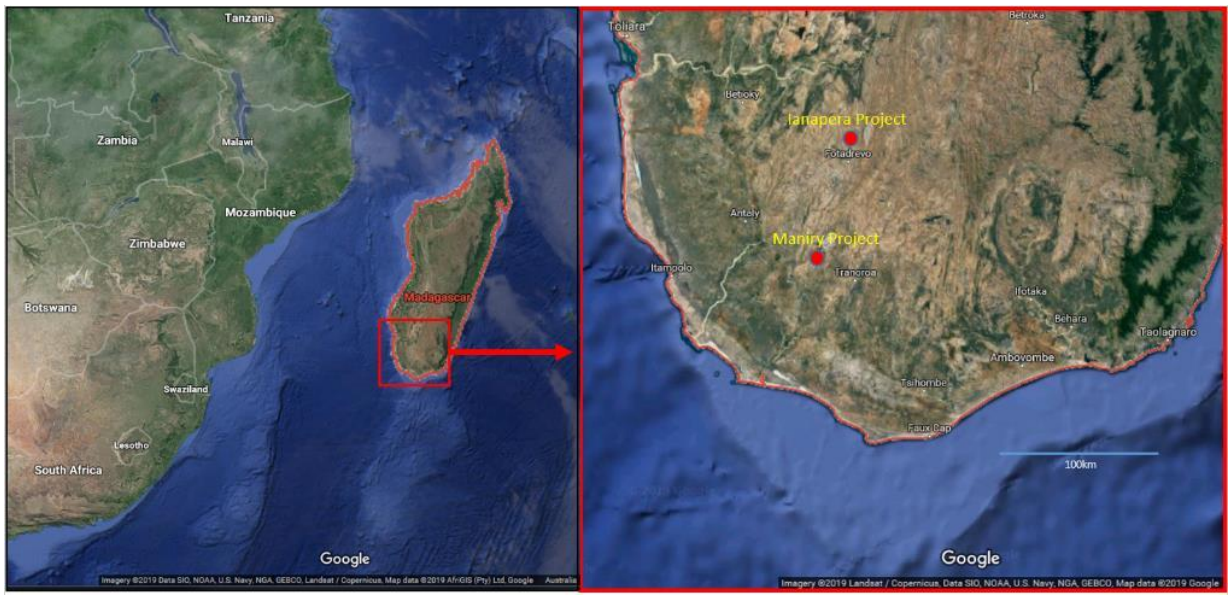
BlackEarth encourages investors to update their contact details to stay up to date with Company news and announcements here: http://www.blackearthminerals.com.au/update-details/

Competent Persons Statement

The information in this document relates to test work results that have been derived using samples from the Company's first pilot program and is based on information reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

About BlackEarth Minerals NL

BlackEarth Minerals NL (ASX:BEM) is an ASX listed company focussed primarily on the development of its 100% owned Madagascan Maniry and Ianapera graphite projects.



The location of the Company's primary graphite projects: Madagascar (Maniry & Ianapera - above)

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement for the scoping study results (ASX Announcement dated 30th January 2019 – "Positive Scoping Study Results for the Maniry Graphite Project"; and that all material assumptions and technical parameters underpinning the estimates of forecast financial information derived from a production target as outlined below continue to apply and have not materially changed.

Project Life	10 Years
NPV @ 10% pre-tax	US$ 103M
IRR pre-tax	42%
Project CAPEX Stage 1	US$ 41M (500ktpa ore)
Project CAPEX Stage 2	US$ 29M (1Mtpa ore)
Payback for Stages 1 & 2	3.7 years (Stage 1 - Only 2.7 years)
Annual graphite production	Av 30ktpa (Stage 1 – Years 1-3) Av 60ktpa (Stage 2 – Years 4+)

Project	Deposit	Tonnes (Mt)	TGC Grade (%)	Contained Tonnes (t)
Maniry	Razafy - Indicated	8	7.22	677,600
	Razafy - Inferred	3.2	6.8	217,600
	Razafy -Total	**11.2**	**7.1**	**795,200**
	Haja - Inferred	9	5.79	521,100
	Haja Total	**9**	**5.79**	**521,100**
	Total Resources	**20.2**	**6.51**	**1,316,300**

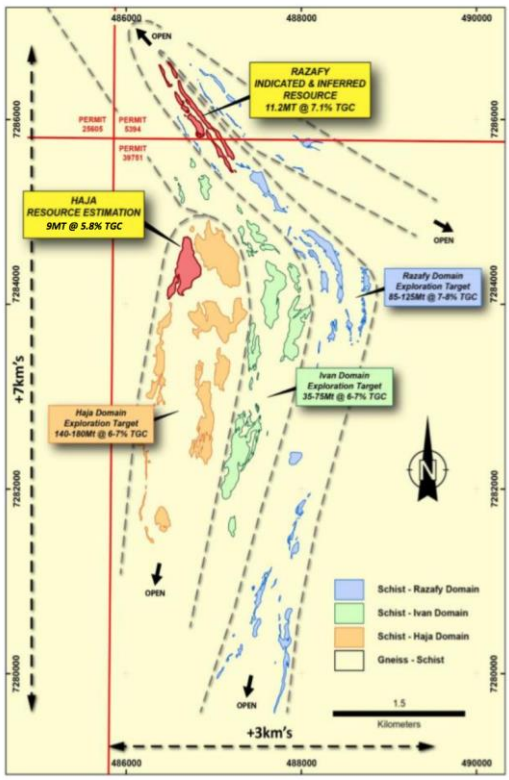
Razafy – Resources reported at 6% TGC with cut off constraining wireframe solids defined at a nominal 3% cut off grade

Haja – Resources reported at 5% TGC cut off with cut off constraining wireframe solids defined at a nominal 1.5% cut off grade

For Razafy CP statement refer to ASX release 14 August 2018 – "Update to Razafy Resources Estimation"

For Haja CP statement refer to ASX release 27th December 2018 – "Maiden Resource " Estimation for Haja"

For Maniry Exploration Target refer to ASX release 14 August 2018 – "Update Maniry Exploration Target"



Maniry Graphite Project – Overview
For Maniry exploration target refer to ASX release 14 August 2018 "Update Maniry Exploration Target"

JORC Code, 2012 Edition – Table 1
Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

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.*	Diamond drilling program - Sampling will consist of 2m composite samples of quarter core - typical 3-5Kg. Samples will be cut using a diamond blade core saw. Duplicate samples will be collected every 20th sample for QAQC purposes. CRM's will be inserted every 20th Sample for QAQC purposes. Sampling is considered to be comprehensive and representative. Remaining core was retained as a permeant reference. Total Graphitic Carbon content is measured at a laboratory using a CS analyser (Intertek Genalysis (Perth). Metallurgical samples were obtained from diamond drilling, ½ core. A split of crushed sample was used for head grade analysis, the remainder retained for metallurgical test work. Downstream testwork was based on a split sample taken from concentrate produced in previous Metallurgical testwork program where the results reported on 18th December 2018.
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).*	Diamond drilling. Core size is HQ and NQ typically in 0.5-1.5m runs. Core from a select number of holes will be orientated.
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 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.*	Core recovery is routinely recorded every metre by a trained geologist. No bias or relationship is observed at this point between recovery and grade. Recovery is typically +80% within weathered rock, and +95% in fresh rock in nearly all instances.
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 holes are logged by a qualified and experienced geologist. All logging included descriptions of geotechnical, mineralisation, structural and lithological aspects of the core and was digitally recorded using an industry standard code system. Core is formally photographed. Data collected offers sufficient detail for the purpose of interpretation and further studies.
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.*	Quarter core will be cut using a diamond core saw and collected for assay. 2 metre composite sampling are deemed to be comprehensive and representative for the style/type of mineralisation under investigation. Duplicate samples are taken (remaining quarter core) every 20th sample for QAQC purposes.

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 (i.e. lack of bias) and precision have been established.*	Assaying is undertaken by Intertek Genalysis in Perth (Aus). Samples are pulverised to 75 micron, roasted to 420deg and digested with a weak acid. Final analysis is undertaken by CS analyser (Code: C73/CSA). This method is considered total. Standards and duplicates are routinely inserted every 20th sample by the BEM technical team as well as internal QAQC from the laboratory. No issues been observed with QAQC. Metallurgical work was undertaken by ALS Metallurgy Perth, managed by BatteryLimits Pty Ltd. Metallurgical results previously reported December 2018 to generate the concentrate for testing. Downstream metallurgical testwork was completed by Dorfner ANZAPLAN -Germany. Industry standard analytical techniques have been employed including, particle size determination, tap density and surface area measurement. Graphite spheroidization amenability testing was undertaken using propriety industry methods including milling and classification equipment.
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 (physical and electronic) protocols.* · *Discuss any adjustment to assay data.*	Significant intersections have been verified by alternative company personnel. No twin holes have been undertaken. All date is recorded digitally using a standard logging system and files are stored in an industry standard database.
Location of data points	· *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 collars have been located using a DGPS (accurate to 1cm) Projection and grid systems used: UTM (WGS84 Z38S). The down hole azimuth and dip is recoded using a Magshot down hole instrument (Accurate to 1deg)
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.*	Sample intervals are typically between 0.5-2.0m taken consistently through all ore zones. This spacing and distribution is considered sufficient for mineral resource estimations.
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.*	The orientation of the drilling is not expected to introduce sampling bias. Most drill holes have intersected the mineralisation at a sufficient angle to the strike and dip of the mineralised units.
Sample security	· *The measures taken to ensure sample security.*	Samples are cut and sampled on site before being transported to the company sample preparation facility in Antananarivo for preparation. Samples will then be freighted by DHL to Intertek Genalysis in Perth (Aus) for assay. It is reasoned that the samples will be under sufficient security.
Audits or reviews	· *The results of any audits or reviews of sampling techniques and data.*	Sampling procedures has been reviewed by an external auditors Sigma Blue Pty. Ltd. and OMNI GeoX Pty. Ltd. plus site visits at the beginning of the program. All testwork is reviewed by Independent consultant

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

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.*	Work was undertaken upon permits 5394 & 39751 • The tenements are located within the inland South West of Madagascar approximately centred on the township of Ampanihy. • Tenements are held 100% by Mada-Aust SARL Ultimately a wholly owned subsidiary of BlackEarth Minerals NL. through Madagascar Graphite Ltd. • No overriding royalties are in place • There is no native title agreement required • Tenure does not coincide with any historical sites or national parkland • Semi-arid, thinly vegetated, relatively flat to low lying hills with sub-cropping rock. • Tenements are currently secure and in good standing.
Exploration done by other parties	· *Acknowledgment and appraisal of exploration by other parties.*	Regional mapping by BRGM, Historical diamond drilling and trenching by Malagasy Minerals. Ltd. (2014-2016)
Geology	· *Deposit type, geological setting and style of mineralisation.*	The project overlies a prominent 20km wide zone consisting of a folded assemblage of graphite and quartz-feldspar schists (<60% graphite), quartzite and marble units, with lesser intercalated amphibolite and leucogneiss. This zone, termed the Ampanihy Belt is a core component of the Neoproterozoic Graphite System. The belt is interpreted as a ductile shear zone accreted from rocks of volcanic and sedimentary origins.
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:* o *easting and northing of the drill hole collar* o *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* o *dip and azimuth of the hole* o *down hole length and interception depth* o *hole length.* · *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.*	Metallurgical testwork was undertaken on the drill hole samples referred to in the 12 Dec 18 announcement.
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.* · *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.* · *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Metallurgical samples were composited across sample intervals interpreted to be geological units. A master composite was compiled from sub composites for further metallurgical testwork representative of the modelled orebody No Metal equivalent values reported
	· *These relationships are particularly important in the reporting of Exploration Results.*	Drilling has intersected the mineralised units at near perpendicular to strike and dip. True

Relationship between mineralisation widths and intercept lengths	· *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').*	widths can be observed through the multiple holes drilled on sections.
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.*	Refer to figures within text 12 Dec 18 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.*	All significant results reported
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.*	Refer to BEM Prospectus.
Further work	· *The nature and scale of planned further work (eg 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.*	Further exploration proximally to Razafy. Further metallurgical testwork planned Additional downstream processing including purification of spheronised graphite products for Li-ion battery anodes. This will be followed by electrochemical cell testing to examine the purified, spheronised material's performance