Mineral Exploration
Halloysite-Kaolin

Archer Materials Limited (ACN: 123 993 233)
Ground Floor, 28 Greenhill Road, SA 5034

ASX Announcement (ASX:AXE) 4 December 2019

Drilling completed at Franklyn Halloysite-Kaolin Project

Highlights

- Drilling completed at Franklyn Halloysite-Kaolin Project.
- A total of 21 holes were drilled with almost all holes intersecting the target mineralisation.
- Composite bulk samples have been prepared and submitted to the laboratory for assay and XRD testing to determine the grade and halloysite content of the mineralisation.
- Assay and drill results from Franklyn expected during the next 2 to 4 weeks.

Archer Materials Limited ("Archer", "Company") is pleased to provide this update on drilling at the Company's 100% owned Franklyn Halloysite-Kaolin Project ("Franklyn Project"). The Franklyn Project is located approximately 220km north of Adelaide, South Australia (Fig. 1).

Archer has completed the aircore drill program at the Company's Franklyn Halloysite-Kaolin Project. A total of 21 holes were drilled for a total of 676 drill metres and an average depth of 32 metres per hole. The drill program was originally designed to drill 18 holes to an average depth of 47 metres for a total of 850 drill metres (ASX announcement 18 November 2019). The kaolin was found to be closer to the surface than originally anticipated meaning that shallower drill holes were required.

All holes were drilled either adjacent to, or on, existing tracks (Fig. 1) to avoid the need to excavate new tracks and minimise costs. The kaolin mineralisation at Franklyn covers an extensive area and the positioning of the existing tracks allowed Archer to drill test the weathered granite that forms the kaolin mineralisation.

All drill holes samples have been submitted to the laboratory for testing and assay. Samples will be screened, assayed to determine kaolin grade and then analysed (X-Ray Diffraction (XRD)) to determine the halloysite content. Results from all test work are expected in the next 2 to 4 weeks.

Commenting on the drill results, Archer Executive Chairman Greg English said, "We are very pleased with the results from our maiden drill program at Franklyn. The kaolin mineralisation appears shallower than originally anticipated making any future mining operation cheaper and easier"

"The geological observations from the 21 holes drilled at Franklyn, confirms the presence and extent of the kaolin mineralisation previously report by other explorers."

"We expect to be able to report the assay and other laboratory results during the next 2 to 4 weeks" said Mr English.

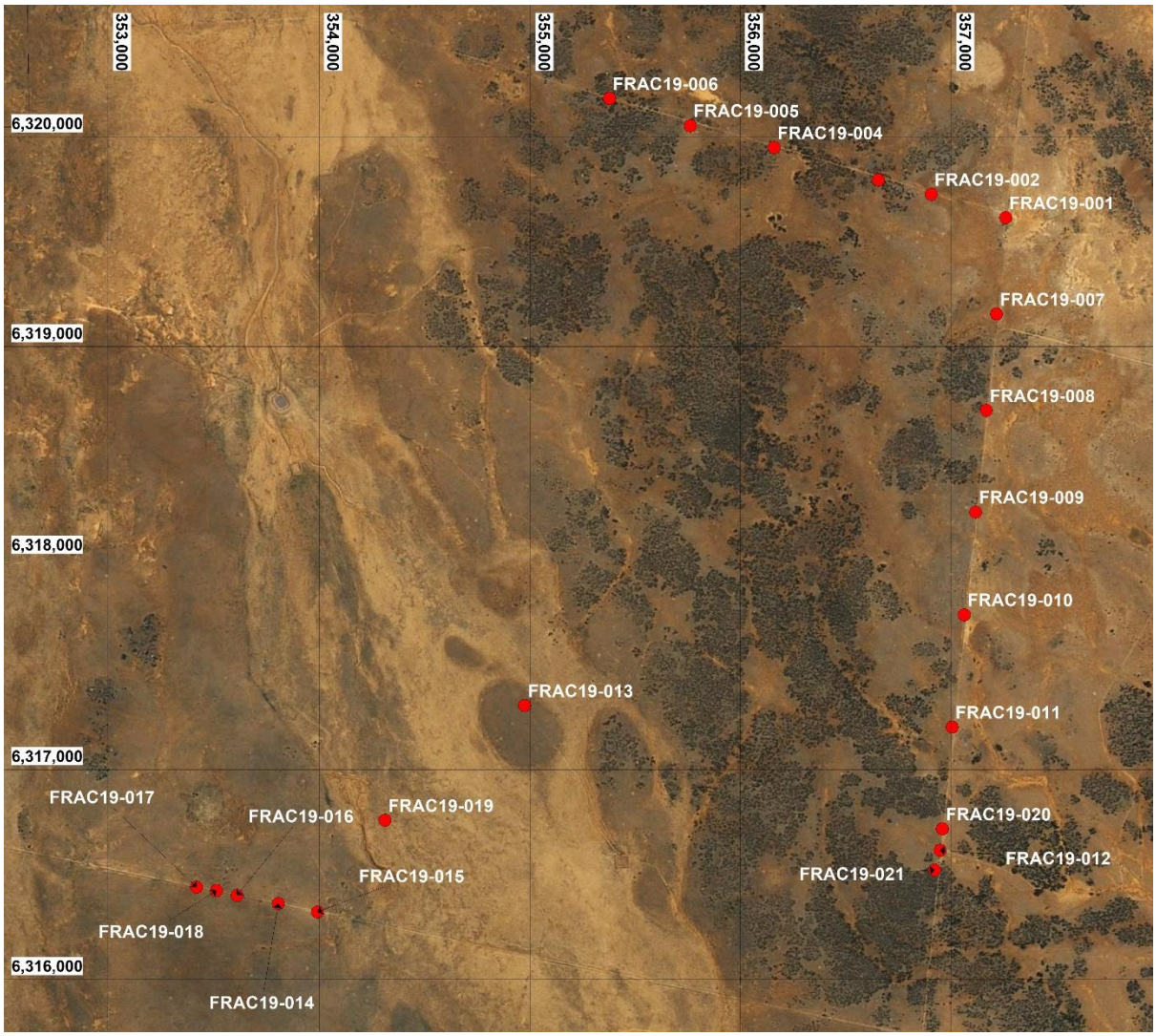

Fig. 1. Google Earth image with collar location of drill holes at Franklyn Project and 1km x 1km grid (e.g. distance from 6,318,000m to 6,319,00m = 1km).

Drill results

Weathered Bendigo granite kaolinitic clays were intersected in 18 of the holes with siltstones intersected in other three holes (drill holes FRAC19-12, 19-13 and 19-18). The clays vary in colour from white, through to cream, yellow and pink in places, with the red colours potentially being derived from weathered (hematite rich) veins. The rock and clay profiles for drill holes FRAC 19-04, 19-16 and 19-21 are shown below (Image 1).

The sample collected by Archer from the Franklyn drilling appears to be consistent with the results from early explorers and confirm the presence of the previously discovered kaolin mineralisation. However, Archer will not be able to confirm the quality of the mineralisation until all assay and other test results are received and analysed.

Image 1. Photos of rock chip trays showing rock chip samples from one metre intervals in drill holes FRAC 19-04 (left), FRAC 19-16 (middle) and FRAC 19-21 (right).

About the Franklyn Project

Archer has calculated an Exploration Target at Franklyn of 45Mt – 91Mt at a grade of 30 – 36% Al_2O_3 (-45 µm size fraction). The Franklyn Exploration Target is in addition to the Eyre Peninsula Kaolin Project Exploration Target of 55Mt – 130Mt at a grade of 33 – 36% Al_2O_3 (-53 µm size fraction) (ASX announcement 19/08/19).

Investors should be aware that the potential quantity and grade of the Exploration Targets reported are conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource at Franklyn or the Eyre Peninsula.

The Franklyn Exploration Target is based on historical drilling, across 40 Rotary drill holes and auger drilling was undertaken by the SA Government (1971 to 1992). This historical drilling intersected substantial widths of kaolin mineralisation over an extensive area during their search for copper and gold mineralisation.

The kaolin mineralisation at Franklyn is formed for the weathering of the Delamerian Granite (Bendigo Granite) and is covered by Cainozoic transported sediments.

Industry Background

Kaolin and halloysite are alumina-based clays, that can naturally occur intermixed, and are part of a larger A$3 billion construction materials industry in Australia[†]. These materials have recently emerged as a potential feedstock in processing high-value and hard-to-substitute high-purity alumina (HPA)[‡] that could be used in deep-tech applications such as light-emitting diodes and lithium-ion batteries; with halloysite having a nanostructure that may allow its use as an efficient catalyst in the petrochemicals industry.

Next Steps

The drilling at Franklyn is complete and Archer expects to receive and report the results from the drilling in the next 2 to 4 weeks.

Image 2. Drill rig on site at Franklyn Project.

[†] https://www.ibisworld.com.au/industry-trends/market-research-reports/mining/rock-limestone-clay-mining.html
[‡] https://www.qut.edu.au/news?news-id=153588

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About Archer

Archer provides shareholders exposure to financial returns from innovative technologies and the materials that underpin them. The Company's strategy is to build an industry-leading Materials Technology company, that delivers maximum value to shareholders through the commercialisation of assets at various stages of the materials lifecycle. Archer has strong intellectual property, broad-scope mineral tenements, world-class in-house expertise, a diverse advanced materials inventory, and access to over $300 million of R&D infrastructure.

The Board of Archer authorised this announcement to be given to ASX.

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For more information about Archer's activities, please visit our:

Website:
https://archerx.com.au/

Twitter:
https://twitter.com/archerxau?lang=en

YouTube:
https://bit.ly/2UKBBmG

Medium:
https://medium.com/@ArcherX

Sign up to our Newsletter:
http://eepurl.com/dKosXI

Competent Person Statement

The information in this announcement that relates to Exploration Results is based on information compiled by Mr Wade Bollenhagen, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Archer Materials Limited.

Mr Bollenhagen 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. Bollenhagen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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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 (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole 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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	• All samples were collected through a cyclone into plastic bags, composite samples were created form selected intervals, which have been sent for chemical analyses. • Intervals were determined to be kaolin dominant through visual observations, laboratory testing of this assumption is then undertaken. •
Drilling Techniques	• 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.).	• Airocre drilling was undertaken to collect the sample, rod diameter was 75mm.
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.	• No measurements of recovery were undertaken, all drilling was dry, loss to fines was considered to minimal.

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Criteria	JORC Code Explanation	Commentary
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 logging was qualitative, all sample intervals were recorded.
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.	• From the raw sample a 200gm composite sample was creted as a first pass analyses. • Subsequent samples, representing the single metre intervals may be taken and submitted for analyses if the composite samples support this.
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 (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• All wet chemistry laboratory work will be undertaken by ALS, which included the blunging and screening work. • ALS Geochemistry code ME-XRF26 • All work is very early indicatory work on random samples that are not representative of an ore body. • All Industry Standard practices are used in laboratory. • No assays are being reported.

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Criteria	JORC Code Explanation	Commentary
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.	• No assays are being reported. • The program was designed to test sites nearby to historically drilled holes, that have have had kaolin reported in them (the quality the sample medium of those historical holes was not sufficient to base any plans on and as such these holes were drilled and fresh material collected. • No twinning has occurred, but holes have been drilled within 50m of historical ones. • Data entry was by paper logs in the field, entered into spreadsheet at a ltter point.
Location of Data Points	• Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Sample positions are shown in images and co-ordinates reported. • Grid system MGA94 Zone 54, a hand held garmin GPS was used for co-ordinate recording.
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.	• The locations of the holes were determined by access and were a first pass check of historical drilling, as such they were drilled close to historical holes. • The first pass sampling has been undertaken on variably composited intervals, where necessary single metre intervals will be analysed if the results provide support for this.

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Criteria	JORC Code Explanation	Commentary
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 types of rocks that have been weathered to produce the kaolin cover very large aerial extents, far beyond the areas deemed exploration targets. • Faults and other fracture type systems can enhance local weathering, i.e. deepen the system, it is unknown what influence if any these have played in the kaolin development,
Sample Security	• The measures taken to ensure sample security.	• All samples were transported from site to secure storage by the competent person.
Audits or Reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits undertaken.

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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.	• Tenement status confirmed on SARIG • All work being reported is from EL 6160, SA Exploratoin Pty Ltd (a subsidiary of AXE) owns the tenement. • The granted tenement is in good standing with no known impositions.
Exploration Done by Other Parties	• Acknowledgment and appraisal of exploration by other parties.	• SA govt 1971 to 1973 & 1992, exploring for base metals and gold. • BHP, 1980, exploring for base metals and gold. • CRA 1985, exploring for base metals and gold.
Geology	• Deposit type, geological setting and style of mineralisation.	• Deep weathering of the Bendigo Granite has resulted in the development of kaolin. • The area in parts has granite outcropping and areas overlain with transported sediments up to 23 m thick, it is expected that these transported sediments increase in thickness ot the East.

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<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
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<td>Drillhole Information</td>
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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
Downhole length and interception depth
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.

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<table>
<tr><th>Hole Id</th><th>Easting</th><th>Northing</th><th>Depth (m)</th></tr>
<tr><td>FRAC19-001</td><td>357258</td><td>6319615</td><td>35</td></tr>
<tr><td>FRAC19-002</td><td>356904</td><td>6319726</td><td>3</td></tr>
<tr><td>FRAC19-003</td><td>356654</td><td>6319794</td><td>24</td></tr>
<tr><td>FRAC19-004</td><td>356159</td><td>6319947</td><td>45</td></tr>
<tr><td>FRAC19-005</td><td>355761</td><td>6320051</td><td>42</td></tr>
<tr><td>FRAC19-006</td><td>355377</td><td>6320180</td><td>72</td></tr>
<tr><td>FRAC19-007</td><td>357214</td><td>6319157</td><td>4</td></tr>
<tr><td>FRAC19-008</td><td>357166</td><td>6318700</td><td>30</td></tr>
<tr><td>FRAC19-009</td><td>357115</td><td>6318219</td><td>13</td></tr>
<tr><td>FRAC19-010</td><td>357061</td><td>6317732</td><td>23</td></tr>
<tr><td>FRAC19-011</td><td>357004</td><td>6317199</td><td>24</td></tr>
<tr><td>FRAC19-012</td><td>356946</td><td>6316614</td><td>16</td></tr>
<tr><td>FRAC19-013</td><td>354974</td><td>6317301</td><td>15</td></tr>
<tr><td>FRAC19-014</td><td>353805</td><td>6316362</td><td>45</td></tr>
<tr><td>FRAC19-015</td><td>353991</td><td>6316323</td><td>40</td></tr>
<tr><td>FRAC19-016</td><td>353610</td><td>6316401</td><td>45</td></tr>
<tr><td>FRAC19-017</td><td>353417</td><td>6316441</td><td>40</td></tr>
<tr><td>FRAC19-018</td><td>353513</td><td>6316424</td><td>40</td></tr>
<tr><td>FRAC19-019</td><td>354312</td><td>6316758</td><td>42</td></tr>
<tr><td>FRAC19-020</td><td>356957</td><td>6316717</td><td>33</td></tr>
<tr><td>FRAC19-021</td><td>356920</td><td>6316522</td><td>45</td></tr>
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Criteria	JORC Code Explanation	Commentary
Data Aggregation Methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. • 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.	• No assays being reported.
Relationship Between Mineralisation Widths and Intercept Lengths	• 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 downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').	• No assays being reported.
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.	• Plan locations of drill holes are shown in the body of th report.
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.	• The reporting is considered to be balanced.
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.	• None to report at this stage of the review.

Criteria	JORC Code Explanation	Commentary
Further Work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• Further exploration work is required to advance the projects towards a more certain nature, which will hopefully lead to a confidence level where resources can be estimated.