

27 December 2023

## ALPHA PROJECT DEVELOPMENT UPDATE

# TEST PROGRAM FOUR DELIVERS FIRST INDICATION OF BITUMINOUS PRODUCTS AS LICELLA COMPLETES SUPERCRITICAL WATER PROGRAM

Significant milestones achieved as liquefaction test program nears completion

## **Key Points:**

- Technix, in collaboration with PROCOM, have provided an initial indication of bituminous product potential from the bulk samples and this is considered to be a highly significant development for the Alpha Torbanite Project.
- Licella<sup>™</sup> supercritical water test program is now complete with results assisting PROCOM and Monash University in their ongoing liquefaction test program.
- Monash University program gathering momentum with 9 of 16 test runs now complete and Test Program Four expected to be completed in early 2024.

Greenvale Energy Limited (ASX: **GRV**, "**Greenvale**" or "**the Company**") is pleased to report several positive developments and interim outcomes with the ongoing liquefaction test program (Test Program Four) for its 100%-owned Alpha Torbanite Project in Queensland.

In a significant milestone for Test Program Four, Greenvale's technical bitumen advisors, Technix, have assessed the initial liquefaction bulk samples from PROCOM and separated the remaining solids and the produced oil. Initial testing of that bulk oil indicates the potential for the Alpha Project to supply bituminous products of commercial interest to market.

This is a highly significant development for the Project, noting that bitumen is generally produced by blending suitable feedstock to achieve certain properties.

Technix has confirmed that the full range oil separated out from the bulk sample provided by PROCOM has very promising properties. The asphaltene content of the produced oil extract is higher than that of the standard bitumen at approximately 55% (55.3% heptane insoluble), while the asphaltene content of standard bitumen is varies up to 25%.

Without any additives, the viscosity of the cannelite and torbanite extract from core samples is similar to 60/70 penetration grade bitumen. However, the penetration is significantly less and therefore **the product is considered to be of high quality as a blend stock**. With respect to the Australian Standard, the crude extract classification assessed by Technix is close to Class 600 bitumen, with its viscosity at 60C being slightly higher.



Class 600 bitumen refers to a specific grade of bitumen used for road construction and pavement applications. The classification is determined based on various factors, including penetration values, softening points and other rheological properties. These properties help in specifying the suitability of bitumen for different climate conditions and road construction requirements.

In general, higher-grade bitumen, such as Class 600, may attract a premium compared to lower-grade bitumen such as Class 300. This premium is typically because higher-grade bitumen often requires additional refining processes to meet specific performance characteristics.

The observed extract requires further analysis and understanding of the blending potential and/or the need for modification by Technix to satisfy the requirements of standard bitumen used in road pavement applications. The early indications are extremely promising for a high value product.

A second bulk sample was also prepared by PROCOM using an oil as carrier and concentrating it over successive production batches. Analysis of this bulk sample at Technix will begin in the New Year.

In addition to the study on bitumen properties from two bulk samples of products, a number of other studies are focusing on the evaluation of Alpha drill core samples to establish whether they will strongly convert to suitable oils under similar processing conditions to the successful trials used in Test Programs 1-3 on outcrop samples. This work is being undertaken on both oil and water as carriers for the liquefaction process. To date, the emphasis has been on the use of water as the carrier.

Licella<sup>TM</sup> has now completed its supercritical water program, marking another step forward in Test Program Four under PROCOM direction. The information obtained from Licella<sup>TM</sup> test apparatus results has demonstrated the trends of increased conversion with Supercritical density as reported in literature. Analysis of the results will providing sound input to the broader based program being undertaken by Monash University to evaluate all the different seams in four drill holes and optimise processing conditions.

Commenting on the latest advancements in Test Program Four, Greenvale CEO, Mark Turner, said: "The news coming from both the Technix and Licella programs is highly positive and moves us ever closer to the delivery of the maiden PFS for the Alpha Project.

"It is very exciting to have the first real indication of the potential commercial products that can be produced from the Alpha Deposit. And while there is some way to go before, we have our first bitumen certified, it is a big step in the right direction — a step towards eventual commercialisation and achieving our goal of becoming Australia's only end-to-end producer of bituminous products.

"I would also like to thank the team at Licella for their work to date, investigating supercritical water properties at different densities. Equipment limitations limited the supercritical density to around 0.2 g/ml, with the high density of around 0.35g/ml being targeted in the Monash University program. The results show good promise and directionally correlate with research work by others which indicates further upside in yields and product type.

"Finally, with 9 out of 16 test runs now complete by Monash, I look forward to updating our shareholders early in the New Year with the completion of Test Program Four."



# <u>Test Program 4 – Background:</u>

Building on the successful outcomes of Test Program Three, which utilised outcrop samples, Test Program Four has focused on investigating the liquefaction of drill core seams obtained from the Alpha deposit. The ongoing testing involves a comprehensive array of studies being coordinated by PROCOM and involving leaders in their respective fields. The program encompasses diverse experiments being undertaken on core-derived samples, employing liquefaction techniques with supercritical water (conducted by Licella<sup>TM</sup> and Monash University), liquefaction with oil as a carrier (performed by PROCOM and Monash University), and bitumen assessments (carried out by Technix) on bulk samples generated by PROCOM in a 7-litre Parr reactor using toluene and shale-derived oil as distinct carriers.

The primary aims of Test Program Four are threefold:

- First, to determine the experimental conditions that provide adequate production of heavy oils (including, but not limited to, Pre-Asphaltene, Asphaltene and heavy oils which can be utilized in making bitumen), understand the yield products generated and the effectiveness of water as a carrier in oil shale liquefaction tests;
- Secondly, to use the results and insights from previous testing programs as a benchmark to support the outcomes and enable comparisons between various samples (outcrop and core of main seams); and
- Thirdly, to understand the heavy oils produced under different conditions to provide market ready products.

The Alpha deposit consists of three major seams, with one Torbanite – LT seam located between two Cannelite Coal seams, known as upper Cannel Coal – L1 and low Cannelite Coal – L2. There is core available for the current programs from four drill holes available, namely GM09CR, GM14C, GM21CR and GM28C (Figure 1).

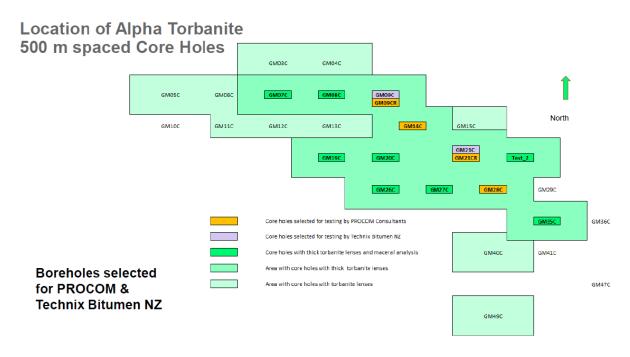


Figure 1: Location of drill holes in deposit - Extract from SRK Consulting report.



## Technix Bitumen Assessment:

The recent tests conducted by Technix involved a 2.5L sample of cannelite and torbanite processed extract derived by using toluene as the carrier for the Alpha Torbanite Project, produced by PROCOM. The separation of derived oil from the carrier (toluene) and the remaining reaction solids was comprehensive, involved homogenising the sample, heating, filtration, toluene washes and separation of the remaining toluene solvent at 110°C, resulting in a 100% heavy oil Alpha Shale derived extract.

Rigorous testing followed, encompassing dynamic viscosity, penetration, and asphaltene content.

#### Test methods:

Dynamic viscosity: ASTM D2171 or equivalent Australian Standards

Penetration: ASTM D5. or equivalent Australian Standards

SARA Analysis: ASTM D3279 or equivalent Australian Standards

#### Results:

Results indicate a total residue of 900g after filtration (not fully dried) and a total crude extract of 128g after solvent removal. Viscosity measurements at 60°C (887.00 Pas) and 135°C (0.422 Pas). Penetration measured at 32 dmm, and Analysis showed 55.3% heptane insoluble (asphaltene).

The above results are encouraging. However, toluene will not be used as a carrier in a commercial plant, and it was used experimentally to allow easy separation of the produced oils. Toluene will not play a role in the Alpha processing pathway on a large scale. Consequently, the precise identification of products and determination of yields is not final but directionally they a good indicative measure. The derived oil-based bulk sample analyses which will soon follow will help close this loop.

### **Next Steps:**

The second bulk sample will be separated and the oils analysed by Technix. This will require a more involved separation procedure compared with the toluene-based product already analysed. PROCOM has recommended distillation at atmospheric pressures and under vacuum to split the oil carrier derived products. A vacuum cut at about 340C was suggested to produce the base for bitumen analyses. Analysis of distillation products will provide insights into the typical production process and will allow the evaluation of the heavier and the lighter oils which can both be utilised in bitumen product formulations.

The methods used to separate out asphaltenes from the remaining shale solids will be standardised according to good laboratory practices to ensure consistency in results and their interpretation.

Additional analytical tests have been recommended, including TGA on liquid sample to provide information on the oil components within a specific temperature range. TGA, Proximate and Ultimate Analysis on the solids will identify any organic materials that may still be present and further characterise the sample.



# Licella<sup>TM</sup> Test Program:

#### **Process:**

The Licella Test Program was driven by PROCOM to better understand the impact of moving from very small (0.1 litre) reactors (University equipment) to 2 litre. Licella has broad experience in conducting such tests and was one of the main reasons they were chosen to carry out this test program.

Borehole GM14 (see Figure 1) was selected for the experiments, with the objective of only using one sample to investigate varying supercritical water densities. A proportioned-blended sample, weighing 1kg, was cut from ground ore from the respective seams relative to the thickness of the three seams of the Well 14. The refrigerated samples were initially prepared by grinding the quartered core to approximately 200 microns, split, measured and blended. The densities of the seams are assumed to be equal (SG range of 1.2 to 1.4) and so the relative amounts of seams for a typical blend have been simplified to a direct relative thickness. The utilisation of all three seams jointly would simplify mining and so it is assumed for testing that the full face will be the typical feed to the processing plant.

Using this batch sample, only four (4) liquefaction runs were initially proposed at varying supercritical densities as literature suggests improved yields at a critical density of about 0.35 g/ml. The study equipment is somewhat limiting and so only minor increments in density were studied in this program however they were higher than precious test results from Test Program 3. Sufficient sample remains to undertake further tests if necessary to better understand the seam. A suitable conversion >60% of the organic matter with over 20% to asphaltene or materials which can be utilized in bitumen is the notional target.

The liquefaction reactions were carried out in a stirred batch autoclave reactor, with a capacity of 2 litres. In a typical experiment, measured amounts of water and the powdered sample (blend of L1, LT, L2) without catalyst were charged into the reactor for each run.

The reactor was purged and pressurized using nitrogen with the objective of achieving an autogenic pressure of 220-250 bar at a desired temperature of 400 °C. The suggested initial experimental pathway was to optimize and maximize the reactor fill volume to a safe level such that a working pressure of 250 bar at 400 °C can safely be achieved (Table 2) under the supercritical conditions.

Accordingly, the reactor was heated and the sample in the reactor stirred during the experiment. Once the target temperature of  $400^{\circ}$ C is achieved, the temperature is then held for around 30 minutes prior to cooling the system. For each test, the pressure and temperature profiles were recorded during the experiments (Figures 6 – 9). After the cooling stage, gas samples are taken, and the corresponding pressure and temperature were recorded and used to estimate the gas evolution during the experiments.

The gas, liquid and solid products were separately collected for further analysis. In addition, the cooling coil and stirrer of the rig system were rinsed with THF to dissolve any adherent bio-oil and solids. The liquid/solid samples were held in suitable containers and dispatched to Petrolab in SA, for further characterization. The gas sample was collected in a 3-litre canister and sent to SGS lab in NSW for further analysis.

The liquefaction tests were conducted without using a catalyst on the basis of results from previous tests using Outcrop material.



#### Workflow:

The products from the autoclave reactor are a mixture of solids, water, oil and gas. Any heavy oils produced tend to precipitate on the solids or adhere to the walls of the reactor as they are not generally soluble in the water phase at normal conditions.

Figure 2 demonstrates the product analyses flowchart and analytical procedures. From each test, a gas sample is preferably collected for GC analysis. The liquid (oil, water) is first decanted from the solids (oily solids) and the components (liquids and solid) are analyzed separately by a series of standard laboratory analyses. The water phase will also be analysed in subsequent testing.

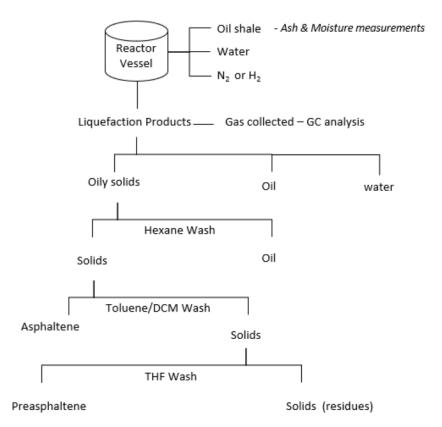


Figure 2: Workflow and analytical procedure

For the oily solids, Asphaltene (A) and Pre-asphaltene (PA) contents are extracted through a sequence of Hexane, Toluene or Dichloromethane (DCM) and Tetrahydrofuran (THF) washes. The separated oily solid is first washed with Hexane, the remaining insoluble materials (Hexane Insoluble – HI) are separated by filtration and the Hexane soluble oil is obtained after Hexane evaporation.

The resultant solids (Hexane Insoluble – HI) are further washed with Toluene (by Petrolab) or/and dichloromethane (by Monash University). The collected solids are filtered out, Toluene/DCM is evaporated, and asphaltene contents determined. Similarly, the remaining solids (Toluene and DCM Insoluble) are rewashed using Tetrahydrofuran as solvent. The solids (Tetrahydrofuran Insoluble) are collected by filtration, Tetrahydrofuran is evaporated from the liquid and remaining solids and the pre-asphaltene content determined.



### Results:

 Table 1: Summary of Licella Liquefaction Results (on as received basis)

Sample ID	Sample Type	W (wt%)	G (wt%)	O (wt%)	A (wt%)	PA (wt%)	Residue (wt%)	Conversion <sup>1</sup> (wt%)
	· ypc	(****/*/	(****/*/	(****)	(****)	(****/0)	(****)	(11170)
L-Test 1	Blend	7.59	7.79	17.28	3.01	1.00	63.33	29.08
L-Test 2	Blend	7.59	6.76	24.23	2.37	1.31	57.74	34.67
L-Test 3	Blend <sup>2</sup>		8.44					
L-Test 4	Blend	7.59	6.03	26.72	1.67	0.92	57.06	35.35
L-Test 5	Blend <sup>3</sup>	7.59	5.92	18.62	1.46	2.05	64.35	28.06

- The conversion excludes water yield (wt%). [W Water, G Gas, O Oil, A Asphaltenes, PA Pre Asphaltenes]
   Results pending
   5.92 wt% of gas was calculated assuming gas weight of 3g, test was aborted due to system leaks, so results are not necessarily reliable.

Unfortunately, the majority of trials fell short of achieving a sufficiently high supercritical fluid density of around 0.35g/ml as indicated in literature as an optimal for the conversion of the torbanite, cannelite and blend samples. The target conditions include holding the reagents at about 400°C for 30 minutes in the reactors of various sizes and methods of agitation.

The collective findings indicate that conversions ranging from 28 wt% to 35 wt% (Table 1) can be achieved using water as a carrier under the conditions of the experiments. There is potential for improved yields if the correct conditions can be found. Catalysts have also not been investigated in this program.

Notably, Licella<sup>TM</sup>'s liquefaction tests attained the highest conversions, which are reporting primarily as oil, with lower asphaltene and pre-asphaltene yields compared to Monash University's tests utilising water as the carrier.

Gas yields of about 8 wt% on an as received basis appeared relatively consistent between both testing programs with water as a carrier (results appear to be different when oil is used as the carrier).

Tests of supercritical water densities (0.1-0.16g/ml) at the lower end of the optimal range clearly indicate improved conversions with increasing density. Yields of pre/asphaltene components are however low.

There are too few results available as yet to make a definitive call on the best conditions and how the different seams affect yield with water as carrier. Further tests are planned with Monash at higher Supercritical Densities across all of the 4 Wells.

PROCOM and Monash University will now take the findings of the Licella<sup>TM</sup> supercritical water program and integrate these findings into the ongoing work.

Finally, the intentional thoroughness in the current investigative phase is shared with all groups participating in the program and is part of the Company's commitment to obtaining precise and reliable data for the foundations of the maiden PFS for the Alpha Project.

The Company is confident that the comprehensive insights gained from these investigations will significantly enhance the overall robustness of the PFS and strategically advance the development of the Alpha Torbanite Project. The Company remains unwavering in its dedication to delivering a project with the potential to create substantial long-term shareholder value. Greenvale appreciates the support of it shareholders and is confident that the ongoing meticulous efforts will contribute to the enduring success of the Alpha Torbanite Project.



## **AUTHORISED FOR RELEASE:**

The Board of Greenvale has approved this announcement for release.

## FOR FURTHER DETAILS, CONTACT:

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### **MEDIA INQUIRIES:**

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## **Competent Person's Statement:**

The information in this report that relates to Metallurgical and Bitumen results is based on information compiled by Paul Griffin, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy AusIMM Member number 100234. Paul Griffin has sufficient experience that is relevant to the processing and testing of the bituminous and related materials 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'. Paul Griffin consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



## **FUTURE STATEMENTS**

Statements contained in this release are or may be forward looking statements. Such statements relate to future events and expectations and as such involve known and unknown risks and significant uncertainties, many of which are outside the control of Greenvale. Actual results, performance, actions and developments of Greenvale Energy may differ materially from those expressed or implied by the forward-looking statements in this release. Such forward looking statements speak only as of the date of this release. There can be no assurance that actual outcomes will not differ materially from these statements. A number of important factors could cause actual results or performance to differ materially from the forward-looking statements. Investors should consider the forward-looking statements contained in this release in light of those disclosures. To the maximum extent permitted by law (including the ASX Listing Rules), Greenvale and any of its affiliates and their directors, officers, employees, agents, associates and advisers disclaim any obligations or undertaking to release any updates or revisions to the information in this release to reflect any change in expectations or assumptions: do not make any representation or warranty, express or implied. as to the accuracy, reliability or completeness of the information in this document, or likelihood of fulfilment of any forward-looking statement or any event or results expressed or implied in any forward-looking statement; and disclaim all responsibility and liability for these forwardlooking statements (including, without limitation, liability for negligence). Nothing in this document will under any circumstances create an implication that there has been no change in the affairs of Greenvale since the date of this release.



# **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, randomchips, 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 sample 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.	The samples refer to in this announcement were taken from the 2021 partly cored (4C – 100mm diameter) hole drilling program on a nominal 250 x 250m grid for the purpose of obtaining torbanite and cannel coal quality samples from the Upper and Lower seams.  Refer to ASX Announcement date – 9 March 2022.
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.).	Not applicable to this announcement.



Criteria	JORC Code explanation	Commentary
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.	Not applicable to this announcement
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.	Refer to ASX Announcement – 9 March 2022



Criteria	JORC Code explanation	Commentary
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.	Sampling and handling of the bituminous material in the laboratory was done in accord with standard techniques used in the Bitumen and roading industries
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.	The bituminous material testing was to standards and procedures recognised by international government roading agencies and done under the overview of the Competent Person
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.	Torbanite and cannel coal were verified by SRK personnel before inclusion in the geological model and resource estimate and representative samples provided to Technix.



Criteria	JORC Code explanation	Commentary
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.	SRK has prepared a geological model of this deposit with all available drill hole, survey and high-resolution LIDAR data. Refer to ASX Announcement – 9 March 2022 and 13 November 2023.  There is high confidence in the location of data points associated with this announcement.
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.	··
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.	Not applicable to this announcement
Sample security	The measures taken to ensure sample security.	All core samples are secured at Stratum Reservoir laboratories at Brendale Qld.
		The sample handling and record keeping at the Bitumen laboratory is done to recognised standards used in the bitumen and road surfacing industry.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	
		Not applicable to this announcement.



# **Section 2** Reporting of Exploration Results

(Criteria listed in section 1 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,	· · · · · · · · · · · · · · · · · · ·
		The current 5-year term for MDL 330 expires on 31 January 2027.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Refer to ASX Announcement – 9 March 2022 and 13 November 2023.
Geology	Deposit type, geological setting and style of mineralisation.	The Alpha deposit lies within the axis of the Glen Avon Syncline, a southwest plunging fold structure that occurs on the eastern flank of the Galilee Basin.  The deposit is part of the Permian Colinlea Sandstone, which contains 150 m of cross-bedded sandstones with minor conglomerates, siltstones and mudstones.  The geology of the deposit consists of an Upper and Lower seam of cannel coal with a torbanite lens present in the lower seam.
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 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	



Criteria	JORC Code explanation	Commentary
	detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
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 comment required in this section.
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. 'down hole length, true width not known').	
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.	
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 avoiding misleading reporting of Exploration Results.	Not applicable to this announcement.



Criteria	JORC Code explanation	Commentary
Other substantive	Other exploration data, if meaningful and material, should be	Nothing currently appropriate here
exploration data	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.	
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale stepout 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.	