13 September 2016

Exploration Update

High-quality uranium target outlined at Tin Camp Creek

Highlights

- ***Target TCC4 in the 'Violet-Orion Zone' is the best drill target defined by Alligator***
- ***High-quality uranium pathfinder anomaly defined at BT12 in Beatrice JV title***

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8.5M Unlisted Options

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Mr Peter McIntyre
(Non Exec. Director)

Mr Andrew Vigar
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Mr Greg Hall
(Non Exec. Director)

Summary

Phase 1 of the Beatrice Joint Venture ('JV') exploration program has revealed extremely anomalous uranium pathfinder results from surface sandstone sampling at BT12. These results upgrade it to becoming one of the top exploration targets in the portfolio. With Phase 1 complete, geophysical surveys are now needed to define precise drill positions.

Further studies of the *'Violet-Orion Zone'* showed an outstanding geochemical and geophysical anomaly within a favourable stratigraphic setting at TCC4 in the Tin Camp Creek tenement. Work continues to bring this to a drill ready stage. This is the best target yet defined by Alligator.

Additional sampling of sandstone and drill-hole material at the BT2 target shows no further work is warranted there.

BT 12

The BT12 target is located within the '*Violet-Orion Zone'* on the northern side of the Beatrice Fault. Geological and geophysical work indicated that the key stratigraphy hosting the known uranium deposits in the Alligator Rivers Uranium Province was likely to exist beneath the covering sandstone in this area.

Sampling and analysis of the sandstone for uranium pathfinder elements in 2015 defined a significant anomaly in the target area. During Phase 1 of the 2016 Beatrice JV exploration program, Alligator Energy collected and assayed an additional 95 surface sandstone samples in the target area from seven North-South transects.

Results show two distinct areas of pathfinder anomalism (Figure 1). The anomaly defined in 2015 lies along the main Beatrice Fault. The 2016 sampling expands this

anomaly considerably, showing it to be much broader (500m) and longer (2000m), extending further north under the sandstone and further east along the Beatrice Fault.

A new separate anomaly was defined 500 metres further north, running parallel to the first and extending discontinuously over more than 2000 metres. The depth of sandstone in the area is estimated to be 250 metres. Uranium lead isotope ratio analysis indicates a likely basement-hosted mineralisation source.

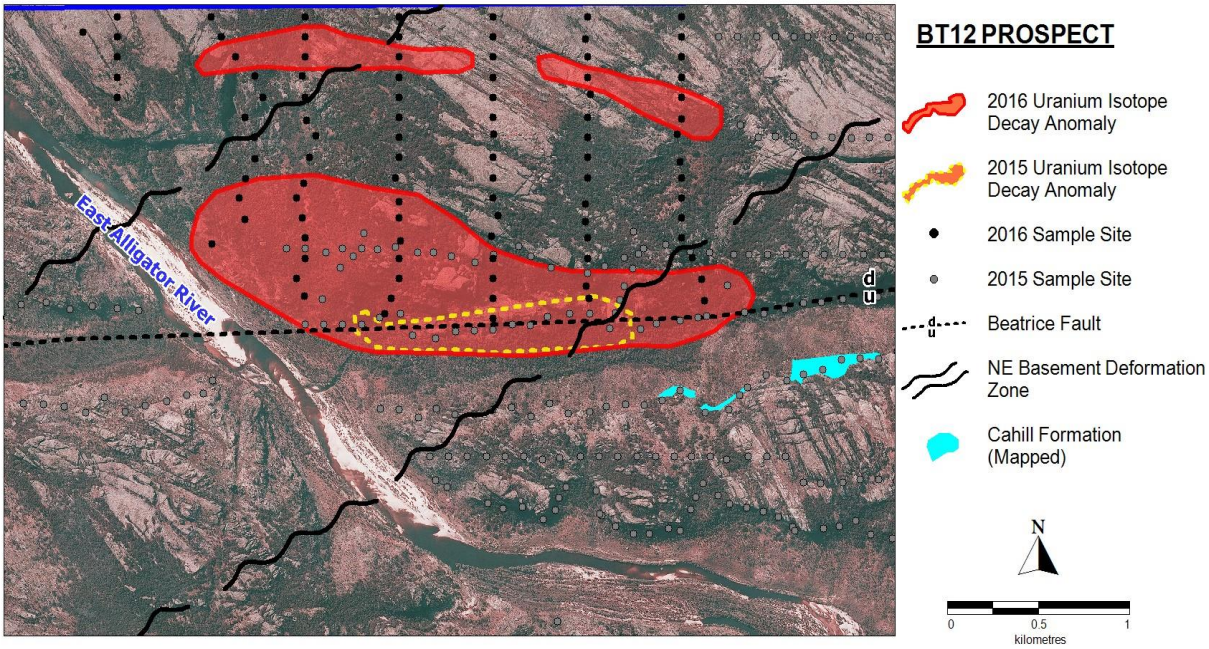

Figure 1 – Pathfinder Element Results at BT12

Alligator Energy is assessing the most suitable geophysical techniques to identify the responses of alteration associated with any uranium mineralisation beneath the sandstone that is likely to be the cause of the pathfinder anomalies. The SAM technique used by the company in the past appears unlikely to be effective in this area. This additional work is necessary to define the optimum location of drill holes to test the target. Results from BT12 are encouraging and rank the prospect as a high quality target.

BT2

The BT2 target area incorporates the Violet prospect, previously identified and drilled by Cameco Australia (Cameco) and the area around it. Alligator Energy collected 205 surface sandstone samples from seven transects, along with 65 samples from drill core from Cameco's drill holes and analysed them for uranium pathfinder elements.

The drill core analyses showed an upper and a lower zone of anomalism. The upper zone shows a plume of anomalous values around the known uranium mineralisation within the dolerites along the Beatrice Fault. The lower zone occurs near the unconformity separating the overlying sandstones from the basement host rocks. This response is likely to be dispersion from a concealed basement uranium source some

distance from the drill holes. This lower plume is encouraging for the broader prospectivity of the region.

Results from surface sampling at BT2 confirmed but failed to significantly increase the surface foot print of the known anomaly occurring on the southern side and proximal to the Beatrice Fault (Figure 2). Uranium and lead ratio analysis suggest the source for this strong surface anomaly is dispersion from the known dolerite hosted mineralisation within the Beatrice Fault. The isotope ratios observed are regarded as highly anomalous considering the amount of known mineralisation and could indicate the potential for further dolerite hosted mineralisation within the main fault system. This is not considered a prime target and no further work is currently proposed at BT2.

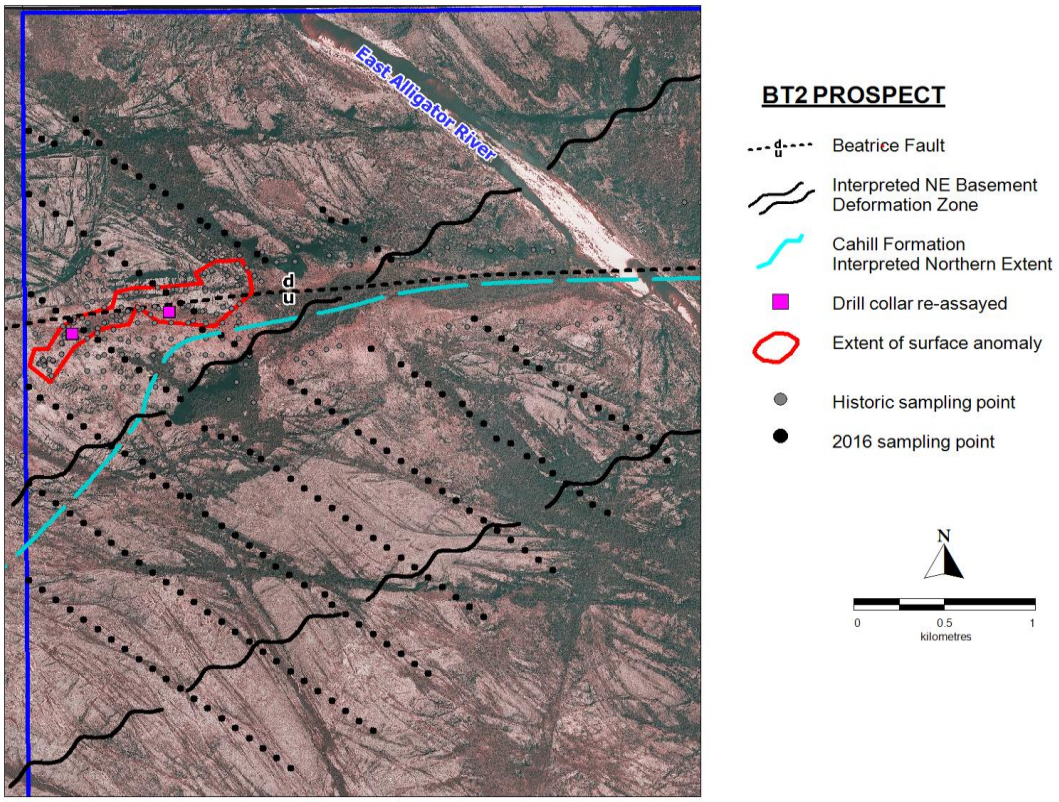

Figure 2 – Surface Pb 207/206 ratio results at BT2

BT 1

A further 31 sandstone samples were collected from BT1 and submitted for uranium pathfinder analysis. Results are expected in late September.

Violet – Orion Zone and TCC 4

Alligator Energy has continued to assess the targets within the '*Violet-Orion Zone*' ('Zone') as defined in ASX announcement dated 23 June 2016.

The zone begins near the BT2 Prospect close to the western boundary of the Beatrice tenements and extends to the spring waters containing highly anomalous pathfinder

elements emerging from beneath the sandstone at Orion North near the northern boundary of the Tin Camp Creek tenement. See Figure 3.

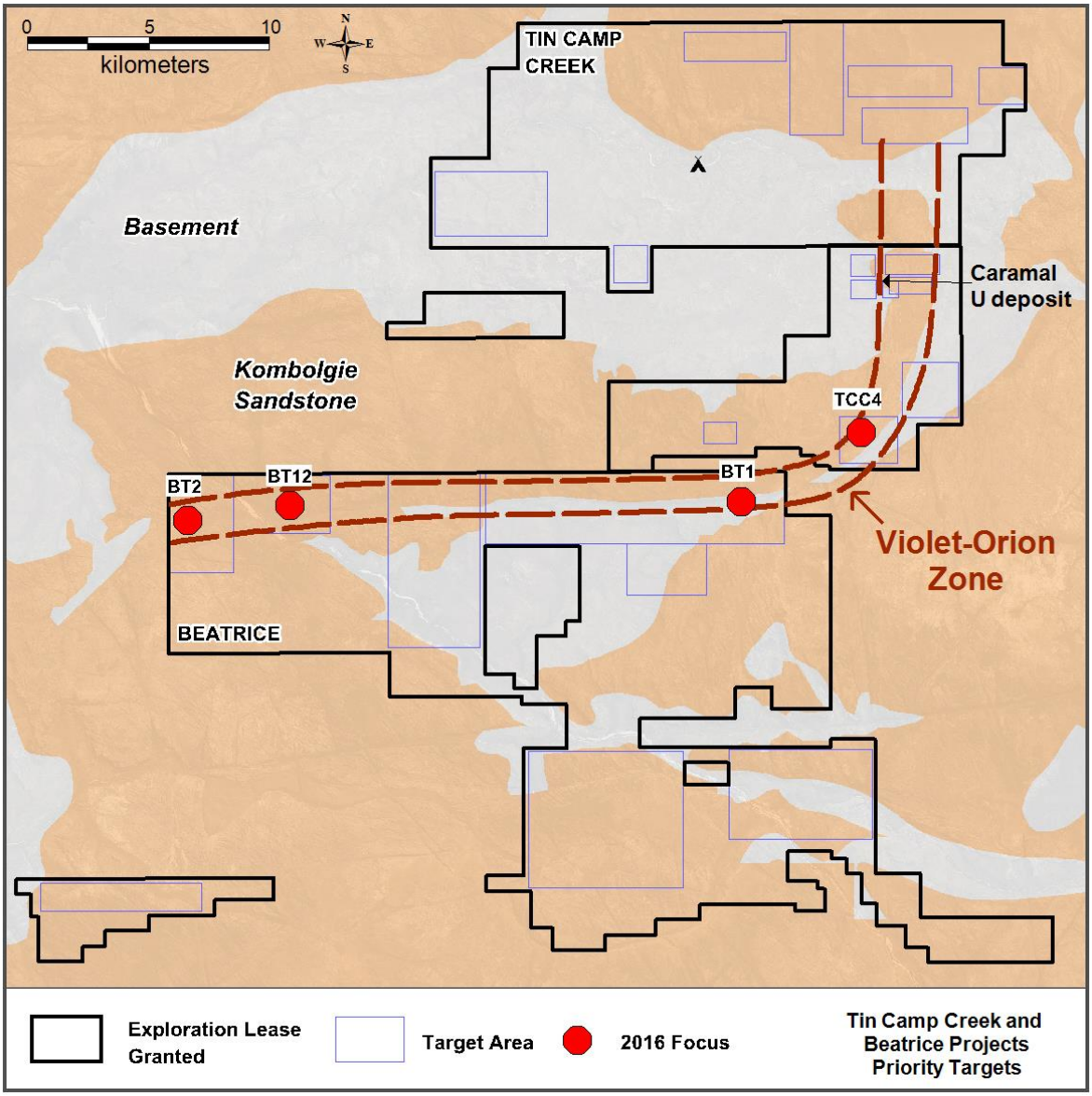

Figure 3 – Violet – Orion Zone with key targets identified

Target TCC4 is located in this zone and has all of the characteristics sought in a high quality drill target. Coincident strong extensive surface pathfinder element anomalism and strong coherent basement SAM conductor features are stand out features. See Figure 4. Two holes drilled nearby in 2014 returned strong downhole pathfinder element anomalism and intense chlorite alteration within the Cahill formation, the preferred host stratigraphy, beneath the covering sandstone. See Figure 5.

Re-logging and additional petrographic and pathfinder element analyses of this drill core have demonstrated high graphite content associated with uranium pathfinder elements within stratigraphic units of the Cahill formation. These units can be projected up dip and along strike from the two drill holes to coincide with a zone of high pathfinder elements and a very strong conductor extending 2,500 metres along strike. In addition

the intrusive dolerites near this feature show chlorite alteration which provides a conductor response.

This untested feature is the highest quality target yet generated by Alligator Energy for a large tonnage, Jabiluka style uranium deposit and ranks as the company's highest quality target. However a modest amount of additional work is required to finalise optimum drill sites. An update on this will provided shortly.

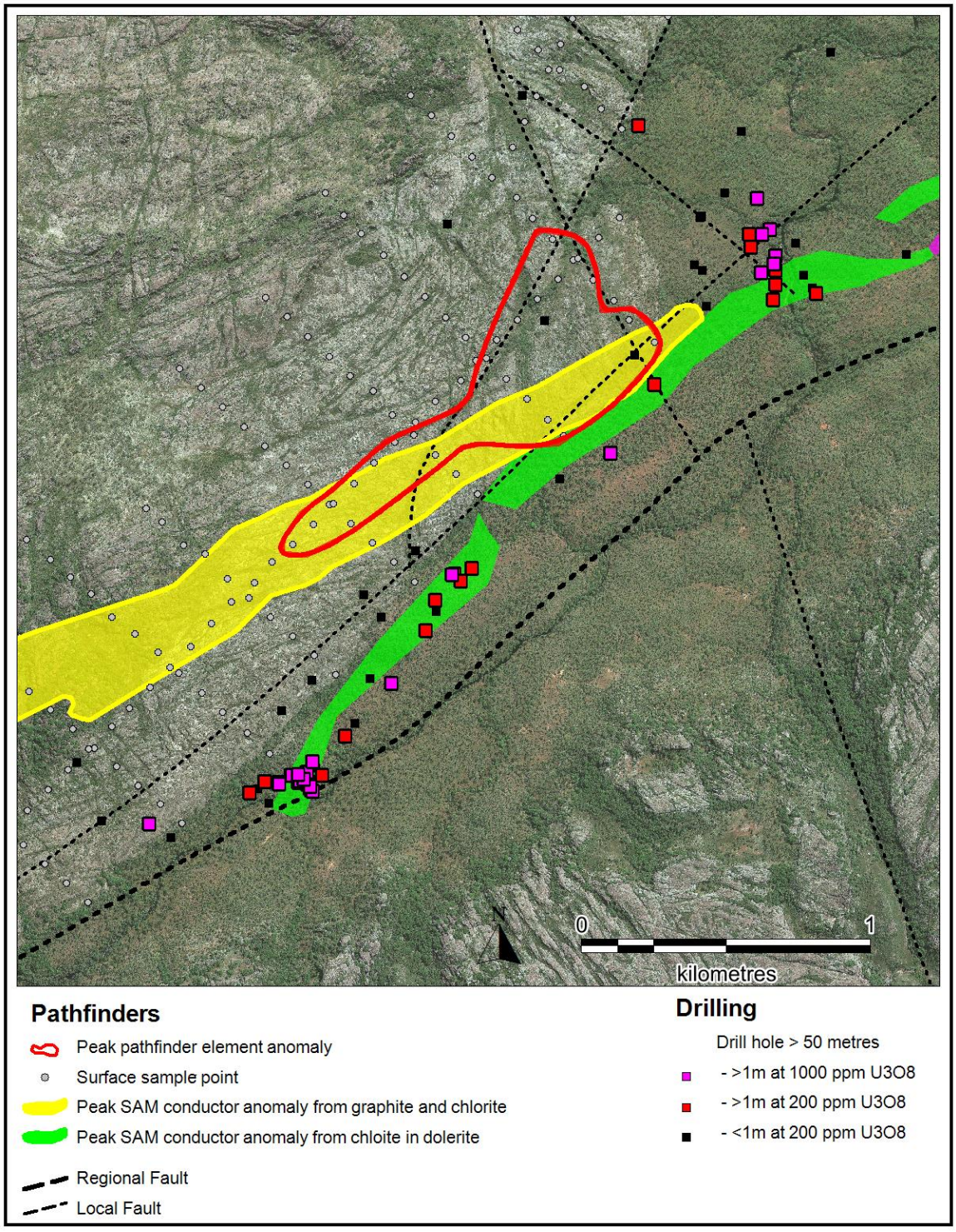

Figure 4 TCC4: Pathfinder Elements and SAM Conductor Anomalies

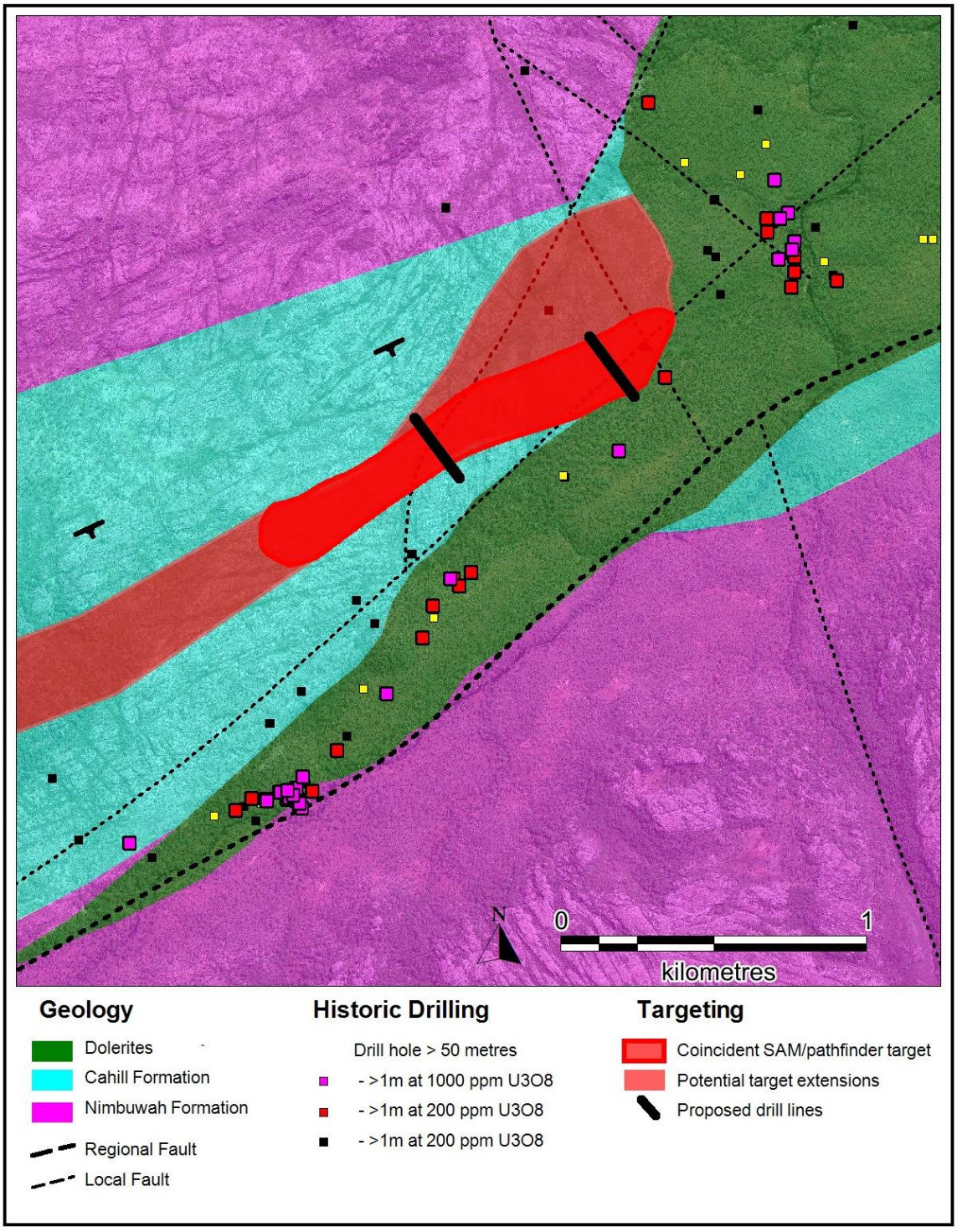

Figure 5: TCC5: Interpreted Basement Geology, Targets and Drill Lines

FOR FURTHER INFORMATION, PLEASE CONTACT

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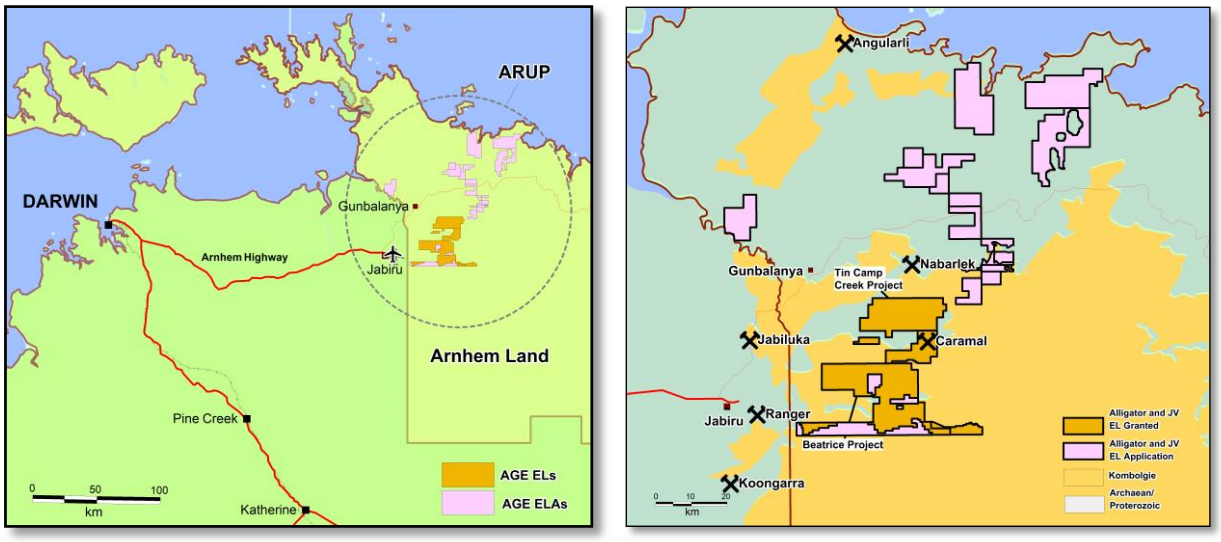
Competent Person's Statement

Information in this report is based on current and historic Exploration Results compiled by Mr A Moorhouse who is a Member of the Australasian Institute of Geoscientists. Mr Moorhouse is the Operations Manager of Alligator Energy Ltd, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Moorhouse consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

About Alligator Energy

Alligator Energy Ltd is an Australian, ASX listed, company with uranium exploration tenements in the world class Alligator Rivers Uranium Province in Arnhem Land, Northern Territory. The Alligator Rivers Uranium Province hosts nearly 1 billion pounds of high grade uranium resources and past production, including the Ranger Mine and Jabiluka. The company's assets include the Tin Camp Creek Project and Joint Venture with Cameco Australia Pty Ltd at the Beatrice project. Since listing in 2011, the company has defined the Caramal Resource (6.5Mlb U3O8 @ 3100ppm U3O8) and intersected high grade uranium at a number of prospects including Mintaka, South Horn and NE Myra. High Grade uranium mineralisation has also been confirmed at the historic Beatrice Prospect. The company has a strong pipeline of prospects with known high grade mineralisation and potential to discover large (>100Mlb U3O8) high grade resources.



Project Location Diagrams

JORC Code, 2012 Edition – Table 1

Exploration update – September 2016.

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.*	A total of 300 surface rock chip samples and 269 historical core samples were obtained during the reported phase of work. The samples obtained are considered to be representative of the lithology from which they were obtained and sampling and sub-sampling techniques were appropriate for the sample type and for exploration purposes. Spectrometer surveys were completed utilising a Radiation Solutions RS-125 spectrometer.
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).*	No drilling was undertaken.
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.*	No drilling was undertaken.

	• *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.*	
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.*	No drilling or logging was undertaken.
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.*	Historical core samples were collected in 1m intervals where possible (intervals <1m are documented in company database) from existing core trays. Both NQ and HQ samples were sampled. Core was cut along core axis using a brick saw and samples collected in calico bags. ½ core was sampled full core existed and ¼ core sampled where only ½ core existed. Rock chip samples were obtain from in-situ locations using geological pick/hammer and <3kg in weight. The historical core samples obtained are considered to be representative of the lithology from which they were obtained and sampling and sub-sampling techniques were appropriate for the sample type and for exploration purposes Field Blanks, duplicates and laboratory prepared standards are not used at this early exploration phase. Samples were submitted for analyses to Bureau Veritas' Laboratory in Adelaide. Further sample preparation was undertaken by Bureau Veritas prior to assay. Samples are dried to a core temperature of approximately 100ºC. Dried samples are then coarse crushed using a Boyd crusher to a sizing of approximately 5mm. The total sample is then milled in an LM5 pulveriser to 85% passing 75µm. An analytical pulp of 250g is taken from the bulk and the residue retained. Sample sizes were considered appropriate for the type of material being sampled.
Quality of	• *The nature, quality and*	A Radiation Solutions RS-125 spectrometer was

assay data and laboratory tests	*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.*	used to measure radioactivity (in counts per second – cps) of each sample. Some samples are selected for laboratory assay based geological observation and radioactivity (cps) relative to background. Geochemical assay of representative samples is undertaken at Bureau Veritas' Adelaide laboratory. Uranium analysis is undertaken utilising ICP-MS using Lithium Borate fusion of the pulp sample. This technique is considered a total analysis method and appropriate for the style of mineralisation targeted. Field Standards, blanks and duplicates were not included in the samples submitted to the laboratory at this early exploration phase. No assay data is provided in this report
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 assay data is provided in this report No adjustment of assay data is undertaken
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.*	Current sample locations were surveyed using GPS with accuracies of between 1-4 metres. All samples have been surveyed on Map Grid of Australia 94 (MGA94 Zone 53).
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.*	Sampling during this phase of work has been broad spaced for exploratory purposes to test new structural targets and until significant mineralisation is identified is insufficient to define mineral resources. Nominally this spacing is 500 metres between lines, and 100 metres between sample points. Sample compositing has not 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*	Current sampling is of an exploratory nature. There is generally insufficient data in the areas during this phase of work to determine the orientation of host structures. No known sampling bias is known to have been

	orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	introduced.
Sample security	• *The measures taken to ensure sample security.*	Samples, each contained in calico and subsequent zip tied polyweave sample bags were delivered by Alligator personnel in directly to Northline Transport in Darwin. Delivery to the Bureau Veritas Laboratory in Adelaide with Chain of Custody documentation is through Northline Transport.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	No audits have been undertaken for this phase of work.

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.*	All work reported in this ASX release was undertaken on the Beatrice Project JV and the Tin Camp Creek Project. The Beatrice Project JV with Cameco Australia which is comprised of exploration licences EL 24291 and EL 26796 in the Northern Territory. The tenements are currently held by Cameco Australia Pty Ltd. Alligator has met the Stage 1 and Stage 2 expenditures under the terms of the JV agreement and is currently in the process of registering its 51% interest in the tenements. The work being performed in 2016 is sole funded by Alligator which will result in an increase in the percentage interest once the expenditures have been audited and approved by the JV Management Committee. On definition of a resource of > 75Mlb U308 resource (inferred+indicated+measured) the JV must commence a NI43-101 compliant Prefeasibility Study (PFS) within 12 months of identifying a qualifying resource. Cameco may elect to manage and operate during the PFS stage and fund 51% of the PFS following making a payment of $2m to Alligator, provided they have maintained a 49% interest. Following completion of the PFS, Cameco may acquire an additional 2% of the Project (for a total of 51%) by paying Alligator: For a total resource of less than 100Mlb U308, an amount equal to 2%xTotal Resource (lbs

		U308)x $5/lb U308. For a total resource of greater than 100Mlb U308, an amount equal to 2%xTotal Resource (lbs U308) and amount equal to 2%xTotal Resource (lbs U308)x$6/lb less the initial PFS payment of $2m. There are no known existing impediments to operating on any land granted within the Beatrice Project area. The Tin Camp Creek Project which is comprised of contiguous exploration licences EL24921 and EL24922 in the Northern Territory. The tenement is held by TCC Project Pty Ltd (98%), a wholly owned subsidiary of Alligator Energy Ltd (Alligator) and by West Arnhem Corporation Pty Ltd (2%). The tenements and are in good standing. Exploration and Mining agreements with the Northern Land Council (NLC) on behalf of traditional owners are in place for these tenements in accordance with the Aboriginal Land Rights Act (1976). The Tin Camp Creek Project is also subject to a uranium buy back agreement with Cameco Australia Pty Ltd whereby Cameco may buy 51% of a defined resource greater than 20,000t contained U3O8. There are no known existing impediments to operating on any tenement within the Tin Camp Creek Project area.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Regional exploration has previously been undertaken by other parties in the region by Queensland Mines Ltd (1970-1972), Afmeco (1996-2001) and Cameco Australia Pty Ltd (2001-2010).
Geology	• *Deposit type, geological setting and style of mineralisation.*	Alligator is exploring for Unconformity Associated Style Uranium Deposits. The geology of the area being targeted is comprised primarily of Carpentarian aged sandstones of the Kombolgie Formation overlying multiply deformed meta-sediments of the lower-Proterozoic Cahill Fm and Archaean granite Gneiss Complexes.
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*	No drilling was undertaken.

	hole collar ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* • *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.*	
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.*	
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 down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	No drilling undertaken.
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 Figures 1,2,3
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting*	All results of significance have been reported within this report.

	of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration 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.*	Reported geochemical anomalies are based on the following cut-offs: Pb207/206 <0.2, Pb206/204 >100, U>90ppmU3O8
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.*	A number of targets have been identified on the Tin Camp Creek and Beatrice JV project areas. The exploration reported on in this release is the first part of what Alligator intends to be a systematic test of these targets. Further advice on this ongoing work will be provided following further assessment and ranking of these targets in the coming months.