

Monday, 21 December 2009

AUSTRALIAN SECURITIES EXCHANGE
COMPANY ANNOUNCEMENTS PLATFORM
ASX CODE USA

UraniumSA Limited
ABN 48 119 978 013

32 Beulah Road
Norwood, South Australia
5067
Australia

Phone +61 (0)8 8132 0577
Fax +61 (0)8 8132 0766
executive@uraniumsa.com.au
www.uraniumsa.com.au

INCREASED GRADE AND THICKNESS AT THE MULLAQUANA URANIUM PROJECT

Progress Results from Infill Drilling

Infill drilling at the Blackbush Prospect is identifying higher grades and thicknesses of mineralisation. To the end of the 2009 field season, 58 rotary mud infill drill holes have been completed on a 100m pattern within the resource area (Figure 3). The initial JORC Inferred Mineral Resource for the Blackbush Prospect is 12Mt @ 0.02% U₃O₈ (224 ppm) for an estimated 2,700t contained U₃O₈.

Drilling highlights include:

- MRM525: 9.70m @ 602ppm eU₃O₈, including 3.8m @ 1,240ppm eU₃O₈
- MRM530: 8.53m @ 307ppm eU₃O₈, including 2.6m @ 571ppm eU₃O₈
- MRM548: 6.87m @ 466ppm eU₃O₈
- MRM550: 11.50m @ 401ppm eU₃O₈
- MRM553: 19.6m @ 364ppm eU₃O₈
- MRM554: 11.61m @ 346ppm eU₃O₈, including 4.9m @ 475ppm eU₃O₈
- MRM556: 21.00m @ 508ppm eU₃O₈, including 15m @ 588ppm eU₃O₈

Drill hole details are provided in Table 1.

Drilling results from the Blackbush Prospect continue to offer strong encouragement for a resource upgrade. Mineralisation is shallow (average depth 50-60m) and is hosted by water saturated high-porosity sands. The mineralisation is potentially amenable to extraction by a low cost (both capital and operating costs) in-situ recovery (ISR) operation.

The drilling program at Blackbush Prospect for early 2010 will see the completion of the current infill drilling program followed by a small drill core program. Initial mineralogy and metallurgical characterisation will be obtained from this drill core. These holes will also be down-holed logged with a pfn tool.

Following on to the current drilling schedule at Blackbush will be the commencement of a preliminary hydrogeology program consisting of groundwater monitoring bores and hydrogeological test bores.

Field work at Blackbush Prospect is scheduled to recommence Monday 11th January 2010.

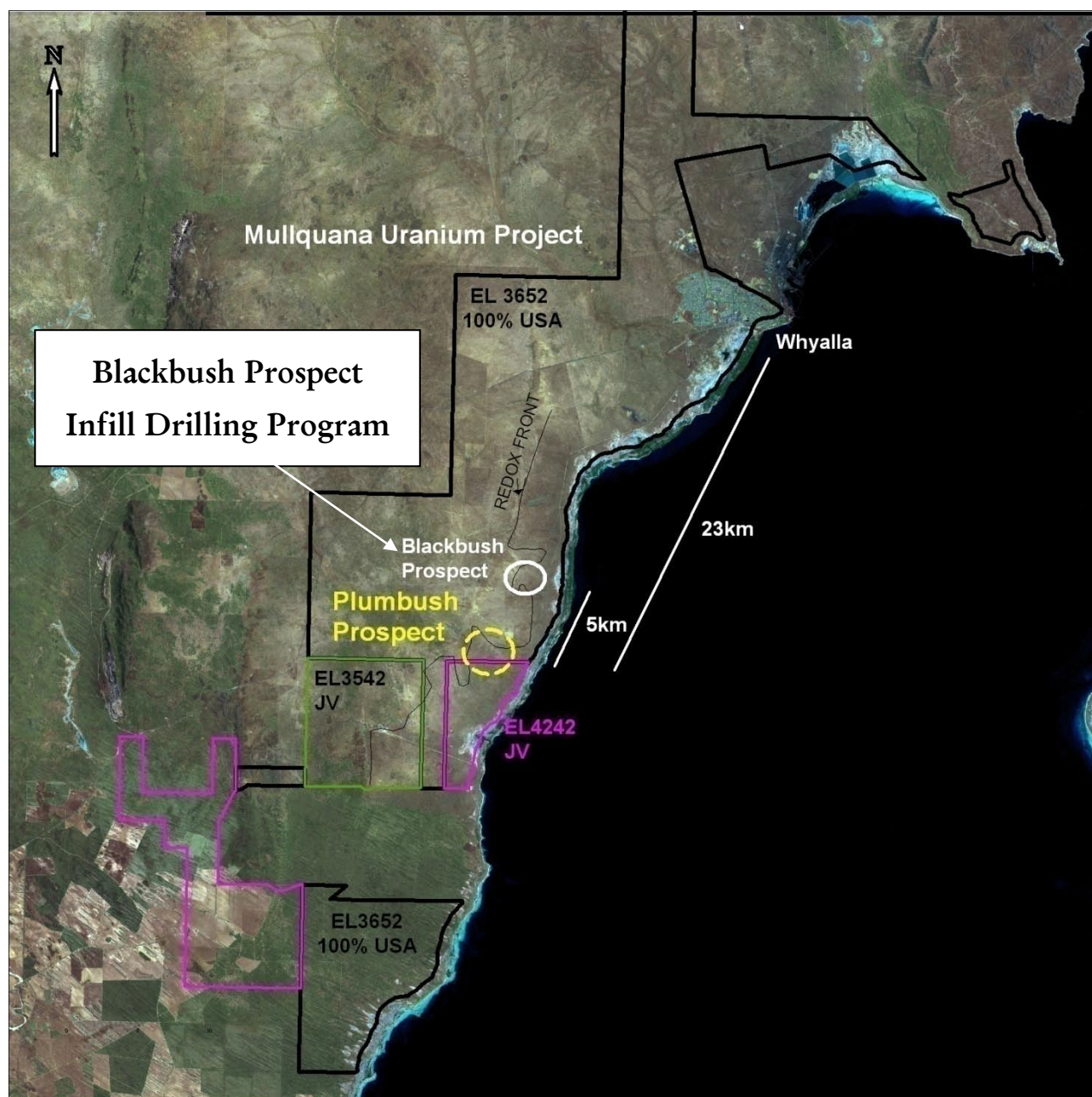


FIGURE 1: Mullaquana Uranium Project Location Map on satellite image.

The Mullaquana Project (EL 3652) is owned 100% by UraniumSA Limited. The Company has Joint Ventures to earn a 70% interest in uranium in tenements to the south held by Stellar Resources Limited (EL 4242) and Australasia Gold Limited (EL 3542).

Whyalla is a well established industrial city which services the iron ore mining and steel manufacturing businesses of OneSteel Limited. The area has good infrastructure and a well skilled workforce.



Pattern drilling is providing definition to a zone of thicker and higher grade mineralisation which was indicated by the initial exploration drilling. This thicker and higher grade mineralisation has been traced by drilling for ~1.5km and the system remains open to the northeast, to the east and the south and east.

A drill hole intersection above a cut-off grade of 0.01% eU₃O₈ (which is the same as 100 ppm) and with a thickness of 0.40m or greater is regarded as significant (a grade x thickness product of 0.004 m%). Drill holes in which the sum of such individual significant intersections exceeds 0.050 m% are considered to be potentially economically significant.

black crosses show the collar locations of drill holes reported herein.

red dots show the collar locations of previously reported exploration drill holes.

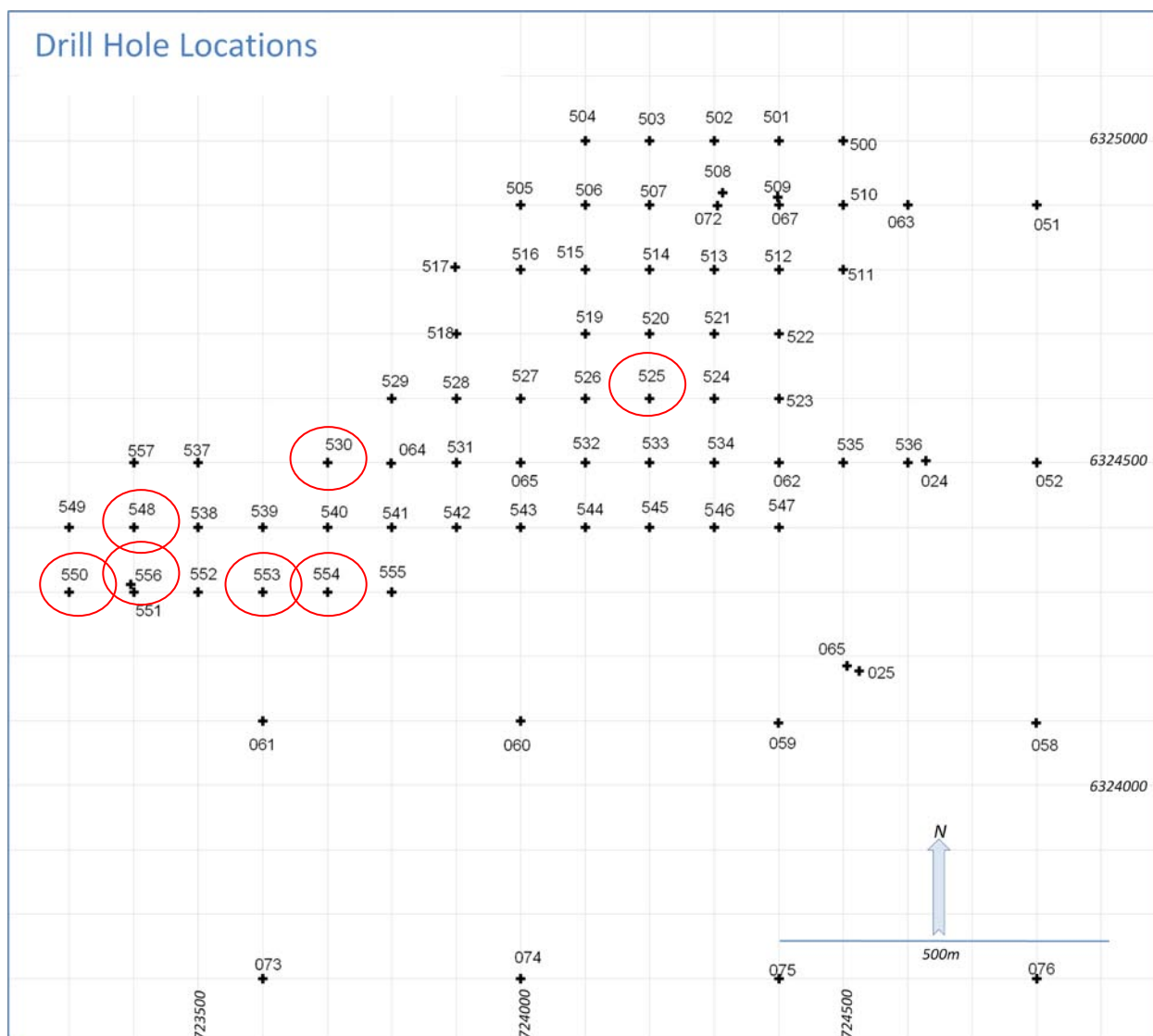


FIGURE 3: Blackbush Prospect. Drill hole locations

Holes reported herein are numbered 500 and up.

Previously reported exploration drill holes have a "0" prefix.

Pattern drilling has proceeded from the northeast towards the southwest and 58 drill holes numbered from 500 to 557 are shown on the map.

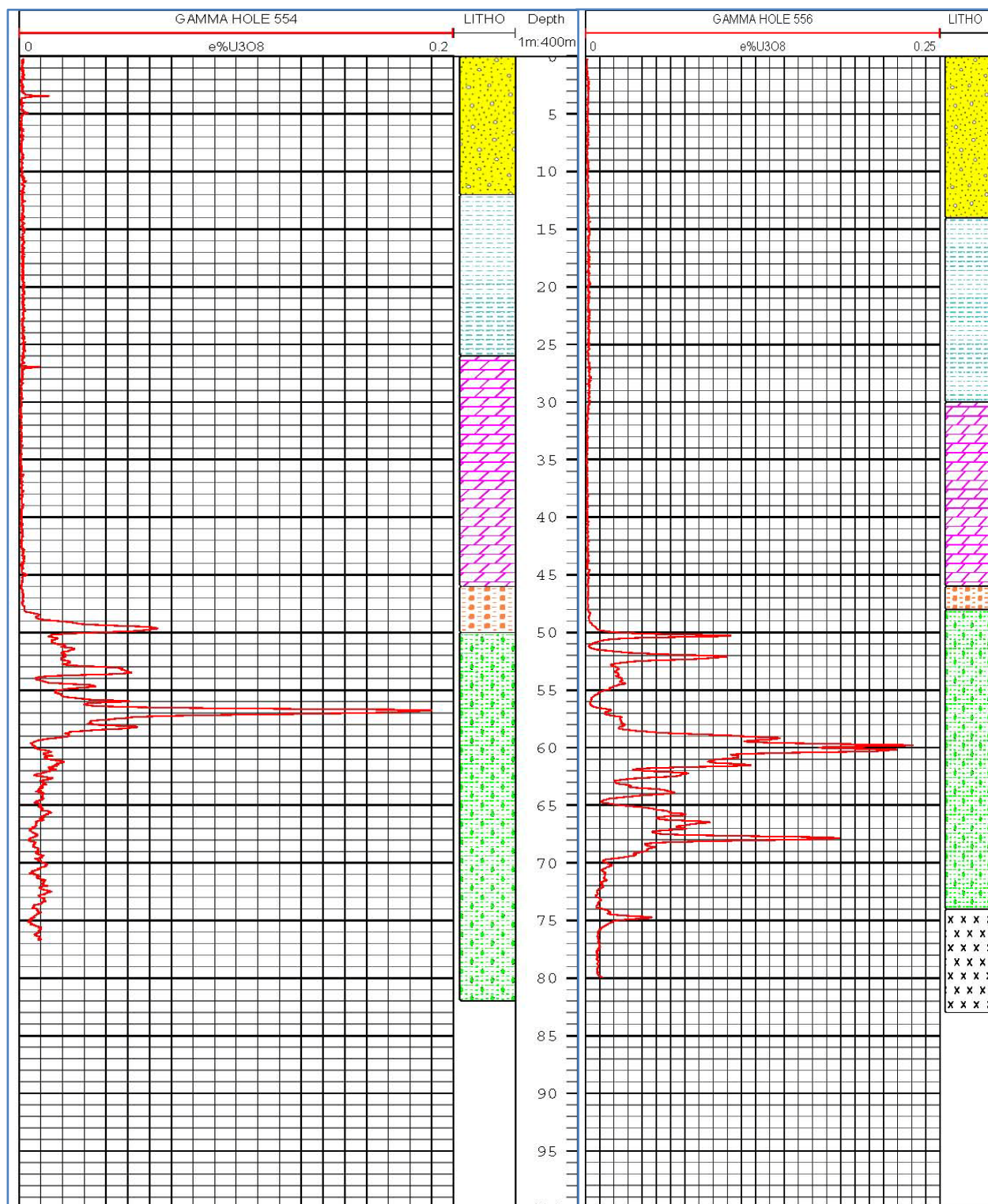
FIGURE 4

MRM 554 Down Hole Log

(Note: full scale 0.200% eU_3O_8)

MRM556 Down Hole Log

(Note: full scale 0.250% eU_3O_8)



Note: the 100 eppm cutoff is the first line on the right hand side

TABLE 1: Drill hole Summary

Hole ID	Depth From (m)	Cumulative Thickness (m)	avg. grade ppm eU ₃ O ₈	avg. grade % eU ₃ O ₈	GT m%
MRM500	Below cutoff				
MRM501	53.5	16.50	268	0.027	0.442
MRM502	Below cutoff				
MRM503	57.1	11.70	291	0.029	0.341
MRM504	Below cutoff				
MRM505	Below cutoff				
MRM506	Below cutoff				
MRM507	Below cutoff				
MRM508	48.8	3.68	218	0.022	0.080
MRM509	49.0	5.00	430	0.043	0.215
MRM510	53.1	0.92	323	0.032	0.030
MRM511	Below cutoff				
MRM512	47.8	1.10	171	0.017	0.019
MRM513	50.4	11.40	280	0.028	0.319
MRM514	Below cutoff				
MRM515	49.4	1.4	146	0.015	0.020
MRM516	Below cutoff				
MRM517	Below cutoff				
MRM518	Below cutoff				
MRM519	49.2	1.00	186	0.019	0.019
MRM520	49.5	7.20	202	0.020	0.145
MRM521	51.2	10.04	269	0.027	0.270
MRM522	49.1	0.93	168	0.017	0.016
MRM523	50.6	1.05	157	0.016	0.016
MRM524	50.2	2.47	151	0.015	0.037
MRM525	51.4	9.70	602	0.060	0.584
MRM526	52.0	2.00	140	0.014	0.028
MRM527	Below cutoff				
MRM528	42.8	0.58	446	0.045	0.026
MRM529	Below cutoff				
MRM530	49.4	8.53	307	0.031	0.262
MRM531	50.0	3.60	244	0.024	0.088
MRM532	50.8	1.72	360	0.036	0.062
MRM533	50.9	5.34	197	0.020	0.105
MRM534	49.6	7.88	214	0.021	0.169

TABLE 1: Drill hole Summary *Continued*.

Hole ID	Depth From (m)	Cumulative Thickness (m)	avg. grade ppm eU ₃ O ₈	avg. grade % eU ₃ O ₈	GT m%
MRM535	48.4	1.00	218	0.022	0.022
MRM536	48.2	1.60	321	0.032	0.051
MRM537	50.8	3.4	217	0.022	0.074
MRM538	50.3	10.50	249	0.025	0.262
MRM539	48.5	13.33	233	0.023	0.310
MRM540	49.3	12.87	255	0.025	0.328
MRM541	49.5	10.26	206	0.021	0.211
MRM542	48.8	10.21	188	0.019	0.192
MRM543	49.6	6.00	177	0.018	0.106
MRM544	50.4	4.86	154	0.015	0.075
MRM545	49.4	8.61	231	0.023	0.199
MRM546	48.2	2.78	181	0.018	0.050
MRM547	46.7	3.10	274	0.027	0.085
MRM548	56.0	6.87	466	0.047	0.320
MRM549	51.4	12.12	304	0.030	0.368
MRM550	50.6	11.50	401	0.040	0.462
MRM551	collapsed hole - not loggable				
MRM552	51.7	10.30	336	0.034	0.346
MRM553	50.0	19.60	364	0.036	0.713
MRM554	49.0	11.61	346	0.035	0.401
MRM555	49.6	15.25	246	0.025	0.376
MRM556	49.8	21.00	508	0.051	0.149
MRM557	55.6	5.30	281	0.028	0.149

Note:

UraniumSA Limited uses a minimum 0.40m intercept length above a 0.01% eU₃O₈ cutoff (or 100 ppm) with a maximum of 0.10m internal dilution to calculate a grade x thickness product for that intercept as a “m%” figure.

“accumulation” results for a drill hole are the sum of individual intervals which exceed the above minimum criteria.

A GT (grade thickness) accumulation in excess of 0.050m% eU₃O₈ is considered to be potentially economically significant.

Results are equivalent % U₃O₈ obtained from down hole logging of natural gamma radiation. This is an industry standard procedure and all equipment is appropriately calibrated and operated.

About UraniumSA Limited

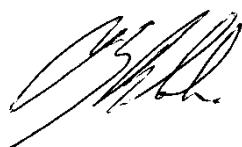


UraniumSA is an Adelaide-based uranium-only explorer specialising in sediment-hosted styles of uranium mineralisation within a substantial portfolio of properties in South Australia's Gawler Craton.

The Company has discovered sediment hosted uranium mineralisation at Mullaquana, south of Whyalla on the Eyre Peninsula.

Evaluation of the Blackbush Prospect for an ISR field leach trial is scheduled to commence documentation mid 2010 with the objective of being able to start construction mid 2011.

Ongoing exploration of the Plumbush Prospect is discovering potentially economic mineralisation. Exploration south into Joint Ventured ground is scheduled for early in 2010.



Russel Bluck
Managing Director
UraniumSA Limited

21st December 2009

The exploration results reported herein, insofar as they relate to mineralisation, are based on information compiled by Ms. Nicole Galloway Warland, Exploration Manager, and Mr. Russel Bluck, Managing Director, UraniumSA Limited. Ms Galloway Warland and Mr. Bluck are Members of the Australian Institute of Geoscientists and have sufficient experience relevant to the style of mineralisation and type of deposits being considered, and to the activity which they are undertaking to qualify as a Competent Person as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition). Ms Galloway Warland and Mr Bluck consent to the inclusion in the report of matters based on their information in the form and context in which it appears. It should be noted that the abovementioned exploration results are preliminary.