

ASX ANNOUNCEMENT
29th November 2013

BROUGHTON CREEK JOINT VENTURE
EXPLORATION UPDATE

Orion Metals Limited (ASX:ORM) is reporting exploration results for a recent round of RC drilling conducted across Broughton Creek Joint Venture tenement, EPM 16209; located in the Mt Isa District of Queensland.

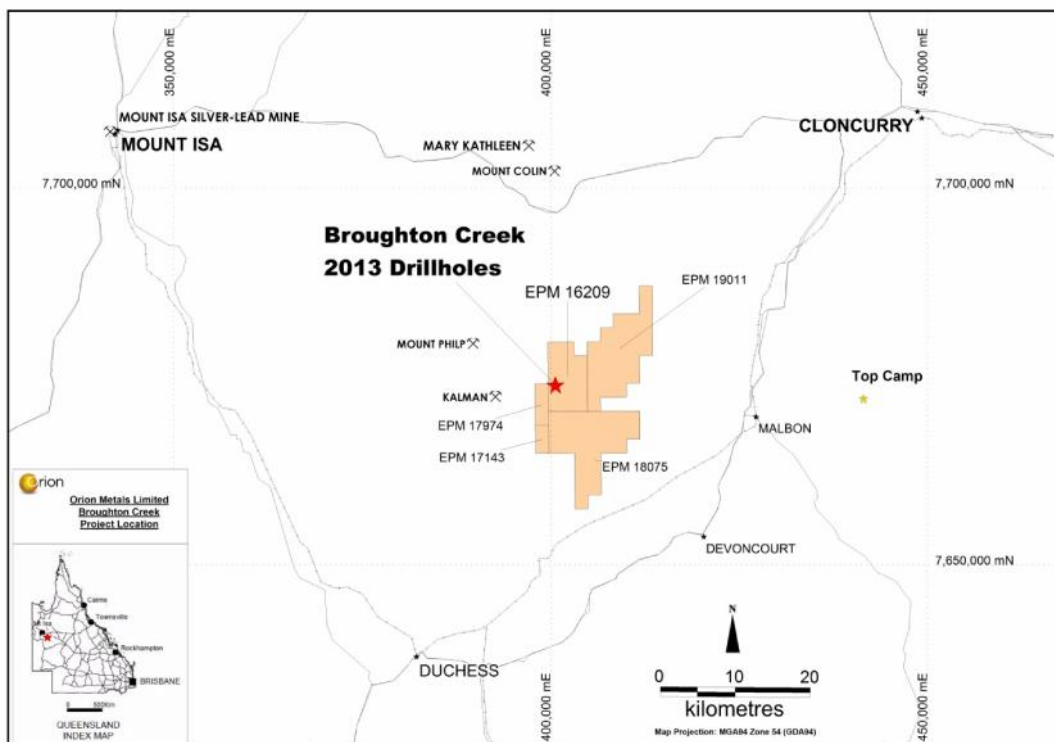
EPM 16209 is one of five tenements covering a total area of 230 square kilometres. This package is contained within the Broughton Creek Joint Venture. (Figure 1).

The RC drill program comprising 17 drill holes (a total of 1,476 metres of drilling) was designed to test radiometric anomalies identified by earlier detailed exploration work for potential uranium and rare earth element mineralisation.

Sample analyses were strategically comprehensive, and while overall the RC drill results were of low order for uranium and rare earth elements, there were coincidental gold and base metal results which is encouraging.

A best gold result of 2m @ 0.44 ppm Au in BCRC012 (refer Table 6), and copper result of 2m @ 0.45% Cu in BCRC009 (refer Table 7) indicates an environment worthy of re-evaluating the gold and copper mineralisation potential.

Figure 1: Broughton Creek JV Tenement Location





Background Geology

The Broughton Creek tenement package is located in the Kalkadoon/Leichardt Belt and covers Proterozoic age metavolcanic and metasedimentary rocks of the Quamby Malbon zone which contains key lithological units of the basal Argylia Formation and the overlying Marraba Volcanics.

Argylia Formation contains felsic volcanics, variably recrystallized, with quartzite, meta-arenite, and pelitic schist units. These have been intruded by mafic dykes present as thin units of amphibolite. The overlying units of the Marraba Volcanics comprise basic volcanics as amphibolites, with metasiltstones.

Both these volcanic Formations are broadly mineralised and altered, typical of the Mt Isa Block. They are strongly metamorphosed, intensely foliated, faulted, and sheared. These attributes are important in base metal exploration environments.

Central to these lithologies, is a complex structural framework which has provided a desirable high strain environment and consequently a valuable focus for ongoing exploration efforts.

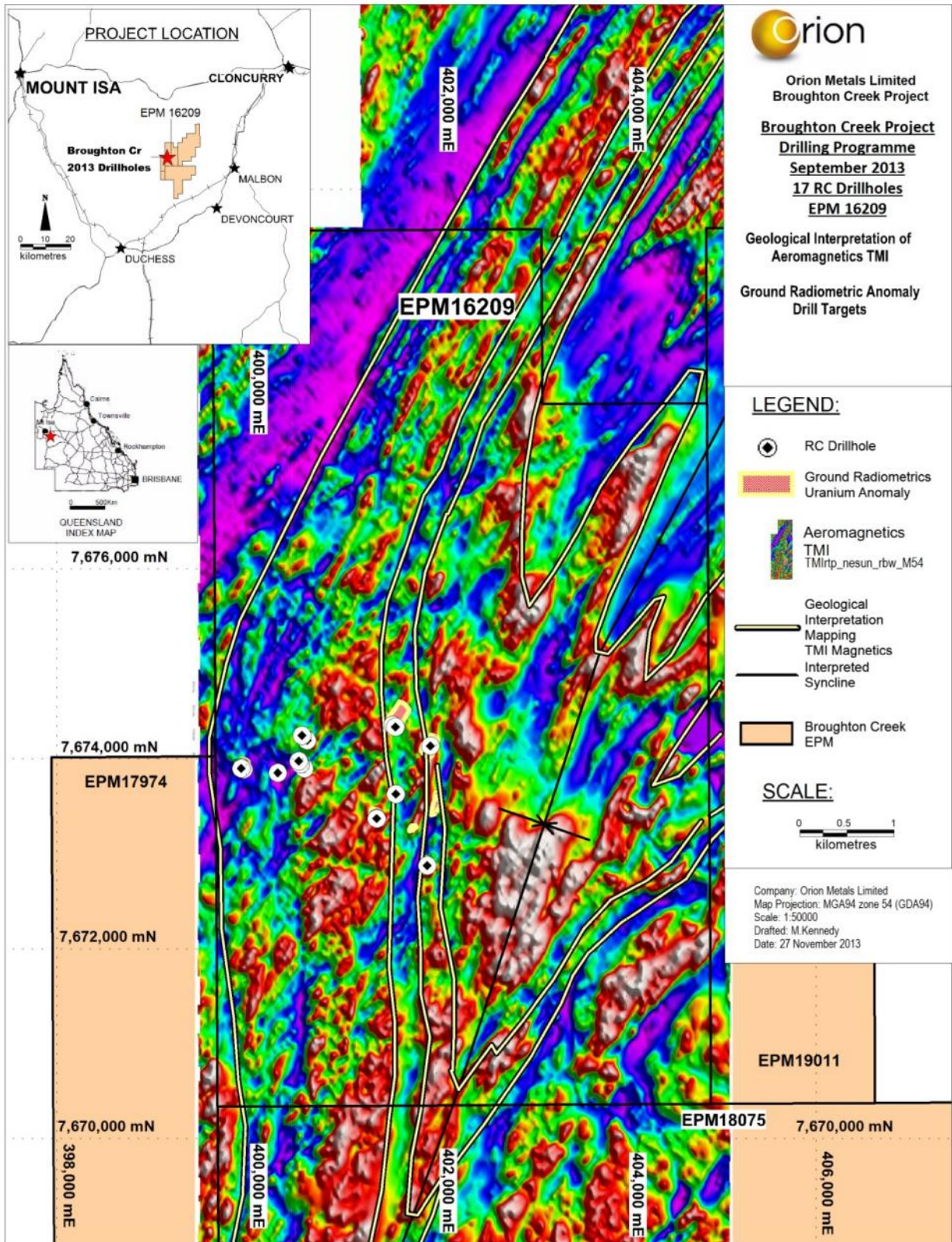
Figure 2 presents an aeromagnetic image covering EPM 16209. The current RC drill holes, highlighted on Figure 2, were positioned on the western limb of a large scale synclinal feature. Ongoing exploration efforts will continue testing this western limb, but will be extended to assess the mineralisation potential of the central axial zone and eastern limb of the synclinal feature.

RC Drill Program

The RC program was purely reconnaissance; designed to test multiple uranium and rare earth anomalous zones, with low impact and cost. Coordinate details of the individual RC drill holes are listed in Table 1 below, and presented on Figure 3.

The radiometric anomalies drilled in this RC program (Figure 3) were well supported by ground based geochemical sampling, regional aero-magnetic surveys, and geological mapping. RC drilling of these anomalies determined the uranium veins and soil uranium occurrences did not have depth extent; rather occurred as discreet narrow veinlets and were locally enriched sub-surface.

Figure 2: Broughton Creek JV Aeromagnetic Image (TMI)



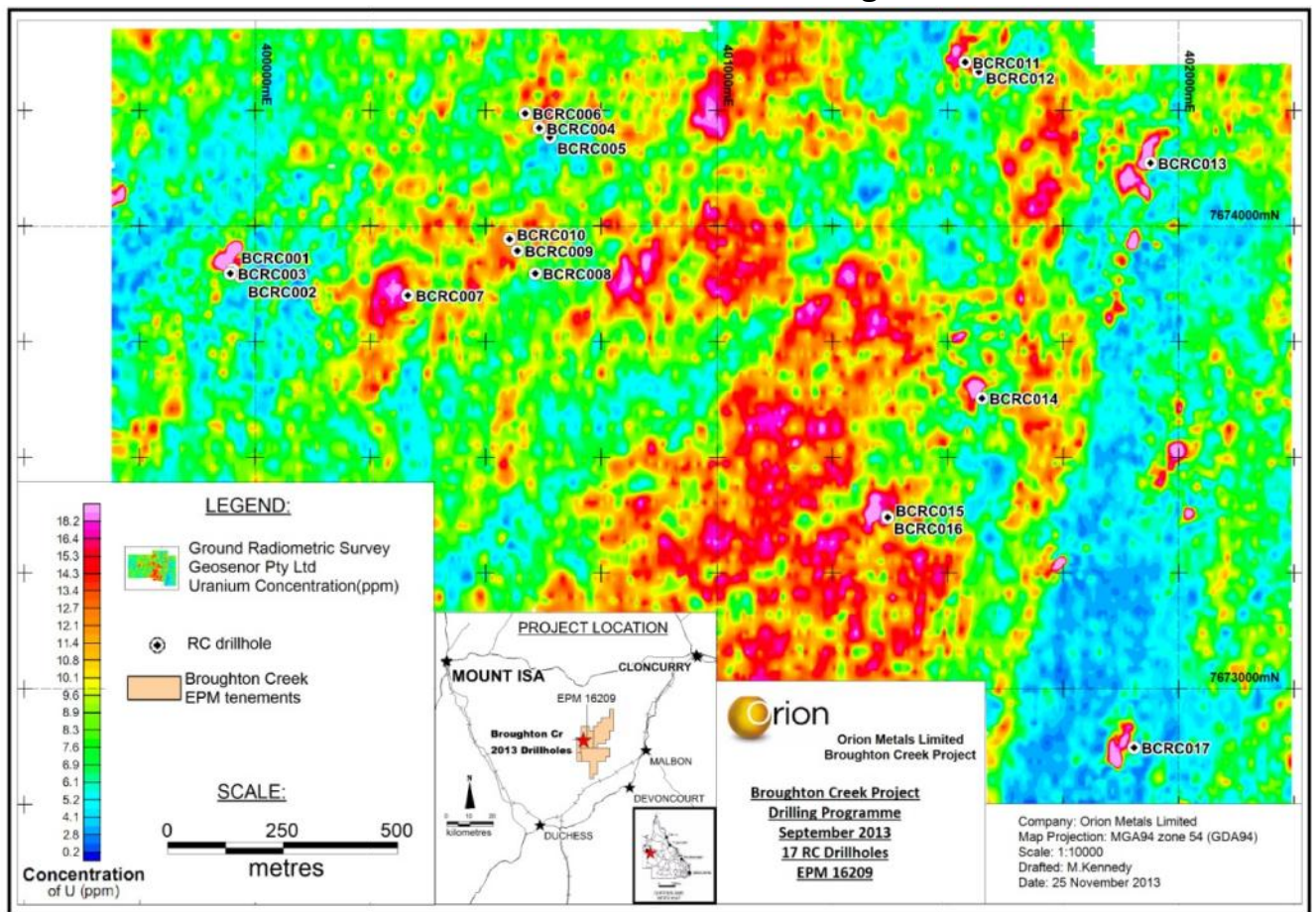
Significant uranium results are listed in Table 5 of Appendix 1. Similarly, rare earth element results were low order. Significant results are provided in Appendix 1.

Though the primary objective of this drill program was to test for uranium and REE; some gold and copper results are interesting and warrant follow up.

Two anomalous gold results were returned from holes BCRC012 and BCRC013, with a best result of 2m @ 0.44 ppm in BCRC012, from 2 to 4 m depth.

Copper anomalism was recorded in holes BCRC007, BCRC009, and BCRC011. A best result of 2m @ 0.45% Cu from 66m – 68m in hole BCRC009 was recorded from a 10 metre wide weakly mineralised zone.

**Figure 3: Broughton Creek JV, EPM 16209.
RC Drill Collars with Radiometric Image**



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About Orion Metals

Orion Metals Limited (ASX:ORM) is a Rare Earth Element and Gold explorer with exploration projects within highly prospective regions in the Tanami Desert of Western Australia and near the former uranium mining district of Mary Kathleen in Northwest Queensland.



Broughton Ck Project RC Collar Locations

Table 1

Hole ID	Hole Type	Easting GDA94	Northing GDA94	RL* (m)	Azimuth (magnetic)	Dip (degrees)	Total Depth (metres)
BCRC001	RC	399951	7673906	315	308	-60	60
BCRC002	RC	399968	7673892	315	307	-60	60
BCRC003	RC	399946	7673898	315	308	-60	60
BCRC004	RC	400615	7674213	315	308	-60	90
BCRC005	RC	400638	7674193	315	309	-60	90
BCRC006	RC	400585	7674245	315	309	-60	78
BCRC007	RC	400331	7673851	315	308	-60	138
BCRC008	RC	400607	7673898	315	308	-60	132
BCRC009	RC	400568	7673947	315	308	-60	96
BCRC010	RC	400551	7673973	315	309	-60	78
BCRC011	RC	401538	7674355	315	309	-60	90
BCRC012	RC	401567	7674334	315	309	-60	90
BCRC013	RC	401939	7674137	315	309	-60	78
BCRC014	RC	401574	7673628	315	309	-60	78
BCRC015	RC	401368	7673373	315	329	-60	90
BCRC016	RC	401370	7673370	315	321	-70	78
BCRC017	RC	401904	7672873	315	307	-60	90

Table 1: RC collar coordinates, drill hole orientations. All coordinates in GDA94 Zone 54.

* RL's not accurately recorded. An RL value has been extrapolated from adjacent historic drilling.

Competent Person Declaration.

The information in this report that relates to Exploration Results or Mineral Resources is based on information compiled by Mr Peter Brookes, a full-time employee of Orion Metals Limited, who is a member of the Australian Institute of Geoscientists. Mr Brookes has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which 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 Brookes consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.



APPENDIX 1: RESULTS TABULATIONS

Broughton Ck Project RC Drilling Results: >0.10% Total Rare Earth Oxides

Table 2

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	LREO %	*HREO %	Y2O3 (ppm)	TREO % (incl Y2O3)
BCRC001	399951	7673906	60	NSR						
BCRC002	399968	7673892	60	58.00	60.00	2.00	0.096	0.008	105	0.114
BCRC003	399946	7673898	60	NSR						
BCRC004	400615	7674213	90	NSR						
BCRC005	400638	7674193	90	NSR						
BCRC006	400585	7674245	78	NSR						
BCRC007	400331	7673851	138	4.00	6.00	2.00	0.084	0.008	127	0.104
				6.00	8.00	2.00	0.083	0.007	121	0.103
BCRC008	400607	7673898	132	NSR						
BCRC009	400568	7673947	96	66.00	68.00	2.00	0.113	0.004	64	0.124
BCRC010	400551	7673973	78	68.00	70.00	2.00	0.077	0.009	145	0.101
BCRC011	401538	7674355	90	NSR						
BCRC012	401567	7674334	90	NSR						
BCRC013	401939	7674137	78	NSR						
BCRC014	401574	7673628	78	NSR						
BCRC015	401368	7673373	90	NSR						
BCRC016	401370	7673370	78	NSR						
BCRC017	401904	7672873	90	74.00	76.00	2.00	0.088	0.005	87	0.101
				84.00	86.00	2.00	0.144	0.002	29	0.149

Table 2: Summary of Light (LREE), Heavy (HREE), and Total Rare Earth Oxide (TREO) results. Lower cutoff 0.1% TREO + Y. *Y excluded from HREO calculations. Maximum consecutive internal dilution set at 2m.

LREE = lanthanum (La) + cerium (Ce) + praseodymium (Pr) + neodymium (Nd) + samarium (Sm).
HREE = europium (Eu) + gadolinium (Gd) + terbium (Tb) + dysprosium (Dy) + holmium (Ho) + erbium (Er) + thulium (Th) + ytterbium (Yb) + lutetium (Lu). Note: Sc is included as a result with the LREO, but not inclusive of the LREO calculation. NSR indicates No Significant Results for the drill hole



Broughton Ck Project RC Drilling Program: Significant Light Rare Earth (LREO) Results

Table 3

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	La2O3 (ppm)	CeO2 (ppm)	Pr6O11 (ppm)	Sc2O3 (ppm)	Nd2O3 (ppm)	Sm2O3 (ppm)
BCRC001	399951	7673906	60	NSR								
BCRC002	399968	7673892	60	58.00	60.00	2.00	244	507	55	2	121	27
BCRC003	399946	7673898	60	NSR								
BCRC004	400615	7674213	90	NSR								
BCRC005	400638	7674193	90	NSR								
BCRC006	400585	7674245	78	NSR								
BCRC007	400331	7673851	138	4.00	6.00	2.00	105	220	27	2	466	20
				6.00	8.00	2.00	107	223	27	2	456	19
BCRC008	400607	7673898	132	NSR								
BCRC009	400568	7673947	96	66.00	68.00	2.00	258	354	32	1	472	13
BCRC010	400551	7673973	78	68.00	70.00	2.00	174	335	40	3	193	26
BCRC011	401538	7674355	90	NSR								
BCRC012	401567	7674334	90	NSR								
BCRC013	401939	7674137	78	NSR								
BCRC014	401574	7673628	78	NSR								
BCRC015	401368	7673373	90	NSR								
BCRC016	401370	7673370	78	NSR								
BCRC017	401904	7672873	90	74.00	76.00	2.00	27	72	10	1	754	11
				84.00	86.00	2.00	377	485	36	1	532	9

Table 3: Results reported consist of combined weighted average results for LREO >0.10%. Maximum consecutive internal dilution set at 2m. NSR indicates No Significant Results for the drill hole. Results rounded to whole numbers.



Broughton Ck Project RC Drilling Program: Significant Heavy Rare Earth (HREO) Results

Table 4

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	Eu2O3 (ppm)	Gd2O3 (ppm)	Tb4O7 (ppm)	Dy2O3 (ppm)	Ho2O3 (ppm)	Er2O3 (ppm)	Tm2O3 (ppm)	Yb2O3 (ppm)	Lu2O3 (ppm)
BCRC001	399951	7673906	60	NSR											
BCRC002	399968	7673892	60	58.00	60.00	2.00	5	24	3	19	3	10	1	9	1
BCRC003	399946	7673898	60	NSR											
BCRC004	400615	7674213	90	NSR											
BCRC005	400638	7674193	90	NSR											
BCRC006	400585	7674245	78	NSR											
BCRC007	400331	7673851	138	4.00	6.00	2.00	4	19	3	19	4	12	2	12	2
				6.00	8.00	2.00	4	18	3	18	3	12	2	11	1
BCRC008	400607	7673898	132	NSR											
BCRC009	400568	7673947	96	66.00	68.00	2.00	3	12	2	10	2	7	1	7	1
BCRC010	400551	7673973	78	68.00	70.00	2.00	5	24	4	23	5	14	2	12	2
BCRC011	401538	7674355	90	NSR											
BCRC012	401567	7674334	90	NSR											
BCRC013	401939	7674137	78	NSR											
BCRC014	401574	7673628	78	NSR											
BCRC015	401368	7673373	90	NSR											
BCRC016	401370	7673370	78	NSR											
BCRC017	401904	7672873	90	74.00	76.00	2.00	4	12	2	12	2	7	1	7	1
				84.00	86.00	2.00	1	5	1	4	1	2	0	3	0

Table 4: Results reported consist of combined weighted average results for HREO >0.10%. Maximum consecutive internal dilution set at 2m. NSR indicates No Significant Results for the drill hole. Results rounded to whole numbers.

Broughton Ck Project RC Drilling Program: Significant Uranium Results

Table 5

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	U (ppm)
BCRC001	399951	7673906	60	NSR			
BCRC002	399968	7673892	60				
BCRC003	399946	7673898	60				
BCRC004	400615	7674213	90				
BCRC005	400638	7674193	90				
BCRC006	400585	7674245	78				
BCRC007	400331	7673851	138				
BCRC008	400607	7673898	132				
BCRC009	400568	7673947	96	80.00	82.00	2.00	181
BCRC010	400551	7673973	78	56.00	58.00	2.00	387
BCRC011	401538	7674355	90	NSR			
BCRC012	401567	7674334	90				
BCRC013	401939	7674137	78				
BCRC014	401574	7673628	78				
BCRC015	401368	7673373	90				
BCRC016	401370	7673370	78				
BCRC017	401904	7672873	90				

Table 5: A 100ppm lower cut was applied. Maximum consecutive internal dilution set at 2m. NSR indicates No Significant Results for the drill hole. Results rounded to whole numbers.

Table 6: Broughton Ck Project RC Drilling Program: Significant Gold Results

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	Au (ppm)
BCRC001	399951	7673906	60	NSR			
BCRC002	399968	7673892	60				
BCRC003	399946	7673898	60				
BCRC004	400615	7674213	90				
BCRC005	400638	7674193	90				
BCRC006	400585	7674245	78				
BCRC007	400331	7673851	138				
BCRC008	400607	7673898	132				
BCRC009	400568	7673947	96				
BCRC010	400551	7673973	78				
BCRC011	401538	7674355	90				
BCRC012	401567	7674334	90	2.00	4.00	2.00	0.44
BCRC013	401939	7674137	78	84.00	86.00	2.00	0.10
BCRC014	401574	7673628	78	NSR			
BCRC015	401368	7673373	90				
BCRC016	401370	7673370	78				
BCRC017	401904	7672873	90				

Table 6: A 0.10ppm lower cut was applied. Maximum consecutive internal dilution set at 2m. NSR indicates No Significant Results for the drill hole. Results rounded to 2 decimal places.

Table 7: Broughton Ck Project RC Drilling Program: Significant Copper Results

Hole ID	East GDA94	North GDA94	Hole Depth (m)	From (m)	To (m)	Interval (m)	Cu %	Intercept
BCRC001	399951	7673906	60	NSR				
BCRC002	399968	7673892	60					
BCRC003	399946	7673898	60					
BCRC004	400615	7674213	90					
BCRC005	400638	7674193	90					
BCRC006	400585	7674245	78					
BCRC007	400331	7673851	138	38.00	40.00	2.00	0.19	4m @ 0.15% Cu
				40.00	42.00	2.00	0.11	
BCRC008	400607	7673898	132	NSR				
BCRC009	400568	7673947	96	58.00	60.00	2.00	0.12	4m @ 0.12% Cu
				60.00	62.00	2.00	0.11	
				66.00	68.00	2.00	0.45	2m @ 0.45% Cu
BCRC010	400551	7673973	78	NSR				
BCRC011	401538	7674355	90	4.00	6.00	2.00	0.22	4m @ 0.22% Cu
				6.00	8.00	2.00	0.22	
BCRC012	401567	7674334	90	NSR				
BCRC013	401939	7674137	78					
BCRC014	401574	7673628	78					
BCRC015	401368	7673373	90					
BCRC016	401370	7673370	78					
BCRC017	401904	7672873	90					

Table 7: A 0.1% lower cut was applied. Maximum consecutive internal dilution set at 2m. NSR indicates No Significant Results for the drill hole. Results rounded to 2 decimal places..

APPENDIX 2

BROUGHTON CREEK J.V. (JORC Code, 2012 Edition – Table 1)

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <i>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.</i> <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> 	<ul style="list-style-type: none"> 17 RC drill holes were completed and provided samples for this reconnaissance program exploring for uranium (U) and rare earth (REE) mineralisation. Samples were collected dry through an industry standard cone sample splitter. 17 RC drill holes were completed for 1,476m. Drill hole locations were marked using a hand held GPS instrument. All drill holes were aligned and drilled at between 307° and 329° magnetic and inclined at -60°. Downhole surveys were taken using an electronic readout, single shot downhole camera. Surveys were taken on average at every 50 metres depth incrementally downhole and at end of hole. The drill holes were designed to give optimal coverage across radiometric anomalies located on EPM16209 coincident with significant rock chip sample results. Drill hole orientations were seen as optimal coverage across strike of interpreted regional stratigraphy, and interpreted NE trending veining/alteration zones. <p>RC drill bulk samples were collected at 1 metre intervals throughout the length of the drill hole, and were aligned in orderly rows at the drill site. 1 metre split samples were collected from the automatic cone splitter and dispatched to the laboratory for analysis. Samples were composited at the lab into 2 metre intervals. 739 composite samples were analysed.</p>
Drilling techniques	<ul style="list-style-type: none"> <i>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).</i> 	<ul style="list-style-type: none"> The drill program was completed using a truck mounted KWL1600 RCP drill rig. Reverse circulation samples were produced using a face sampling hammer. Samples were deposited into an industry standard cyclone and split utilizing a cone splitter mounted under the cyclone.
Drill sample	<ul style="list-style-type: none"> <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> 	<ul style="list-style-type: none"> Drill sample recoveries are visually assessed at the time of drilling by the supervising geologist. Any unacceptable reduction of sample

Criteria	JORC Code explanation	Commentary
<p><i>recovery</i></p>	<ul style="list-style-type: none"> <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> <i>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.</i> 	<p>volume was immediately flagged, drilling is ceased, and the problem rectified. Sample recovery for the program averaged >90%.</p> <ul style="list-style-type: none"> In this case, using a highly rated air compressor to ensure samples are delivered to the surface dry by RC methods offers optimal sample recovery, minimal downhole contamination, and an ideal sample split. On each drill site prior to drilling, the cone splitter is leveled to ensure an optimal unbiased sample split. Routinely, the cyclone and splitter were cleaned of any accumulated material. RC drilling produced dry samples, using a face sampling hammer. It is unlikely these samples experienced any sample bias due to drilling.
<p><i>Logging</i></p>	<ul style="list-style-type: none"> <i>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.</i> <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> <i>The total length and percentage of the relevant intersections logged.</i> 	<ul style="list-style-type: none"> Chip samples were logged routinely, at metre intervals, by a qualified supervising geologist at the drill rig. Geological information was recorded on paper at site, then transferred by the geologist into a digital format for loading into a database. RC chips were logged qualitatively by the geologist. Entire drill holes were geologically logged.
<p><i>Sub-sampling techniques and sample preparation</i></p>	<ul style="list-style-type: none"> <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> 	<ul style="list-style-type: none"> There was no core drilling conducted. RC samples were collected dry and the entire interval was automatically split through an industry standard cone splitter. Industry best practice methods for RC sample preparation for analysis was employed. Samples are dried in ovens at 120°C, split and pulverized to better than 85% passing 75 microns. An ISO accredited laboratory was employed. Field blanks and standards (Certified Reference Materials) were not employed, while duplicates were assembled at the laboratory along with sample composites. Standards were not employed due to the

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> 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. 	<p>lack of available packaged reference material. Also, the nature of this drilling program was purely reconnaissance – the objective to assess anomalies quickly and cost effectively.</p> <ul style="list-style-type: none"> Duplicates were assembled at the laboratory in line with standard documented sample preparation procedure, a PDF QC certificate issued with each batch of samples. Visual observations during drilling of the host rock material indicated current sampling practices were appropriate to grain size and texture encountered.
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. 	<p>Multiple analytical techniques were applied to the samples, where the mineralization environment contains a potentially diverse array of elements. Samples were analysed for REE, U, base metals, and Au. U, REE and most base metals were analysed using method ME-MS81 (ALS Laboratories). A prepared sample (0.200g) is added to lithium metaborate flux (0.90 g), mixed well and fused in a furnace at 1000°C. The resulting melt is then cooled and dissolved in 100 mL of 4% HNO₃ / 2% HCl₃ solution. This solution is then analysed by inductively coupled plasma - mass spectrometry. Elements analysed include Ag, Ba, Ce, Co, Cr, Cs, Cu, Dy, Er, Eu, Ga, Gd, Hf, Ho, La, Lu, Mo, Nb, Nd, Ni, Pb, Pr, Rb, Sm, Sn, Sr, Ta, Tb, Th, Tl, Tm, U, V, W, Y, Yb, Zn, Zr. 10 elements were further subject to a 4 acid digest including Ag, Cd, Co, Cu, Li, Mo, Ni, Pb, Sc, Zn with an ICPAES finish. Gold samples were fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents as required, inquarted with 6 mg of gold-free silver and then cupelled to yield a precious metal bead. The bead is digested in 0.5 mL dilute nitric acid in the microwave oven, 0.5 mL concentrated hydrochloric acid is then added and the bead is further digested in the microwave at a lower power setting. The digested solution is cooled, diluted to a total volume of 4 mL with de-mineralized water, and analysed by atomic absorption spectroscopy against matrix-matched standards. These techniques are considered industry standard, and yield best</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> 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. 	<p>outcomes towards total digestion.</p> <ul style="list-style-type: none"> A hand held radiation scintillometer/spectrometer (Model GR-135Plus) was applied to all RC samples collected. Readings were recorded in the geological drill log for each meter. The unit was calibrated by Fugro Instruments. There were no significant U values recorded. ALS laboratories in-house QAQC laboratory procedures are rigorous and comprehensive, in line with NATA accreditation ISO 17025. The use of CRM's, blanks, and duplicate analyses were applied to each batch of samples. Established benchmarks met acceptable levels of accuracy.
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> High grade mineralization intersected would have been re-assayed for confirmation and further assessment. In this instance, there were no zones warranting this effort. Not required for this program. Drill logs were recorded on paper, and then manually transferred by geologist to excel spreadsheets. Data is stored digitally in excel spreadsheets and PDF documents. <p>Rare earth element (REE) results were required to be adjusted in order to report industry standard equivalent rare earth oxide compounds. Element results are reported in ppm values by the laboratory. These have an oxide conversion factor applied by Orion Metals, unique to each element reported. Rare earth oxides (REO) are reported in an industry standard format of reporting light, heavy, and total REO's (Table 2, ORM ASX release 29th November 2013)). The complete calculation, including each respective oxide conversion value is included here.</p> <p>The following formula has been applied to the calculation of LREO, HREO, and TREO: $((La * 1.173) + (Ce * 1.228) + (Pr * 1.208) + (Nd * 1.166) + (Sm * 1.160)) / 10000 = LREO\%$.</p>

Criteria	JORC Code explanation	Commentary
		<p>Sc* 1.534 = Sc₂O₃.</p> <p>$((\text{Eu} * 1.158) + (\text{Gd} * 1.153) + (\text{Tb} * 1.176) + (\text{Dy} * 1.148) + (\text{Ho} * 1.146) + (\text{Er} * 1.143) + (\text{Tm} * 1.142) + (\text{Yb} * 1.139) + (\text{Lu} * 1.137)) / 10000 = \text{HREO}\%$.</p> <p>Y * 1.270 = Y₂O₃.</p> <p>$((\text{La} * 1.173) + (\text{Ce} * 1.228) + (\text{Pr} * 1.208) + (\text{Nd} * 1.166) + (\text{Sm} * 1.160) + (\text{Eu} * 1.158) + (\text{Gd} * 1.153) + (\text{Tb} * 1.176) + (\text{Dy} * 1.148) + (\text{Ho} * 1.146) + (\text{Er} * 1.143) + (\text{Tm} * 1.142) + (\text{Yb} * 1.139) + (\text{Lu} * 1.137) + (\text{Y} * 1.270)) / 10000 = \text{TREO}\%$.</p>
<p><i>Location of data points</i></p>	<ul style="list-style-type: none"> • <i>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.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<ul style="list-style-type: none"> • Drill hole locations were surveyed using a hand held GPS unit. This method is adequate for a reconnaissance drill program. • The grid system used is GDA94 Zone 54. All reported coordinates use this system. • Not required for this program.
<p><i>Data spacing and distribution</i></p>	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>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.</i> • <i>Whether sample compositing has been applied.</i> 	<ul style="list-style-type: none"> • Drill holes were sited to give optimal coverage across anomalous areas, and across strike of stratigraphy. 5 fences of 2 and 3 holes were completed with approx 20 m separations between holes on fences. • Not applicable • 2 metre composite samples were produced for this exercise. 1 metre split samples collected at the rig were supplied to the laboratory.

Criteria	JORC Code explanation	Commentary
		These samples were subsequently weighted, combined, mixed, and split to create 2 metre composites for analysis. Results were reported as 2 metre composite results. No compositing was applied subsequently to the results.
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Drilling was strategically oriented to give maximum coverage across apparent strike of stratigraphy and mineralized structures. • There is not expected to be any sampling bias through drill orientation.
<i>Sample security</i>	<ul style="list-style-type: none"> • <i>The measures taken to ensure sample security.</i> 	<ul style="list-style-type: none"> • Samples were collected and stored at site at the exploration camp under the supervision of Orion Metals staff. Samples were couriered by Orion Metals staff directly to the lab. Sample receipts were received for the delivery.
<i>Audits or reviews</i>	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of sampling techniques and data.</i> 	<ul style="list-style-type: none"> • No formal audits or reviews were conducted for this small reconnaissance program.

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> • <i>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.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Drilling was conducted on a Qld state EPM (exploration permit for minerals) licence, ref no: EPM 16209. Located in the Mt Isa district, 60 km's SSW of Cloncurry. Tenement holder is Broughton Minerals Pty Ltd. The EPM is subject to a Farm in and JV Agreement between Orion Metals Ltd and Broughton Minerals Pty Ltd. The Agreement was executed 31st August 2011. A Form 1 Native Title Protection Conditions was lodged with the Kalkadoon People in regards to this current RC drill program. • Tenure is secure with no known impediments.

Criteria	JORC Code explanation	Commentary
<p><i>Exploration done by other parties</i></p>	<ul style="list-style-type: none"> <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<p>EPM16209 has had numerous tenants over a long time and subject to various exploration efforts as follows: MOUNT ISA MINES LIMITED (late 1960's, ATP 359), evaluated the Pindora Cu workings (age 1915 to 1930) to the NW of the EPM. No drilling was conducted.</p> <p>CLUTHA DEVELOPMENT (1967-1968, ATP 406) explored the Cambrian sediments of the Georgina Basin for Duchess style Phosphate.</p> <p>MINES EX. - BROKEN HILL SOUTH JOINT VENTURE (late 1960's, ATP 415) explored for phosphate in the Cambrian Bottle Creek Formation, no drilling conducted on EPM Pandora area.</p> <p>NEWMONT P/L / CRAE (1977, ATP 1794) targeted roll-front type U deposits in the Cambrian Mt. Birnie Formation, however no work conducted within current EPM boundaries.</p> <p>CRAE (1981-1982, ATP 2562) conducted an airborne radiometric and magnetic survey, targeting uranium and/or base metal mineralisation within the Lower Proterozoic Tewinga Group.</p> <p>CRAE (1982-1983, ATP 3263) conducted a 1 sample/10km² multi-element stream sediment survey, and minor rock chip program. No follow up work recommended on current EPM area</p> <p>CRAE (1988, ATP 5237 and ATP 5238) acquired this ground on the basis of gold anomalism encountered within Mitakoodi Quartzite on another CRAB tenement ATP 3967. No significant discovery was made in ATP 3967 so ATP 5237 and ATP 5238 were relinquished with no work having been conducted</p> <p>PLACER EXPLORATION LTD (1993, EPM 8605) targeted this ground to search for gold and copper mineralisation associated with splays off the north-northeast trending Pilgrim Fault zone.</p> <p>MIMEX (1994 -1995, EPM 9385) selected the ground on the basis of potential for Ernest Henry style Au-Cu mineralization and for Tick Hill style Au only mineralization. In the first year's exploration, interpretation and modelling of the MIM Airborne Magnetics dataset was carried out, followed by regional BCL stream sediment sampling, the results of which gave rise to the Seven Spit Cu Au prospective area During this second year of exploration, a further 60 samples were taken to refine</p>

Criteria	JORC Code explanation	Commentary
		<p>the anomalous zone at 'Seven Split'. Mapping of the 'Seven Split' prospect was carried out at both 1:25 000 and 1:5000 scale along with soil and rock chip geochemistry surveys.</p> <p>CNW PTY LTD (2008 - 2011, EPM 16209) also selected the EPM area on the basis of potential for Ernest Henry style Au-Cu mineralization and for Tick Hill style Au only mineralization. A detailed aeromagnetic /radiometric survey over the tenement in May 2009 confirmed the previously discovered anomalous copper/gold surface geochemistry and discovered areas of intense uranium and rare earth anomalism. A geochemical survey over anomalous zones had results with individual analyses ranging up to in excess of 30% U3O8 and 9% REEs. Subsequently, an Industry Network Initiative (INI) funded project combined ground spectrometry, ground geochemical field-portable XRF with assessment of results in a Common Earth GoCAD model. A Collaborative Drilling Initiative (CDI) funded drilling programme south of the Malbon River tested a magnetic anomaly and the depth extent of a 600m long quartz reef at the Pandora Prospect.</p>
<p><i>Geology</i></p>	<ul style="list-style-type: none"> <i>Deposit type, geological setting and style of mineralisation.</i> 	<ul style="list-style-type: none"> The Mt Isa Inlier in which the Broughton Ck tenement EPM 16209 is located is subdivided by major N striking faults into three tectonic belts. EPM 16209 is located within the Kalkadoon/Leichardt Belt. It covers Proterozoic metavolcanic and metasedimentary rocks of the Quamby/Malbon zone, which is unconformably overlain by Cambrian rocks of the Georgina Basin. The Proterozoic rocks comprise of the Basal Argylla Formation and over-lying Marraba Volcanics. EPM16209 was secured for its potential to host Ernest Henry style copper/gold deposits, though subsequent regional exploration initiatives by CNW Broughton Minerals Pty Ltd determined a U/REE exploration potential. That potential has been the focus for Orion Metals Ltd, and this consequential RC drill program. Identified mineralization at surface gave rise to the anomalous U/REE, expressed as silica/adularia alteration within a moderately brecciated metafelsite host. Veinlets are thin, anastomosing, within zones sub-parallel to overall apparent NNE striking stratigraphy which has been significantly structurally impacted. The area is subject to a regional NNE trending plunging syncline, with this U/REE anomalous zone lying adjacent to and on the western limb of this major structure.

Criteria	JORC Code explanation	Commentary
<p><i>Drill hole Information</i></p>	<ul style="list-style-type: none"> • <i>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:</i> <ul style="list-style-type: none"> ○ <i>easting and northing of the drill hole collar</i> ○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> ○ <i>dip and azimuth of the hole</i> ○ <i>down hole length and interception depth</i> ○ <i>hole length.</i> • <i>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.</i> 	<ul style="list-style-type: none"> • Details of the RC drill program are attached in Table 1, (ORM ASX release 29th November 2013), of this document. All significant intercepts are reported in Tables 2 to 7 of this document.
<p><i>Data aggregation methods</i></p>	<ul style="list-style-type: none"> • <i>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.</i> • <i>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.</i> • <i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i> 	<ul style="list-style-type: none"> • Weighted averages applied to intercepts have no top cut, maximum internal dilution of 2 metres, and lower cuts applied as follows: 0.10%TREO, 100 ppm U, 0.10 ppm Au, 0.10% Cu. • Not applicable to these results • No metal equivalents have been used.
<p><i>Relationship between mineralisation widths and intercept lengths</i></p>	<ul style="list-style-type: none"> • <i>These relationships are particularly important in the reporting of Exploration Results.</i> • <i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i> • <i>If it is not known and only the down hole lengths are reported, there</i> 	<ul style="list-style-type: none"> • Regional structural and stratigraphic information suggest an overall strike trend of 45° (NNE), with dips steep to the SW towards the syncline axial plane. A drilling orientation of approximately 315°magnetic at -60° is consistent with drilling normally across dip and strike of the units being explored. • Results from the RC drilling program were generally of low order. No significant U/REE mineralization was intersected to assist with further mineralization geometries, apart from what is extrapolated through regional context reported here already. • It is expected that from the results received, and the intersections

Criteria	JORC Code explanation	Commentary
	<i>should be a clear statement to this effect (eg 'down hole length, true width not known').</i>	reported, that the drilling orientation of -60 intersected potential mineralization as normal as possible across dip and strike of the interpreted mineralization.
Diagrams	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • Refer to text of this document (ORM ASX release 29th November 2013) for diagrams of drill collar positions. No significant discovery is being reported.
Balanced reporting	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • Representative reporting has been achieved, with the reporting of some slightly elevated base metal results along with the primary objectives of this drilling program – U and REE.
Other substantive exploration data	<ul style="list-style-type: none"> • <i>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.</i> 	<ul style="list-style-type: none"> • There is no other additional substantive material to be reported.
Further work	<ul style="list-style-type: none"> • <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<ul style="list-style-type: none"> • With these results, additional ground based geochemical survey work will be initiated, especially further work towards Cu Au anomalous areas. U and REE areas worthy of drill testing lie closer to the syncline hinge and adjacent eastern limb of the fold. • Refer to figures presented in the main body of this document (ORM ASX release 29th November 2013).