



## ASX ANNOUNCEMENT

14<sup>th</sup> July 2014

# EXPLORATION UPDATE Broughton Creek Project Geochemical Sample Results

Orion Metals Limited (ASX:ORM), rare earth element (REE) and gold explorer, is pleased to provide this exploration update.



001 AUS

### HIGHLIGHTS

- Two high-grade copper gold rock chip results, (7.7% Cu, 6.55 g/t Au and 11.1% Cu, 0.77g/t Au) from Huggins prospect area confirm strength of outcropping mineralisation.
- 2.5g/t gold returned in one stream sediment sample. Potential for new gold prospective area.
- Encouraging stream sediment results highlight new areas of copper and gold anomalism.

A broad based geochemical sampling survey (Figure 2), comprising of stream sediment and rock chip sampling, across the entire granted project area (excluding EPM18075 not granted at that time) has resulted in the identification of new copper and gold anomalous zones across the tenement package.

### Rock Chip Sampling

Areas were selected for ground based geological assessment on the basis of historic sample information and interpretative data obtained from the recently completed desktop study. A total of 42 rock chip samples were taken from prospective areas across the Project for analysis.

Two excellent rock chip results (Table 1) returned from the Huggins prospect area, located on the eastern fringe of EPM19011 (Figure 2) coincident to an interpreted regional shear zone, confirm

the prospectivity of visually identified copper mineralisation contained in several mapped gossanous quartz veins.

*Best results include **11.1% Cu**, 0.77g/t Au, 5.04ppm Ag, 391ppm Mo, and 636ppm W from sample DMRK049, and 7.7% Cu, **6.55 g/t Au**, 2.37ppm Ag, 208ppm Mo, and 10ppm W from DMRK050.*

This zone of anomalism requires further intensive mapping and sampling to determine the extent of the mineralisation. Scheduling of field crews is in progress.

### Stream Sediment Sampling

A total of 152 stream sediment samples have been collected from the Project area. These were taken from trap locations along select drainage channels. This sampling method was designed to provide maximum geochemical coverage over the entire Project area at a relatively conservative cost. This stream sediment sampling program has produced some positive results.

*A best gold result of **2497 ppb** from stream sediment sample BCG0128, centrally located on EPM19011 (Figures 2 & 3) is an outstanding result and will trigger an expanded reconnaissance effort focussed in this area.*

Additionally, good stream gold and copper results received from the central eastern margin of EPM16209 further strengthen the overall prospectivity of the region. Stream gold results (Table 2) include 35ppb Au from sample BCG0035, and 11ppb Au from sample BCG0034. Stream copper results (Table 3) from the same area include 118ppm Cu from BCG0048, and 111ppm Cu from BCG0035 (Figures 2 & 4).

A North East trending zone of copper anomalism located centrally in EPM19011 (Figure 4) warrants follow up ground assessment and soil sampling to refine the anomaly. A best result of 177ppm Cu from sample BCG0137.

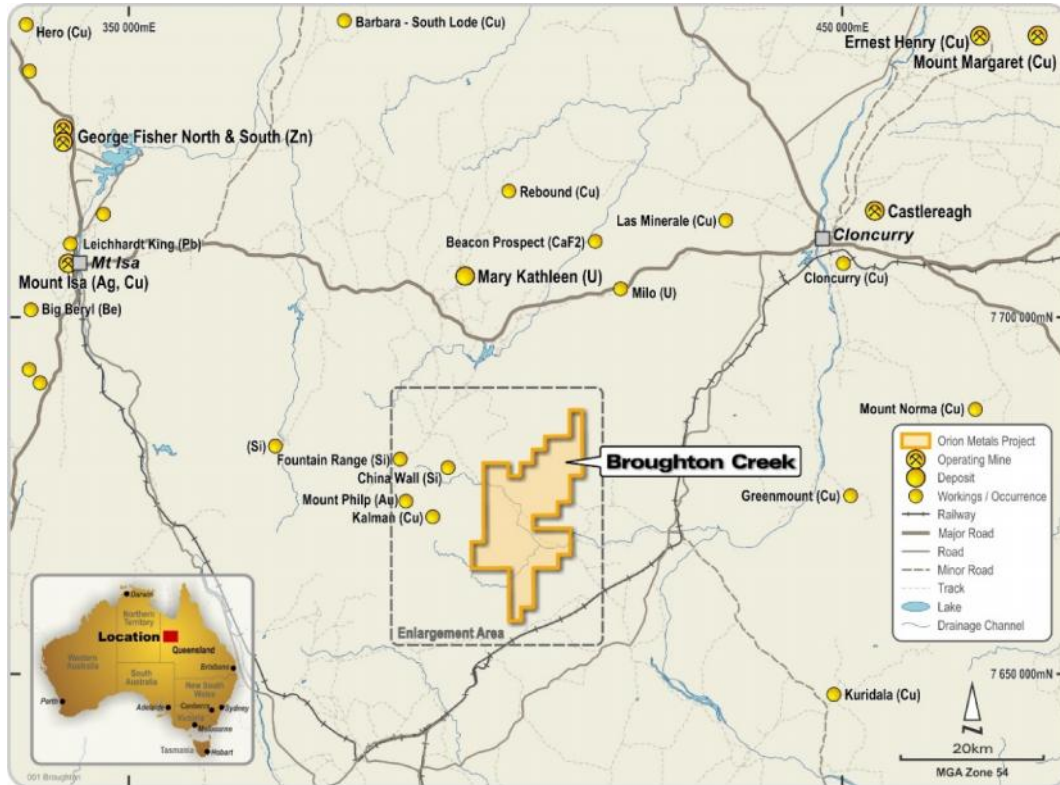
### Further Work

Given the success of this exercise, further field reconnaissance work is planned to include:

- Prospect scale mapping and extensive rock chip sampling
- Soil sampling, and expanded stream sediment sampling across new tenement EPM18075.

Additionally, acquisition and reprocessing of aeromagnetic data is a high priority, along with geochemical processing and normalisation of recently collected samples and historic data to assist with target definition.

Figure 1: Broughton Creek Project location plan.



### About Orion Metals

Orion Metals Limited (ASX:ORM) is a Rare Earth Element(REE) and Gold explorer with exploration projects in the highly prospective metal provinces of the Tanami Desert of Western Australia, the former uranium mining district of Mary Kathleen in Northwest Queensland, and Mt Surprise, in NE Queensland.

### For Further Information

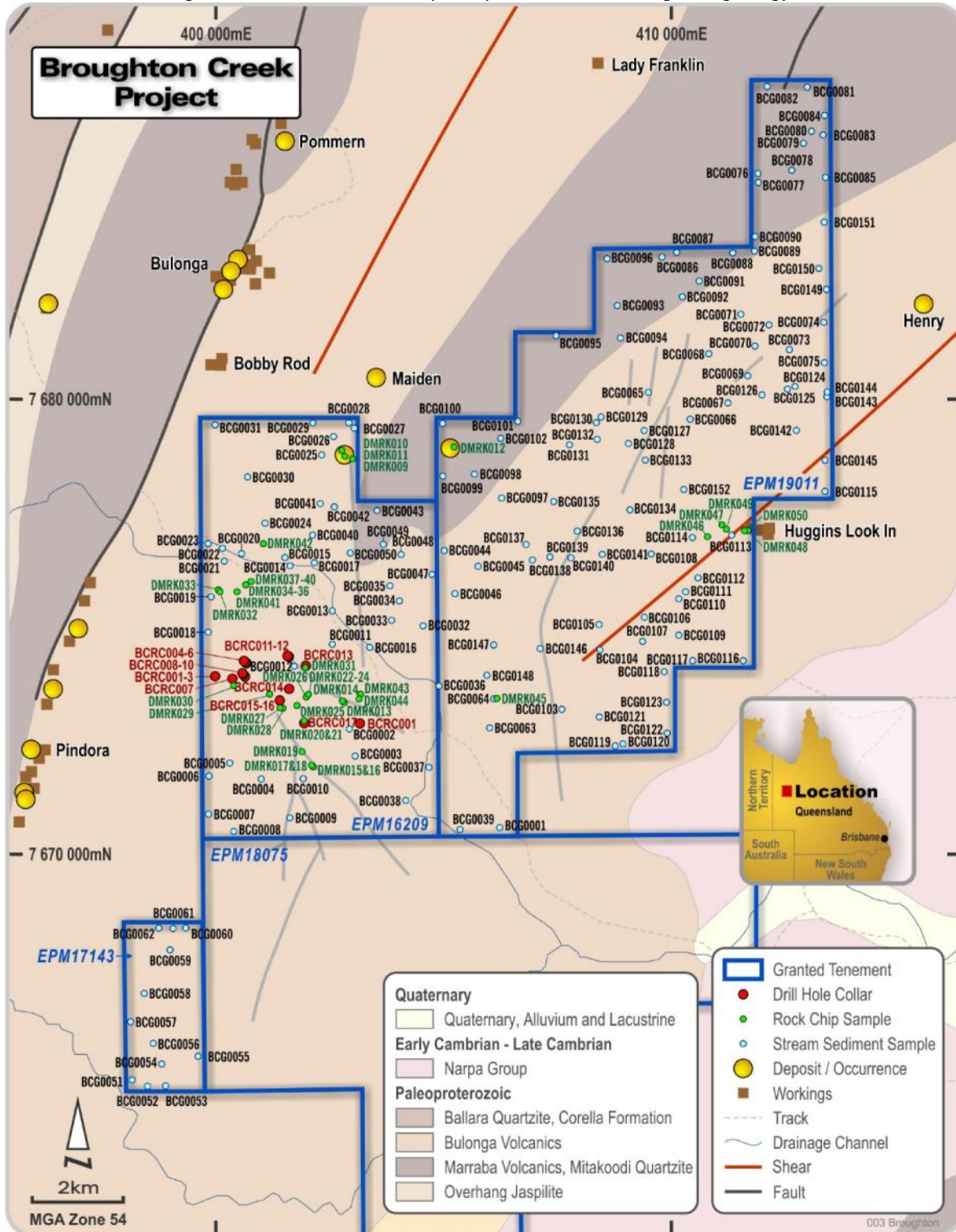
Please contact: **Bill Lyne – Company Secretary**  
 Phone – 0418 874 175  
 Email – [blyne@orionmetals.com.au](mailto:blyne@orionmetals.com.au)

### 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.

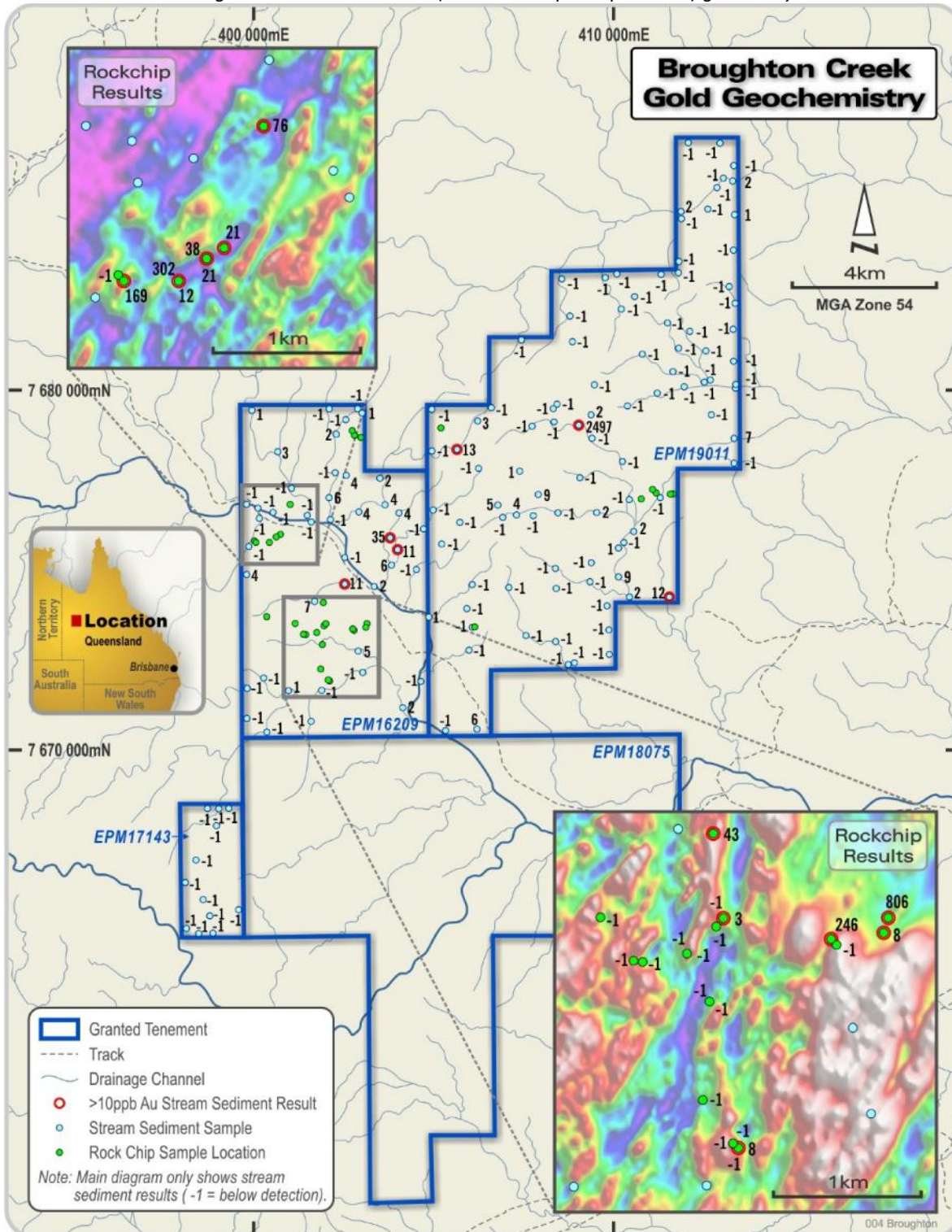


Figure 2: Stream and Rock Chip Sample locations with regional geology.



Note: Prefix DMRK indicates rock chip sample, BCG indicates stream sediment sample, BCRC indicates reverse circulation drill collar location.

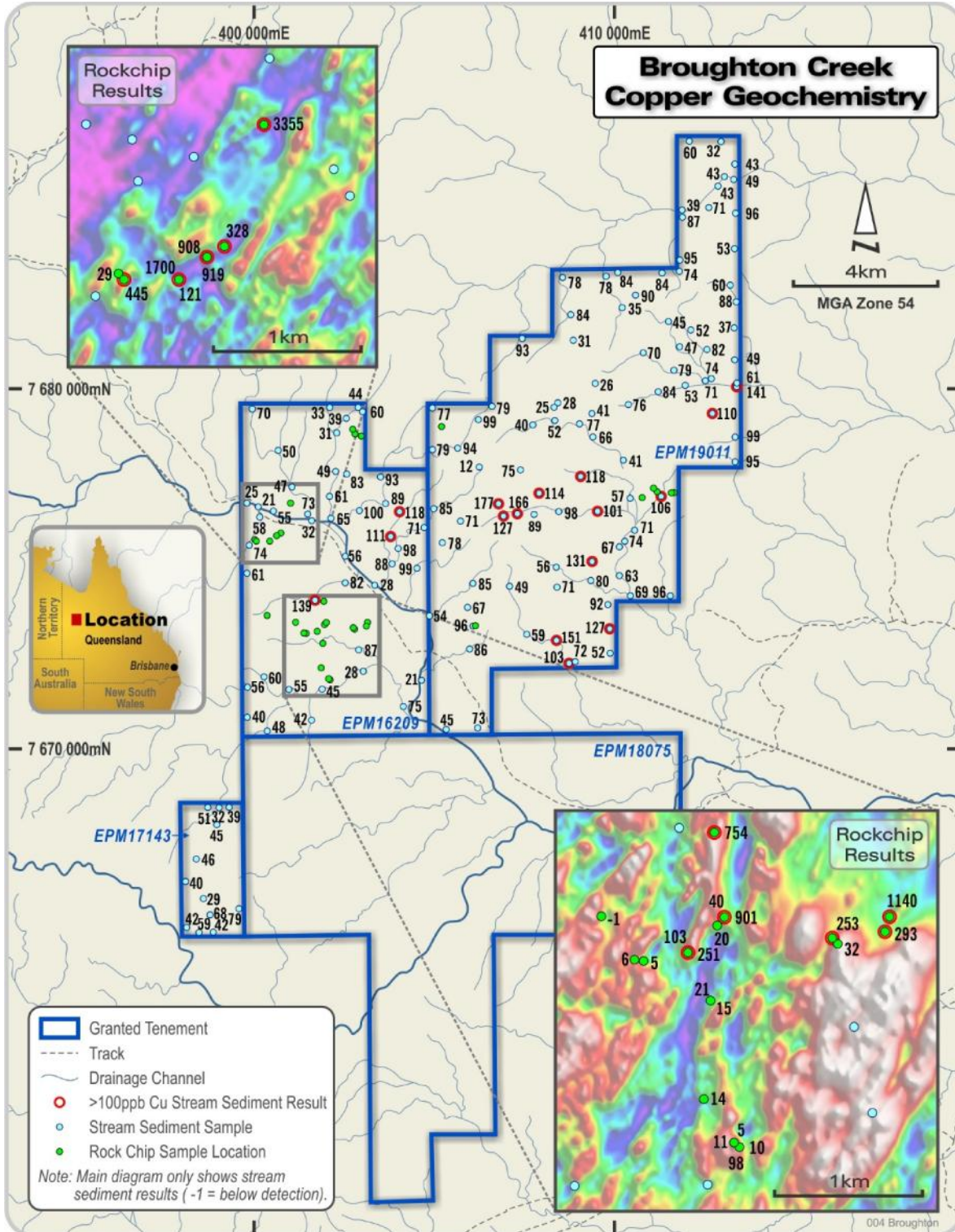
Figure 3: Stream Sediment (and Rock Chip Sample insert) gold assay results.



Note: The plan background presents the areas drainage pattern with access tracks and all stream sediment sample results. The coloured inserts to EPM16209 present rockchip gold results with a TMI air mag image. All gold results on the plan are presented in ppb's.



Figure 4: Stream Sediment (and Rock Chip Sample insert) copper assay results.



Note: The plan background presents the areas drainage pattern with access tracks and all stream sediment sample results. The coloured inserts to EPM16209 present rockchip copper results with a TMI air mag image. All copper results on the plan are presented in ppm's.

Table 1: Rock Chip Sample highlights – Gold, copper, and select multielements.

Site ID	Easting GDA94	Northing GDA94	Elevation (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (g/t)	Ba (ppm)	Bi (ppm)	Co (ppm)	Mo (ppm)	Sb (ppm)	W (ppm)
DMRK009	402826	7678743	320	4	-5	3	-0.05	-0.001	1193.8	0.06	0.6	0.3	0.32	-1
DMRK010	402764	7678871	320	<b>1613</b>	-5	4	0.1	0.054	6.7	0.07	14.4	0.5	-0.05	-1
DMRK011	402997	7678684	320	334	13	10	0.25	0.004	29	1.77	32.4	3	0.16	6
DMRK012	405188	7678946	320	329	8	5	0.22	-0.001	24.9	0.63	15.1	1.2	0.56	3
DMRK013	402744	7673363	320	253	-5	6	-0.05	<b>0.246</b>	94.1	0.13	4.4	6.2	0.08	-1
DMRK014	402782	7673323	320	32	10	9	-0.05	-0.001	740	0.08	6.7	0.9	0.12	-1
DMRK015	402101	7671915	320	10	-5	6	-0.05	-0.001	496.9	0.02	4.1	0.3	-0.05	-1
DMRK016	402101	7671914	320	5	-5	4	-0.05	-0.001	456.8	0.02	1.9	0.3	-0.05	-1
DMRK017	402064	7671946	320	98	-5	13	-0.05	0.008	266.1	0.09	13.5	0.4	0.16	-1
DMRK018	402061	7671947	320	11	-5	23	-0.05	-0.001	141.2	0.08	18.3	0.4	0.17	-1
DMRK019	401855	7672247	320	14	-5	17	-0.05	-0.001	81.8	0.08	17.5	0.4	0.28	-1
DMRK020	401902	7672929	320	15	-5	41	-0.05	-0.001	338.4	0.11	46.3	0.3	0.09	-1
DMRK021	401902	7672929	320	21	-5	23	0.12	-0.001	395	0.15	15.4	0.5	0.4	1
DMRK022	401999	7673507	320	40	-5	5	-0.05	-0.001	99.7	0.02	2.4	1.2	0.06	-1
DMRK023	401999	7673501	320	901	8	47	0.13	0.003	1297.5	0.11	29.5	14	0.3	-1
DMRK024	401948	7673449	320	20	-5	6	-0.05	-0.001	712.6	0.05	4.2	0.4	0.06	-1
DMRK025	401747	7673262	320	251	8	33	-0.05	-0.001	331	0.11	46.8	0.8	0.17	-1
DMRK026	401747	7673261	320	103	13	17	0.07	-0.001	191.5	0.08	39.5	1.3	0.28	-1
DMRK027	401375	7673212	320	6	7	11	-0.05	-0.001	656.5	0.05	3	0.4	0.1	-1
DMRK028	401440	7673204	320	5	9	27	-0.05	-0.001	1211.4	0.02	7.7	0.3	0.07	-1
DMRK029	401147	7673513	320	-1	-5	4	-0.05	-0.001	193.8	0.05	1.8	0.4	-0.05	-1
DMRK030	400358	7673701	320	4	9	21	-0.05	-0.001	1180.2	0.03	11.8	2.7	0.12	-1
DMRK031	401928	7674095	320	754	36	4	0.06	0.043	116.7	0.43	72.4	8.2	0.18	6
DMRK032	400022	7675804	320	29	-5	3	-0.05	-0.001	21.2	0.04	0.8	0.4	-0.05	-1
DMRK033	400059	7675764	320	445	-5	6	0.14	<b>0.169</b>	31	0.77	6	2.5	0.09	-1
DMRK034	400734	7675982	320	537	9	18	-0.05	0.017	110.2	0.06	15.8	1.5	0.08	-1
DMRK035	400734	7675982	320	166	-5	4	-0.05	0.005	4.8	0.09	3.2	20.5	0.05	-1
DMRK036	400734	7675982	320	908	-5	15	0.07	0.037	66.1	0.07	17.2	6.6	0.08	-1
DMRK037	400741	7675989	320	328	-5	4	0.06	0.021	6.4	0.04	3.3	2	0.05	-1
DMRK038	400621	7675919	320	<b>1309</b>	5	25	0.08	0.038	219.4	0.06	28.9	1.9	0.12	-1
DMRK039	400621	7675919	320	919	-5	5	0.34	<b>0.302</b>	27.6	0.41	4.2	5.7	0.07	-1
DMRK040	400621	7675919	320	<b>1700</b>	8	25	0.1	0.021	393.7	0.04	27.3	4.5	0.28	-1
DMRK041	400430	7675763	320	121	-5	8	0.13	0.012	10.3	0.17	7.7	12.9	-0.05	-1
DMRK042	401038	7676819	320	<b>3355</b>	-5	23	0.19	0.076	7.6	0.06	8.9	10.4	-0.05	2
DMRK043	403140	7673511	320	<b>1140</b>	-5	6	0.16	<b>0.806</b>	61.7	1.61	6.2	26.3	0.06	-1
DMRK044	403107	7673405	320	293	-5	4	-0.05	0.008	79.9	0.58	6.6	2.3	0.06	-1
DMRK045	406156	7673416	320	290	-5	9	-0.05	0.002	834.7	0.08	4.2	5.3	-0.05	2
DMRK046	410745	7676972	320	199	-5	5	0.07	-0.001	10.1	0.54	3	0.6	0.13	-1
DMRK047	411060	7677237	320	63	-5	8	0.11	0.015	7.4	0.06	1.4	31.8	0.06	-1
DMRK048	411157	7677138	320	20	-5	5	-0.05	-0.001	341.5	0.06	2.6	0.4	-0.05	-1
DMRK049	411688	7677109	320	<b>110950</b>	-5	55	5.04	<b>0.772</b>	13.7	2.15	30.1	391.1	0.08	636
DMRK050	411766	7677111	320	<b>77379</b>	51	52	2.37	<b>6.55</b>	18.1	3.03	58.6	207.9	0.08	10

Note: Coordinate system GDA94 Zone 54, elevation level averaged at 320mRL. Au + Cu results highlighted, and presented with 9 other related elements selected from the 40 element analysis suite. Minus results indicate below detection.

Table 2: Stream Sediment Sample highlights – Significant Gold Results with select multielements

Site ID	Easting GDA94	Northing GDA94	Elevation (m)	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Ba (ppm)	Bi (ppm)	Co (ppm)	Mo (ppm)	Sb (ppm)	W (ppm)
BCG0001	406189	7670411	301	<b>6</b>	73	12	42	0.15	573.6	0.29	85.3	3.6	0.28	5
BCG0002	402894	7672748	318	<b>5</b>	87	10	33	0.08	513.3	0.18	57.5	1.7	0.19	2
BCG0011	402522	7674607	323	<b>11</b>	82	9	22	0.06	495.1	0.17	63.2	2.3	0.18	2
BCG0012	401685	7674126	329	<b>7</b>	139	16	27	0.12	313.9	0.25	145.1	3.4	0.23	3
BCG0033	403820	7675134	318	<b>6</b>	88	8	60	0.08	303.6	0.6	70.3	0.9	0.2	2
BCG0034	403990	7675563	322	<b>11</b>	98	9	58	0.07	279.5	0.32	103.8	1.1	0.24	5
BCG0035	403781	7675893	328	<b>35</b>	111	9	55	0.1	287.9	0.34	73.9	1	0.2	2
BCG0040	402088	7677008	320	<b>6</b>	61	7	29	-0.05	498.6	0.22	57.3	1.2	0.21	3
BCG0098	405635	7678349	369	<b>13</b>	94	8	74	0.07	304.4	1.71	84.7	0.8	0.29	2
BCG0109	410113	7674807	303	<b>9</b>	63	10	38	0.13	488	0.19	55.7	1.7	0.22	3
BCG0116	411525	7674110	300	<b>12</b>	96	12	35	0.13	605.2	0.31	118.8	2.2	0.35	5
BCG0128	409011	7679021	334	<b>2497</b>	77	11	41	0.09	397.5	0.52	175.1	1.6	0.31	15
BCG0136	407890	7677096	334	<b>9</b>	114	12	61	0.12	431.2	0.42	129.6	2.1	0.26	3
BCG0137	406766	7676802	342	<b>5</b>	177	16	39	0.07	412.5	0.62	231.8	4	0.29	10
BCG0145	413452	7678654	311	<b>7</b>	99	18	36	0.21	301.1	0.45	139.5	2.4	0.35	59

Note: Coordinate system GDA94 Zone 54. Au + Cu results highlighted, and presented with 9 other related elements selected from the 40 element analysis suite. Minus results indicate below detection.

Table 3: Stream Sediment Sample highlights – Significant Copper Results with select multielements

Site ID	Easting GDA94	Northing GDA94	Elevation (m)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	Au (ppb)	Ba (ppm)	Bi (ppm)	Co (ppm)	Mo (ppm)	Sb (ppm)	W (ppm)
BCG0012	401685	7674126	329	<b>139</b>	16	27	0.12	7	313.9	0.25	145.1	3.4	0.23	3
BCG0035	403781	7675893	328	<b>111</b>	9	55	0.1	35	287.9	0.34	73.9	1	0.2	2
BCG0048	404057	7676581	338	<b>118</b>	10	58	0.12	4	266.5	0.36	78.9	1	0.22	2
BCG0050	402915	7676615	324	<b>100</b>	7	58	0.06	4	398.3	0.33	60.8	1	0.23	2
BCG0106	409359	7675201	309	<b>131</b>	20	34	0.2	-1	486.8	0.51	183.7	6	0.41	6
BCG0108	409509	7676593	316	<b>101</b>	12	54	0.09	2	374.3	0.29	97.3	1.9	0.2	3
BCG0113	411270	7677006	319	<b>106</b>	8	34	0.06	-1	405.2	0.17	58.5	1.5	0.2	4
BCG0119	408721	7672239	305	<b>103</b>	24	45	0.15	-1	417.9	0.41	145.7	4.1	0.27	8
BCG0121	408370	7673009	310	<b>151</b>	25	30	0.16	-1	507.1	0.63	163.6	6.2	0.33	3
BCG0123	410047	7673333	303	<b>127</b>	18	24	0.12	-1	437.8	0.44	209.7	5	0.38	2
BCG0134	409041	7677561	324	<b>118</b>	13	61	0.14	-1	321.5	9.97	121.7	1.3	0.26	4
BCG0136	407890	7677096	334	<b>114</b>	12	61	0.12	9	431.2	0.42	129.6	2.1	0.26	3
BCG0137	406766	7676802	342	<b>177</b>	16	39	0.07	5	412.5	0.62	231.8	4	0.29	10
BCG0138	406906	7676461	339	<b>127</b>	13	42	0.18	-1	379	0.3	135.1	3.1	0.21	5
BCG0139	407287	7676527	336	<b>166</b>	18	37	0.1	4	399	0.48	185.7	3.7	0.25	8
BCG0142	412690	7679312	312	<b>110</b>	18	21	0.15	-1	302.7	0.32	110.7	3.3	0.28	128
BCG0143	413462	7680052	305	<b>141</b>	19	23	0.12	-1	454.3	0.45	182.5	4.3	0.36	20

Note: Coordinate system GDA94 Zone 54. Au + Cu results highlighted, and presented with 9 other related elements selected from the 40 element analysis suite. Minus results indicate below detection.



## APPENDIX 2

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

#### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• <i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.</i></li>   <li>• <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></li>   <li>• <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></li> </ul>	<ul style="list-style-type: none"> <li>• 152 stream sediment samples and 42 rock chip samples were collected for this reconnaissance program exploring for uranium (U), rare earth (REE), base metals and gold mineralisation.</li>   <li>• Stream, soil, and rock chip sampling is conducted in accordance with Orion Metals Limited (ORM) Standard Work Procedure 0000-GEO-PR-015 Surface Sampling. Rock chip sampling is conducted under geological supervision. Sample locations are measured with a hand held GPS instrument, calibrated to the correct local datum.</li>   <li>• This sampling program was purely reconnaissance in nature. Rock chip samples were taken at the discretion of a geologist, but according to visual identification of suitably mineralized rock units. Stream sediment samples were pre-planned from desktop, with local minor variations to the sample positioning upon assessment at the proposed sample site.</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• <i>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.).</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling was conducted. Not applicable.</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling was conducted. Not applicable.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> <li>Industry best practice sample preparation for analysis was employed. Samples are dried overnight in ovens at 100°C. Crushed with jaw crusher to &lt;5mm, then pulverized with an LM5 mill to better than 85% passing 75 microns. An ISO accredited laboratory was employed.</li> <li>Lab supplied CRM's, blanks and replicates are analysed with each batch of samples, along with 10% duplicate samples. There were no field duplicates employed and are considered unnecessary with this style of reconnaissance sampling.</li> <li>Not considered necessary for this reconnaissance sample effort. Stream sediment samples are not representative of insitu material.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Does not apply to this sampling method.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Multiple analytical techniques were applied to the samples, where the mineralization environment contains a potentially diverse array of elements. A suite of 26 mostly REE elements were analysed by method FP6/MS33 (Genalysis Laboratories) which is a sodium peroxide fusion in nickel crucible analysed by ICP-MS. The elements analysed include La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y, Th, U, Nb, Ta, Hf, Zr, Sn, W, Li, Be, Ga. A further 13 elements including Ag, As, Ba, Bi, Co, Cu, Fe, Mo, Ni, Pb, Sb, Sc, Zn were analysed by method 4A/OM (Genalysis Laboratories) which is a four acid, near total, digest followed by either ICP-MS or ICP-OES analysis. Gold was analysed by method FA25/OEO2, 25 gram fire assay. In total, 40 elements. These techniques are considered industry best practise.</li> <li>• No specific hand held analytical tools were used in the field.</li> <li>• Genalysis Laboratories in-house QAQC processes are rigorous and comprehensive, in line with NATA accreditation ISO/IEC 17025. The use of CRM's, blanks, and replicate analyses were applied to each batch of samples. Established benchmarks met acceptable levels of accuracy.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• <i>The verification of significant intersections by either independent or alternative company personnel.</i></li> <li>• <i>The use of twinned holes.</i></li> <li>• <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling was conducted. Not applicable.</li> <li>• No drilling was conducted. Not applicable.</li> <li>• Sample logs were recorded on paper, and then manually transferred by geologist to excel spreadsheets. Data was later transferred to the Company DMS, an Azeva.XDB SQL database.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li><i>Discuss any adjustment to assay data.</i></li> </ul>	<ul style="list-style-type: none"> <li>There was no adjustment to the assay data.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li><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></li> <li><i>Specification of the grid system used.</i></li> <li><i>Quality and adequacy of topographic control.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sample locations were surveyed using a hand held GPS unit with accuracy of +/- 5m which is sufficient accuracy for a reconnaissance stream sediment and rock chip sampling program.</li> <li>The grid system used is GDA94 Zone 54. All reported coordinates use this system.</li> <li>Not required for this program.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li><i>Data spacing for reporting of Exploration Results.</i></li> <li><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></li> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>Rock chip samples were taken randomly at the discretion of the geologist, with the coordinates recorded and reported in Table 1 of the text. Stream sediment samples were predetermined locations at irregular spacing's, but adequate to give a sample density across the project of 1 sample per square kilometer.</li> <li>Not applicable</li> <li>No compositing was applied.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Not applicable to this style of reconnaissance sampling program.</li> <li>No drilling was conducted. Not applicable.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Sample security</b>	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>No formal audits or reviews were conducted for this reconnaissance program.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li><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></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Drilling was conducted on a Qld state EPM (exploration permit for minerals) licence, ref no's: EPM 16209, EPM 19011, EPM17143. 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 31<sup>st</sup> August 2011. A Form 1 Native Title Protection Conditions was lodged with the Kalkadoon People.</li> <li>Tenure is secure with no known impediments.</li> </ul>
<b>Exploration done by other parties</b>		<p>The tenure 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>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li data-bbox="398 316 1176 347">• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<p data-bbox="1279 204 2132 304">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 data-bbox="1279 312 2132 413">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 data-bbox="1279 421 2132 521">CRAE (1982-1983, ATP 3263) conducted a 1 sample/10km<sup>2</sup> multi-element stream sediment survey, and minor rock chip program. No follow up work recommended on current EPM area</p> <p data-bbox="1279 529 2132 703">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 data-bbox="1279 711 2132 812">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 data-bbox="1279 820 2132 1166">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 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 data-bbox="1279 1174 2132 1332">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</p>



Criteria	JORC Code explanation	Commentary
		<p>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% U<sub>3</sub>O<sub>8</sub> 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><b>Geology</b></p>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Mt Isa Inlier in which the Broughton Ck tenement package 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 recent focus for Orion Metals Ltd, though with the lack of success from the September 2013 RC drilling program, the exploration methodology has shifted back to a broad based multicommodity exploration approach.</li> </ul>
<p><b>Drill hole Information</b></p>	<ul style="list-style-type: none"> <li>• <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"> <li>○ <i>easting and northing of the drill hole collar</i></li> <li>○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul> </li> <li>• <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</i></li> </ul>	<ul style="list-style-type: none"> <li>• No drilling was conducted. Not applicable.</li>   <li>• No drilling was conducted. Not applicable.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Data aggregation methods</b>	<p><i>clearly explain why this is the case.</i></p> <ul style="list-style-type: none"> <li><i>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.</i></li> <li><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></li> <li><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></li> </ul>	<ul style="list-style-type: none"> <li>There are no weighted averages, top cuts, any grade truncations applied.</li> <li>Not applicable to these results</li> <li>No metal equivalents have been used.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li><i>These relationships are particularly important in the reporting of Exploration Results.</i></li> <li><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></li> <li><i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</i></li> </ul>	<ul style="list-style-type: none"> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> <li>No drilling was conducted. Not applicable.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Refer to text of this document for diagrams of stream sediment and rock chip sample locations.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>A total of 40 individual elements have been analysed from each of the 194 submitted rock chip and stream sediment samples. Of those 40 elements, all the Cu and Au stream sediment assays have been presented on Diagrams 3 &amp; 4 in the text, along with sample highlights in Tables 2 &amp; 3 of the best Cu and Au results. Additionally, all 42 rock chip samples are listed in Table 1 with Cu + Au results. In all 3 Tables, Cu + Au are reported along with select elements Pb, Zn, Ag, Ba, Bi, Co, Mo, Sb, and W which include pathfinder, and complimentary element types for this mineralization style.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>There is no other additional substantive material to be reported.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><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></li> </ul>	<ul style="list-style-type: none"> <li>Additional ground based geochemical survey work will be initiated, especially further work towards Cu Au target refinement.</li> <li>Refer to figures presented in the text with particular reference to the TMI inserts.</li> </ul>