ABN 64 123 993 233

ASX Announcement 17 January 2017

Significant cobalt and manganese mineralisation identified at Ketchowla

Highlights

- Ketchowla Cobalt Manganese Project exploration results upgraded to JORC 2012 status across large 75km x 4.5km mineralised system.
- Rock chip sampling identified **cobalt up to 0.59%** and manganese up to 48%.
- Shallow significant cobalt intercepted near surface:
    - 11m @ 0.11% Co and 12%Mn from 6 to 17m.
    - including 4m @ 0.14% Co and 15.6% Mn.
- Significant potential for additional resources, both locally and regionally.
- Project located within 35km of Trans Australian Railway and in close proximity to established power and water infrastructure.
- Leigh Creek magnesite remains the key primary focus to produce near term cash flow following successful bulk trial.

The Ketchowla Cobalt Manganese Project, is located north of Burra, South Australia, within the Nuccaleena Formation. Ketchowla is a cobalt and manganese project which includes the K1 Prospect (centred around the historic small Ketchowla Mine) and numerous outstanding exploration targets and prospects, including the K2 to K9 prospects.

Location

The Ketchowla Project is located approximately 45km north of Burra and 200km north of Adelaide, South Australia. The main access route is via the Barrier Highway and the Collinsville Station access road (unsealed) and station tracks within Collinsville Station. The standard gauge east-west Trans Australian Railway line is located 35km north of the main project area. Established electricity and water infrastructure is also within close proximity.

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The main project area is made up of a granted exploration licence (EL 5433) that covers an area of approximately 445km^2.

Local geology

The coablt and manganese occurrences appear to be strataform, closely associated with Nuccaleena Dolomite and its contact with bleached purple shales within a sequence of sandstone, tillite and siltstones. The main manganese and cobalt bearing strata has been tightly folded folded with the main K1 Prospect present on the eastern limb of the fold structure (Figure 1).

The area has historically been explored for copper and molybdenum mineralisation. Most exploration was focused on the eastern side of the tenement where extensive shallow drilling did not identify significant copper targets however, low level gold (up to 01.g/t) and widespread manganese mineralisation was discovered over vast areas of the tenement.

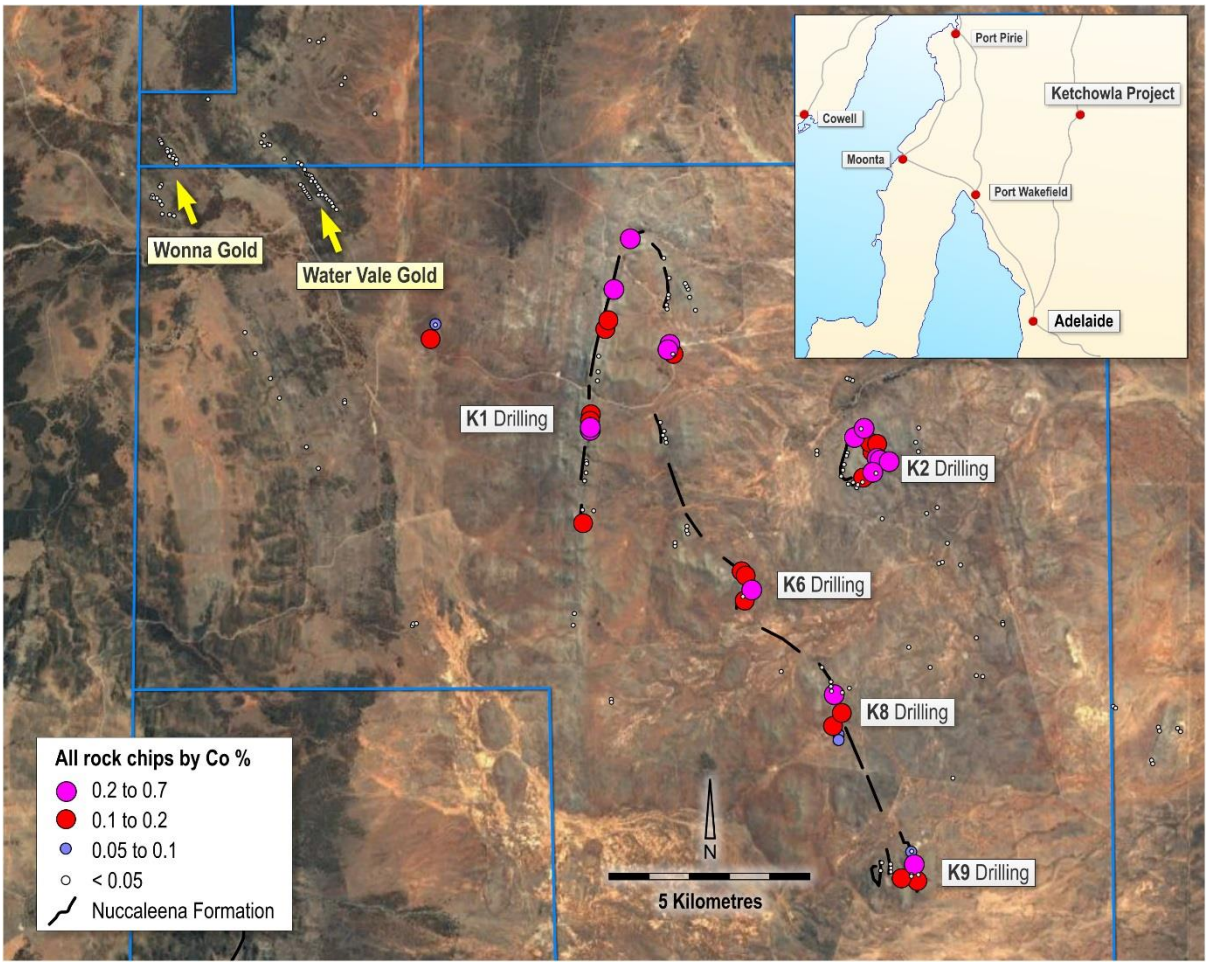

Figure 1: Location of prospects at Ketchowla Project with significant Co rock chips samples

Exploration by Archer

Early rock chip sampling reported by Archer (ASX announcement 16/11/2009) reported grades of up to:

- **0.59% cobalt (Co)** and 42% manganese (Mn) at K1 (includes K1 northern and southern extensions).
- **0.50% Co** and 48.1% Mn at K2.
- **0.29% Co** and 46.3% Mn at K3 – K9.

Archer completed a small 678m RC drill program in early 2010 (ASX announcement 19/03/2010). Drilling was undertaken during the peak of the last mining boom and Archer was unable to gain access to a suitable drill rig meaning that only easily accessible areas were targeted in this first round of drilling. Archer is yet to drill test the best targets.

Shallow cobalt and manganese mineralisation was intercepted at K1 in both of two holes drilled at K1 (K1RC001 and K1RC004):

- K1RC001: **11m @ 0.11% Co and 12%Mn from 6 to 17m**, including 4m @ 0.14% Co and 15.6% Mn.
- K1RC004: 4m @ 0.11%Co and 17.5%Mn from 11 to 15m.

Simple beneficiation and acid leach test work (ASX announcement 20/04/11) done by Archer showed that:

- cobalt and manganese could be easily upgraded using simple heavy media separation.
- Agitated sulphuric acid leaching resulted in metal recoveries of >90% for all elements tested (Co, Cu, Ni, Zn and Mn).

Archer has upgraded the early exploration results to JORC 2012 standard in response to third party interest in the tenement area and the market interest in good quality cobalt projects.

Ketchowla Project

The Ketchowla Cobalt Manganese Project comprises:

- K1 Prospect which is centred around a small historic manganese open pit mine (**Ketchowla Mine**) and located on the eastern limp of the main fold structure.
- K2 – K9 prospects. Prospects K3 to K9 are located on the western limb of the main fold structure with K2 offset to the east of the fold. The known K2 to K9 mineralisation demonstrates the potential size (75km x 4.5km) of the mineralising system at Ketchowla.

K1 Prospect

The K1 Prospect is part of a large-scale cobalt and manganese mineralised system. Archer has mapped K1 over a strike length of 5km.

The K1 Prospect is centred around the historic Ketchowla Hill Manganese Mine which was last worked in 1941 when it produced 358 tons of ore. Site investigations outlined a 320m strike length of manganese oxide outcrop centred on an old and shallow open pit.

Rock chip sampling by Archer (ASX announcement 23/09/2009 and 16/11/2009) over the strike length of the outcropping manganese at K1 Mine identified high grade cobalt, copper and manganese, mineralisation. The northern and southern extensions to the K1 deposit were also sampled with outcrop and small pits identified up to 4.7km north and 2.3km south of the K1 Mine.

Figure 2: Old workings (looking South) showing outcropping manganese.

In 2011 Archer drilled four RC holes North of the old Ketchowla Mine to test the extension of the known mineralisation. Two failed to reach target depths and two drill holes (K1RC001 and K1RC004) recorded the presence of manganese and cobalt as follows (Figures 3 and 4):

- K1RC001 6 - 17m, 11 metres @ 0.11% Co, 0.17%Cu, 0.2%Ni, 0.13%Zn and 12%Mn
- K1RC004 11-15m, 4 metres @ 0.11%Co, 0.34%Cu, 0.24%Ni, 0.15%Zn and 17.5%Mn

Holes K1RC001 and K1RC004 confirmed the extension of the mineralisation at depth. Scope exists for expansions of the manganese/cobalt mineralisation below the K1 Mine and along strike with additional drilling. The focus of future drilling will be on defining additional broad intervals of manganese and cobalt mineralisation.

K2 – K9 Prospects

The K2 Prospect is offset 6km to the east of K1. K2 is on the eastern limb of a shallow dipping syncline with discontinuous manganese outcrops mapped by Archer over 1.3km. Manganese mineralisation occurs within the Nuccaleena Dolomite close to the contact with bleached grey siltstone where pods up to 9m thick are located.

The K3 – K9 Prospects are located on the eastern limb of the same fold structure as K1. K6, K8 and K9 are the more prominent ridges with outcrops of manganese mineralisation (K6, K8 and K9) separated by broad areas of shallow, sandy alluvium cover 9.2km strike length.

Drilling at K2, K8 and K9 intersected cobalt and manganese mineralisation within 1 – 5 metres of surface.

Extractive and Beneficiation Studies

Archer followed up the early drilling with simple beneficiation and acid leach test work (ASX announcement 20/04/11) which showed that:

- cobalt and manganese could be easily upgraded using simple heavy media separation.
- Agitated sulphuric acid leaching resulted in metal recoveries of >90% for all elements tested (Co, Cu, Ni, Zn and Mn).

Next Steps

Ketchowla forms an important part of Archer's larger tenement area that is prospective for cobalt. The exploration program at Ketchowla will be planned in conjunction with the next stage of development of the larger cobalt exploration effort.

By way of background, Archer has entered into a farmin and Joint Venture Agreement with Cobalt Bull Pty Ltd (**CB**) whereby CB can earn a 75% joint venture interest in the Ketchowla Project and other tenements by spending $2.0m on exploration over 3 years (ASX announcement 31/08/16). The farmin and JV is subject to one outstanding condition precedent which must be satisfied by 31 January 2017.

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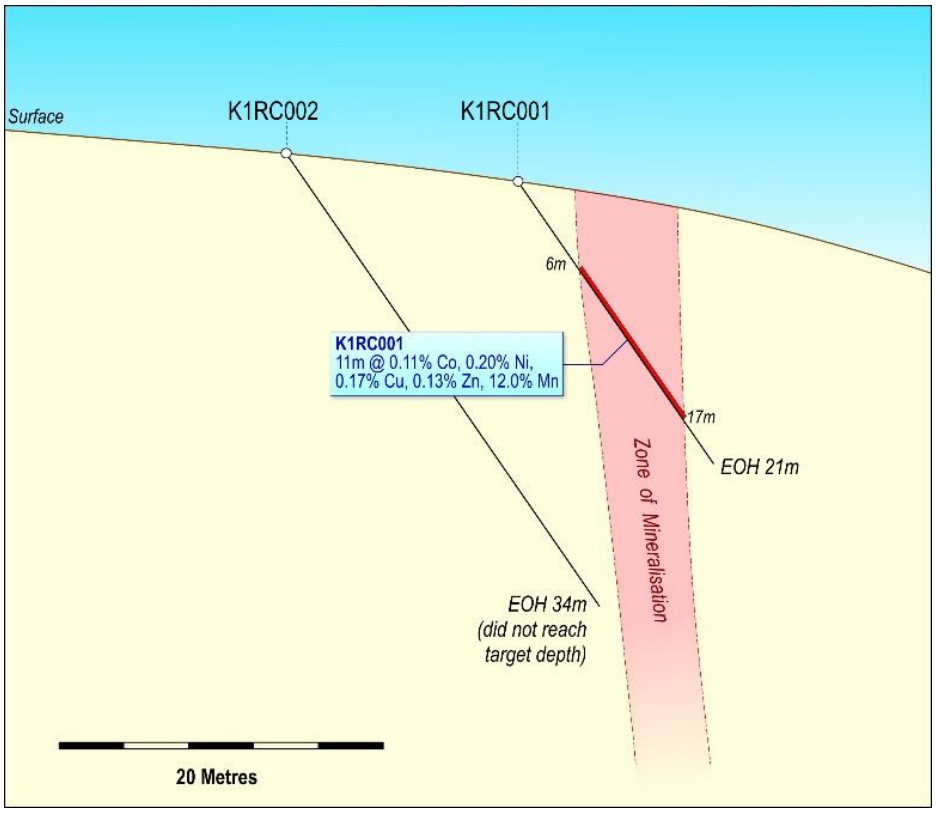

Figure 3: K1RC001 cross-section

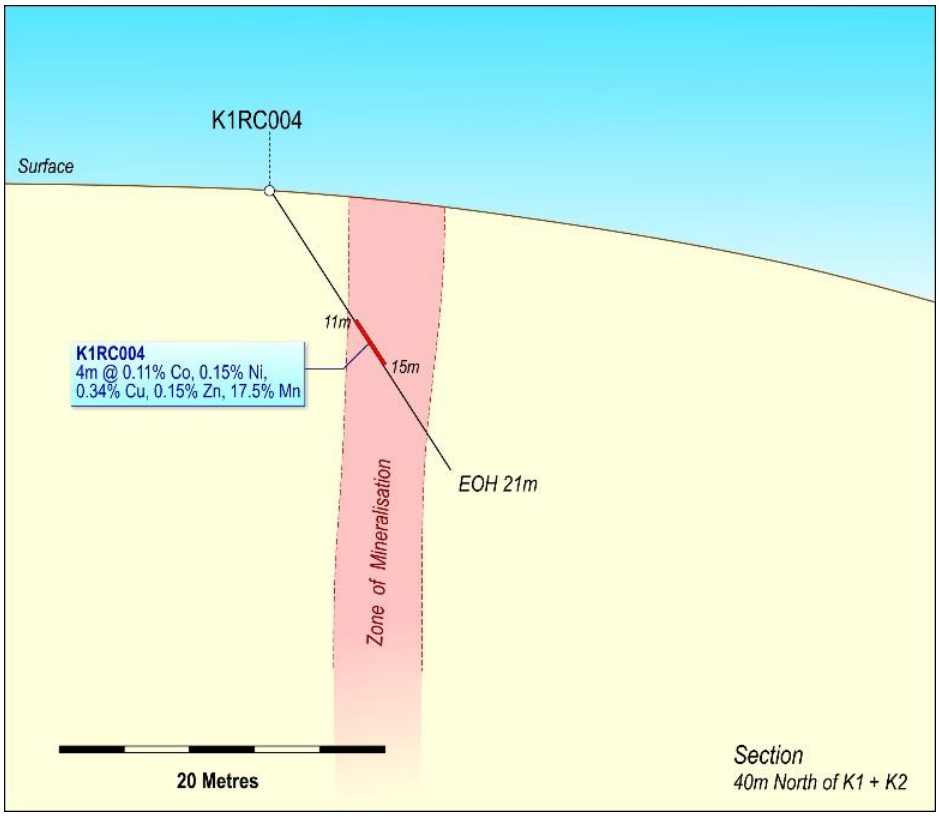

Figure 4: K1RC004 cross-section

Competent Person Statement

The information in this report that relates to Exploration Results is based on information compiled by Mr Wade Bollenhagen, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Archer Exploration Limited. Mr Bollenhagen has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Bollenhagen consents to the inclusion in the report of the matters based on his information in the form and context in which it appears

Summary of drill hole information

The following table provides information on RC drilling completed by Archer at the Ketchowla Project during Feb/Mar 2010 and first reported by Archer on 19 March 2010.

Hole ID	Easting	Northing	RL (m)	Final Depth (m)	Dip (º)	Azimuth (º)
K1RC001	332017	6313318	366	21	-55	90
K1RC002	332003	6313321	366	34	-55	90
K1RC003	332025	6313370	365	15	-55	80
K1RC004	332021	6313368	364	21	-55	81
K2RC001	339158	6312405	284	6	-55	120
K2RC002	339157	6312405	285	12	-90	0
K2RC003	339131	6312382	286	11	-90	0
K2RC004	339174	6312436	292	6	-55	100
K2RC005	339163	6312436	284	12	-90	0
K2RC006	338862	6312141	262	9	-55	104
K2RC007	338857	6312141	260	9	-90	0
K2RC008	338822	6312104	268	15	-55	150
K2RC009	338821	6312106	265	12	-90	0
K6RC001	336067	6309322	255	15	-55	90
K6RC002	335819	6309687	255	9	-55	20
K8RC001	338263	6305622	229	20	-55	90
K8RC001	340549	6307366	218	9	-55	270
K8RC002	338273	6305623	233	9	-55	270
K8RC003	338090	6306732	244	30	-55	90
K8RC004	338069	6306733	248	12	-55	85
K8RC005	338050	6306735	246	19	-55	90
K8RC006	338079	6306775	245	12	-55	90
K8RC007	338063	6306777	249	15	-55	90
K8RC008	338043	6306772	246	23	-55	90
K8RC009	338072	6306865	252	9	-90	0
K8RC010	338056	6306857	246	11	-90	0
K8RC011	338108	6306719	245	18	-55	270
K8RC012	338119	6306668	246	3	-90	0
K8RC013	338106	6306650	243	6	-90	0

Hole ID	Easting	Northing	RL (m)	Final Depth (m)	Dip (º)	Azimuth (º)
K8RC014	338128	6306621	248	5	-90	0
K8RC015	338242	6305666	223	6	-90	0
K8RC016	338249	6305669	230	3	-90	0
K8RC017	338255	6305623	228	15	-90	0
K8RC018	338270	6305577	229	21	-90	0
K9RC001	340266	6302236	216	39	-60	270
K9RC002	340260	6302095	220	8	-60	90
K9RC003	340265	6302092	223	24	-60	270
K9RC004	340250	6302076	221	18	-55	90
K9RC005	340242	6302074	220	30	-55	90
K9RC006	340235	6302071	220	20	-55	90
K9RC007	340254	6301986	219	12	-55	90
K9RC008	340242	6301938	219	19	-55	90
K9RC009	340237	6302235	212	10	-55	90
K9RC010	340228	6302237	214	12	-55	90
K9RC011	304148	6302458	211	6	-55	0
K10RC001	340549	6307366	218	9	-55	270

Summary of drilling results

The following table provides the significant intersections from Ketchowla Project RC drilling, first reported on 19 March 2010. The following table only reports intervals >100ppm Co with intervals <100ppm Co listed as “NSR” (No Significant Result).

Significant assays listed within the announcement to which this table is attached are summaries of the data below.

Hole Id	From (m)	To (m)	Intercept (m)	Co (ppm)	Cu (ppm)	Ni (ppm)	Zn (ppm)	Mn (%)
K1RC001	0	6	6			NSR		
K1RC001	6	7	1	454	2430	2620	1535	14.9
K1RC001	7	8	1	508	1865	1870	1235	8.66
K1RC001	8	9	1	465	1485	1220	1255	13.5
K1RC001	9	10	1	1180	2010	2370	1495	12.95
K1RC001	10	11	1	1470	2360	2660	1715	18.45
K1RC001	11	12	1	2280	2660	3460	1850	20.5
K1RC001	12	13	1	1810	1865	2530	1470	16.75
K1RC001	13	14	1	2960	2450	2260	1290	18.8
K1RC001	14	15	1	317	405	471	393	2.03
K1RC001	15	16	1	487	474	1050	782	2.88
K1RC001	16	17	1	669	656	1280	958	5.36
K1RC001	17	18	1	125	120	360	487	1.7
K1RC001	18	21	3	NSR				
K1RC002	0	34	34	NSR				
K1RC003	0	1	1	338	1390	592	260	2.34
K1RC003	1	2	1	510	2940	1070	427	3.45
K1RC003	2	3	1	139	2310	268	300	1.14

Hole Id	From (m)	To (m)	Intercept (m)	Co (ppm)	Cu (ppm)	Ni (ppm)	Zn (ppm)	Mn (%)
K1RC003	3	4	1	489	1930	881	476	4.08
K1RC003	4	5	1	183	1030	559	450	1.5
K1RC003	5	7	2	NSR				
K1RC003	7	8	1	207	513	380	256	2.45
K1RC003	8	9	1	605	619	626	320	2.71
K1RC003	9	10	1	1030	669	588	388	3.35
K1RC003	10	11	1	519	421	453	291	1.51
K1RC003	11	12	1	462	439	639	404	2.11
K1RC003	12	13	1	258	319	529	434	1.94
K1RC003	13	14	1	101	199	717	895	1.87
K1RC003	14	15	1	NSR				
K1RC004	0	9	9	NSR				
K1RC004	9	10	1	106	1150	633	950	5.01
K1RC004	10	11	1	373	856	290	302	1.99
K1RC004	11	12	1	1070	4080	1740	1060	25.2
K1RC004	12	13	1	1420	3970	2380	1240	20.4
K1RC004	13	14	1	1220	3390	2070	1340	15.15
K1RC004	14	15	1	489	2170	3200	2100	9.17
K1RC004	15	16	1	126	1130	1930	2260	4.16
K1RC004	16	17	1	NSR				
K1RC004	17	18	1	151	445	1350	1450	3.72
K1RC004	18	21	3	NSR				
K2RC001	1	2	1	152	23	121	288	3
K2RC001	2	3	1	103	27	64	118	1.64
K2RC001	3	4	1	240	30	243	202	2.22
K2RC001	4	6	2	NSR				
K2RC002	0	3	3	NSR				
K2RC002	3	4	1	1090	31	560	1310	33.6
K2RC002	5	6	1	104	8	83	152	2.13
K2RC002	6	12	6	NSR				
K2RC003	0	1	1	NSR				
K2RC003	1	2	1	780	64	256	746	31.7
K2RC003	2	11	9	NSR				
K2RC004	0	1	1	NSR				
K2RC004	1	2	1	111	20	183	322	0.43
K2RC004	2	3	1	159	16	99	174	0.15
K2RC004	3	6	3	NSR				
K2RC005	0	6	6	NSR				
K2RC005	6	10	4	28	20	247	1009	0.45
K2RC005	10	12	2	NSR				
K2RC006	0	3	3	NSR				
K2RC006	3	4	1	176	203	131	114	3.31
K2RC006	4	5	1	167	322	148	156	0.35
K2RC006	5	9	4	NSR				
K2RC007	0	1	1	NSR				
K2RC007	1	2	1	434	158	226	113	4.47
K2RC007	2	3	1	319	104	199	149	5.29
K2RC007	3	6	3	NSR				
K2RC007	6	7	1	330	482	232	201	1.66

Hole Id	From (m)	To (m)	Intercept (m)	Co (ppm)	Cu (ppm)	Ni (ppm)	Zn (ppm)	Mn (%)
K2RC007	7	9	2	NSR				
K2RC008	0	15	15	NSR				
K2RC009	0	7	7	NSR				
K2RC009	7	8	1	287	652	491	597	0.06
K2RC009	8	9	1	168	268	272	471	0.17
K2RC009	9	10	1	109	160	182	366	0.19
K2RC009	10	12	2	NSR				
K6RC001	0	15	15	NSR				
K6RC002	0	1	1	NSR				
K6RC002	1	2	1	610	1500	341	514	7.19
K6RC002	2	3	1	612	1100	356	475	5.75
K6RC002	3	9	6	NSR				
K8RC001	0	1	1	698	66	339	89	7.59
K8RC001	1	2	1	399	34	179	65	4.93
K8RC001	2	3	1	237	25	171	59	2.84
K8RC001	3	20	17	NSR				
K8RC002	0	1	1	102	55	50	63	2.8
K8RC002	2	3	1	744	530	263	206	21.5
K8RC002	3	4	1	474	345	179	122	13.5
K8RC002	4	9	5	NSR				
K8RC003	0	2	2	NSR				
K8RC003	2	4	2	29.5	70	97	30	12.03
K8RC003	4	30	26	NSR				
K8RC004	0	12	12	NSR				
K8RC005	0	17	17	NSR				
K8RC005	17	18	1	145	167	156	97	1.87
K8RC005	18	19	1	NSR				
K8RC006	0	1	1	NSR				
K8RC006	1	2	1	130	18	139	100	5.67
K8RC006	2	4	2	54	20	140	48	18.9
K8RC006	4	9	5	NSR				
K8RC007	0	4	4	NSR				
K8RC007	4	5	1	421	373	412	238	3.93
K8RC007	5	7	2	NSR				
K8RC007	7	8	1	456	277	352	182	12.1
K8RC007	8	9	1	340	387	306	151	13
K8RC007	9	10	1	158	129	185	93	7.43
K8RC007	10	11	1	314	19	273	174	6.88
K8RC007	11	12	1	216	19	223	158	6.27
K8RC007	12	15	3	NSR				
K8RC008	0	1	1	182	159	138	199	0.75
K8RC008	1	5	4	NSR				
K8RC008	5	6	1	132	214	161	231	0.16
K8RC008	6	7	1	NSR				
K8RC008	7	8	1	126	65	192	345	0.14
K8RC008	8	9	1	103	61	191	386	0.01
K8RC008	9	10	1	342	348	388	328	1.75
K8RC008	10	11	1	469	407	531	615	4.84
K8RC008	11	17	6	NSR				

Hole Id	From (m)	To (m)	Intercept (m)	Co (ppm)	Cu (ppm)	Ni (ppm)	Zn (ppm)	Mn (%)
K8RC008	17	18	1	102	22	188	102	5.41
K8RC008	18	19	1	NSR				
K8RC008	19	20	1	132	155	171	131	4.07
K8RC008	20	23	3	NSR				
K8RC009	0	9	9	NSR				
K8RC010	0	11	11	NSR				
K8RC011	0	18	18	NSR				
K8RC012	0	1	1	122	56	150	170	4.98
K8RC012	1	3	2	NSR				
K8RC013	0	6	6	NSR				
K8RC014	0	5	5	NSR				
K8RC015	0	2	2	NSR				
K8RC015	2	3	1	702	693	233	102	3.43
K8RC015	3	4	1	281	470	160	57	3.9
K8RC015	4	6	2	NSR				
K8RC016	0	1	1	645	606	224	180	29.8
K8RC016	1	2	1	276	231	170	103	7.7
K8RC016	2	3	1	NSR				
K8RC017	0	5	5	NSR				
K8RC017	5	6	1	206	19	161	53	1.43
K8RC017	6	8	2	NSR				
K8RC017	8	9	1	252	73	102	55	3.87
K8RC017	9	15	6	NSR				
K8RC018	0	21	21	NSR				
K9RC001	0	39	39	NSR				
K9RC002	0	8	8	NSR				
K9RC003	0	24	24	NSR				
K9RC004	0	1	1	NSR				
K9RC004	1	2	1	260	381	248	985	20.7
K9RC004	2	3	1	220	100	228	1035	20.6
K9RC004	3	4	1	115	66	161	547	15.95
K9RC004	4	18	14	NSR				
K9RC005	0	3	3	NSR				
K9RC005	3	4	1	455	213	569	921	8.16
K9RC005	4	5	1	326	34	452	1035	6.38
K9RC005	5	6	1	157	43	239	396	8.77
K9RC005	6	30	24	NSR				
K9RC006	0	4	4	NSR				
K9RC006	4	5	1	184	343	250	759	5.24
K9RC006	5	6	1	791	279	744	1790	28.9
K9RC006	6	7	1	640	91	445	1825	36.1
K9RC006	7	8	1	457	39	274	1275	30.2
K9RC006	8	9	1	334	27	204	935	21.8
K9RC006	9	10	1	145	19	120	434	8.92
K9RC006	10	20	10	NSR				
K9RC007	0	12	12	NSR				
K9RC008	0	19	19	NSR				
K9RC009	0	1	1	205	177	365	659	1.21
K9RC009	1	2	1	813	777	725	1325	8.25

Hole Id	From (m)	To (m)	Intercept (m)	Co (ppm)	Cu (ppm)	Ni (ppm)	Zn (ppm)	Mn (%)
K9RC009	2	3	1	552	944	755	747	4.06
K9RC009	4	5	1	120	646	398	288	1.5
K9RC009	5	6	1	247	664	500	553	6.25
K9RC009	6	10	4	NSR				
K9RC010	0	3	3	NSR				
K9RC010	3	4	1	311	211	441	935	3.29
K9RC010	4	5	1	428	295	350	877	6.55
K9RC010	5	6	1	521	913	286	1020	17.6
K9RC010	6	7	1	189	568	407	531	1.56
K9RC010	7	8	1	612	858	244	497	18.8
K9RC010	8	9	1	160	128	214	413	3.38
K9RC010	9	12	3	NSR				
K9RC011	0	6	6	NSR				
K9RC011	5	6	1	351	42	98	64	3.57
K10RC01	0	9	9	NSR				

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m 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 (e.g. submarine nodules) may warrant disclosure of detailed information.	• Samples comprise intervals that were reported as containing manganese from drilling on 2010 • Sampling was guided by Archer's protocols as the program was exploratory in nature. No standards were submitted by the company during analyses. • All samples were sent to ALS laboratory in Adelaide for preparation and forwarded to Peth for multi-element analyses. • All samples are crushed using LM2 mill to –4 mm and pulverised to nominal 80% passing –75 µm. • The assays being reported were analysed during routine analyses of the drill samples in 2010.
Drilling Techniques	• Drill type (e.g. core, reverse circulation, open hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	• All material being reported comes from drill pulps created during the assay for base metals, the samples at the time were generated from aircore drilling for manganese and base metal exploration. All drilling was undertaken in 2010 by the current tenement owner and the pulps stored for future reference.

Criteria	JORC Code Explanation	Commentary
Drill Sample Recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• The nature was grass roots exploration as no drilling has ever been performed in the area for mineral exploration, no attempt was made to assess the recovery of the sample material during this phase of drilling. • All efforts were made to ensure that the sample was representative. • No relationship is believed to exist, but no work has been done to confirm this.
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.	• All samples were geologically logged, as the hole collars were never accurately surveyed no data can be used for mineral resource estimation. • Logging was qualitative and quantitative, i.e. percentages of vein material and host rock were estimated as well as noted.
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.	• All drilling was Air-core • All samples were riffle split on a 2-tiered splitter • All sample material was dry. • No additional quality control measures were taken for the sample submission. • The sample sizes are considered appropriate for the material being sampled.

Criteria	JORC Code Explanation	Commentary
Quality of Assay Data and Laboratory Tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	• Only laboratory standards were used in the assessment of the analyses. • Analyses was by ALS Perth using their ME-MS61 technique for multi-elements
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 verification of sampling, no use of twinned holes. • Data is exploratory in nature and exists as excel spread sheets. • No data adjustment.
Location of Data Points	• Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• MGA94 Zone 54 grid coordinate system is used. • A hand-held GPS was used to identify the sample location • Quality and adequacy is appropriate for this level of exploration

Criteria	JORC Code Explanation	Commentary
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.	• There is no pattern to the sampling, the spacing is random, the location of the holes was determined by the land surface as no clearing was undertaken for the drill rig so many sites were unsuitable to drill. Some of these may have produced different results to the one being reported. • Data spacing and distribution are sufficient to establish the degree of geological and grade continuity for future drill planning, but not for resource reporting. • Sample compositing has occurred at the time for the sample being taken, i.e. there are composited intervals being reported.
Orientation of Data in Relation to Geological Structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• It is unknown whether the drill holes have interested the mineralisation in a perpendicular manner. The mineralised horizon is folded and has a variable dip strike over the length of the mineralisation • It is believed there is no bias has been introduced.
Sample Security	• The measures taken to ensure sample security.	• It is assumed that best practices were undertaken at the time • All residual sample material (pulps) are stored securely.
Audits or Reviews	• The results of any audits or reviews of sampling techniques and data.	• None undertaken.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code Explanation	Commentary
Mineral Tenement and Land Tenure Status	• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, 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.	• Tenement status confirmed on SARIG. • All work being reported is from EL 5433 (owned by SA Exploration Pty Ltd, a subsidiary of AXE). • The tenement is in good standing with no known impediments. • Results are from drilling undertaken in 2010, when it was drilled under its former EL number (EL 4266)
Exploration Done by Other Parties	• Acknowledgment and appraisal of exploration by other parties.	• The most significant exploration was undertaken by Aberfoyle in the early 1980's focussing on Cu-Mo mineralisation associated with granite intrusive. • A large program of 1-5m deep holes were completed with little success. • As a part of follow up to Mn exploration, in 2012 Archer flew EM over selected parts of the tenement and successfully identified buried anomalies that are not associated with the conductive Tapley Hill Formation.
Geology	• Deposit type, geological setting and style of mineralisation.	• The mineralisation is strataform and associated with Manganese. • The orientation of the mineralisation is unknown.

Criteria	JORC Code Explanation	Commentary
Drillhole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: – Easting and northing of the drill hole collar – Elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – Dip and azimuth of the hole – Downhole length and interception depth – Hole length • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	Refer to announcement to which this document is attached, in particular tables titled: • "Summary of drill hole information" • "Summary of drilling results"
Data Aggregation Methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• Interval length weighted assay results are reported • Significant Intercepts are chosen based on the context of the results, for example significant intercepts > 100ppm cobalt are reported
Relationship Between Mineralisation Widths and Intercept Lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. • If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g. 'downhole length, true width not known').	• All assay intervals are down hole length, the true width not known. • The mineralisation is interpreted to be steeply dipping. Drill holes have been angled to intercept the mineralisation as close to perpendicular as possible. • Down hole intercepts are reported. True widths are likely to be 60-70% of the down hole widths.
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.	• See main body of report.

Criteria	JORC Code Explanation	Commentary
Balanced Reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• The reporting is considered to be balanced.
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.	• The mineralisation is restricted to within the Nuccaleena Formation which has been mapped by the SA govt geologists and reports up to 17m wide in locations. The unit is mappable over 10's of kilometres
Further Work	• The nature and scale of planned further work (e.g. 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.	• Further drilling is required along strike as well as testing for mineralisation under cover. • Figures in the body of this report highlight the gaps in the data.