

Monday 18 November 2013

CONDUCTOR TARGETS IDENTIFIED AT KEMPFIELD – GROUND EM SURVEY RESULTS AND MASSIVE SULPHIDE DRILL PROGRAM UPDATE

HIGHLIGHTS:

- Ground fixed loop electromagnetic survey identifies two conductor targets at Kempfield
- Historical helicopter-borne electromagnetic survey reprocessing reveals additional anomalies
- Rich sulphide grades intersected in geotech hole - 15.8 m (from 85 m) @ 10.4% Zn/Pb, 123 g/t Ag & 0.27 g/t Au including 5 m @ 17.9% Zn/Pb, 259 g/t Ag and 0.34 g/t Au
 - Potential strike extension to Causeway target
 - Mineralisation remains open at depth
- Preparations underway for drill program to test Kempfield massive sulphide targets

KEMPFIELD, NSW AUSTRALIA

Argent Minerals Limited (ASX: ARD, Argent, Argent Minerals or the Company) is pleased to announce the results of a geophysics program performed at its flagship Kempfield Silver Project in NSW, Australia, to assist with drill target positioning.

A fixed loop ground electromagnetic (EM) survey has been performed at the location of two of six anomalies identified by the recent reprocessing of a historical helicopter-borne virtual time domain electromagnetic (VTEM) survey. The purpose of the ground EM survey was to validate the VTEM anomalies and identify any electrical conductors that may be present in the Company's Kempfield project area, as Argent Minerals commences preparations for test drilling the massive sulphide targets identified by Australian Research Centre of Excellence in Ore Deposits (CODES) expert, Professor Ross Large.

Two potential conductors have been identified in the ground EM survey data, located between 300 and 500 metres to the southeast of Quarries Zone. One of the conductors is adjacent to the Copperhanna Thrust - a regional structure known to play a significant role in mineralisation in the district. The two identified conductors are located on the gradient of a chargeability anomaly detected by a 2010 pole-dipole induced polarisation (IP) survey, which, in the context of Volcanic-hosted Massive Sulphide (VMS) system footprints, may be a vector to massive sulphide mineralisation. Both of these conductors have been earmarked for follow up, and potential inclusion in the Company's massive sulphide drilling program at Kempfield.

The review of both the airborne and ground EM surveys also confirmed that massive sulphides dominated by zinc and lead, known to be weak conductors, are not reliably identifiable at Kempfield by the specific electromagnetic survey methods employed to date. The October 2013 ground EM survey also included West McCarron, where relatively rich polymetallic grades have been identified in assays of historical geotechnical holes; the identified mineralisation includes 15.8 m (from 85 m to end of hole at 100.8 m) @ 10.4% Pb/Zn, 123 g/t Ag and 0.27 g/t Au including 5m @ 17.9% Pb/Zn, 259 g/t Ag and 0.34 g/t Au (diamond hole AKDD159). However, similar to other polymetallic lead/zinc-rich VMS deposits in the Lachlan Orogen, the EM surveys were unable to recognise this relatively significant mineralisation.

Preparations are underway for drill testing massive sulphide targets at Kempfield, commencing with Causeway.



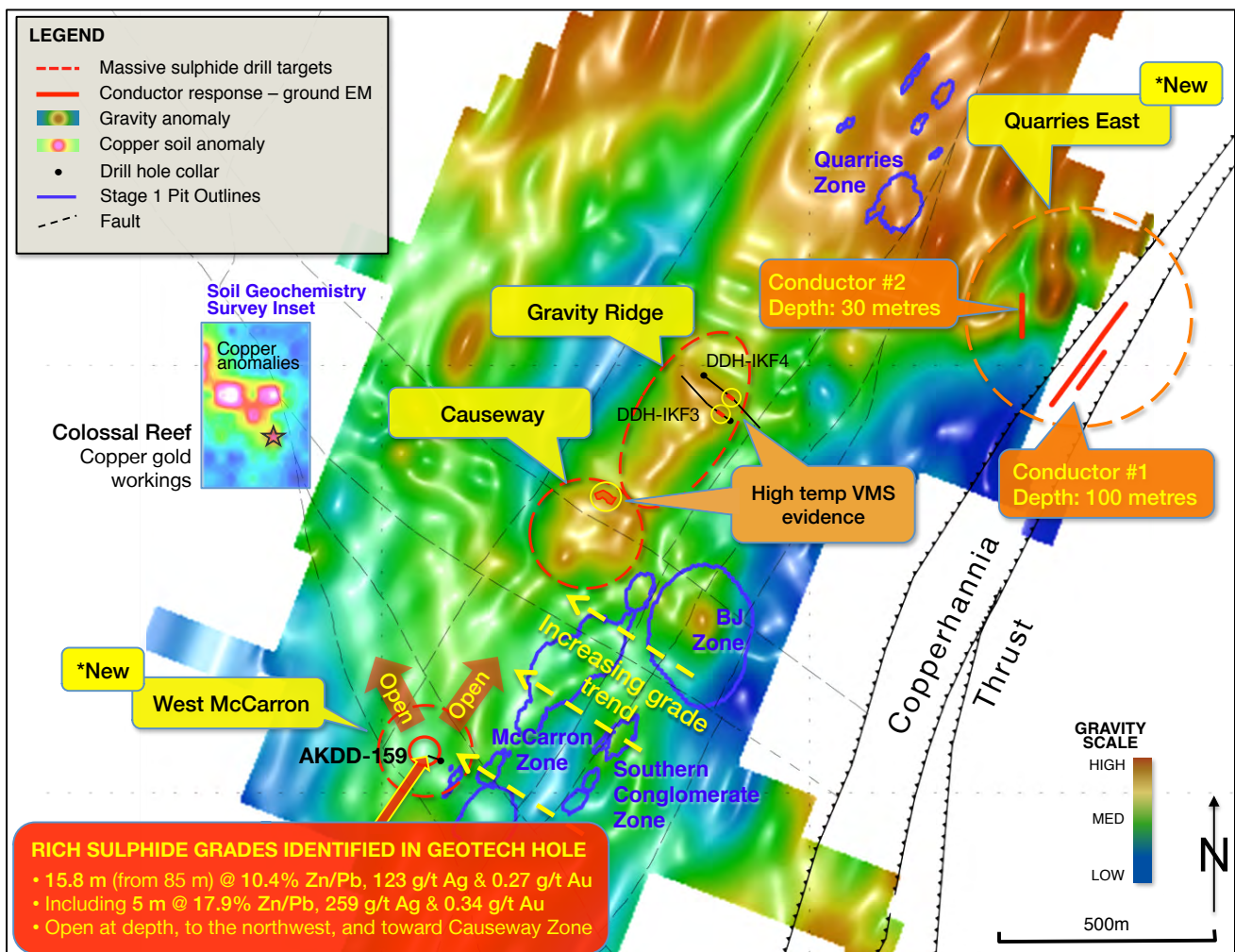
The drill program is being designed to test the location of an interpreted potential third VMS lens as a high temperature feeder zone immediately to the west of the Stage 1 open cut pit mine design, containing higher grade silver, lead and zinc, and potentially, copper and gold.

KEMPFIELD MINERALISATION - POTENTIALLY TO A MUCH GREATER SCALE

The combined effect of the new information announced in this report, the known mineralisation in the area, and the increasing knowledge of the geology, is that a potential bigger picture is emerging for the Kempfield Project area.

Argent Minerals Managing Director David Busch said, “While we continue to advance the approval process for commencing mining of this NSW State Significant Development with a low cost heap leach operation, we continue to uncover evidence that points to significant upside potential at Kempfield. The latest evidence indicates VMS mineralisation potential of a much greater scale than has been apparent to date.”

Figure 1 - Kempfield massive sulphide drill target zones and ground EM conductor locations over gravity survey map



CONDUCTOR TARGETS IDENTIFIED

The ground fixed loop EM survey was performed in October 2013 by Outer-Rim Exploration Services Pty Ltd under the supervision of geophysicist ARCTAN Services Pty Ltd (ARCTAN) and Argent Minerals geologist Dr. Vladimir David at Causeway, West McCarron and Quarries East.

Two conductors have been identified at the Quarries East Zone, confirming a broad VTEM anomaly identified in the area (see Figure 1 for their location):

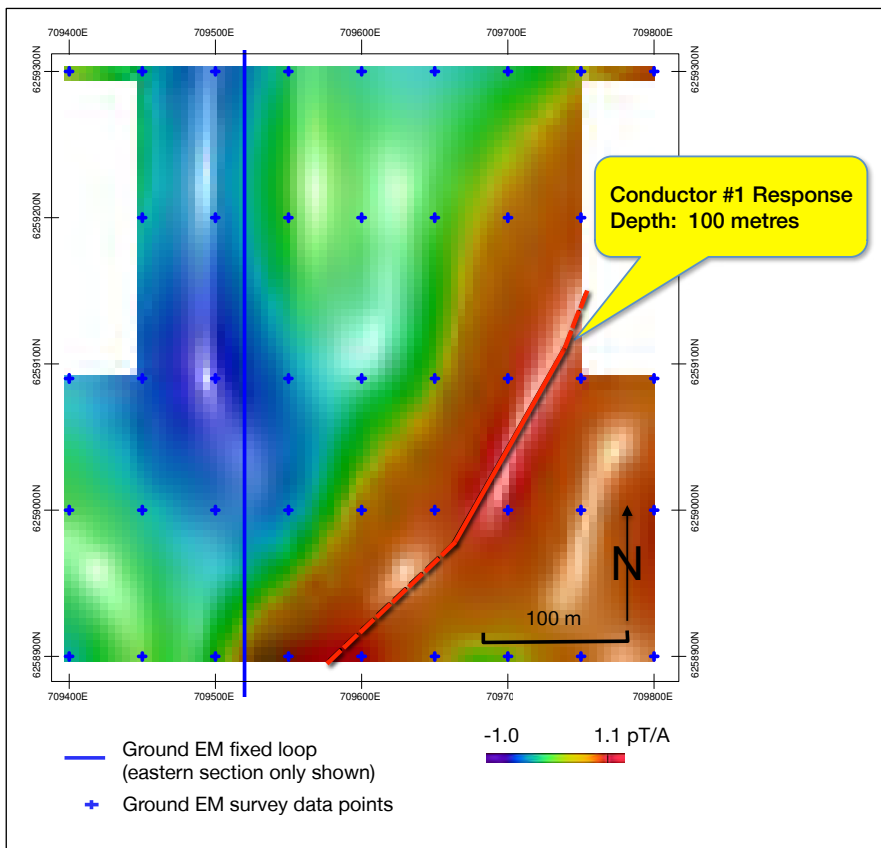
Conductor #1 – Quarries East

The fixed loop ground EM survey detected Conductor #1 at the eastern edge of the survey area, in proximity to the Copperhannia Thrust fault (Figure 1). The EM conductivity response is approximately 300 metres in length and the top of the source is estimated to be at a depth of 100 metres – subject to further modelling. The time constant of the conducting source is approximately 0.3 milliseconds, which is weak but considered to be reasonable for mineralisation dominated by lead and zinc similar to that identified to date at Kempfield.

Empirical modelling was performed by ARCTAN in order to enhance discernment of the conductor response from the background conductivity of the host rocks.

The result is displayed in Figure 2 which clearly illustrates the presence of the EM conductor response.

Figure 2 – Quarries East Conductor #1 – plan view



Technical Note

The diagram at left shows the X (east) component Channel 10 (0.7ms) high pass filtered (100 m half width Gaussian). The signal response of Conductor #1 is defined as an 'early conductor', signifying a source at depth.

Additional analysis confirmed a Z component waveform signature that can be theoretically expected from a conductor - a positive to negative crossover (west to east).

Since this response lies very close to a known regional fault system (the Copperhannia Thrust), there is a small possibility that the response is simply due to the fault zone being slightly more conducting than the general rock type of the area. However, this fault system is also known to play a significant part in the mineralisation in the district.

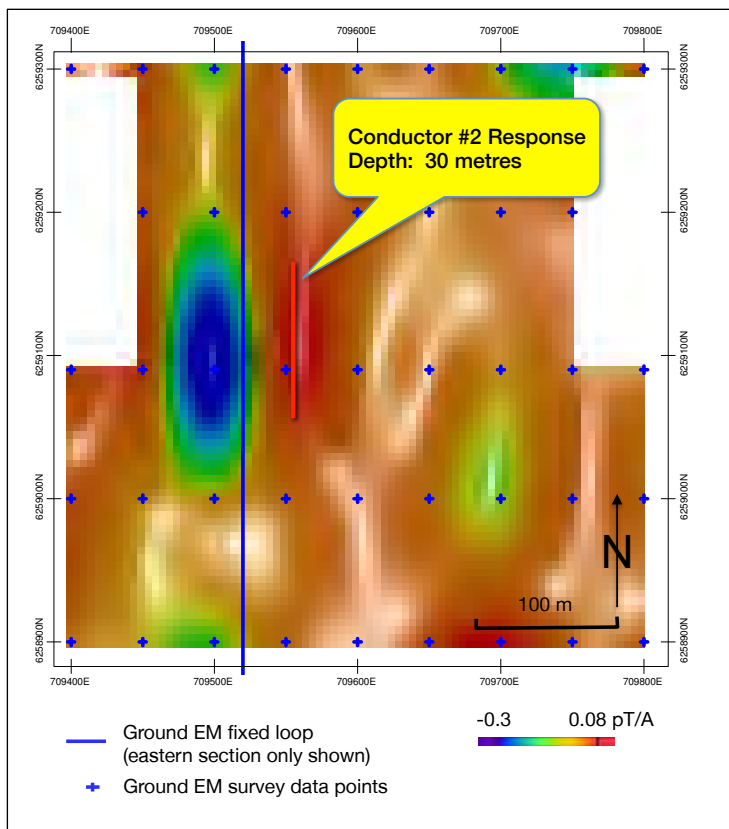
Importantly, Conductor #1 lies on the gradient of a chargeability anomaly detected by a 2010 pole-dipole induced polarisation (IP) survey, which, in the context of Volcanic-hosted Massive Sulphide (VMS) system footprints, may be a vector to massive sulphide mineralisation. Additionally, the location of Conductor #1 at the eastern edge of the Quarries East VTEM anomaly (see Figure 4) could indicate a steeply west dipping conductor. This would be consistent with the existing VMS lenses identified by previous Kempfield drilling, which dip steeply to the west at approximately 80 degrees.

Argent Minerals will design a drill plan to test the Conductor #1 target, for inclusion in the Kempfield massive sulphide drilling program.

Conductor #2 – Quarries East

A prominent and sharp EM conductivity positive response has been detected immediately east of the Quarries East ground EM loop – potentially due to a small, shallow (30 m depth), but strongly conducting, steeply west dipping source. See conductor response indicated the blue line in Figure 3:

Figure 3 – Quarries Zone East Conductor #2 – plan view



Technical Note

The diagram at left shows the X (east) component Channel 25 (18 ms). The signal response of Conductor #2 is defined as an 'late conductor', signifying a shallow source.

Additional analysis confirmed a Z component waveform signature that can be theoretically expected from a conductor.

The response was challenging due to its apparent shallow depth and geometric relationship to the transmitter loop. ARCTAN advises that, while the response may be due to a combination of noise and background loop effects, there are no other similar effects in the current data set and it lies in an ideal location relative to both the VTEM data and the IP models.

Argent Minerals has concluded that the location needs to be carefully ground checked, geochemically sampled, and subject the outcome of the above, drill test Conductor #2.

Causeway and West McCarron EM Survey Results

Ground fixed loop EM surveys were also performed at Causeway and West McCarron. The results are summarised as follows:

- **Causeway.** The purpose of the EM survey at Causeway was to follow up the VTEM anomaly identified in the area (see under heading “VTEM Anomalies”). Some challenges were experienced during the survey with electrical noise, particularly in the vicinity of a power line transformer that prevented some of the fixed loop data being obtained. The ARCTAN analysis of the results concluded that there were no significant responses in the EM survey data, and that the observed VTEM anomaly was possibly due to fences and power lines; and
- **West McCarron** – a new area of interest extending southwest of the Causeway ground EM survey area, where significant base metal and silver mineralisation has been identified in the zone (see under heading “Rich Sulphide Grades Intersected at West McCarron”).

A ground fixed loop EM survey was performed at West McCarron. However, the EM survey failed to recognise the relatively significant known mineralisation in that area. The signal levels were very low, and the data was dominated by a large low surrounding the transmitter loop due to normal interactions with conducting material in the soil. Any signal levels were not discernable from normal background noise. ARCTAN's conclusion was that there are no significant bedrock conductor responses in the West McCarron zone.

The EM survey results from West McCarron confirm that zinc/lead massive sulphide mineralisation, known to be a weak conductor, is not reliably identifiable at Kempfield by the specific electromagnetic survey methods employed to date.

This conclusion is consistent with similar findings at polymetallic lead/zinc-rich VMS deposits in the Lachlan Orogen, and Professor Ross Large's recommendations for the project. Professor Large advised that coincident gravity and IP chargeability high anomalies would form the best targeting method for VMS feeder zone exploration at Kempfield; whilst a gravity high anomaly could indicate either the presence of barite or massive sulphides, a coincident IP chargeability anomaly could indicate the presence of an alteration halo of disseminated pyrite associated with massive sulphide mineralisation.

Causeway remains the Company's highest priority drill target at this point. The Causeway drill target has been identified by a series of vectors, including:

- Coincident gravity high and IP chargeability high anomalies;
- Que River-like outcrop of intensely silicified and sericitised rhyolite;
- high temperature VMS evidence observed in adjacent Gravity Ridge, including:
 - historical drill hole intercepts with high combined base metal presence (AKDDIKF3 & AKDD-IKF4 – see Figure 1 for their location); and
 - dark brown sphalerite observed in the above drill core.

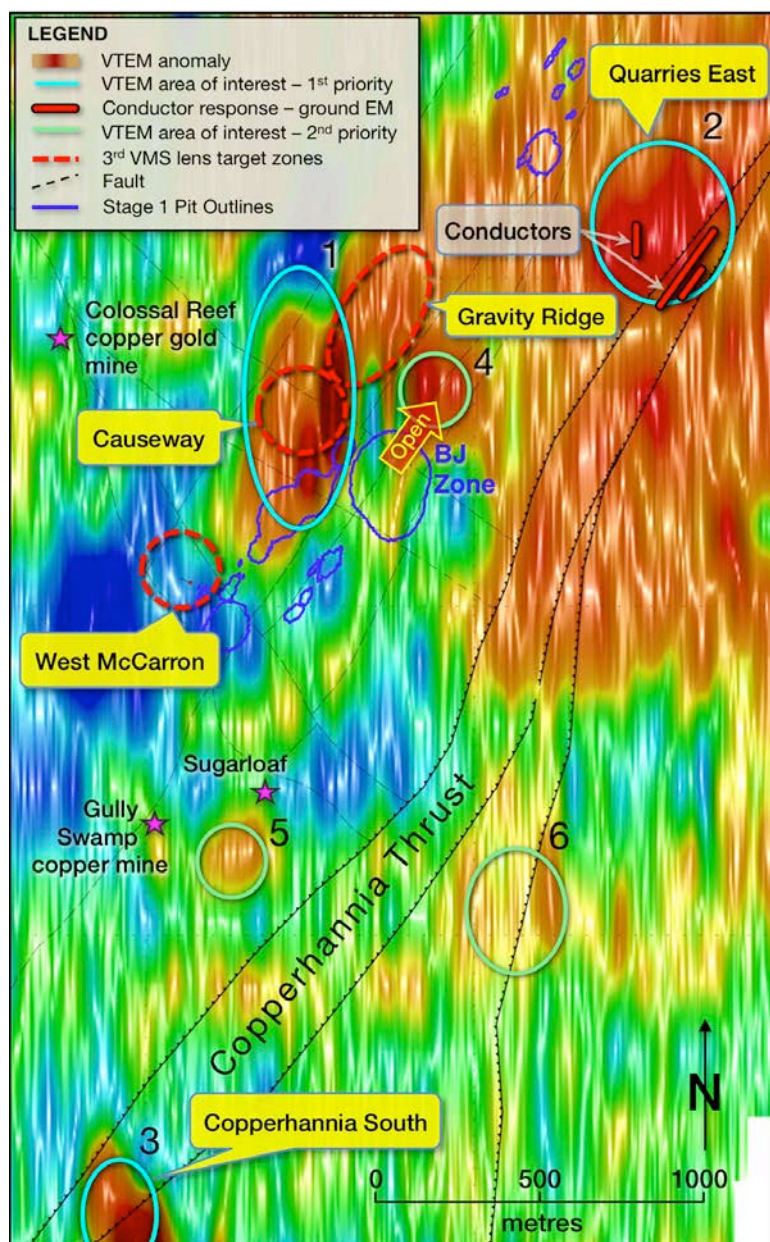


VTEM ANOMALIES

A helicopter-borne virtual time domain electromagnetic (VTEM) survey was flown over Kempfield in May 2008, shortly after the Company listed on the ASX. Preliminary analysis at that time had indicated two potential anomalies had been identified - one at Causeway, the other in the southern area of the tenement (see VTEM areas of interest numbers 1 and 3 in Figure 4 indicated by blue ellipses).

Argent Minerals engaged geophysicist ARCTAN In July and August 2013 to follow up the 2008 VTEM survey with a detailed analysis of the data. ARCTAN has identified six potential VTEM anomalies and categorised them in two levels of follow up priority, as shown in Figure 4. This formed the basis of the October 2013 ground fixed loop survey - resulting in the identification of the two conductor targets at Quarries East. VTEM areas of interest numbers 3 to 6 will be scheduled for follow up.

Figure 4 - Kempfield VTEM areas of interest against VTEM mid-time data chart – plan view



VTEM Areas of Interest – 1st Priority

Areas of interest numbers 1 and 3 were identified as the strongest anomalies, with Causeway (1) and Copperhanna South (3) as the most promising targets for further investigation.

Causeway was identified as the superior anomaly, despite challenges with noise, since it is located in an area of favourable lithologies.

A potential double peaked character was observed for both Causeway (1) and Quarries East (2), indicative of steeply west dipping sources. As noted earlier in this report, this would be consistent with the existing VMS lenses identified by previous Kempfield drilling, which dip steeply to the west at approximately 80 degrees.

The Copperhanna South (3) anomaly was considerably stronger, with a signature that includes later time bands, which may indicate a source extending to depth. Geological mapping of the area does not indicate a favourable host for volcanogenic mineralisation; it is possible that this is an area of graphitic rocks at the edge of a granite by contact metamorphism. Nevertheless, the strong Copperhanna South anomaly merits follow up.

Conclusion: Follow up Causeway Zone (1), Quarries East (2) and Copperhanna South (3) with ground fixed loop EM surveys. Argent Minerals will schedule this follow up of Copperhanna South.

VTEM Areas of Interest – 2nd Priority

ARCTAN advised that Anomaly 4 is prominent, but categorised it as a level of priority from a geophysics standpoint, on the basis that it may be due to cultural features. Anomaly 4 is also coincident with an IP chargeability anomaly which could potentially be caused by the same cultural features. The anomaly is exactly coincident with a chargeability anomaly on a 200 metre depth horizontal plane of a 3D model constructed from a 2010 pole-dipole IP survey.

However, in the context of the favourable geology and known adjacent mineralisation, this IP chargeability anomaly could represent halo material associated with massive sulphide mineralisation. Anomaly 4 lies to the northeast of the significantly mineralised BJ Zone, potentially along strike, in the same direction as the fault which runs through BJ Zone and the centre of Anomaly 4 (see Figure 4). Anomaly 4 may represent an extension of BJ Zone mineralisation – the latter being open to the northeast with high grade base metals at the margin. The area in Anomaly 4 has not been drill tested at depth.

Anomaly 5 is a relatively minor feature, located adjacent to Sugarloaf – an area of known barite mineralisation and a mine shaft entering the side of a hill (adit). The Gully Swamp copper mine is also located to the west of Anomaly 5.

Anomaly 6 is relatively minor in strength, but has a noteworthy signature – a double peaked form that may be indicative of a steeply dipping source, the third such VTEM anomaly in the project area with this feature, and consistent with the known steeply dipping geometry of existing VMS lenses at Kempfield.

Careful ground checking has been recommended for Anomaly 5 and Anomaly 6. Argent Minerals will also follow up Anomaly 4 and re-evaluate its priority; whilst from a geophysics standpoint this anomaly may be caused by cultural features, the Company is of the opinion that, from a geological perspective, follow up is required. At this point Argent Minerals considers Anomaly 4 as a high risk but potentially rewarding target.

RICH SULPHIDE GRADES INTERSECTED AT WEST McCARRON

Background

In November 2011 a series of five large diameter (PQ) geotechnical diamond holes was drilled for the Kempfield Silver Project. Specified for the express purpose of providing data for open cut pit design, each hole was drilled to an exact depth. Mineral assays were deemed unnecessary since the final pit walls would be designed to be outside the mineralised area.

During the second half of calendar year 2012, heap leach column testing was conducted in order to assess the potential enhancement of the project economics through heap leach processing of the oxide and transitional material. The remaining available and relevant drill core samples were inspected for suitability as potential candidates, from which composite grade batches would be assembled for the column testing.

The holes from which samples were collected included diamond hole AKDD-159 which was drilled in a westerly direction from the western edge of the McCarrons South open cut pit to a depth of 100 metres. All other holes in the vicinity were generally drilled in an easterly direction. During the drill core inspection process it was observed that AKDD-159 appeared to have evidence of massive sulphide mineralisation; core samples from this hole were included in the selection process and prepared for assaying.

The assays confirmed sulphide mineralisation in AKDD-159. However, the specific assay details were not announced by the Company since there was no geological context apparent at the time for doing so. The assay results from a series of holes including AKDD-159 were forwarded to H&S Consultants Pty Ltd (H&SC) for review, to determine the potential impact of the new data on the Kempfield resource.

In its December 2012 quarterly report released 31 January 2013, Argent Minerals announced that H&SC had reviewed the new assay data from a total of 19 drill holes in order to assess the potential impact on the Kempfield resource estimate. H&SC advised that “the impact of the new data on total resource tonnage and grade is that it confirms the existing resource estimates, and should result in a small improvement in the resource classification, ie. a slight increase in Measured or Indicated”.

AKDD-159 Assays Reviewed in the Context of the Interpreted 3rd VMS Lens

Following the subsequent identification of the potential for massive sulphide mineralisation at Kempfield by Professor Ross Large, additional gravity survey and analysis, and re-inspection of drill core at Gravity Ridge during 2013, a third VMS lens has been interpreted immediately to the west of the current open cut pit design for Stage 1 of the Kempfield Silver Project (see September Quarterly Activities Report released 31 October 2013 for a summary).

In November 2013, with the results of the VTEM review and ground EM results at hand, Argent Minerals elected to perform an additional review of the AKDD-159 sulphide intercepts and intercepts in adjacent holes, in order to determine if the observed mineralisation is open or not, and if open, in which directions.

The results of the review are that the sulphide mineralisation intersected by AKDD-159, drilled in a northwest direction, is open at depth, to the northwest, and to the northeast in the direction of Causeway. The mineralisation is interpreted to be structurally bound by the fault immediately to the south which strikes southeast/northwest in the direction of Colossal Reef (see Figure 1).

The Company has determined that it is now appropriate to release the assay details for diamond hole AKDD-159 in the context of this fresh understanding of the geology.

In summary for AKDD-159:

- **15.8 m (from 85 m to end of hole) @ 10.4% Zn/Pb, 123 g/t Ag & 0.27 g/t Au,**
- **including 5 m @ 17.9% Zn/Pb, 259 g/t Ag and 0.34 g/t Au; and**
- **mineralisation remains open at depth, to the northwest, and toward Causeway.**

In the event that mineralisation does extend from AKDD-159 to Causeway, the maximum strike length of the interpreted 3rd VMS lens would exceed 1,000 metres. However, the direction(s) and extent of mineralisation can only be determined by drilling.

Importantly, a nearby hole, AKRC-136, drilled in the opposite direction to AKDD-159 (to the southeast), also intersected significant sulphide mineralisation as follows:

- **48 m (from 50 m) @ 4.3% Zn/Pb, 43 g/t Ag & 0.60 g/t Au,**
- **including 14 m @ 5.2% Zn/Pb, 65 g/t Ag & 1.5 g/t Au.**

Coincident Mineralisation – Target Zone

Analysis of the geometry of the above indicates that the mineralisation intersected by AKRC-136 is located above that intersected by AKDD-159, with the latter extending further to the west and deeper, and indicating a potentially steeply west dipping VMS lens with rich sulphides grades at depth. This is consistent with the geometry of the existing two main VMS lens groups at Kempfield, and the observed increasing grade trend from east to west (see yellow arrows in Figure 1 marked “Increasing grade trend”).

See Appendix A for additional information in relation to drilling, sampling, assaying and hole intercept data.

KEMPFIELD MINERALISATION - POTENTIALLY TO A MUCH GREATER SCALE

The combined effect of the new information announced in this report, the known mineralisation in the area, and the increasing knowledge of the geology, is that a potential bigger picture is emerging for the Kempfield Project area. The increasing evidence indicates VMS mineralisation potential of a much greater scale than may have been apparent to date.

Referring to Figure 4, the potential scope of the mineralisation of the Kempfield Project, owned 100% by Argent Minerals, now includes:

- **Existing confirmed mineralisation** (see pit layouts in for the proposed Stage 1 of mining);
- **Potential interpreted 3rd VMS lens immediately to the west, with a maximum strike length that could exceed 1,000 metres** (comprising West McCarron, Causeway and Gravity Ridge massive sulphide target zones;
- **A prospective area extending over a distance exceeding 3 kilometres along the Copperhannia Thrust, which now includes (from north to south):**
 - The two conductors at recently defined Quarries East;
 - Potential extension of BJ mineralisation along strike to the northeast;
 - VTEM anomaly areas 5 and 6 in the area of the Gully Swamp copper mine and Sugarloaf; and
 - Copperhannia South – a prominent VTEM anomaly.

Additionally, the Trunkey Creek area of the main tenement EL5748 area is prospective for shallow orogenic gold deposits.

DRILLING PRIORITY

Argent Minerals has commenced work on preparations for drilling the Kempfield massive sulphide targets as a high priority. The relevant regulatory documentation has been submitted, and Argent Minerals is expecting an approval before the end of November 2013.

Details of progress and an indicative drilling timetable, once finalised, will be released in a separate announcement to the ASX.

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APPENDIX A – DRILL HOLE INFORMATION

Table 1 - Kempfield geotechnical drilling diamond hole AKDD-159 assay results*

	AMG Easting (m)	AMG Northing (m)	Zone	RL (m)	Azimuth	Dip	EOH (m)	Intercept (m)	From (m)	Ag (g/t)	Au (g/t)	Zn + Pb (%)
AKDD-159	708023	6257890	55	763	290 ⁰	-70 ⁰	100.8	15.8	85	123	0.27	10.4
Including								5	88	259	0.34	17.9

Table 2 - Kempfield RC hole AKRC-136 assay results*

	AMG Easting (m)	AMG Northing (m)	Zone	RL (m)	Azimuth	Dip	EOH (m)	Intercept (m)	From (m)	Ag (g/t)	Au (g/t)	Zn + Pb (%)
AKRC-136	707968	6257922	55	752	110 ⁰	-60 ⁰	138.5	48	58	42.1	0.62	4.32
Including								14	72	64.5	1.5	5.2

* Only intercepts relevant to the “Coincident Mineralisation – Target Zone” discussion on page 8 of this report are shown.

Notes

- Drilling was completed as PQ diamond core for hole AKDD-159, and Reverse Circulation (RC) percussion for hole AKRC-136;
- Sample recovery was sufficient for all type of samples;
- Drill core and drill chips have been logged in detail based on lithology, mineralisation and alteration;
- Samples for analysis were collected as follows:
 - For AKDD-159, by longitudinal sawing of the core in half, and
 - For AKRC-136, by riffle splitter sampling of the RC samples;
- Samples were submitted as 1 metre composite half-core intervals, or as 2 metre composites for RC drill samples.
- Samples were analysed at ALS Laboratories in Orange using following methods: Au-AA25 for Au (fire assay); Inductively coupled plasma mass spectrometry (ICP-MS) ME-ICP41 for multiple elements including Ag, Cu, Pb, Zn; Ag-OG46 for >100 g/t Ag; Pb-OG46 for >1% Pb and Zn-OG46 for >1% Zn; and
- Diamond drillhole collars were surveyed by digital global positioning system (DGPS) based on the GDA94 grid reference, and downhole surveys were conducted every 30 metres using an Eastman camera.

COMPETENT PERSON STATEMENT

The information in this report that relates to Exploration Results is based on information compiled by Dr. Vladimir David who is a member of the Australian Institute of Geoscientists, an employee of Argent Minerals, and who has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves' (JORC Code). Dr. David consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

DISCLAIMER

Certain statements contained in this announcement, including information as to the future financial or operating performance of Argent Minerals and its projects, are forward-looking statements that:

- may include, among other things, statements regarding targets, estimates and assumptions in respect of mineral reserves and mineral resources and anticipated grades and recovery rates, production and prices, recovery costs and results, capital expenditures, and are or may be based on assumptions and estimates related to future technical, economic, market, political, social and other conditions;
- are necessarily based upon a number of estimates and assumptions that, while considered reasonable by Argent Minerals, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies; and,
- involve known and unknown risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in such forward-looking statements.

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All forward looking statements made in this announcement are qualified by the foregoing cautionary statements. Investors are cautioned that forward-looking statements are not guarantees of future performance and accordingly investors are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

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