

Appendix 3: Compass Creek & Mavis

Proposed 2012 Drill Sites & Target Descriptions

Jim McGregor-Dawson, March 10, 2012

Magnetic Anomaly

The Magnetic Anomaly consists of a combined geophysical, structural and geochemical anomaly. Here a large unexplained magnetic anomaly coincides with a large area of hydrothermal alteration with associated narrow “stringer” quartz veining and disseminated & veinlet sulphide casts. The presence of sulphides to depth is reinforced by the coincidence of a strong IP chargeability anomaly and a significant airborne electro-magnetic anomaly (conductor). All of these anomalies occur in the core of a north plunging anticline of Upper Alligator River Formation sediments that are in contact with a large granite body (Prices Springs Granite) immediately to the south. The core/hinge of the anticline contains a dark grey hornfels unit that confirms the extent of metasomatism and alteration that has been focused in the hinge of the anticline.

The area is geochemically anomalous for copper, lead and arsenic with weak values for gold, silver, bismuth and antimony. The surface exposure of broad alteration, stringer veining (with only rare major veins) and low geochemical response, is thought to indicate (represent) the outer zone of a stronger mineralised system at depth in the core of the anticline. This anomalous area requires several deep drill holes to test for better metal content at depth.

Hole No.	North (mN)	Easting (mE)	Azimuth To true N	Hole Inclination	Hole Depth
1	8511750	788450	090	-60	200m
2	8512250	788200	090	-60	350
3	8512250	788500	270	-60	350
				Sub Total	900m

Drill hole 1 is the most southerly in the Magnetic Anomaly. It is about 175m north of the granite contact, and located on a broad ridge that has an existing access track. The hole will target both the core of the anticline and the projected gossan vein which is exposed closer to the granite contact and Terra Search magnetic lineament which extends about 700m to the north from near the granite contact. This hole will also test the projected strike of the hornfels unit in the core of the anticline and the position of a very high IP chargeability anomaly.

Drill holes 2 & 3 test a combined AEM, IP & magnetic anomaly on line 8512250mN. This is also the location of a weak silver soil anomaly. These holes also test a second magnetic linear (of four defined by Terra Search) which are thought to be the main cause of the broad magnetic anomaly. These holes are located on the top of broad ridge, adjacent to an existing access track.

Mavis & Mavis South Area

The Mavis area consists of the old Mavis tin/gold mine that worked a bedding parallel quartz-sulphide vein of 10 to 50 cm width located in the core of the north plunging anticline. A few hundred metres south of the mine there is a broad area (250m x 50m) of hydrothermal alteration with stringer quartz veining and 1-5% disseminated and veinlet sulphide casts apparently in a bedded unit in the east limb of the anticline. Rock chip samples from this mineralised zone are commonly anomalous for gold (0.2 – 1.25 g/t Au), silver, copper, arsenic, bismuth, & tin.

Coincident with the surface mineralisation and the core of the anticline is the presence of a significant airborne electro-magnetic (AEM) conductor that also extends at least another 500m to the north. Likewise the two IP/Resistivity lines in this area show a chargeability response that is also coincident with the AEM and geochemical anomaly.

A third IP/Resistivity line to the south of Mavis (and north of the Magnetic Anomaly) also shows two chargeability anomalies. One appears to be the northward continuation of the alteration and mineralisation of the Magnetic Anomaly; while the second (eastern) chargeability anomaly shows no surface expression (i.e. hidden anomaly) and the source is unknown. The position of this chargeability anomaly indicates that it may be related to a SE extension of the Mavis South sulphide mineralisation, extending down-plunge in the east limb of the anticline. A magnetic susceptibility anomaly is also recorded with the hidden eastern chargeability anomaly.

Hole No.	North (mN)	Easting (mE)	Azimuth To true N	Hole Inclination	Hole Depth
4	8512750	789550	270	-60	200
5	8513250	789500	270	-60	300
6	8513400	789350	270	-60	300
7	8513100	789150	045	-60	200
				Sub Total	1,000m

Drill hole 4 is targeting the hidden eastern chargeability and magnetic anomaly to the SE of the Mavis South area. This 200m hole will be positioned in the valley flat next to the access track to the Spundaily Camp. The hole will drill to the west to test the chargeability anomaly.

Drill hole 5 is located on top of the ridge at Mavis, near the old haul road, and will be angled to the west to test the IP chargeability anomaly at Mavis South and the N-S trending AEM conductor estimated at 789400mE. This hole is also testing midway between the Mavis mine and the alteration zone with anomalous gold at Mavis South.

Drill hole 6 is also located on top of the ridge at Mavis, about 150m north of hole 5. This hole will also test the AEM anomaly and the projected IP chargeability anomaly, directly under the old Mavis mine site.

Drill hole 7 will be drilled north-easterly from a gully beneath the Mavis South alteration area with the anomalous gold in rock samples. The hole will test beneath the surface mineralisation and also should test the IP chargeability and AEM anomaly.

Kamas Cauldron Breccia Pipe

The Kamas Cauldron breccia pipe is located on the eastern base of the Mountain Area and forms a circular flat top hill about 80m in diameter (at the peak). The hill rises about 30m above the level of the plain. The breccia consists of variably broken and altered sediment fragments with quartz and sulphides (gossan) forming the breccia matrix and veins and disseminated sulphides (casts) within the fragments. The original sulphide content appears to vary from 1-10%, but is locally higher. The top of the hill is surrounded by a rim of massive metasomatic altered sediment with coarse porphyroblasts and occasional thin quartz-sulphide veinlets. This altered wall rock forms a slightly raised rim around the breccia contact, and would have funnelled the abundant monsoon rains down through the more porous breccia. This funnelling of water through the breccia would likely cause excessive leaching of most metals due to the high acid environment. Hence the surface assays are problematic and the possibility of a deep and rich supergene zone is likely.

The surface geochemistry from the seven rock chip samples shows highly anomalous tin, arsenic, lead and antimony, with weakly anomalous silver and bismuth. Only copper, zinc and gold are at relatively low levels. It is possible that acid leaching could have played a part in removing these metals.

The one IP/Resistivity line over Kamas Cauldron defined a weak chargeability anomaly. The weakness of the chargeability is probably due to the small size of the breccia pipe compared to the huge volume of un-mineralised surrounding rock. The comment by our consultant geophysicist (David McInnes) is very encouraging.

A subtle chargeable source with depth extent directly associated with the mapped Kamas Cauldron. The chargeable body correlates with a deepening of the weathering profile (as indicated by the resistivity model) which also has a slight increase in conductive (increased clay/water?).

Hole No.	North (mN)	Easting (mE)	Azimuth To true N	Hole Inclination	Hole Depth
8	8515675	790415	090	-60	250
				Sub Total	250m

Drill hole 8 will be collared about 25m west of the western edge of the breccia pipe and drilled east into the pipe, and should penetrate the pipe from about 50m to 200m down hole. It is hoped this will provide a good examination of the oxide, supergene and primary zone of mineralisation within the pipe. However it is possible supergene mineralisation could extend below this depth.

Jason's Peak Area

Jason's Peak is a "knob" or small hill consisting of strongly altered sediments with at least six small breccia dykes and pipes cutting through the altered rock. The altered hill is about 75m long and up to 35m wide, and the breccia bodies vary from 0.5m to 6m wide and occur at both steep and shallow angles. The eight rock chip samples collected from Jason's Peak returned highly anomalous lead, arsenic, tin, antimony, bismuth and silver, with weakly anomalous gold and low copper and zinc. The average assays for the eight samples are: 5252 ppm Pb, 3580 ppm As, 1148 ppm Sn, 582 ppm Sb, 259 ppm Bi, 6.2 ppm Ag, 0.07 ppm Au, 81 ppm Zn & 67 ppm Cu. It is possible that copper and zinc have been leached from the surface environment by acid ground water due to the high pyrite content.

About 200m east of Jason's Peak is a zone of N-S faulting and veining that is exposed over 50m wide and is traceable for over 400m to the south, and about 150m to the north. This zone hosts occasional narrow quartz veins with gossan material. Rock chip assays from this zone show strongly anomalous arsenic and lead, with moderate to weakly anomalous copper, antimony, bismuth, tin, silver and gold; with only zinc being low.

The IP/Resistivity lines over Jason's Peak and the line 350m to the south, both show significant chargeability anomalies. The following is an abbreviated summary from David McInnes (Geophysical Consultant).

Beneath the mapped location of Jason's Peak breccia pipe there is a substantial chargeable body associated with a strong conductor. The IP traverse directly to the south of the Jason's Peak breccia (350m) displays a more diffuse chargeable conductor, indicating that the source may have deepened, however more likely it suggests that the source of the anomaly is off line.

Directly to the east of the chargeable conductor associated with Jason's Peak breccia, there is another strong chargeable conductor. The body occurs directly below the mapped NNW (or N-S) striking alteration/quartz vein zone. The depth to the top of this body is deeper than that of the Jason's Peak source. The IP traverse directly to the south (350m) displays the chargeable conductor as a "diffuse/nebulous" deep feature indicating that the source is off-line. Both this chargeable conductor and the one associated with the Jason's Peak breccia are open to the north.

Hence the Jason's Peak area contains a breccia pipe and a broad shear/vein zone, both of which are geochemically anomalous and contain significant chargeable conductors at depth.

Hole No.	North (mN)	Easting (mE)	Azimuth To true N	Hole Inclination	Hole Depth
9	8516350	789050	090	-60	300
10	8516000	789150	090	-60	300
11	8516150	789440	270	-60	300
12	8516300	789350	270	-60	300
				Sub Total	1,200m

Drill hole 9 will be collared about 50m west of the Jason's Peak breccia zone, and will be drilled to the east under the breccia zone at -60° declination. This hole will test the breccia pipe between 100 to 300m down hole; and will also test the IP chargeability anomaly and the coincident conductor.

Drill hole 10 will test the chargeability and conductor anomaly 350m south of Jason's Peak where it is defined by the IP line at 8516000mN. Dave McInnes felt this anomaly could be at depth or maybe off-line (to north) reflecting the Jason's Peak mineralisation. However, given that alteration and veining are quite strong in the mountainous area further south; it is likely that mineralisation underlies this area and that the chargeability and conductor anomaly at 8516000mN is likely to be at depth (rather than off-line).

Drill hole 11 will test the altered shear/vein zone where it is well exposed in outcrop about half way between the two IP lines (8516000mN & 8516350mN). Both these IP lines show good chargeability and conductor anomalies coincident with the shear/vein zone. The target zone on surface is at 789340-390mN.

Drill hole 12 will test the shear/vein zone at about 50m south of the IP line that shows the strong chargeability and conductor anomalies (8516350mN), and about 150m north of hole 11. Hole 12 will be drilled from east to west and this will put the end of the drill hole close to the Jason's Peak breccia area at around 300m down hole. Hence it may be possible to extend the hole if significant mineralisation is encountered at the end of the hole.

Summary

This proposed drill program totals 3,350 m of reverse circulation (RC) drilling. The estimated cost of the program is between \$350,000 and \$400,000. This drill program will test most of the targets defined at Compass Creek, and results should be conclusive one way or the other.