

# GeoSpark Logger ~ Drill Log

**Project:** KZK      **Hole Number:** K15-254  
**Prospect:** ABM      **Hole Type:** DD      **Survey Type:** RTK DGPS      **Logged By:** Dillon Hume  
**Grid:** NAD83\_Z9      **Hole Diameter:** 75.7      **Survey By:** Challenger\_Survey      **Date Logging Start:** 09-Sep-15  
**UTM Easting:** 415050.927      **Core Size:** NQ3      **Azimuth:** 179.86      **Date Logging Complete:** 10-Sep-15  
**UTM Northing:** 6815377.977      **Casing Pulled?:** Yes      **Dip:** -60      **Drill Company:** Geotech  
**UTM Elev. (m):** 1386.875      **Casing Depth (m):** 12      **Length (m):** 100      **Drill Rig:** Hydracore  
**Local Easting:**      **Stored?:** Yes      **Claims Title:**      **Drill Started:** 08-Sep-15  
**Local Northing:**      **Cemented?:** Yes      **Core Storage Loc.:** KZK Camp      **Drill Completed:** 09-Sep-15  
**Local Elev. (m):**                **Purpose:** Resource Definition  
**Comments:**                **Parent Hole:**

K15-254 was drilled as a resource infill hole between historic holes K94-002 and K95-087. Overburden was encountered to a depth of 19 m. The hanging wall of the MSXS (19-39.3 m) consists of mixed MU-altered felsic volcanics and minor carbonaceous units. The first MSXS was intercepted from 39.3-40.3 and consisted of the OC ore type. Below this there is an undifferentiated Mu-altered rhyolite unit to a depth of 42.1 m. From 42.1-51.7 m MSXS was encountered, consisting of ore types OB, OA, and OJ. Below this final ore intercept there was MU-CL+/-CI altered felsic volcanics to a depth of 54.3 m. The footwall consists of MAFi, RHYi, and a minor interval of MU-altered RHYv.

**Downhole Surveys:**

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-60	179.86	0	179.86	APS	Dillon Hume	09-Sep-15		<input checked="" type="checkbox"/>	Rig set-up azimuth
53	-60	172.2	22.5	194.7	ReflexEZS	Geotech	09-Sep-15	5613	<input checked="" type="checkbox"/>	
80	-58.4	161.4	22.5	183.9	ReflexEZS	Geotech	09-Sep-15	5691	<input checked="" type="checkbox"/>	
100	-58.5	166.1	22.5	188.6	ReflexEZS	Geotech	09-Sep-15	5728	<input checked="" type="checkbox"/>	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<b>0.00</b>	<b>19.00</b>	<b>OVBN Overburden</b>									
<b>19.00</b>	<b>21.20</b>	<b>MDSst Rhyolite tuff dominant mudstone</b>									
19 - 21.2: minor (~5%) carbonaceous material within the well foliated schist											
<<Min: 19 - 25.1 2% Min: Pyrite>>											
<<Min: 19 - 25.1 1% Min: Pyrrhotite>>											
<<Alt: 19 - 38.3 Strong (Alt) Muscovite>>											
<b>21.20</b>	<b>25.10</b>	<b>RHYv Rhyolite volcanoclastic</b>									
21.2 - 25.1: strongly foliated MU-QZ schist. Very hard to determine the original texture (volcanoclastic vs coherent) due to alteration.											

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KZK

Hole Number:

K15-254

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<<Vein: 23.5 - 24.1 40% Quartz>> Zone with multiple QZ-AK veins <<Struc: 22.93 - 22.94 dominant foliation>>											
<b>25.10</b>	<b>28.00</b>	<b>MSt Rhyolite tuff dominant mudstone</b>									
25.1 - 28: Minor carbonaceous component (~10%) within well foliated MU-schist. Appears to be volcanoclastic. <<Min: 25.1 - 28 5% Min: Pyrite>>											
<b>28.00</b>	<b>35.60</b>	<b>RHYv Rhyolite volcanoclastic</b>									
28 - 35.6: Mu-QZ schist. Hard to determine original texture due to MU-alteration, but there appears to be minor volcanoclastic textures present. <<Min: 28 - 39.3 3% Min: Pyrite>> <<Min: 28 - 39.3 2% Min: Pyrrhotite>> <<Struc: 28.7 - 28.71 dominant foliation>> <<Struc: 34.89 - 34.9 dominant foliation>>											
<b>35.60</b>	<b>37.10</b>	<b>MSt Rhyolite tuff dominant mudstone</b>	35.60	37.10	1.50	B00268707	0.8	0.014	-0.01	0.01	0.03
35.6 - 37.1: ~15% carbonaceous material in GR-MU-QZ schist. <<Struc: 35.7 - 35.8 Strong (Alt) Fault>> weak-moderate fault gouge zone											
<b>37.10</b>	<b>39.30</b>	<b>RHYv Rhyolite volcanoclastic</b>	37.10	38.20	1.10	B00268708	1.7	0.022	0.01	0.02	0.03
37.1 - 39.3: MU-QZ+/-CA schist from 39.1-39.3 m there appears to be a fg ~equigranular texture possibly related to a dyke (?). <<Min: 39.1 - 39.3 15% Min: Calcite>> <<Alt: 39.2 - 40.5 Strong (Alt) Cordierite>> <<Struc: 37.68 - 37.69 dominant foliation>>											
<b>39.30</b>	<b>40.30</b>	<b>OC Chalcopyrite-pyrrhotite net textured sulphides</b>	39.30	40.30	1.00	B00268712	330	3.98	10.2	0.17	1.08
39.3 - 40.3: Good CP+PO+MG net texture. MU+CI groundmass. <<Min: 39.3 - 40.3 10% Min: Chalcopyrite>> CP-PO net textured rock <<Min: 39.3 - 51.7 5% Min: Calcite>> <<Alt: 39.3 - 40.5 Moderate (Alt) Chlorite>>											

CG

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KZK

Hole Number:

K15-254

From (m) To (m) Rocktype & Description

**40.30 42.10 RHY undifferentiated rhyolite**

40.3 - 42.1: Original texture obscured by alteration. Moderate-heavily disseminated PY+PO+/-CP near the top and bottom of the unit

<<Min: 40.3 - 42.1 5% Min: Pyrite>>  
 <<Min: 40.3 - 42.1 2% Min: Pyrrhotite>>  
 <<Min: 40.3 - 42.1 2% Min: Chalcopyrite>>  
 <<Alt: 40.5 - 41.9 Strong (Alt) Muscovite>>  
 <<Alt: 41.9 - 42.2 Moderate (Alt) Chlorite>>  
 <<Alt: 41.9 - 42.2 Strong (Alt) Cordierite>>  
 <<Struc: 41.43 - 41.44 dominant foliation>>

**42.10 42.80 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

**MCG**

42.1 - 42.8: laminated massive PY+SP. Patchy AP and CI from 42.1-42.2 m.

<<Min: 42.1 - 42.2 2% Min: Arsenopyrite>>

**42.80 43.40 OA Magnetite bearing sulphides**

**MCG**

42.8 - 43.4: Laminated PY+SP+MG

**43.40 48.30 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

**MCG**

43.4 - 48.3: laminated-banded PY+SP+GL+/-CP. High grade SP & GL from 46.7-49.1 m (~20% SP and ~3-4% GL).

<<Min: 46.6 - 49.1 20% Min: Sphalerite>>  
 <<Min: 46.6 - 49.1 4% Min: Galena>>  
 <<Struc: 43.54 - 43.55 dominant foliation>>  
 <<Struc: 47.33 - 47.34 dominant foliation>>

**48.30 49.10 OA Magnetite bearing sulphides**

**MCG**

48.3 - 49.1: laminated PY+SP+GL+CA with some cg PY buckshot texture mostly confined to SP bands.

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
40.30	41.20	0.90	B00268713	60.7	0.209	1.26	0.28	0.57
41.20	42.10	0.90	B00268714	38.7	0.288	0.91	0.29	0.58
42.10	42.80	0.70	B00268715	171	1.36	0.91	1.68	10.9
42.80	43.40	0.60	B00268716	120	0.591	0.22	1.69	8.55
43.40	44.40	1.00	B00268717	233	1.47	0.24	2.36	9.06
44.40	45.40	1.00	B00268718	152	1.18	0.3	1.78	10.1
45.40	46.40	1.00	B00268719	103	0.813	0.19	0.54	3.62
46.40	47.40	1.00	B00268721	295	2.29	0.57	3.87	10.8
47.40	48.30	0.90	B00268722	301	1.08	0.31	4.47	13.4
48.30	49.10	0.80	B00268723	128	0.622	0.34	3.41	13.9

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K15-254

From (m) To (m) Rocktype & Description

**49.10 50.60 OJ Heavily disseminated sulphides in proximal altered rock**

**MCG**

49.1 - 50.6: Py+/-CP stringers withing CL+MU+CI altered schist

<<Alt: 49.1 - 49.5 Moderate (Alt) Cordierite>>

<<Alt: 49.1 - 50.6 Moderate (Alt) Muscovite>>

<<Alt: 49.1 - 50.6 Moderate (Alt) Chlorite>>

<<Struc: 49.75 - 49.76 dominant foliation>>

<<Struc: 50.3 - 50.4 Strong (Alt) Fault>> weak-moderate fault gouge zone

**50.60 51.10 OA Magnetite bearing sulphides**

**MCG**

50.6 - 51.1: Banded/laminated mg PY and cg PY+SP. First ~10 cm has no magnetite (OB).

**51.10 51.70 OB Wispy laminate, fine buckshot textured, non-magnetite bearing sulphides**

**MCG**

51.1 - 51.7: Laminated cg and mg PY and SP. Local PY buckshot texture. Trace patchy AP.

**51.70 54.30 RHY undifferentiated rhyolite**

51.7 - 54.3: Strong Mu-alteration in rhyolite, with a band of OA (52.2-52.3 m) and OJ (53.8-54.1 m). Disseminated PY+/- AP in the MU-schist component.

<<Min: 51.7 - 54.4 10% Min: Calcite>>

<<Min: 52.2 - 52.3 80% Min: Pyrite>> Zone of MSXS (OA)

<<Min: 52.3 - 53.8 5% Min: Pyrite>>

<<Min: 52.3 - 53.8 0.5% Min: Arsenopyrite>>

<<Min: 53.8 - 54.1 5% Min: Sphalerite>>

<<Min: 53.8 - 54.1 15% Min: Pyrite>>

<<Min: 53.8 - 54.1 1% Min: Galena>>

<<Alt: 51.7 - 52.2 Moderate (Alt) Muscovite>>

<<Alt: 51.7 - 52.2 Moderate (Alt) Chlorite>>

<<Alt: 52.3 - 53.8 Strong (Alt) Muscovite>>

<<Alt: 53.8 - 54.1 Moderate (Alt) Chlorite>>

<<Alt: 54.1 - 54.3 Strong (Alt) Muscovite>>

<<Struc: 53.7 - 53.8 Weak (Alt) Fault>> weak-moderate fault gouge zone

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
49.10	49.90	0.80	B00268724	74.6	1.38	1.75	0.71	2.89

49.90	50.60	0.70	B00268725	25.1	0.245	0.18	0.4	2.68
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50.60	51.70	1.10	B00268726	98.2	0.619	0.31	1.92	9.35
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51.70	53.20	1.50	B00268727	17.4	0.09	0.07	0.34	1.26
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53.20	54.30	1.10	B00268728	26.1	0.137	0.18	0.33	1.67
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From (m) To (m) Rocktype & Description

**54.30 83.00 MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

54.3 - 83: CL-BI-CA schist

- <<Min: 54.4 - 80.3 0.01% Min: Pyrrhotite>>
- <<Min: 54.4 - 80.3 20% Min: Calcite>>
- <<Min: 80.3 - 83 1% Min: Pyrite>>
- <<Min: 80.3 - 84 1% Min: Sphalerite>>
- <<Min: 80.3 - 84 0.5% Min: Galena>>
- <<Min: 80.3 - 84 5% Min: Calcite>>
- <<Alt: 54.3 - 80.3 Strong (Alt) Chlorite>>
- <<Alt: 54.3 - 80.3 Strong (Alt) Biotite>>
- <<Alt: 80.3 - 96.3 Strong (Alt) Silicification>>
- <<Alt: 80.3 - 96.3 Strong (Alt) Muscovite>>
- <<Struc: 61.8 - 61.81 dominant foliation>>
- <<Struc: 65.05 - 65.06 dominant foliation>>
- <<Struc: 68.2 - 68.21 dominant foliation>>
- <<Struc: 71.37 - 71.38 dominant foliation>>
- <<Struc: 80.4 - 82.5 Weak (Alt) Fault>> moderate-strong fault gouge zone with significant core loss

**83.00 84.00 RHYi Aphanitic Rhyolite (intrusion)**

83 - 84: mixture of aphanitic rhyolite and QZ-MU schist.

- <<Min: 83 - 84 2% Min: Pyrite>>

**84.00 84.50 MAFi Mafic Intrusions (primarily footwall mafic intrusion)**

84 - 84.5: MU-CA-CL schist with a similar texture to the CL-BI-CA schist

- <<Min: 84 - 84.5 10% Min: Calcite>>
- <<Min: 84 - 88.9 1% Min: Pyrite>>

**84.50 85.70 RHYi Aphanitic Rhyolite (intrusion)**

84.5 - 85.7: QZ-MU schist

- <<Min: 84.5 - 85.7 5% Min: Calcite>>

From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
54.30	55.80	1.50	B00268729	1.4	0.013	-0.01	0.03	0.11

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From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Ag PPM	Au PPM	Cu %	Pb %	Zn %
<b>85.70</b>	<b>88.90</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>									
85.7 - 88.9: MU-altered and silicified MAFi, with a 30 cm RHYi from 88-88.3 m											
<<Min: 85.7 - 88.9 10% Min: Calcite>>											
<b>88.90</b>	<b>95.00</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b>									
88.9 - 95: Massive aphanitic rhyolite with local zones of QZ-MU schist and QZ-veining											
<<Min: 88.9 - 96.3 3% Min: Pyrite>>											
<<Min: 88.9 - 100 5% Min: Calcite>>											
<<Vein: 93.7 - 94.3 40% Quartz>> zone with multiple QZ-AK veins											
<b>95.00</b>	<b>100.00</b>	<b>RHYv Rhyolite volcanoclastic</b>									
95 - 100: Strong MU-alteration of volcanoclastic rocks											
<<Min: 96.3 - 100 1% Min: Pyrite>>											
<<Alt: 96.3 - 100 Strong (Alt) Muscovite>> Hard to determine wether this is overprint alteration associated with the RHYi or original alteration associated with the mineralizing event											
<b>End of Hole @ 100</b>											