

# GeoSpark Logger ~ Drill Log

**Project:** KZK **Hole Number:** K16-361

Prospect:	ABM	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Rob Duncan
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	6/15/2016
UTM Easting	415048.707	Core Size:	HQ3	Azimuth:	359.95	Date Logging Complete:	6/16/2016
UTM Northing:	6815308.954	Casing Pulled?:	Yes	Dip:	-48.8	Drill Company:	Hytech
UTM Elev. (m):	1385.429	Casing Depth (m):	9	Length (m):	68.9	Drill Rig:	Tech 5000
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	6/9/2016
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	6/10/2016
Local Elev. (m):				Hole Completed?:	Completed	Purpose:	Metallurgical
Comments:						Parent Hole:	

K16-361 was designed to intersect the up-dip near surface portion of the ABM deposit to provide a sample suitable for metallurgical testing. The hole was drilled down the dip of the ABM lens. The hole intersected OB mineralization of the ABM lens at the overburden bedrock interface @ 7.57m and continued to 39.48m with a narrow interval of weakly developed OA mineralization from 21.45 - 22.79 m; RHYva from 27.77 - 30.78m; and muscovite altered RHY from 34.00 - 36.28m. Below the massive sulphide lens, muscovite +/- chlorite altered RHYvl was encountered to 48.42m followed by the MAFi footwall mafic to the E.O.H at 68.9m

**Downhole Surveys:**

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-48.8	358.55	1.4	359.95	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
5	-48.79657	358.54649	1.4	359.94649	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
10	-48.97359	358.60767	1.4	0.00767	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
15	-49.07945	358.63668	1.4	0.03668	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
18	-49.2	338.6	22.1	0.7	ReflexEZS	Hytech	6/9/2016	5722	<input type="checkbox"/>	
20	-49.16161	358.47105	1.4	359.87105	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
25	-49.21853	358.43356	1.4	359.83356	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
30	-49.34963	358.36418	1.4	359.76418	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
35	-49.52326	358.35497	1.4	359.75497	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
40	-49.71739	358.44721	1.4	359.84721	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
42	-50.2	336.7	22.1	358.8	ReflexEZS	Hytech	6/9/2016	5744	<input type="checkbox"/>	
45	-49.94989	358.37144	1.4	359.77144	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
50	-50.14171	358.40091	1.4	359.80091	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
55	-50.23048	358.46076	1.4	359.86076	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
60	-50.36044	358.39511	1.4	359.79511	Gyro	Oscar Nielsen	6/10/2016		<input checked="" type="checkbox"/>	100
66	-50.8	339	22.1	1.1	ReflexEZS	Hytech	6/10/2016	5777	<input type="checkbox"/>	

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %

**0.00 7.53 OVBN Overburden**

**7.53 7.57 RHYv Rhyolite volcanoclastic**

<<Alt: 7.53 - 7.57 Weak Muscovite>> weak for in contact with MXSX.

**7.57 21.45 OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite**

**FMG**

7.57	8.57	1.00	B00267401	0.608	111	0.06	2.02	9.88
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7.57 - 21.45: significant patches of silica, carb, barite masses, veinlets where sulphide (GA, SP) become coarse grained. Particularly 17.5 - 21.0m. Here it is close to OK

<<Min: 7.57 - 15 5% Min: Sphalerite>> and coarse 5mm patches associated with CA, sil, BA

<<Min: 7.57 - 15 70% Min: Pyrite>>

<<Min: 7.57 - 15 2% Min: Galena>> coarser around sil, CA, BA

<<Min: 7.57 - 15 1% Min: Chalcopyrite>> rare visible as coarse gr around sil, CA, BA

<<Min: 7.57 - 15 1% Min: Barite>> with sil, CA agr

<<Min: 15 - 21.45 10% Min: Sphalerite>> and as above

<<Min: 15 - 21.45 65% Min: Pyrite>>

<<Min: 15 - 21.45 5% Min: Galena>> as above

<<Min: 15 - 21.45 2% Min: Chalcopyrite>> visible with sil, ca, ba

<<Min: 15 - 21.45 2% Min: Barite>> With SIL, CA AGR

<<Alt: 7.57 - 13 Weak-Moderate Calcite>> In OB, veinlet + AGR

<<Alt: 13 - 17 Weak Calcite>> In OB, Veinlets too

<<Alt: 17 - 21.45 Weak-Moderate Calcite>> as above

**21.45 22.79 OA Laminar or heavily disseminated magnetite bearing massive sulphide**

**FMG**

21.45 - 22.79: weakly developed MG laminations, lower CNT 300/005

<<Min: 21.45 - 22.79 10% Min: Sphalerite>> black coarse and more concentrated towards lower contact

<<Min: 21.45 - 22.79 65% Min: Pyrite>>

<<Min: 21.45 - 22.79 10% Min: Magnetite>> forming weak laminae

<<Min: 21.45 - 22.79 2% Min: Galena>>

<<Min: 21.45 - 22.79 1% Min: Chalcopyrite>>

<<Alt: 22.5 - 27.77 Weak Calcite>> as above

<<Struc: 21.45 - 22.5 dominant foliation>> mg laminations define fabric

8.57	9.57	1.00	B00267402	1.16	97.7	0.09	1.62	9.21
9.57	10.57	1.00	B00267403	1.47	102	0.35	0.45	6.71
10.57	11.57	1.00	B00267404	1.84	223	0.63	0.86	6.87
11.57	12.57	1.00	B00267405	3.19	353	1.05	0.91	5.35
12.57	13.57	1.00	B00267406	1.6	156	0.43	0.93	6.3
13.57	14.57	1.00	B00267407	2.11	227	0.59	1.22	3.53
14.57	15.57	1.00	B00267408	1.59	226	0.52	1.6	6.76
15.57	16.57	1.00	B00267409	2.45	206	0.65	0.8	4.85
16.57	17.57	1.00	B00267411	1.89	163	0.51	0.69	3.77
17.57	18.57	1.00	B00267412	1.4	121	0.46	0.48	6.05
18.57	19.57	1.00	B00267413	2.79	275	0.78	0.84	4.73
19.57	20.57	1.00	B00267414	1.83	282	0.74	0.77	4.39
20.57	21.45	0.88	B00267415	0.69	60.6	0.28	0.32	2.38
21.45	22.79	1.34	B00267416	0.677	49.8	0.55	0.38	1.93

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
22.79	27.77	<b>OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite</b>	22.79	23.79	1.00	B00267417	1.17	138	1.2	1.1	5.78
22.79 - 27.77: as OB above close to OK in composition. Sharp lower contact alpha= 25. 25.20 - 25.30m core intersects old drill hole!  <<Min: 22.79 - 27.77 7% Min: Sphalerite>> some coarser bands <<Min: 22.79 - 27.77 5% Min: Galena>> <<Min: 22.79 - 27.77 2% Min: Chalcopryrite>> <<Min: 22.79 - 27.77 2% Min: Barite>> associated with Sil, CA masses <<Min: 23.5 - 23.6 5% Min: Arsenopyrite>> in sil/CA replacement bands <<Struc: 22.79 - 22.79 Contact>>			23.79	24.79	1.00	B00267418	1.91	159	0.15	1.93	6.34
			24.79	25.79	1.00	B00267419	0.907	204	0.37	2.38	6.57
			25.79	26.79	1.00	B00267422	1.21	161	0.33	2.03	5.76
			26.79	27.77	0.98	B00267423	1.08	208	0.33	1.64	3.83
<b>27.77 30.78 RHYva Coarse grained to ash tuff</b> <<Min: 27.77 - 30.78 1% Min: Sphalerite>> same as PY <<Min: 27.77 - 30.78 10% Min: Pyrite>> foliaform dis bands <<Min: 27.77 - 30.78 0.5% Min: Galena>> <<Alt: 27.77 - 30.78 Strong Muscovite>> <<Alt: 27.77 - 30.78 Trace Calcite>> <<Struc: 28.8 - 30.3 Moderate Fault>> gouge and healed gouge			27.77	29.40	1.63	B00267424	1.34	158	0.33	0.06	0.09
			29.40	30.78	1.38	B00267425	0.083	3.8	0.1	0.02	0.05
<b>30.78 31.50 OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite</b>  30.78 - 31.5: calcite vining brx to 31m  <<Min: 30.78 - 31.5 15% Min: Sphalerite>> <<Min: 30.78 - 31.5 60% Min: Pyrite>> <<Min: 30.78 - 31.5 5% Min: Galena>> <<Min: 30.78 - 31.5 0.5% Min: Chalcopryrite>> <<Alt: 30.78 - 31 Weak-Moderate Calcite>> In OB in veinlets			30.78	31.50	0.72	B00267426	0.803	150	0.6	3.51	10.3
<b>31.50 32.76 OC Chalcopryrite-pyrrhotite net textured sulphides</b>  31.5 - 32.76: MXSX with significant PO, CP. Not stringer style.  <<Min: 31.5 - 32.76 7% Min: Sphalerite>> <<Min: 31.5 - 32.76 50% Min: Pyrite>>			31.50	32.76	1.26	B00267427	3.9	192	6	1.84	14.6

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %	
<<Min: 31.5 - 32.76 15% Min: Pyrrhotite>> to banded net textured with CP <<Min: 31.5 - 32.76 1% Min: Magnetite>> <<Min: 31.5 - 32.76 3% Min: Galena>> <<Min: 31.5 - 32.76 7% Min: Chalcopryite>> to banded net textured												
<b>32.76</b>	<b>34.00</b>	<b>OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite</b>	<b>FMG</b>	32.76	34.00	1.24	B00267428	1.91	246	2.73	5.06	14.1
<<Min: 32.76 - 34 15% Min: Sphalerite>> to SMAS over lower 30cm <<Min: 32.76 - 34 70% Min: Pyrite>> <<Min: 32.76 - 34 2% Min: Magnetite>> <<Min: 32.76 - 34 4% Min: Galena>> <<Min: 32.76 - 34 4% Min: Chalcopryite>> weak banding <<Alt: 32.76 - 34 Weak Calcite>> and vienlets												
<b>34.00</b>	<b>36.28</b>	<b>RHY undifferentiated rhyolite</b>		34.00	35.48	1.48	B00267429	0.06	7.2	0.05	0.1	0.37
34 - 36.28: altered + 2 areasof fault gouge												
<<Min: 34 - 36.28 1% Min: Sphalerite>> <<Min: 34 - 36.28 4% Min: Pyrite>> <<Min: 34 - 36.28 0.5% Min: Galena>> <<Min: 35.58 - 35.73 1% Min: Chalcopryite>> <<Alt: 34 - 36.28 Moderate-Strong Muscovite>> <<Vein: 35.38 - 35.73 100% Quartz-Albite 30 deg. >> massive undeformed white QV, CNT upper and lower @ 30 CA <<Struc: 34 - 34 Contact>> sharp contact <<Struc: 34.2 - 34.6 Moderate Fault>> gouge, broken missing core <<Struc: 35.73 - 36.28 Moderate Fault>> healed gouge												
<b>36.28</b>	<b>39.48</b>	<b>OB Wispy laminar, fine buckshot textured, massive sulphide with lesser magnetite</b>	<b>FMG</b>	36.28	37.28	1.00	B00267432	0.848	137	1.61	2.92	5.95
36.28 - 39.48: low angle cockcomb carbonate vein lets												
<<Min: 36.28 - 39.48 8% Min: Sphalerite>> <<Min: 36.28 - 39.48 70% Min: Pyrite>> <<Min: 36.28 - 39.48 2% Min: Magnetite>> coarse grained <<Min: 36.28 - 39.48 5% Min: Galena>>												
				37.28	38.28	1.00	B00267433	0.656	118	0.26	2.73	6.63
				38.28	39.00	0.72	B00267434	0.557	161	0.1	4.29	7.53
				39.00	39.48	0.48	B00267435	0.386	179	0.23	4.09	9.68

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<<Alt: 36.28 - 39.48 Weak-Moderate Calcite>> carb veinlets <<Vein: 37 - 38.8 15% Calcium carbonate/Carbonate 5 deg. >> 5mm brittle low angle tensional carbonate veinlet mass											
<b>39.48</b>	<b>48.42</b>	<b>RHYvl Lapilli tuff</b>	39.48	40.48	1.00	B00267436	0.03	5.2	0.07	0.07	0.65
39.48 - 48.42: silicic bands and low angle make some sections look like possible RHYc. broken contact with MAFi below											
<<Min: 39.48 - 46.5 2% Min: Pyrite>> Foliaform weak bands			40.48	42.00	1.52	B00267437	-0.005	1.5	0.01	0.02	0.06
<<Min: 46.5 - 48.2 1% Min: Sphalerite>>			42.00	43.20	1.20	B00267438	-0.005	0.3	-0.01	-0.01	0.02
<<Min: 46.5 - 48.2 10% Min: Pyrite>> weakbands with CL MU alt			43.20	44.20	1.00	B00267439	0.012	0.7	-0.01	-0.01	0.01
<<Min: 46.5 - 48.2 5% Min: Pyrrhotite>> weak bands			44.20	45.20	1.00	B00267441	0.044	6.5	-0.01	0.11	0.21
<<Min: 46.5 - 48.2 1% Min: Galena>>			45.20	46.50	1.30	B00267442	0.035	8.5	0.23	0.02	0.12
<<Min: 46.5 - 48.2 1% Min: Chalcopyrite>>			46.50	48.42	1.92	B00267443	0.412	52.1	0.27	0.81	2.47
<<Alt: 39.48 - 40 Intense Muscovite>>											
<<Alt: 39.48 - 40 Weak-Moderate Chlorite>>											
<<Alt: 40 - 48.2 Moderate Chlorite>> rare 4mm massive CL stringer bands											
<<Alt: 40 - 48.42 Moderate-Strong Muscovite>> Int 7 in cm bands											
<<Alt: 48.2 - 68.9 Moderate-Strong Calcite>> in MAFi											
<<Struc: 40 - 46.5 Trace Fault>> broken core zone											
<b>48.42</b>	<b>68.90</b>	<b>MAFi Mafic Intrusions (primarily footwall mafic intrusion)</b>	48.42	49.42	1.00	B00267444	-0.005	-0.3	-0.01	-0.01	0.02
48.42 - 68.9: fine grained 53.50 - 57.60m: Mottled Leopard rock 59 - 68.9m											
<<Min: 53 - 57.7 0.5% Min: Pyrrhotite>>											
<<Struc: 59.7 - 68.9 dominant foliation>>											
<b>End of Hole @ 68.9</b>											