

## GeoSpark Logger ~ Drill Log

**Project:** KZK **Hole Number:** K16-377

Prospect:	Infrastructure	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Jerome de Pasquale	
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	7/1/2016	
UTM Easting:	415150.652	Core Size:	HQ3	Azimuth:	72.2	Date Logging Complete:	7/3/2016	
UTM Northing:	6815089.79	Casing Pulled?:	Yes	Dip:	-49.8	Drill Company:	Hytech	
UTM Elev. (m):	1406.901	Casing Depth (m):	4.5	Length (m):	150.6	Drill Rig:	Tech 5000	
Local Easting:		Stored?:	Yes	Claims Title:		Drill Started:	6/30/2016	
Local Northing:		Cemented?:	Yes	Core Storage Loc.:	KZK Camp	Drill Completed:	7/2/2016	
Local Elev. (m):				Hole Completed?:	Completed	Purpose:	Geotech	
Comments:							Parent Hole:	

Collared in order to investigate Sunda fault and south wall stability, located 50m offset from projected fault and south mid-wall. K16-377 is dominantly made up coherent and thick aphanitic rhyolite as well as pelite and possibly mafic dikes. The fault zone is intercepted from 124.45m to 128.00m. Surrounding the fault zone, the units are gougy and weakly sheared. The fractured zone extents from 124.45m to 150.60m -End Of Hole- showing a moderate intensity. Detail geotechning was carried out at drill site. Drill shut down at 150.60m upon engineer call.

### Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-49.8	70.8	1.4	72.2	TN14	Dillon Hume	6/30/2016		<input checked="" type="checkbox"/>	Rig aligned to true north (measured azimuth). Grid convergence of 1.4 deg applied to correct to UTM azimuth.
15.8	-50.6	52.4	22.1	74.5	ReflexEZS	Hytech	6/30/2016	5772	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
39.8	-50.6	53.7	22.1	75.8	ReflexEZS	Hytech	6/30/2016	5732	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
63.8	-50.3	55	22.1	77.1	ReflexEZS	Hytech	7/1/2016	5712	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
87.8	-49.8	55.9	22.1	78	ReflexEZS	Hytech	7/1/2016	5723	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
111	-49.4	56.1	22.1	78.2	ReflexEZS	Hytech	7/1/2016	5724	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
135.8	-49.9	57.8	22.1	79.9	ReflexEZS	Hytech	7/2/2016	5716	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.
150.6	-50	56.8	22.1	78.9	ReflexEZS	Hytech	7/2/2016	5716	<input checked="" type="checkbox"/>	Measured azimuth relative to magnetic north. Grid declination of 22.1 deg applied to correct to UTM azimuth.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>0.00</b>	<b>4.00</b>	<b>OVBN Overburden</b>									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>4.00</b>	<b>7.23</b>	<b>RHYvl Lapilli tuff</b>									
<p>4 - 7.23: Aphanitic groundmass, Fspar phenos automorph. Fractured. Gradual upper contact marked by SI bands (flow?).</p> <p>&lt;&lt;Min: 4 - 14.15 0.5% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Min: 4 - 14.15 1% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 4 - 7.23 Weak-Moderate Calcite&gt;&gt; Veining and lapilli replacement.</p>											
<b>7.23</b>	<b>12.65</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b>									
<p>7.23 - 12.65: Grey, aphanitic, Flow banded at upper and lower contact. Containing Fspar phenos automorph. Fractured, PY infill.</p> <p>&lt;&lt;Alt: 7.23 - 35.38 Weak Calcite&gt;&gt; Fractures and veins.</p>											
<b>12.65</b>	<b>14.15</b>	<b>RHY undifferentiated rhyolite</b>									
<p>12.65 - 14.15: Probably volcanoclastic at upper contact, flow banded from 13.20m to 14.15m. Gradual lower contact.@% cm of PEL/SED.</p>											
<b>14.15</b>	<b>32.80</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b>									
<p>14.15 - 32.8: Fractured RHYi containing low density of Fspar automorph. PY infill (5%).</p> <p>&lt;&lt;Min: 14.15 - 24.8 3% Min: Pyrite&gt;&gt; Fracture infill.</p> <p>&lt;&lt;Min: 24.8 - 32.8 5% Min: Pyrite&gt;&gt; Fracture infill.</p>											
<b>32.80</b>	<b>33.57</b>	<b>RHY undifferentiated rhyolite</b>									
<p>32.8 - 33.57: Probably volcanoclastic (lapilli and/or xtl). Sharpe upper contact, faulted lower contact. QZ/CA veining. PY in carbonate veinlets.</p> <p>&lt;&lt;Min: 32.8 - 33.57 0.5% Min: Pyrite&gt;&gt;</p>											
<b>33.57</b>	<b>35.58</b>	<b>RHYcw Curdy textured-flow banded (flows, subvolcanics)</b>									
<p>33.57 - 35.58: Flow banded, crenulated, gradual lower contact.</p> <p>&lt;&lt;Alt: 35.38 - 40.42 Moderate-Strong Calcite&gt;&gt;</p>											
<b>35.58</b>	<b>40.42</b>	<b>PEL Equigranular biotite + calcite +/- quartz rock</b>									
<p>35.58 - 40.42: Foliated, sharpe contacts. CA rich. Could be mafic dike. RHY at lower contact foliated over 40 cm.</p> <p>&lt;&lt;Min: 35.88 - 40.42 1% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Min: 38.38 - 40.42 0.1% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Struc: 38.25 - 38.26 dominant foliation&gt;&gt;</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<b>40.42</b>	<b>43.67</b>	<b>RHYc Rhyolite coherent volcanics</b> 40.42 - 43.67: Foliated RHY (v) at upper contact. SI rich unit, almost curdy texture.  <<Alt: 40.42 - 111.75 Weak Calcite>> Fractures and veins. <<Struc: 42.3 - 42.31 dominant foliation>>									
<b>43.67</b>	<b>65.45</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b> 43.67 - 65.45: Pinkish to grey, fractured, PY infill, containing Fspar automorph (up to 4 mm long).  <<Min: 43.67 - 65.45 3% Min: Pyrite>> Fracture infill. <<Struc: 60 - 60.01 dominant foliation>>									
<b>65.45</b>	<b>67.13</b>	<b>RHY undifferentiated rhyolite</b> 65.45 - 67.13: Weakly foliated. Heterogeneous unit containing 30 cm of PEL/SED. Curdy texture at lower contact.  <<Min: 65.45 - 67.13 5% Min: Pyrite>> <<Struc: 66.9 - 66.91 dominant foliation>>									
<b>67.13</b>	<b>72.60</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b> 67.13 - 72.6: Pinkish to grey, fractured, PY infill, containing Fspar automorph.  <<Min: 67.13 - 111.75 3% Min: Pyrite>> Fracture infill. <<Struc: 70.25 - 70.26 Foliation>> Main foliation in RHYi. <<Struc: 70.3 - 70.31 >> Mineralized PY fracture in RHYi.									
<b>72.60</b>	<b>74.54</b>	<b>RHYv Rhyolite volcanoclastic</b> 72.6 - 74.54: Containing RHYi clasts up to 10 cm wide.  <<Vein: 73.05 - 73.2 Quartz>> QZ/brecciated vein. Translucent (late) and milky QZ.									
<b>74.54</b>	<b>111.75</b>	<b>RHYi Aphanitic Rhyolite (intrusion)</b> 74.54 - 111.75: Pinkish to grey, fractured, PY infill. Rare xtl. Locally brecciated texture rhyolite supported and narrow interval of RHYv from 84.53 m to 85.23 m.									
<b>111.75</b>	<b>121.27</b>	<b>RHYcf Feldspar &amp; feldspar quartz porphyry</b> 111.75 - 121.27: Texture obscured/broken zone/heterogeneous. Wavy silica bands   groundmass suggesting coherent rhyolite. Containing crystal (up to 5mm long) Sharp contacts.  <<Min: 111.75 - 124.45 0.1% Min: Pyrite>> <<Alt: 111.75 - 121.27 Weak-Moderate Calcite>> <<Alt: 111.75 - 150.6 Weak Chlorite>> Proximity of fault zone.									

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
<p>&lt;&lt;Struc: 116.4 - 116.41 dominant foliation&gt;&gt;</p> <p><b>121.27 124.45 PEL Equigranular biotite + calcite +/- quartz rock</b></p> <p>121.27 - 124.45: Foliated pelite, locally sheared. Carbonaceous, fine grain, brown biotite.</p> <p>&lt;&lt;Min: 121.27 - 128 0.5% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 121.27 - 128 Moderate-Strong Calcite&gt;&gt; And veining.</p> <p>&lt;&lt;Struc: 122.5 - 124.45 Moderate Shear&gt;&gt;</p> <p>&lt;&lt;Struc: 122.6 - 122.61 dominant foliation&gt;&gt;</p> <p><b>124.45 128.00 FLZ Fault Zone</b></p> <p>124.45 - 128: MAFI/RHY mixed or discordant contacts. Sub rounded clasts in gouge as well as grey clay gouge over 50 cm.</p> <p>&lt;&lt;Min: 124.45 - 128 0.5% Min: Pyrite&gt;&gt; Associated with QZ, late mineralization..</p> <p>&lt;&lt;Struc: 124.45 - 128 Moderate-Strong Fault&gt;&gt;</p> <p><b>128.00 132.95 RHYcf Feldspar &amp; feldspar quartz porphyry</b></p> <p>128 - 132.95: Flow banded rhyolite containing Fspar crystal pseudo automorph. Locally narrow gougy intervals (5cm large).</p> <p>&lt;&lt;Min: 128 - 133.57 0.1% Min: Pyrite&gt;&gt;</p> <p>&lt;&lt;Alt: 128 - 133.57 Weak-Moderate Calcite&gt;&gt;</p> <p>&lt;&lt;Struc: 128 - 137.38 Weak-Moderate Fault&gt;&gt; Multiple narrow gouge intervals.</p> <p>&lt;&lt;Struc: 132.55 - 132.56 dominant foliation&gt;&gt;</p> <p><b>132.95 133.57 RHY undifferentiated rhyolite</b></p> <p>132.95 - 133.57: BI specks. Could suggest gradual contact (mixed with pelitic material).</p> <p><b>133.57 146.30 PEL Equigranular biotite + calcite +/- quartz rock</b></p> <p>133.57 - 146.3: Interpreted as pelite regarding the presence of biotite porphyroblasts of the units surrounding at contact. Carbonaceous (matrix and veining), locally weakly altered MU/CL, grain size heterogeneous. Including 15 to 25 cm of rhyolite intervals.</p> <p>&lt;&lt;Min: 133.57 - 146.3 0.5% Min: Pyrite&gt;&gt; Along the foliation.</p> <p>&lt;&lt;Min: 133.57 - 146.3 2% Min: Pyrrhotite&gt;&gt;</p> <p>&lt;&lt;Alt: 133.57 - 146.3 Moderate Calcite&gt;&gt;</p> <p>&lt;&lt;Struc: 133.57 - 133.58 Contact&gt;&gt; RHY/PEL contact.</p>											

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**KZK**

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<p>&lt;&lt;Struc: 134.4 - 134.41 dominant foliation&gt;&gt;            &lt;&lt;Struc: 136.05 - 136.07 dominant foliation&gt;&gt;            &lt;&lt;Struc: 137.2 - 137.21 dominant foliation&gt;&gt;            &lt;&lt;Struc: 137.38 - 146.4 Moderate Fault&gt;&gt; 30% gouge in the interval. Foliation randomly oriented, locally sheared (folded).  <b>146.30 150.60 RHY undifferentiated rhyolite</b>            146.3 - 150.6: Possibly mixed with pelitic material (BI porphyroblasts). Texture obscured. Milky clasts interpreted as Fspar crystals. E.O.H.            &lt;&lt;Min: 146.3 - 150.6 0.1% Min: Pyrite&gt;&gt;            &lt;&lt;Alt: 146.3 - 150.6 Weak Calcite&gt;&gt; Few veinlets.            &lt;&lt;Struc: 146.4 - 150.6 Weak-Moderate Fault&gt;&gt; Multiple gougy intervals over 20 cm.            &lt;&lt;Struc: 149 - 149.01 dominant foliation&gt;&gt;</p> <p><b>End of Hole @ 150.6</b></p>											