

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K16-389

Prospect:	Infrastructure	Hole Type:	DD	Survey Type:	RTK DGPS	Logged By:	Oscar Nielsen	
Grid:	NAD83_Z9	Hole Diameter:	96	Survey By:	Challenger_Survey	Date Logging Start:	7/16/2016	
UTM Easting	414361.294	Core Size:	HQ3	Azimuth:	360	Date Logging Complete:	7/16/2016	
UTM Northing:	6818334.036	Casing Pulled?:	Yes	Dip:	-90	Drill Company:	Hytech	
UTM Elev. (m):	1421.259	Casing Depth (m):	6	Length (m):	42	Drill Rig:	Tech 5000	
Local Easting:		Stored?:	Yes	Claims Title		Drill Started:	7/9/2016	
Local Northing:		Cemented?:	THM	Core Storage Loc.:	KZK Camp	Drill Completed:	7/10/2016	
Local Elev. (m):				Hole Completed?:	Completed	Purpose:	Geotech	
Comments:							Parent Hole:	

Hole K16-389 was planned to test the ground for a class A Storage Facility, north extent; the Knight-Piésold crew conducted 6 SPT tests in overburden, 3 packer tests in bedrock, and installed a 10 node thermistor. Mafic tuffaceous siltstones-sandstones and mudstone containing intervals of conglomerate. No significant mineralized intervals are present in the hole however, there is pyrrhotite and pyrite in minor quantities throughout the majority of the hole and a quartz carbonate vein containing pyrite and galena from 32.56 to 32.68 m depth.

Downhole Surveys:

Depth (m)	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Survey Type	Survey By	Survey Date	Mag Field	Accept Values?	Comments
0	-90	360	0	360	PLND-LiDAR	Knight Piésold	7/9/2016		<input checked="" type="checkbox"/>	Vertical hole, drill rig set up over the collar picket with no survey.

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
0.00	11.50	OVBN Overburden									
11.50	12.75	MDS Carbonaceous Mudstone & Tuffaceous Mudstone	black			FG					
11.5 - 12.75: Black fine grained carbonaceous mudstone with bands of white calcite											
<<Alt: 11.5 - 16.64 Weak-Moderate Biotite>> Upper portion is coarse euhedral black biotite speckled, lower portion is fine black biotite, semi-pervasive											
12.75	18.12	MAFt Mafic Volcaniclastics	grey-green			FMG					
12.75 - 18.12: Fine to medium grained grey-green MAFt with minor interbedded MDS (<40cm). Poorly bedded, with a mix of large massive beds and sub-cm beds.											
<<Min: 13.7 - 14.66 3% Min: Pyrrhotite>> Possibly associated with the biotite alteration											
<<Alt: 17 - 18.12 Weak-Moderate Biotite>> Patches of fine black biotite and small clots ~1mm in size											
<<Vein: 15.25 - 16.03 80% Quartz-Carbonate>> Brecciated (?) quartz vein with a matrix of carbonate bearing iron oxide. May originally have been QTZ-CARB-PY?											
<<Struc: 18 - 18 Moderate dominant foliation>> Partings along calcite bands and/or chloritic/micaceous surfaces											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
18.12	21.02	MDS Carbonaceous Mudstone & Tuffaceous Mudstone									
<p>18.12 - 21.02: Fine grained black-grey, well laminated mudstone (MDS) with lithic (or rip-up) clasts of mudstone showing discordant bedding, with minor beds(<5cm) of MAFt</p> <p><<Min: 18.12 - 21.02 0.5% Min: Pyrrhotite>> Associated with carbonate bands and blebs</p>											
21.02	28.89	MAFt Mafic Volcaniclastics									
<p>21.02 - 28.89: Fine to medium grained grey-green MAFt with minor interbedded MDS (<40cm). Poorly bedded, with a mix of large massive beds and sub-cm beds. The lower 2m has finely interbedded MDS. Black euhedral foliation parallel and disseminated biotite porphyroblasts are present throughout the unit.</p> <p><<Min: 26.2 - 30.9 0.01% Min: Pyrite>> Associated with carbonate bands and blebs</p> <p><<Min: 26.2 - 30.9 0.01% Min: Pyrrhotite>> Associated with carbonate bands and blebs</p> <p><<Alt: 23.93 - 25.7 Moderate Biotite>> Disseminate 1-2mm porphyroblasts of black biotite</p> <p><<Alt: 25.7 - 26.22 Weak Biotite>> Sparsely disseminated coarse black biotite porphyroblasts</p> <p><<Vein: 23.12 - 23.15 100% Quartz-Carbonate>></p> <p><<Vein: 23.27 - 23.94 50% Quartz-Carbonate>> Patches of Muscovite-chlorite are most likely incorporated and altered wall-rock</p> <p><<Vein: 24.88 - 24.9 100% Quartz-Carbonate>></p> <p><<Struc: 27 - 27 Moderate dominant foliation>> Partings along calcite bands and/or chloritic/micaceous surfaces</p>											
28.89	30.33	MDS Carbonaceous Mudstone & Tuffaceous Mudstone									
<p>28.89 - 30.33: Fine grained, finely laminated black-grey carbonaceous mudstone with thin beds of MAFt as well as clasts of mudstone and mafic tuff disrupting bedding</p>											
30.33	30.90	MAFt Mafic Volcaniclastics									
<p>30.33 - 30.9: Massive to poorly bedded grey-green ashy (?) mafic tuff unit with fine interbeds of grey and white chaotically bedded mudstone and blebs of carbonate-pyrrhotite.</p> <p><<Vein: 30.34 - 30.35 100% Quartz-Carbonate>></p>											
30.90	33.09	MDS Carbonaceous Mudstone & Tuffaceous Mudstone									
<p>30.9 - 33.09: Fine grained, finely but chaotically laminated black-grey carbonaceous mudstone with thin beds of MAFt as well as clasts of mudstone disrupting bedding</p> <p><<Min: 32.56 - 32.68 4% Min: Pyrite>></p> <p><<Min: 32.56 - 32.68 1% Min: Galena>></p> <p><<Vein: 32.56 - 32.68 60% Quartz-Carbonate>> Sulphides comprise 80% pyrite, 20% galena</p>											

From (m)	To (m)	Rocktype & Description	From (m)	To (m)	Width	Sample	Au ppm	Ag ppm	Cu %	Pb %	Zn %
33.09	34.19	MAFt Mafic Volcaniclastics									
<p>grey-green MG 33.09 - 34.19: Poorly to well bedded grey-green ashy (?) mafic tuff unit with small black biotite blebs (clasts?)</p>											
34.19	41.75	MDS Carbonaceous Mudstone & Tuffaceous Mudstone									
<p>dark grey FG 34.19 - 41.75: Fine grained, finely but chaotically laminated dark grey carbonaceous mudstone with clasts of mudstone and possibly lapilli disrupting bedding.</p> <p><<Min: 34.19 - 42 0.01% Min: Pyrite>> Associated with carbonate bands and blebs <<Min: 34.19 - 42 0.5% Min: Pyrrhotite>> Associated with carbonate bands and blebs <<Struc: 36.5 - 36.5 Moderate dominant foliation>> Partings along calcite bands and/or chloritic/micaceous surfaces <<Struc: 41 - 41 Moderate dominant foliation>> Partings along calcite bands and/or chloritic/micaceous surfaces</p>											
41.75	42.00	MAFt Mafic Volcaniclastics									
<p>grey-green CG 41.75 - 42: Massive to poorly bedded grey-green ashy (?) mafic tuff unit.</p>											
End of Hole @ 42											