

GeoSpark Logger ~ Drill Log

Project: KZK **Hole Number:** K98-190

| | | | | | | | |
|------------------|-------------|-------------------|------|--------------------|-------------------|------------------------|------------|
| Prospect: | GP4F | Hole Type: | DD | Survey Type: | RTK DGPS | Logged By: | Rob Duncan |
| Grid: | NAD83_Z9 | Hole Diameter: | 75.7 | Survey By: | Challenger_Survey | Date Logging Start: | 5/24/2016 |
| UTM Easting | 419566.153 | Core Size: | NQ | Azimuth: | 180 | Date Logging Complete: | 5/24/2016 |
| UTM Northing: | 6813208.858 | Casing Pulled?: | No | Dip: | -53 | Drill Company: | |
| UTM Elev. (m): | 1326.252 | Casing Depth (m): | | Length (m): | 109.1 | Drill Rig: | |
| Local Easting: | 9550 | Stored?: | Yes | Claims Title | | Drill Started: | |
| Local Northing: | 3210 | Cemented?: | | Core Storage Loc.: | KZK Camp | Drill Completed: | |
| Local Elev. (m): | 1326.252 | | | Hole Completed?: | Completed | Purpose: | |
| Comments: | | | | | | Parent Hole: | |

Downhole Surveys:

| Depth (m) | Dip | Measured Azimuth | Correction Factor | Corrected Azimuth | Survey Type | Survey By | Survey Date | Mag Field | Accept Values? | Comments |
|-----------|-----|------------------|-------------------|-------------------|-------------|-----------|-------------|-----------|-------------------------------------|----------|
| 0 | -53 | 180 | | 180 | ACID | | | | <input checked="" type="checkbox"/> | |
| 109 | -47 | 180 | | 180 | ACID | | | | <input checked="" type="checkbox"/> | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|--|--------------|---|----------|--------|-------|--------|--------|--------|------|------|------|
| 0.00 | 21.50 | OVBN Overburden | | | | | | | | | |
| 21.50 | 25.80 | RHYvl Lapilli tuff | | | | | | | | | |
| <<Min: 21.5 - 32 1% Min: Pyrite>> | | | | | | | | | | | |
| <<Min: 21.5 - 32 0.5% Min: Pyrrhotite>> | | | | | | | | | | | |
| 25.80 | 26.30 | MAFi Mafic Intrusions (primarily footwall mafic intrusion) | | | | | | | | | |
| 25.8 - 26.3: suggestion of symmetrical chill margins | | | | | | | | | | | |
| <<Alt: 25.8 - 26.3 Moderate-Strong Calcite>> | | | | | | | | | | | |
| 26.30 | 36.00 | RHYvl Lapilli tuff | | | | | | | | | |
| 26.3 - 36: 10cm MAFi/PEL @27m | | | | | | | | | | | |
| <<Min: 32 - 36 3% Min: Pyrite>> also 4mm bands | | | | | | | | | | | |
| <<Alt: 28 - 36 Weak-Moderate Muscovite>> | | | | | | | | | | | |
| <<Struc: 33 - 37 Trace Fault>> broken core | | | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|--------|---|----------|--------|-------|--------|--------|--------|------|------|------|
| 36.00 | 36.40 | PEL Equigranular biotite + calcite +/- quartz rock | | | | | | | | | |
| <p>36 - 36.4: some quartz grains, gradatioal upper contact?</p> <p><<Min: 36 - 38 1% Min: Pyrrhotite>></p> <p><<Alt: 36 - 36.4 Moderate-Strong Calcite>></p> | | | | | | | | | | | |
| 36.40 | 37.30 | RHYv Rhyolite volcanoclastic | | | | | | | | | |
| 37.30 | 38.00 | PEL Equigranular biotite + calcite +/- quartz rock | | | | | | | | | |
| <p>37.3 - 38: qv at uper contact</p> <p><<Alt: 37.5 - 38 Moderate-Strong Calcite>></p> <p><<Vein: 37.3 - 37.5 100% Quartz-Albite 80 deg. >></p> | | | | | | | | | | | |
| 38.00 | 41.90 | RHYv Rhyolite volcanoclastic | | | | | | | | | |
| <p><<Min: 38 - 42 1% Min: Pyrite>></p> <p><<Alt: 38 - 42 Weak Muscovite>></p> | | | | | | | | | | | |
| 41.90 | 61.30 | RHYvx Quartz and/or feldspar crystal tuff | | | | | | | | | |
| <p>41.9 - 61.3: BI rich foliation matrix altered to cl in spots</p> <p><<Min: 42 - 47 2% Min: Pyrite>></p> <p><<Min: 47 - 57 3% Min: Pyrite>></p> <p><<Min: 47 - 57 1% Min: Pyrrhotite>></p> <p><<Min: 49 - 52 2% Min: Sphalerite>></p> <p><<Min: 49 - 52 0.5% Min: Galena>></p> <p><<Min: 49 - 52 0.5% Min: Chalcopryite>></p> <p><<Alt: 42 - 54 Trace Muscovite>></p> <p><<Alt: 42 - 54 Weak Chlorite>> after BI</p> <p><<Vein: 44.5 - 44.6 100% Quartz-Albite 70 deg. >> 2% py and tetrahedrite?</p> <p><<Vein: 51.4 - 51.5 80% Quartz-Albite 80 deg. >> 5% cp</p> <p><<Struc: 42.1 - 45 Weak-Moderate Fault>> broken, missing, minor gouge rubble</p> <p><<Struc: 50 - 60 Weak Fault>> broken rubble core, missing core</p> | | | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|--|--------------|---|----------|--------|-------|--------|--------|--------|------|------|------|
| 61.30 | 62.10 | MAFi Mafic Intrusions (primarily footwall mafic intrusion) | | | | | | | | | |
| 61.3 - 62.1: sharp contacts correlates to MAFI in K98-191 @ 71m approx | | | | | | | | | | | |
| <<Alt: 61.3 - 62.1 Moderate-Strong Calcite>> | | | | | | | | | | | |
| 62.10 | 64.90 | RHYvx Quartz and/or feldspar crystal tuff | | | | | | | | | |
| 62.1 - 64.9: as above, lower contact with intense fault | | | | | | | | | | | |
| 64.90 | 74.30 | FLZ Fault Zone | | | | | | | | | |
| 64.9 - 74.3: protolith appears to be felsic with narrow mafic or sed | | | | | | | | | | | |
| <<Struc: 64.9 - 74.3 Strong Fault>> fault gouge now weathered, missing core | | | | | | | | | | | |
| 74.30 | 77.00 | RHYva Coarse grained to ash tuff | | | | | | | | | |
| 74.3 - 77: lower contact 1m increasing biotite and pelitic | | | | | | | | | | | |
| <<Min: 74.3 - 77 0.5% Min: Sphalerite>> | | | | | | | | | | | |
| <<Min: 74.3 - 77 4% Min: Pyrite>> | | | | | | | | | | | |
| <<Min: 74.3 - 77 1% Min: Pyrrhotite>> | | | | | | | | | | | |
| <<Alt: 74.3 - 77 Moderate Muscovite>> | | | | | | | | | | | |
| <<Alt: 74.3 - 77 Weak Chlorite>> | | | | | | | | | | | |
| 77.00 | 78.90 | OI Heavily disseminated sulphides in host schist | | | | | | | | | |
| 77 - 78.9: host rock difficult to determine, but MU - CL - BT | | | | | | | | | | | |
| <<Min: 77 - 78.9 5% Min: Sphalerite>> | | | | | | | | | | | |
| <<Min: 77 - 78.9 15% Min: Pyrite>> conc in smas bands 4cm wide | | | | | | | | | | | |
| <<Min: 77 - 78.9 4% Min: Pyrrhotite>> massive over 5cm on margin of qtz vein | | | | | | | | | | | |
| <<Min: 77 - 78.9 1% Min: Galena>> | | | | | | | | | | | |
| <<Alt: 77 - 78.9 Moderate Muscovite>> | | | | | | | | | | | |
| <<Alt: 77 - 78.9 Moderate-Strong Chlorite>> | | | | | | | | | | | |
| <<Vein: 78.5 - 78.8 100% Quartz-Albite 80 deg. >> possible po tet | | | | | | | | | | | |
| 78.90 | 80.20 | PEL Equigranular biotite + calcite +/- quartz rock | | | | | | | | | |
| 78.9 - 80.2: weak ca, quartz in matrix. CL - BT. Too much qz to be mafic. | | | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|----------|--------|---|----------|--------|-------|--------|--------|--------|------|------|------|
| | | <<Min: 78.9 - 80.2 1% Min: Pyrite>> <<Min: 78.9 - 80.2 1% Min: Pyrrhotite>> <<Struc: 80 - 80.6 Weak Fault>> broken rubble core | | | | | | | | | |
| | | 80.20 80.60 RHYv Rhyolite volcanoclastic 80.2 - 80.6: core rubble, asp tet mineralized, sil zone | | | | | | | | | |
| | | <<Min: 80.2 - 80.6 2% Min: Tetrahedrite>> <<Min: 80.2 - 80.6 0.5% Min: Arsenopyrite>> <<Alt: 80.2 - 80.6 Moderate Silicification>> | | | | | | | | | |
| | | 80.60 82.10 OL semi to massive sulphide; 10 - 40% coarse buckshot PY in a SP +/- PO, MG, GL, CP matrix | | | | | | | | | |
| | | 80.6 - 82.1: py content to 705 at upper and lower margins @ 81.6 - 81.7 QV with mu -cl alt @ 81.8-81.9 RHYv un mineralized | | | | | | | | | |
| | | <<Min: 80.6 - 82.1 12% Min: Sphalerite>> <<Min: 80.6 - 82.1 50% Min: Pyrite>> buckshot - smas <<Min: 80.6 - 82.1 8% Min: Magnetite>> <<Min: 80.6 - 82.1 3% Min: Galena>> <<Vein: 81.6 - 81.7 100% Quartz-Albite 80 deg. >> py sp 2% | | | | | | | | | |
| | | 82.10 82.70 PEL Equigranular biotite + calcite +/- quartz rock | | | | | | | | | |
| | | 82.1 - 82.7: photo for loggers guide. Gradational downhle into RHYva. NOT altered, minor mu in last 10cm of rhyva | | | | | | | | | |
| | | <<Min: 82.1 - 82.7 4% Min: Pyrrhotite>> | | | | | | | | | |
| | | 82.70 82.90 OF Pyrrhotite rich sulphides 82.7 - 82.9: sig sp within "grades up into RHYva" | | | | | | | | | |
| | | <<Min: 82.7 - 82.9 15% Min: Sphalerite>> <<Min: 82.7 - 82.9 50% Min: Pyrrhotite>> <<Min: 82.7 - 82.9 3% Min: Galena>> | | | | | | | | | |
| | | 82.90 85.50 RHYvx Quartz and/or feldspar crystal tuff 82.9 - 85.5: 10% 2-4mm QE as above | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|--------|------------------------|----------|--------|-------|--------|--------|--------|------|------|------|
| <p><<Min: 82.9 - 87.8 1% Min: Pyrite>> <<Min: 82.9 - 87.8 0.5% Min: Pyrrhotite>> <<Alt: 82.9 - 86 Weak-Moderate Muscovite>> <<Vein: 85.2 - 85.4 20% Tourmaline 25 deg. >></p> <p>85.50 86.00 PEL Equigranular biotite + calcite +/- quartz rock</p> <p><<Alt: 85.5 - 86 Weak-Moderate Calcite>></p> <p>86.00 91.00 RHYvx Quartz and/or feldspar crystal tuff</p> <p>86 - 91: 5% QE tr feldspar</p> <p><<Min: 87.8 - 88.3 5% Min: Pyrite>> <<Alt: 86.5 - 87.8 Weak Muscovite>> <<Alt: 87.8 - 88.3 Moderate Chlorite>> possible x cutting stringer alteration <<Alt: 87.8 - 88.3 Weak-Moderate Calcite>> <<Alt: 88.3 - 91 Weak-Moderate Muscovite>> <<Struc: 89.5 - 90.8 Weak-Moderate Fault>> broken rubble core minor gouge</p> <p>91.00 91.70 PEL Equigranular biotite + calcite +/- quartz rock</p> <p>91 - 91.7: intercalated with RHYvx above over 0.4m</p> <p><<Min: 91 - 92.8 1% Min: Pyrrhotite>> <<Alt: 91 - 91.7 Weak-Moderate Calcite>></p> <p>91.70 92.40 RHYv Rhyolite volcanoclastic</p> <p>91.7 - 92.4: lower 7cm gradational BI contact with underlying PEL</p> <p>92.40 92.80 PEL Equigranular biotite + calcite +/- quartz rock</p> <p>92.4 - 92.8: lower contact gradational with RHYvx QE</p> <p><<Alt: 92.4 - 92.8 Moderate Calcite>></p> <p>92.80 94.40 RHYvx Quartz and/or feldspar crystal tuff</p> <p>92.8 - 94.4: QE and Feldspar with BI interbands. Believe this is tuffaceous top to RHYcf below. Gradational contact from this to sheared porphyry to massive porphyry below.</p> | | | | | | | | | | | |

| From (m) | To (m) | Rocktype & Description | From (m) | To (m) | Width | Sample | Au ppm | Ag ppm | Cu % | Pb % | Zn % |
|---|---------------|---|----------|--------|-------|--------|--------|--------|------|------|------|
| | | <<Struc: 92.9 - 94 Weak-Moderate Fault>> broken missing core, sandy gouge | | | | | | | | | |
| 94.40 | 103.60 | RHYcf Feldspar & feldspar quartz porphyry | | | | | | | | | |
| 94.4 - 103.6: becomes massive @ 97m, 7 - 10% 5mm feldspars, 5-10% 2-4mm QE | | | | | | | | | | | |
| <<Min: 99 - 103.6 1% Min: Pyrite>> | | | | | | | | | | | |
| <<Alt: 95 - 103.6 Weak-Moderate Muscovite>> | | | | | | | | | | | |
| <<Struc: 97 - 97.3 Trace Fault>> broken core | | | | | | | | | | | |
| 103.60 | 104.40 | MAFi Mafic Intrusions (primarily footwall mafic intrusion) | | | | | | | | | |
| 103.6 - 104.4: indistinguishable from PEL -BI-r. However, RHYcf on either side Therefore an intrusion. However, possible this RHYcf unit could be a RHYvx qe + fd and that it's core is clean of PEL input and possibly hot enough to weld (supposed to be impossible?) | | | | | | | | | | | |
| <<Min: 103.6 - 104.4 2% Min: Pyrrhotite>> | | | | | | | | | | | |
| <<Alt: 103.6 - 104.4 Moderate-Strong Calcite>> | | | | | | | | | | | |
| 104.40 | 109.10 | RHYcf Feldspar & feldspar quartz porphyry | | | | | | | | | |
| 104.4 - 109.1: or possible qe-fd xtal tuff | | | | | | | | | | | |
| <<Min: 104.4 - 106 2% Min: Pyrite>> and 2-4mm bands | | | | | | | | | | | |
| <<Alt: 104.4 - 109.1 Weak Muscovite>> | | | | | | | | | | | |
| End of Hole @ 109.1 | | | | | | | | | | | |