

Hole Number: **KLD0110**

Units: **METRIC**

Project Name:	Kukalak	UTM Coordinates	Grid Coordinates	Hole Type:	DDH
Project Number:	KL	Datum:	AMG66-53	Hole Size:	HQ/NQ
Location:	Caramal Fault	North:	8618946.00	Collar Dip:	-60.00
Date Started:	Sep 25, 2007	East:	330496.00	Collar Az:	360.00
Date Completed:	Oct 01, 2007	Collar Elev:	277.00	Final Depth:	386.70
Total Days:	7	Collar Survey:	N	Pulse EM Survey:	N
Core Storage:	Exploration Camp	Multishot Survey:	N	Making Water:	N
Logged By:	arao	Is Hole Plugged:	N	Is Cemented:	N
		Gas Intersected:	N	Object In Hole:	N
		Verified:	N	Casing:	Pulled
		Contractor:	Titeline Drilling		

Comments: KLD0110 was drilled to test both a TEMPEST and a structural target. TEMPEST indicated a conductive feature just below the unconformity in the region of the drill hole location. As with KLD0109, it is likely that the conductor is either Tin Camp Creek Granite or graphitic semi-pelites of the basement Nungbulgarri Volcanics.
Drilling now indicates that the TEMPEST anomaly may have been caused by basement gneisses and amphibolites (once pelitic/semi-pelitic?)

It is unknown what KLD0110 collared in because the top 3.30m of core was lost, presumably due to extremely broken ground, however below this zone of lost core lies 106m of variably silicified and haematized Mamadawerre Sandstone. Occasional limonitic alteration and patches of bleaching are common throughout. Bleaching is especially common around fractures; minor quartz veins commonly infill fractures and often contain drusy quartz. Occasional haematization of drusy quartz is also observed. Exposed fracture surfaces are often coated with limonite and zones of clay alteration, in which sandstone is both bleached and thoroughly clay-altered, are often recorded.

50m of heavily chloritised, often brecciated dolerite lie directly below the sandstone. The dolerite has a porphyritic texture, abundant sericitised feldspars, leucoxenes, amphiboles and mica throughout. Also strongly haematized in places.

The rest of the lithological sequence in the drill hole comprises haematized quartz-feldspar gneiss and quartz-biotite gneiss. All of the feldspars have now been replaced by sericite, chloritised/haematized garnets are common throughout. Pegmatitic sweats and veins are ubiquitous, often the sericitised feldspars within these pegmatitic intervals are massive enough to give the core a bleached appearance. Some haematized biotites are seen, although these are relatively rare.

The quartz-feldspar gneiss also contains a minor unit of completely haematized, foliated amphibolite with abundant quartz sweats and veinlets, chloritised/haematized garnets and pegmatitic bands, and also a minor quartz vein in which there are patches of sericitised and haematized feldspars, and some chlorite clay stringers.

The quartz-feldspar-biotite gneiss comprises abundant large quartz-feldspar augens to 313.82m, mostly with a haematitic alteration halo. Pegmatitic veins and sweats are observed throughout, whilst a foliation is visible in most of the core however from approximately 270m to end of interval depth, the foliation has been overprinted by successive chlorite alteration.

Also contained in this unit are interbedded quartz-feldspar-muscovite gneisses, a minor mafic intrusion, now a completely chloritised/haematized amphibolite and also a minor dolerite intrusion, also now a heavily chloritised amphibolite. Occasional fractures with abundant fine disseminations of pyrite are observed.

Survey Data

Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments	Depth	Azimuth Decimal	Dip Decimal	Test Type	Flag	Comments
50.00	8.60	-61.30	Reflex	OK		100.00	12.40	-61.20	Reflex	OK	
150.00	12.00	-61.40	Reflex	OK		200.70	10.70	-61.60	Reflex	OK	
251.70	10.60	-61.40	Reflex	OK		300.00	10.50	-61.70	Reflex	OK	
386.70	6.70	-62.20	Reflex	OK							

Detailed Lithology		
From	To	Lithology
0	3.30	LOST, lost core Open hole to 3.3m
3.30	109.05	SDST, sandstone Variably silicified and haematized sandstone. Occasional limonitic alteration and patches of bleaching throughout. Bleaching especially common around fractures; minor quartz veins commonly infill fractures and often contain drusy quartz. Occasional haematization of drusy quartz. Exposed fracture surfaces often coated with limonite. Occasional zones of clay alteration in which sandstone is both bleached and thoroughly clay-altered. Colour 3.300 - 109.050 Primary Colour: 3 RB RO Secondary Colour: 2 A K Munsell:

Detailed Lithology		
From	To	Lithology
109.05	162.72	<p>DOL, dolerite</p> <p>Heavily chloritised dolerite. Porphyritic texture, abundant sericitised feldspars, leucoxenes, amphiboles and mica throughout. Also strongly haematised in places.</p> <p>Colour</p> <p>109.050 - 109.730 Primary Colour: 3 F K Secondary Colour: 1 G RM Munsell:</p> <p>109.730 - 110.700 Primary Colour: 3 GA N Secondary Colour: 2 RM YF Munsell:</p> <p>110.700 - 111.600 Primary Colour: 3 G WG Secondary Colour: 1 RM OB Munsell:</p> <p>111.600 - 119.400 Primary Colour: 3 GA N Secondary Colour: 2 RM YF Munsell:</p> <p>119.400 - 121.250 Primary Colour: 3 G WG Secondary Colour: 1 OB Munsell:</p> <p>121.250 - 132.120 Primary Colour: 3 GA N Secondary Colour: 1 RM YF Munsell:</p> <p>132.120 - 132.400 Primary Colour: 3 G WG Secondary Colour: 3 RM Munsell:</p> <p>132.400 - 133.180 Primary Colour: 3 G Secondary Colour: 3 RM Munsell:</p> <p>133.180 - 133.920 Primary Colour: 3 RM G Secondary Colour: 1 OB R Munsell:</p> <p>133.920 - 144.630 Primary Colour: 3 RM G Secondary Colour: 1 F Munsell:</p> <p>MINOR INTERVALS:</p> <p>Minor Interval:</p> <p>109.05 - 109.73 GOUG, gouge</p> <p>Clay gouge incorporating clasts of haematitic, silicified sandstone and chloritised dolerite.</p> <p>Colour</p> <p>109.050 - 109.730 Primary Colour: 3 F K Secondary Colour: 1 G RM Munsell:</p> <p>Minor Interval:</p> <p>110.7 - 111.6 BX, breccia</p> <p>Strongly chloritised, broken, clay-rich dolerite breccia. Haematite and limonite in places.</p> <p>Colour</p> <p>110.700 - 111.600 Primary Colour: 3 G WG Secondary Colour: 1 RM OB Munsell:</p> <p>Minor Interval:</p> <p>119.4 - 121.25 BX, breccia</p> <p>Brecciated, chloritised dolerite with chloritic clay matrix. Patches of haematite and limonite alteration.</p> <p>Colour</p> <p>119.400 - 121.250 Primary Colour: 3 G WG Secondary Colour: 1 OB Munsell:</p> <p>Minor Interval:</p> <p>132.12 - 132.4 BX, breccia</p> <p>Brecciated dolerite with clay matrix. Also incorporates transition from chlorite to haematite alteration.</p> <p>Colour</p> <p>132.120 - 132.400 Primary Colour: 3 G WG Secondary Colour: 3 RM Munsell:</p> <p>Minor Interval:</p> <p>133.18 - 133.92 BX, breccia</p> <p>Brecciated chloritic and haematitic dolerite.</p> <p>Colour</p> <p>133.180 - 133.920 Primary Colour: 3 RM G Secondary Colour: 1 OB R Munsell:</p> <p>Minor Interval:</p> <p>144.63 - 150.15 QFGN, quartz-feldspar gneiss</p> <p>Quartz-feldspar gneiss almost completely haematised, abundant sericitised feldspars, chloritic/sericitic/haematitic clay, quartz veinlets and stringers, totally altered (chloritised?) garnets and replaced biotites (?) throughout.</p> <p>Colour</p> <p>144.630 - 150.150 Primary Colour: 3 RM A Secondary Colour: 2 G YG Munsell:</p>

Detailed Lithology		
From	To	Lithology
162.72	223.80	<p>QFGN, quartz-feldspar gneiss</p> <p>Haematised quartz-feldspar gneiss in which all feldspars have been replaced by sericite. occasional pegmatitic sweats and minor veinlets throughout. also abundant garnets now replaced by chlorite or haematite.</p> <p>Colour 162.720 - 210.210 Primary Colour: 3 YG RM Secondary Colour: 2 G A Munsell:</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 162.72 - 165.6 AMPH, amphibolite Completely haematised, foliated amphibolite.abundant quartz sweats and veinlets, garnets replaced by haematite throughout. occasional sericitised feldspars.</p> <p>Colour 162.720 - 165.600 Primary Colour: 3 RM G Secondary Colour: 1 G YG Munsell:</p> <p>Minor Interval: 186.29 - 199.7 PEGM, pegmatite pegmatitic sweats and veinlets throughout this section of the gneiss. Most of the interval has been completely sericitised, giving an almost "bleached" appearance. occasional replaced garnets (haematised and chloritised), and some haematised biotites.</p> <p>Colour 186.290 - 199.700 Primary Colour: 3 RM G Secondary Colour: 3 YG I Munsell:</p> <p>Minor Interval: 199.7 - 200.5 QZVN, vein quartz Minor quartz vein containing some patches of haematised and sericitised feldspars, and some chlorite clay stringers.</p> <p>Colour 199.700 - 200.500 Primary Colour: 3 W A Secondary Colour: 1 RM G Munsell:</p>
223.80	386.70	<p>QFBG, quartz feldspar biotite gneiss</p> <p>Quartz-feldspar-biotite gneiss with abundant large quartz-feldspar augens to 313.82m, mostly with a haematitic alteration halo. occasional pegmatitic veins and sweats throughout. foliation visible in most of core however from approximately 270m to end of interval depth, foliation has been overprinted by successive chlorite alteration.</p> <p>Also contained in this unit are interbedded quartz-feldspar-muscovite gneiss, a minor mafic intrusion, now a completely chloritised/haematised amphibolite and also a minor dolerite intrusion, also now a heavily chloritised amphibolite.</p> <p>Occasional fractures with abundant fine disseminations of pyrite.</p> <p>Colour 223.800 - 282.350 Primary Colour: 3 IW AG Secondary Colour: 3 G YG Munsell:</p> <p>MINOR INTERVALS:</p> <p>Minor Interval: 313.82 - 344.71 QFGN, quartz-feldspar gneiss Quartz-feldspar-muscovite gneiss; occasional pyrite porphyroblasts throughout, often surrounded by limonite (pyrite breakdown). all feldspars now completely sericitised. specular pyrite, abundant haematite alteration with fractures and along veinlets. also abundant pegmatitic sweats and veinlets. occasional chlorite- and haematite-replaced garnets.</p> <p>Colour 313.820 - 344.710 Primary Colour: 3 G RM Secondary Colour: 2 A W Munsell:</p> <p>Minor Interval: 344.71 - 346.53 AMPH, amphibolite Former (possibly) mafic intrusion (dolerite?), now a completely chloritised/haematised amphibolite. abundant minor fractures throughout, infilled by quartz veins and often containing magnetite. Drusy quartz often observed within veins.</p> <p>Colour 344.710 - 346.530 Primary Colour: 3 RM G Secondary Colour: 1 W A Munsell:</p> <p>Minor Interval: 358.82 - 369.6 DOL, dolerite</p> <p>Colour 358.820 - 369.600 Primary Colour: 3 G GA Secondary Colour: 1 RM A Munsell:</p>

Alteration

Depth From	Depth To	Strat	Intense	Colour	Type	Distrib	Pct	Comments
3.300	89.450	H	2	OB	LI	FRAC	30.0	limonitic fractures
3.300	89.450	H	2	A	QZ	VN	20.0	minor quartz veins often infilling fractures
3.300	89.450	H	1	A	QZD	VN	5.0	some drusy quartz within veins
3.300	89.450	H	1	RM	HE	COAT	1.0	some drusy quartz coated in haematite
3.300	89.450	H	3	K	CY	PERV	60.0	occasional minor zones of clay alteration and bleaching in sandstone
3.300	89.450	H	2	K	CY	FRAC	30.0	clay bleaching in and around fractures
53.300	89.450	H	3	RB	HE	PERV		haematized silicified sandstone
89.450	103.100	B	3	K	CY	PERV	50.0	zone of strong clay alteration and bleaching
89.450	103.100	B	2	RB	HE	PAT	30.0	patches of haematitic silicified sandstone
89.450	103.100	B	3	OB	LI	FRAC	10.0	strong limonitic alteration on broken and fractured surfaces
103.100	109.050	H	3	RB	HE	PERV		haematized silicified sandstone, same as 3.3 - 89.45m
109.050	132.230	G	3	G	CL	PERV		strongly chloritised dolerite
109.050	132.230	G	1	RM	HE	PAT		patches of haematite alteration
109.050	132.230	G	3	YG	SE	REPL	30.0	sericite-altered feldspar porphyroblasts
109.050	132.230	G	3	N	HB	MATR	15.0	abundant amphiboles in groundmass
109.050	132.230	G	3	YF	OX	MATR	20.0	abundant leucoxenes throughout
109.050	132.230	G	2	I	HE	REPL	10.0	occasional haematization of prismatic amphiboles
132.230	144.630	T	3	RM	HE	MATR	40.0	transition from chloritisation to haematization of dolerite
132.230	144.630	T	3	G	CL	PERV	60.0	chloritic throughout but mainly surficial alteration
132.230	144.630	T	1	OB	LI	MATR	1.0	minor limonite in matrix of breccia
144.630	150.150	H	3	RM	HE	PERV	90.0	haematized quartz-feldspar gneiss
144.630	150.150	H	3	YG	SE	REPL		sericitized feldspars throughout
144.630	150.150	H	2	RM	HE	REPL	1.0	occasional haematite-replaced biotites
144.630	150.150	H	2	G	CL	REPL	5.0	chlorite-altered garnets
144.630	150.150	H	3	A	QFX	FOL		foliations comprise quartz-feldspar sweats
150.150	162.720	H	3	RM	HE	PERV	100.0	haematized dolerite, mineralogy and alteration otherwise same as overlying dolerite
162.720	165.600	H	3	RM	HE	PERV		haematized foliated amphibolite
162.720	165.600	H	3	A	QFX	FOL	40.0	quartz-feldspar along foliations
162.720	165.600	H	2	YG	SE	REPL	10.0	sericitic replacement of feldspars in foliations and veins
162.720	165.600	H	2	RM	HE	REPL	5.0	occasional garnets now completely replaced by haematite
165.600	177.750	H	3	RM	HE	PERV		haematized quartz-feldspar gneiss, same mineralogy and alteration as quartz-feldspar gneiss above
165.600	177.750	H	3	YG	SE	REPL		sericitized feldspars throughout
177.750	186.290	H	3	YG	SE	REPL	60.0	quartz-feldspar (pegmatitic) sweats, heavily sericitized throughout - sericitic replacement of feldspars
177.750	186.290	H	2	RM	HE	PERV	20.0	occasional patches of pervasive haematite alteration in pegmatitic section of gneiss
177.750	186.290	H	2	G	CL	REPL	20.0	occasional, chlorite-replaced garnets
177.750	186.290	H	1	N	BI	MATR		some biotite within matrix
177.750	186.290	H	1	W	MU	MATR		some muscovite within matrix
186.290	199.700	H	3	RM	HE	PERV		haematized quartz-feldspar gneiss, same mineralogy and alteration as quartz-feldspar gneiss above
186.290	199.700	H	2	G	CL	REPL	10.0	chlorite replacement within pegmatitic sections
186.290	199.700	H	3	YG	SE	REPL	30.0	sericitization of feldspars throughout pegmatite sweats
186.290	199.700	H	2	GA	QFX	VN	30.0	pegmatitic sweats and veinlets
199.700	200.500	H	3	W	QZ	VN	100.0	minor quartz vein
199.700	200.500	H	1	RM	HE	PAT	5.0	occasional patches of haematite alteration
199.700	200.500	H	2	YG	SE	REPL	10.0	occasional sericitic clay
199.700	200.500	H	1	G	CL	STRG	5.0	occasional chloritic stringers
200.500	210.470	T	3	RM	HE	PERV	60.0	haematized quartz-feldspar gneiss as above
200.500	210.470	T	3	YG	SE	REPL	40.0	stronger, greater concentration of sericitized feldspars
200.500	210.470	T	3	G	CL	REPL	5.0	occasional large porphyroblasts of feldspar now totally replaced by chlorite
210.470	223.800	G	3	G	CL	PERV	80.0	chloritised quartz-feldspar gneiss, rest of alteration is the same as in overlying gneiss intervals
210.470	223.800	G	3	YG	SE	REPL	30.0	stronger and greater concentration of sericitization of feldspars within foliations
210.470	223.800	G	3	RM	HE	PERV	20.0	occasional patches of pervasive haematization
210.470	223.800	G	2	A	QZ	VN	5.0	minor, thin, quartz veinlets throughout
223.800	313.820	G	3	G	CL	PERV		chloritised, quartz-feldspar-biotite gneiss with strong augen fabric
223.800	313.820	G	3	YG	SE	REPL	30.0	complete sericitization of feldspars throughout

Alteration

Depth From	Depth To	Strat	Intense	Colour	Type	Distrib	Pct	Comments
223.800	313.820	G	3	IW	QZ	PHEN	40.0	large quartz augens along foliations, often with haematite halo
223.800	313.820	G	2	IW	QFX	VN	20.0	occasional pegmatite sweats and veins
223.800	313.820	G	1	Y	PY	SPEC	1.0	sparse specular pyrite
223.800	313.820	G	2	RM	HE	REPL	4.0	haematitic replacement of minerals, e.g. garnets, throughout
223.800	313.820	G	3	RM	HE	COAT	5.0	haematitic clay observed on fracture surfaces and along contacts with pegmatitic/quartz veins
313.820	327.150	G	3	W	MU	PERV		pervasive muscovite instead of biotite in gneiss; rest of alteration is the same overlying QFBG
313.820	327.150	G	3	G	CL	PERV	100.0	chloritised quartz-feldspar-muscovite gneiss
327.150	344.710	T	3	RM	HE	PDIS		mostly in interior of drill core, throughout the matrix
327.150	344.710	T	3	G	CL	PERV		mainly chloritic QFM-gneiss
327.150	344.710	T	2	Y	PY	SPEC	10.0	specular yellow pyrites throughout
327.150	344.710	T	2	RM	HE	REPL	20.0	haematite replacement of feldspars and occasional coatings on quartz
327.150	344.710	T	2	RM	HE	REPL	1.0	occasional haematite-replaced garnets
344.710	346.530	T	3	RM	HE	PERV		mainly haematitic amphibolite
344.710	346.530	T	3	G	CL	PERV		some pervasive chloritic alteration
344.710	346.530	T	3	N	MT	FRAC	20.0	abundant magnetite within fractures
344.710	346.530	T	2	W	QZD	VN	20.0	ferruginous oxide and drusy quartz fracture infill
358.820	369.600	G	3	G	CL	PERV	100.0	completely chloritised dolerite intrusion
369.600	384.490	G	3	G	CL	PERV		chloritised QFBG
369.600	384.490	G	3	G	SE	VN	60.0	pegmatitic, quartz-feldspar veinlets and sweats have grown along foliations throughout interval; all feldspar now replaced by sericite
369.600	384.490	G	3	R	HE	SPEC	20.0	coppery-red, metallic specular haematite throughout
369.600	384.490	G	2	RM	HE	REPL	20.0	occasional patches of haematite alteration and replacement
384.490	386.700	T	3	RM	HE	PERV		mixture of haematitic and chloritic alteration to EOH
384.490	386.700	T	3	G	CL	PERV		
384.490	386.700	T	3	YG	SE	REPL		all feldspars replaced by sericite

Interval Structure

Depth From	Depth To	Structure	Frac Int	Friab	Recov	Peaks	Comments
0	3.300	LC					open hole to 3.3m - no core
3.300	12.700	WFR	6	4	95	10	weakly fractured
12.700	24.000	FR	15	2	100	10	fractured and broken in places
24.000	89.450	FR	20	1	100	15	fractured throughout, broken core in places
89.450	91.500	BC		1	90	10	broken, clay-altered sandstone
91.500	101.700	FR	10	1	100	10	fractured and broken in places
101.700	102.380	BC		1	90	10	broken core
102.380	109.050	WFR	5	1	90	10	weakly fractured
109.050	109.730	GG		1	90	15	clay-rich gouge
110.700	111.600	BX		1	90	10	minor dolerite breccia
111.600	119.400	BC		1	90	15	broken core
119.400	121.250	BX		1	90	10	dolerite breccia
121.250	122.550	BC		1	90	10	broken core
123.700	125.950	BC		1	90	10	broken core
132.120	132.400	BX		1	90	15	minor dolerite breccia
133.180	133.920	BX		1	90	15	minor dolerite breccia
133.920	139.620	BC		1	90	10	broken core
139.800	140.520	BX		1	90	25	minor dolerite breccia
140.520	145.000	BC		1	90	20	broken core over dolerite-granitic gneiss contact
150.000	151.200	BC		1	90	30	broken core over dolerite-granitic gneiss contact
151.200	162.720	FR		1	100	35	fractures within dolerite
162.720	199.700	FR	20	1	100	25	fracture within granitic gneiss
199.700	200.500	VN		1	100	10	minor quartz vein
200.500	210.210	WFR	6	1	100	20	weakly fractured
210.210	282.350	FR	20	1	100	20	fractured throughout; occasional pegmatitic sweats and minor veins
282.350	340.500	WFR	20	1	100	25	weakly fractured over 58m of core
340.500	341.920	BC		1	100	15	broken core, often along foliation planes
341.920	353.370	FR	12	1	100	20	fractured core
353.370	358.820	BC	4	1	100	20	
358.820	384.490	FO	3	1	100	25	pegmatite veins along foliations, occasional fractures



Hole Number: **KLD0110**

DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 6 of 19

Units: METRIC

Rock Quality

Point Structure

Depth	Orient	Ref Elem	Lin / Plan	Element	Dip Dir / Trend	Dip / Plunge	Rake	Alpha	Ang TCA	Intensity	Colour	Code	Confidence	Comments
6.340	N		Planar	Fracture					40	2	RO	HE		fractures in haematized sandstone
9.030	N		Planar	Fracture					20	1	RO	HE		fractures in haematized sandstone
10.050	N		Planar	Fracture					25	3	RO	HE		fractures in haematized sandstone
12.800	N		Planar	Fracture					40	2	RO	HE		fractures in haematized sandstone
13.500	N		Planar	Vein					25	3	RO	QZ		drusy quartz infilling fracture
15.760	N		Planar	Vein					35	1	W	QZV		drusy quartz vein infilling fracture
19.050	N		Planar	Fracture					15	1	RO	HE		fracture in haematitic sandstone
19.540	N		Planar	Vein					30	1	W	QZD		drusy quartz fracture infill
20.050	N		Planar	Vein					35	1	RM	HQZ		haematized drusy quartz vein infilling fracture
21.440	N		Planar	Fracture					25	1	RO	HE		fracture in haematitic sandstone
21.900	N		Planar	Fracture					15	2	RO	HE		fracture in haematitic sandstone
22.730	N		Planar	Fracture					30	1	RO	HE		fracture in haematitic sandstone
23.390	Y		Planar	Fracture	73	83			10	1	RO	HE		fracture in haematitic sandstone
23.870	N		Planar	Fracture					25	1	RO	HE		fracture in haematitic sandstone
24.280	N		Planar	Fracture					15	2	RO	HE		fractures in haematitic sandstone
30.450	Y		Planar	Fracture	114	83			20	4	RO	HE		closed fractures with bleached haloes
31.320	Y		Planar	Vein	142	88			20	1	A	QZV		minor quartz vein infilling fracture
32.770	Y		Planar	Fracture	108	88			15	2	RO	HE		fractures in haematitic sandstone
40.120	Y		Planar	Fracture	102	67			25	2	RO	HE		fractures in haematitic sandstone
41.570	N		Planar	Vein					25	1	RM	HQZ		large haematized drusy quartz infilling fracture
44.430	N		Planar	Fracture					10	3	RO	HE		fractures in haematitic sandstone
47.820	Y		Planar	Fracture	128	77			30	2	RO	HE		fractures in haematitic sandstone
53.780	N		Planar	Fracture					5	3	RO	HE		fractures in haematitic sandstone
57.710	Y		Planar	Fracture	122	77			15	1	OB	LI		limonitic fracture surface in haematitic sandstone
63.440	Y		Planar	Fracture	96	68			30	5	RB	HE		parallel fractures over 8m of core
70.900	Y		Planar	Fracture	297	87			20	1	OB	LI		limonitic fracture surface in haematitic sandstone
75.040	N		Planar	Fracture					15	2	RB	HE		fractures in stronger haematized sandstone
79.810	Y		Planar	Fracture	130	73			35	2	RB	HE		fractures in stronger haematized sandstone; ORIENTED BUT VERY BROKEN
84.540	Y		Planar	Fracture	201	83			35	UK	K	CY		closed fracture surrounded by minor bleaching halo
87.340	Y		Planar	Fracture	101	78			30	3	OB	LI		fractures in more limonitic, clay-altered sandstone
91.730	Y		Planar	Fracture	119	88			20	1	OB	LI		limonitic fractures
97.030	Y		Planar	Fracture	306	39			35	1	IW	HE		fracture in bleached, haematitic sandstone
104.240	Y		Planar	Fracture	31	49			25	1	RB	HE		fractures in stronger haematized sandstone
105.590	N		Planar	Fracture					10	2	RB	HE		parallel fractures over 1m of haematitic sandstone
109.050	N		Planar	Contact					40	1	K	CY		contact of 68cm clay gouge
110.700	N		Planar	Contact					60	1	G	CL		contact of 90cm chloritic dolerite breccia
115.800	N		Planar	Fracture					15	2	G	CL		parallel fractures in chloritic dolerite
119.400	N		Planar	Contact					20	1	G	CL		contact of 1.15m chloritic, clay-rich dolerite breccia
122.400	N		Planar	Fracture					5	1	G	CL		fracture in chloritized dolerite
126.200	N		Planar	Fracture					45	1	RM	HE		haematite along fracture in chloritic dolerite

Point Structure

Depth	Orient	Ref Elem	Lin / Plan	Element	Dip Dir / Trend	Dip / Plunge	Rake	Alpha	Ang TCA	Intensity	Colour	Code	Confidence	Comments
129.660	N		Planar	Fracture					30	3	G	CL		parallel fractures over 4m of core
132.120	N		Planar	Contact					50	1	G	CL		contact of minor dolerite breccia
134.530	N		Planar	Fracture					5	1	RM	HE		fracture in chlorite-haematite transition zone
147.850	N		Planar	Fracture					30	1	RM	HE		fracture in granitic gneiss
151.420	Y		Planar	Fracture	259	66			35	3	OB	LI		limonitic halo around fractures in haematized dolerite
152.740	N		Planar	Fracture					5	1	OB	LI		limonitic halo around fracture in haematized dolerite
155.700	Y		Planar	Fracture	335	70			10	1	RM	HE		fracture in haematized dolerite
162.720	N		Planar	Contact					30	1	G	CL		chloritic contact between dolerite and granitic gneiss
165.620	N		Planar	Contact					20	1	RM	HE		amphibolite-granitic gneiss contact
171.510	Y		Planar	Fracture	277	86			20	1	RM	HE		fracture in granitic gneiss
179.180	Y		Planar	Fracture	294	76			20	5	YG	SE		parallel fractures over 10m of gneiss
190.700	N		Planar	Vein					20	1	YG	SE		pegmatitic vein
191.850	Y		Planar	Fracture	265	84			10	1	RM	HE		fracture in granitic gneiss
199.700	N		Planar	Contact					50	1	RM	HE		pegmatitic contact of 80cm quartz vein
202.050	Y		Planar	Vein	315	40			40	1	IW	QZ		slightly haematized quartz vein
208.620	Y		Planar	Fracture	280	78			25	1	G	SE		fracture in strongly sericitized granite gneiss
212.400	Y		Planar	Foliation	76	56			65	UK	G	SE		sericitic feldspars and quartz along foliations
216.380	Y		Planar	Foliation	156	54			65	UK	YG	SE		sericitic feldspars and quartz along foliations
219.450	Y		Planar	Fracture	76	58			15	3	RM	HE		fractures in haematitic zone of gneiss
222.900	N		Planar	Vein					30	1	IW	VN		pegmatitic veinlet along fracture
227.360	N		Planar	Fracture					30	1	G	CL		fracture in chloritic gneiss
228.930	Y		Planar	Vein	299	51			50	1	IW	QZ		minor pegmatitic veinlet
232.580	Y		Planar	Fracture	115	85			20	3	G	CL		parallel fractures over 3m of chloritic gneiss
237.630	Y		Planar	Foliation	107	34			65	UK	YG	SE		sericitic feldspars and quartz along foliations
240.260	Y		Planar	Fracture	286	64			30	3	G	SE		sericitic fractures in chloritic gneiss
242.000	Y		Planar	Vein	268	72			25	1	I	QF		pegmatitic vein
245.070	Y		Planar	Foliation	13	16			45	UK	IW	QF		quartz-feldspar augens along foliations
247.210	Y		Planar	Vein	253	61			35	1	A	QF		minor pegmatitic (quartzofeldspathic) vein
250.340	Y		Planar	Fracture	306	58			25	1	YG	SE		sericitic fractures in chloritic gneiss
255.880	Y		Planar	Foliation	128	35			65	UK	YG	SE		sericitic feldspars and quartz along foliations
264.350	N		Planar	Contact					55	1	IW	QHF		contact of minor pegmatitic sweat
268.580	Y		Planar	Foliation	2	26			50	UK	A	QZ		quartz along foliations
269.970	Y		Planar	Vein	336	35			30	1	A	QZ		minor quartz vein infilling fracture
274.020	Y		Planar	Fracture	260	84			25	1	YG	SE		sericitic fractures in chloritic gneiss
274.830	Y		Planar	Vein	277	82			20	1	A	QZ		quartz vein infilling fracture
278.800	Y		Planar	Foliation	175	41			70	UK	IW	QF		quartz-feldspar along foliations
281.840	Y		Planar	Contact	23	34			60	1	IW	QF		contact of minor pegmatitic sweat
288.370	Y		Planar	Fracture	251	82			20	4	RM	HE		haematitic fractures in chloritic gneiss over 4m of core
296.190	Y		Planar	Foliation	107	49			50	UK	G	CL		foliations in chloritic gneiss
305.450	Y		Planar	Fracture	296	74			15	2	G	CL		fractures in chloritic gneiss

Point Structure

Depth	Orient	Ref Elem	Lin / Plan	Element	Dip Dir / Trend	Dip / Plunge	Rake	Alpha	Ang TCA	Intensity	Colour	Code	Confidence	Comments
309.700	Y		Planar	Fracture	61	77			15	1	IW	QHF		minor pegmatitic vein infilling fracture
319.440	N		Planar	Foliation					65	UK	A	QZ		quartz veinlet along foliations
327.270	N		Planar	Foliation					35	1	RM	HE		haematitic fracture in chloritic gneiss
345.330	N		Planar	Fracture					15	1	RM	HE		curved haematitic fracture in amphibolite/mafic intrusion unit
349.380	Y		Planar	Foliation	85	40			50	UK	G	CL		foliations in chloritic gneiss
352.120	Y		Planar	Fracture	227	89			15	2	B	OX		ferruginous fracture surface with some drusy quartz
354.880	N		Planar	Fracture					5	1	RM	HE		haematitic quartz veins (drusy quartz and pyrite disseminations) infilling fracture
358.820	N		Planar	Contact					30	1	IW	QF		pegmatitic QFBG-dolerite contact
360.240	Y		Planar	Fracture	42	39			35	2	RM	HE		haematitic fractures in chloritised dolerite
369.600	N		Planar	Contact					50	1	G	CL		basal dolerite-QFBG contact
372.020	Y		Planar	Foliation	61	28			45	UK	G	CL		chloritic alteration/replacement in pegmatitic veinlets along foliations
373.610	Y		Planar	Foliation	120	58			35	UK	A	QF		quartz-feldspar, pegmatitic veins/sweats along foliations
376.400	Y		Planar	Fracture	251	86			25	1	RM	HE		haematitic fracture forming contact with pegmatitic sweat/veinlet
379.650	Y		Planar	Foliation	85	37			40	UK	AG	QF		quartz-feldspathic veins along foliations
383.810	Y		Planar	Fracture	269	76			25	2	YG	SE		parallel fractures over 3m of core

Lithology Details

Mineralization

Mineralogy



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 10 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
151.65	152.49	0.14	
152.49	153.33	0.16	
153.33	154.17	0.12	
154.17	155.01	0.10	
155.01	155.85	0.10	
155.85	156.69	0.13	
156.69	157.52	0.10	
157.52	158.36	0.08	
158.36	159.20	0.10	
159.20	160.05	0.05	
160.05	160.89	0.17	
160.89	161.74	0.12	
161.74	162.58	0.19	
162.58	163.43	0.05	
163.43	164.27	0.07	
164.27	165.11	0.06	
165.11	165.94	0.03	
165.94	166.78	0.06	
166.78	167.61	0.07	
167.61	168.45	0.03	
168.45	169.28	0.04	
169.28	170.15	0.04	
170.15	171.02	0.06	
171.02	171.89	0.05	
171.89	172.75	0.11	
172.75	173.62	0.02	
173.62	174.49	0.03	
174.49	175.34	0.05	
175.34	176.19	0.02	
176.19	177.05	0.10	
177.05	177.90	0.12	
177.90	178.75	0.01	
178.75	179.60	0.09	
179.60	180.46	0.07	
180.46	181.32	0.18	
181.32	182.18	0.06	
182.18	183.03	0.04	
183.03	183.89	0.09	
183.89	184.75	0.06	
184.75	185.60	0	
185.60	186.46	0.06	
186.46	187.31	0	
187.31	188.16	0	
188.16	189.02	0	
189.02	189.87	0.04	
189.87	190.70	0.16	
190.70	191.53	0.11	
191.53	192.36	0.09	
192.36	193.19	0.04	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 11 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
193.19	194.02	0.11	
194.02	194.85	0.07	
194.85	195.71	0.05	
195.71	196.57	0.17	
196.57	197.44	0.03	
197.44	198.30	0.13	
198.30	199.16	0.07	
199.16	200.02	0.14	
200.02	200.85	0.16	
200.85	201.68	0.24	
201.68	202.52	0.19	
202.52	203.35	0.08	
203.35	204.18	0.10	
204.18	205.01	0.15	
205.01	205.88	0.16	
205.88	206.74	0.17	
206.74	207.61	0.13	
207.61	208.48	0.12	
208.48	209.34	0.21	
209.34	210.21	0.11	
210.21	211.10	0.13	
211.10	211.99	0.13	
211.99	212.89	0.10	
212.89	213.78	0.08	
213.78	214.67	0.12	
214.67	215.56	0.12	
215.56	216.42	0.12	
216.42	217.28	0.12	
217.28	218.15	0.23	
218.15	219.01	0.17	
219.01	219.87	0.10	
219.87	220.73	0.06	
220.73	221.64	0.12	
221.64	222.54	0.11	
222.54	223.45	0.67	
223.45	224.35	0.25	
224.35	225.26	0.26	
225.26	226.16	0.24	
226.16	227.03	0.21	
227.03	227.91	0.39	
227.91	228.78	0.42	
228.78	229.65	0.09	
229.65	230.53	0.29	
230.53	231.40	0.22	
231.40	232.28	0.13	
232.28	233.17	0.23	
233.17	234.05	0.19	
234.05	234.93	0.27	
234.93	235.82	0.05	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 12 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
235.82	236.70	0.12	
236.70	237.58	0.18	
237.58	238.46	0.26	
238.46	239.34	0.11	
239.34	240.22	0.04	
240.22	241.10	0.15	
241.10	241.98	0.13	
241.98	242.84	0.17	
242.84	243.70	0.42	
243.70	244.57	0.28	
244.57	245.43	0.35	
245.43	246.29	0.35	
246.29	247.15	0.23	
247.15	247.98	0.25	
247.98	248.81	0.32	
248.81	249.64	0.26	
249.64	250.47	0.16	
250.47	251.30	0.20	
251.30	252.13	0.93	
252.13	253.01	0.24	
253.01	253.88	0.28	
253.88	254.76	0.39	
254.76	255.63	0.34	
255.63	256.51	0.24	
256.51	257.38	0.40	
257.38	258.23	0.51	
258.23	259.07	0.32	
259.07	259.92	0.21	
259.92	260.76	0.40	
260.76	261.61	0.45	
261.61	262.45	0.35	
262.45	263.30	0.60	
263.30	264.15	0.17	
264.15	265.00	0.14	
265.00	265.85	0.10	
265.85	266.70	0.16	
266.70	267.55	0.13	
267.55	268.40	0.39	
268.40	269.25	0.42	
269.25	270.10	0.20	
270.10	270.95	0.09	
270.95	271.80	0.32	
271.80	272.65	0.33	
272.65	273.43	0.24	
273.43	274.21	0.27	
274.21	275.00	0.30	
275.00	275.78	0.20	
275.78	276.56	0.35	
276.56	277.34	0.14	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 13 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
277.34	278.18	0.38	
278.18	279.01	0.20	
279.01	279.85	0.19	
279.85	280.68	0.19	
280.68	281.52	0.11	
281.52	282.35	0.20	
282.35	283.20	0.26	
283.20	284.05	0.14	
284.05	284.90	0.24	
284.90	285.75	0.17	
285.75	286.60	0.15	
286.60	287.45	0.10	
287.45	288.32	0.20	
288.32	289.19	0.22	
289.19	290.06	0.13	
290.06	290.92	0.03	
290.92	291.79	0.18	
291.79	292.66	0.25	
292.66	293.51	0.16	
293.51	294.36	0.05	
294.36	295.21	0.06	
295.21	296.05	0.12	
296.05	296.90	0.12	
296.90	297.75	0.16	
297.75	298.61	0.11	
298.61	299.48	0.16	
299.48	300.34	0.22	
300.34	301.20	0.15	
301.20	302.07	0.15	
302.07	302.93	0.17	
302.93	303.84	0.09	
303.84	304.75	0.15	
304.75	305.67	0.13	
305.67	306.58	0.11	
306.58	307.49	0.09	
307.49	308.40	0.29	
308.40	309.23	0.13	
309.23	310.06	0.07	
310.06	310.90	0.20	
310.90	311.73	0.20	
311.73	312.56	0.13	
312.56	313.39	0.34	
313.39	314.26	0.42	
314.26	315.12	0.10	
315.12	315.99	0.30	
315.99	316.85	0.21	
316.85	317.72	0.18	
317.72	318.58	0.14	
318.58	319.43	0.13	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 14 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
319.43	320.27	0.15	
320.27	321.12	0.19	
321.12	321.97	0.07	
321.97	322.81	0.24	
322.81	323.66	0.21	
323.66	324.50	0.32	
324.50	325.34	0.14	
325.34	326.18	0.10	
326.18	327.02	0.23	
327.02	327.86	0.04	
327.86	328.70	0.10	
328.70	329.55	0.09	
329.55	330.40	0.22	
330.40	331.25	0.20	
331.25	332.10	0.16	
332.10	332.95	0.06	
332.95	333.80	0.16	
333.80	334.62	0.21	
334.62	335.43	0.11	
335.43	336.25	0.09	
336.25	337.07	0.21	
337.07	337.88	0.09	
337.88	338.70	0.19	
338.70	339.59	0.11	
339.59	340.50	0.08	
340.50	341.10	0.05	
341.10	341.92	0.20	
341.92	342.85	0.11	
342.85	343.77	0.27	
343.77	344.56	0.22	
344.56	345.35	0.10	
345.35	346.14	0.28	
346.14	346.93	0.22	
346.93	347.72	0.30	
347.72	348.51	0.23	
348.51	349.36	0.13	
349.36	350.21	0.11	
350.21	351.05	0.15	
351.05	351.90	0.09	
351.90	352.85	0.12	
352.85	353.37	0.10	
353.37	354.18	0.16	
354.18	354.97	0.16	
354.97	355.75	0.29	
355.75	356.54	0.14	
356.54	357.32	0.11	
357.32	358.11	0.07	
358.11	358.95	0.06	
358.95	359.78	0.22	

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
359.78	360.62	0.10	
360.62	361.45	0.04	
361.45	362.29	0.21	
362.29	363.12	0	
363.12	363.95	0.28	
363.95	364.78	0.16	
364.78	365.61	0.19	
365.61	366.44	0.29	
366.44	367.27	0.29	
367.27	368.10	0.29	
368.10	369.04	0.27	
369.04	369.79	0.18	
369.79	370.40	0.10	
370.40	371.17	0.29	
371.17	371.96	0.13	
371.96	372.74	0.23	
372.74	373.57	0.10	
373.57	374.39	0.09	
374.39	375.22	0.07	
375.22	376.05	0	
376.05	376.87	0.01	
376.87	377.70	0.01	
377.70	378.56	0.09	
378.56	379.41	0.02	
379.41	380.27	0.13	
380.27	381.13	0.08	
381.13	381.98	0.05	
381.98	382.84	0.04	
382.84	383.70	0.15	
383.70	384.54	0.08	
384.54	385.42	0.05	
385.42	386.30	0.07	
386.30	386.70	0.11	
3.30	4.20	1.62	
4.20	5.10	0.04	
5.10	6.00	0.04	
6.00	6.90	0.03	
6.90	7.80	0.03	
7.80	8.78	0.02	
8.78	9.76	0.03	
9.76	10.74	0.02	
10.74	11.72	0.01	
11.72	12.70	0.02	
12.70	13.54	0.03	
13.54	14.39	0.03	
14.39	15.23	0.03	
15.23	16.07	0.02	
16.07	16.92	0.02	
16.92	17.76	0.02	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 16 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
17.76	18.56	0.02	
18.56	19.36	0.02	
19.36	20.16	0.12	
20.16	20.95	0.03	
20.95	21.75	0.02	
21.75	22.55	0.03	
22.55	23.41	0.03	
23.41	24.27	0.01	
24.27	25.14	0.02	
25.14	26.00	0.02	
26.00	26.86	0.01	
26.86	27.72	0.03	
27.72	28.56	0.03	
28.56	29.40	0.04	
29.40	30.25	0.10	
30.25	31.09	0.18	
31.09	31.93	0.01	
31.93	32.77	0.01	
32.77	33.58	0.03	
33.58	34.40	0.02	
34.40	35.21	0.01	
35.21	36.02	0.01	
36.02	36.84	0.03	
36.84	37.65	0.04	
37.65	38.43	0.02	
38.43	39.22	0.04	
39.22	40.00	0.03	
40.00	40.78	0.03	
40.78	41.57	0.03	
41.57	42.35	0.02	
42.35	43.18	0.02	
43.18	44.01	0.02	
44.01	44.85	0.04	
44.85	45.68	0.02	
45.68	46.51	0.02	
46.51	47.34	0.03	
47.34	48.14	0.02	
48.14	48.93	0.03	
48.93	49.73	0.02	
49.73	50.52	0.02	
50.52	51.32	0.02	
51.32	52.11	0.02	
52.11	52.87	0.05	
52.87	53.62	0.05	
53.62	54.38	0.05	
54.38	55.14	0.05	
55.14	55.89	0.02	
55.89	56.65	0.03	
56.65	57.43	0.03	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 17 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
57.43	58.22	0.05	
58.22	59.00	0.02	
59.00	59.78	0.04	
59.78	60.57	0.06	
60.57	61.35	0.04	
61.35	62.22	0.03	
62.22	63.08	0.02	
63.08	63.95	0.02	
63.95	64.81	0.03	
64.81	65.68	0.04	
65.68	66.54	0.03	
66.54	67.38	0.03	
67.38	68.23	0.03	
68.23	69.07	0.02	
69.07	69.91	0.06	
69.91	70.76	0.03	
70.76	71.60	0.05	
71.60	72.40	0.04	
72.40	73.20	0.04	
73.20	74.00	0.07	
74.00	74.79	0.02	
74.79	75.59	0.03	
75.59	76.39	0.03	
76.39	77.24	0.04	
77.24	78.09	0.04	
78.09	78.94	0.03	
78.94	79.80	0.02	
79.80	80.65	0.04	
80.65	81.50	0.03	
81.50	82.32	0.03	
82.32	83.14	0.05	
83.14	83.96	0.06	
83.96	84.79	0.05	
84.79	85.61	0.03	
85.61	86.43	0.04	
86.43	87.18	0.04	
87.18	87.93	0.03	
87.93	88.68	0.05	
88.68	89.44	0.10	
89.44	90.19	0.03	
90.19	90.94	0.03	
90.94	91.75	0.03	
91.75	92.56	0.03	
92.56	93.37	0.03	
93.37	94.17	0.03	
94.17	94.98	0.04	
94.98	95.79	0.06	
95.79	96.57	0.03	
96.57	97.35	0.03	



DETAILED DIAMOND DRILL REPORT

KUKALAK PROJECT

Page 18 of 19

Hole Number: KLD0110

Units: METRIC

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
97.35	98.13	0.03	
98.13	98.91	0.03	
98.91	99.69	0.03	
99.69	100.47	0.03	
100.47	101.32	0.03	
101.32	102.16	0.03	
102.16	103.01	0.08	
103.01	103.86	0.04	
103.86	104.70	0.04	
104.70	105.55	0.05	
105.55	106.38	0.02	
106.38	107.20	0.06	
107.20	108.03	0.02	
108.03	108.86	0.04	
108.86	109.68	0.08	
109.68	110.51	0.49	
110.51	111.28	0.32	
111.28	112.04	0.50	
112.04	112.81	0.55	
112.81	113.57	0.35	
113.57	114.34	0.34	
114.34	115.10	0.54	
115.10	115.87	0.56	
115.87	116.63	0.26	
116.63	117.40	0.60	
117.40	118.17	0.44	
118.17	118.93	0.42	
118.93	119.70	0.42	
119.70	120.47	0.33	
120.47	121.23	0.54	
121.23	122.00	0.75	
122.00	122.77	0.35	
122.77	123.53	0.44	
123.53	124.30	0.63	
124.30	125.11	0.44	
125.11	125.92	0.37	
125.92	126.73	0.53	
126.73	127.54	0.32	
127.54	128.35	0.23	
128.35	129.16	0.29	
129.16	129.98	0.35	
129.98	130.81	0.30	
130.81	131.63	0.31	
131.63	132.45	0.35	
132.45	133.28	0.15	
133.28	134.10	0.54	
134.10	134.88	0.35	
134.88	135.67	0.34	
135.67	136.45	0.43	

Magnetic Susceptibility

Depth From	Depth To	Mag Susceptibility	Comments
136.45	137.23	0.58	
137.23	138.02	0.48	
138.02	138.80	0.61	
138.80	139.70	0.35	
139.70	140.60	1.56	
140.60	141.50	0.36	
141.50	142.40	0.56	
142.40	143.30	1.77	
143.30	144.20	0.42	
144.20	145.02	0.15	
145.02	145.84	0.12	
145.84	146.66	0.15	
146.66	147.48	0.12	
147.48	148.30	0.28	
148.30	149.12	0.14	
149.12	149.96	0.16	
149.96	150.80	0.14	
150.80	151.65	0.12	