ORIECO PROJECT **98ORDD1**

HOLE NO: 98ORDD1	SECTION:	GRID:

PROJECT CODE
TENEMENT : EL 1/98
PROSPECT : ORIECO
GRID
MAP REFERENCE : SCAMANDER TIER
LOCATION : ORIECO
HOLE TYPE : DIAMOND

****COLLAR COORDINATES AND RL****

SURVEYED:
AMG 5413811.07N 601103.56E 75.83RL

PRE-COLLAR DEPTH
FINAL DEPTH

PURPOSE OF HOLE : Resource Definition
HOLE STATUS : Complete
COMMENTS : Ore intersection 20m below existing workings

SURVEY DATA

Survey Method: Eastman Single Shot

Depth	Azimuth	Inclination
20	030	-37
100	032	-41

SUMMARY LOG

0.00	10.53m	Quartz Sandstone
10.53	11.04m	Intbd Qtz Sandstone-Siltstone
11.04	21.20m	Quartz Sandstone
21.20	21.80m	Intbd Qtz Sandstone-Siltstone
21.80	34.50m	Quartz Sandstone
34.50	35.00m	Intbd Qtz Sandstone-Siltstone
35.00	43.50m	Quartz Sandstone
43.50	44.20m	Intbd Qtz Sandstone-Siltstone
44.20	49.00m	Quartz Sandstone
49.00	53.30m	Siltstone
53.30	57.10m	Intbd Qtz Sandstone-Siltstone
57.10	74.80m	Quartz Sandstone
74.80	80.00m	Quartzite
80.00	91.20m	Mylonite-Fault zone
91.20	97.80m	Quartz Sandstone
97.80	99.00m	Intbd Qtz sandstone-Siltstone
99.00	104.20m	Quartz Sandstone
104.20		END OF HOLE

**** DRILLING SUMMARY****

DIAMOND 0.00 104.20 BQTK

Drilling Contractor : LIDDS
Drill Rig: : Gopher 28
Date Started :
Date Completed :
Logged By : AG
Sampled By : AG

Material Left in Hole : NIL

Base of Complete Oxidation : 1.50m
Top of Fresh Rock : 78.00m
Water First Encountered :
Water Inflow Estimate :

SIGNIFICANT ASSAYS

83.00-83.65	1350Cu,	6600 Zn
83.65-84.07	30Ag, 2450Cu,	15.5% Zn
84.07-85.00	7800Cu,	4200 Zn
85.00-85.67	40Ag, 1.18%Cu,	3.80%Zn
85.67-86.43	30Ag, 5200Cu,	4200 Zn
86.43-87.50	80Ag, 3.60%Cu,	1900 Zn
87.50-88.50	3000Cu,	
88.50-89.50	1.35%Cu,	1900 Zn
89.50-90.00		4.50%Zn

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
0.00	10.53	QUATRZ SANDSTONE Light brown to pale gray, fine grained, massive quartz sandstone. Moderate to strong pervasive oxidation with ferric oxides and coatings on joint planes. Sandstone cut by numerous white, quartz veinlets and stringers up to a maximum thickness of 1cm. Preferred orientation 45 degrees to core axis. Veinlets are typically partially oxidised with relict vughs and voids partially gossanous after pyrite. Minor cubic pyrite casts up to 3mm in diameter are irregularly dispersed through out the sandstone. 3.65-4.65m CORE LOSS 1.0m core loss in clay zone, possible small fault? Core remnants contain numerous oxidised quartz vein fragments with strong FeOx possibly after pyrite.			
10.53	11.04	INTERBEDDED QUARTZ SANDSTONE AND SILTSTONE Pale gray, fine grained interbedded massive quartz sandstone and siltstone. Weak pervasive oxidation with ferric oxides and coatings on joint planes. Siltstone bands are typically red brown in colour, siliceous to cherty, with individual horizons typically less than 1cm in thickness. Siltstone horizons are orientated at approximately 70 to the core axis and contain several small scale slump and flame structures. Orientation of these small scale structures indicate bedding is right way up although steeply dipping to core axis.			
11.04	16.88	QUARTZ SANDSTONE Pale gray, fine grained massive quartz sandstone with minor siltstone intervals at 13.90m and 16.48m. 12.20-12.66m Zone of moderate to strong, white quartz vein stockworks.Veinlets to 1cm thickness, but 14.20-15.80m typically 1-2mm.Partially oxidised with minor boxworks after pyrite. Two generations of veining based on intersections. Orientations 10 and 20 degreEs to core axis.			

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
16.88	21.20	QUARTZ SANDSTONE Light brown to pale gray, fine grained, massive quartz sandstone. Moderate to strong pervasive oxidation with ferric oxides and coatings on joint planes. Sandstone cut by numerous white, quartz veinlets and stringers up to a maximum thickness of 1cm. Preferred orientation 45 degrees to core axis. Veinlets are typically partially oxidised with relict vughs and voids partially gossanous after pyrite. Minor cubic pyrite casts up to 3mm in diameter are irregularly dispersed through out the sandstone. 16.60-18.50m Zone of moderate to strong white quartz veining locally stockworked. Veins to 1cm in thickness, but typically 2-3mm. Veins often vughed, with gossanous boxworks after pyrite. Veining very strong at 17.50-18.0m with local brecciation. 18.45-18.75m Siltstone interbed.			
21.20	21.80	INTERBEDDED SILTSTONE AND SANDSTONE Pale gray, massive siltstone with minor fine grained, massive quartz sandstone interbeds.			
21.80	34.50	QUARTZ SANDSTONE Pale gray to tan, fine grained, massive quartz sandstone. Weak, 1-2% white quartz veinlets 1-2mm in thickness, slight oxidation of veinlets due to weathering. No significant mineralisation with veinlets orientated at approximately 45 degrees to core axis. 25.0-29.0m Zone of strong-intense massive quartz veining with localised brecciation and stockworking. Veins typically 2-3mm in thickness, occassionally up to 1cm orientated at 10 and 45 degrees to the core axis. Numerous void spaces which have been infilled by dark brown, Fe rich gossanous boxworks after pyrite. Trace peacock ore colouration on broken surfaces. Trace cubic pyrite casts scattered through out the zone. 30.20-30.90m CORE LOSS 0.7m core loss in clay zone, possible small fault?	P1001 P1002 P1003 P1004 P1005 P1006 P1007 P1008 P1009	25.10 26.00 27.00 28.00 29.00 30.00 31.40 32.70 34.00	26.00 27.00 28.00 29.00 30.00 31.40 32.70 34.00 34.50

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
		31.40-31.70m Zone of strong to intense quartz veining with localised brecciation and stockworking. Veins typically 2-3mm in thickness, occassionally up to 1cm orientated at 10 and 45 degrees to the core axis. Numerous void spaces which have been infilled by dark brown, Fe rich gossanous boxworks after pyrite. Trace peacock ore colouration on broken surfaces. Trace cubic pyrite casts scattered through out the zone.			
34.50	35.00	INTERBEDDED QUARTZ SANDSTONE AND SILTSTONE Pale gray, fine grained interbedded massive quartz sandstone and black siltstone. Weak pervasive oxidation with ferric oxides and coatings on joint planes.			
35.00	43.50	QUARTZ SANDSTONE Pale gray to light green, fine grained, massive quartz sandstone. Weak to moderate pervasive oxidation with ferric oxides and coatings on joint planes. Sandstone cut by numerous white, quartz veinlets and stringers up to a maximum thickness of 1cm. Preferred orientation 45 degrees to core axis. Veinlets are typically partially oxidised with relict vughs and voids partially gossanous after pyrite. 40.82-41.02m Two zones of strong, white quartz veining. Veins to 1cm in width, strongly oxidised with 41.70-41.80m boxworks after pyrite. Veins preferentially orientated at 10 and 45 degrees to the core axis.			
43.50	44.20	INTERBEDDED QUARTZ SANDSTONE AND SILTSTONE Pale gray, fine grained interbedded massive quartz sandstone and gray siltstone. Weak pervasive oxidation with ferric oxides and coatings on joint planes.			
44.20	49.00	QUARTZ SANDSTONE Dark gray, fine grained, massive quartz sandstone cut by 1-2% white quartz veinlets up to 10mm in width but typically 1-2mm. Preferred orientation 45 degrees to core axis. Partially oxidised			

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
		with minor gossanous boxworks after pyrite. Trace cubic pyrite casts to 3mm randomly distributed throughout the core.			
49.00	53.30	SILTSTONE Light gray to black, siltstone. Trace amount of white, partially oxidised quartz veinlets 1-2mm in width. Preferred orientations at 20 and 45 degrees to core axis. 49.00-50.60m CORE LOSS 1.60m core loss within siltstone horizon appears non mineralised.			
53.30	57.10	INTERBEDDED QUARTZ SANDSTONE AND SILTSTONE Dark gray, fine grained, massive interbedded quartz sandstone and siltstone. Gradational boundaries between the units and weak pervasive oxidation. Interval contains up to 5% red-brown to white, partially oxidised quartz-kaolin veinlets typically 1-2mm in width. Ocassional veinlets to 10mm. Preferred orientation 45 degrees to the core axis.			
57.10	74.80	QUARTZ SANDSTONE Pale gray to weakly pale green, fine grained, massive quartz sandstone with occassional minor siltstone horizons. Interval contains trace 1%, brown to white, partially oxidised quartz-kaolin veinlets 2-3mm in width orientated at 45 degrees to the core axis. Trace vughs possibly after pyrite. 58.00-60.00m Zone containing 5% white, massive quartz veins partially oxidised with veins up to 1cm. 60.80-61.00m Areas of increased vein intensity may be locally brecciated and stockworked. Preferred vein orientation 70 degrees to core axis. Strong Feox developed on fracture planes. 67.00-69.00m Interval contains trace 1-2% pyrite casts randomly distributed through out the core. 68.30-68.40m Breccia zone. Angular, quartz sandstone clasts, matrix supported and infilled by dark brown to black gossanous Feox with trace chalcocite.	P1010 P1011 P1012	67.30 68.00 69.00	68.00 69.00 70.00

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
		70.50-70.60m Fault gouge. Non mineralised.			
		70.60-72.00m Interval contains approximately 5% pyrite casts to 3mm randomly distributed through core.	P1013	70.00	71.00
		72.80-73.10m Mylonite. Zone approximately 30cm in width which appears to contain gray, fine grained strongly foliated sandstone clasts orientated 50 degrees to the core axis set in a black shale? matrix. Basal contact sharply defined with a 5cm zone of kaolin.	P1014	71.00	72.00
			P1015	72.00	73.00
			P1016	73.00	74.00
		73.10-74.80m Zone of moderate to strong quartz-kaolin veinlets and stockworks 2-3mm in width. Vein intensity decreases down hole below the fault zone.	P1017	74.00	75.00
		74.75m Gossanous quartz vein 1cm thick orientated at 40 degrees to the core axis.			
74.80	80.00	QUARTZITE			
		Pale gray to weakly green, fine grained, massive quartzite. Zone contains 5% white, massive quartz-kaolin veinlets 2-3mm in width which may be partially oxidised and vughed in part. Trace 1% Feox after pyrite. Vein intensity increases down hole and may be locally stockworked. Preferred vein orientations at 50 and 80 degrees to the core axis.	P1018	75.00	76.00
			P1019	76.00	77.00
			P1020	77.00	78.00
			P1021	78.00	79.00
		78.00-80.00m Trace fine grained chalcocite and pyrite contained in quartz-kaolin veinlets.	P1022	79.00	79.90
80.00	91.20	MYLONITE-FAULT ZONE			
		Pale gray to weakly pale green mylonite-fault zone. Interval appears to be an intermixed zone of gray, partially silicified fine grained quartz sandstone and pale, to olive green coloured siltstone, with weak chlorite-epidote? alteration. Both the sandstone and siltsone appears to be set in a gray, to black coloured, fine-grained groundmass containing trace amounts of very fine grained pyrite. The zone is very strongly foliated with a preferred orientation of 70 degrees to the core axis.	P1023	79.90	81.00
			P1024	81.00	82.00
			P1025	82.00	83.00
			P1026	83.00	83.65
			P1027	83.65	84.07
		80.70-81.00m Zone of increased silicification, minor brecciation and trace 1% fine grained pyrite-sphalerite			
		82.10-82.20m veinlets and blebs.			
		84.12-84.37m 25cm interval containing approximately 20% fine grained black chalcocite-sphalerite-pyrite set in gray, strongly silicified groundmass.			

FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
		85.40-85.50m Several fine grained, black chalcocite-sphalerite-pyrite veins to 3cm in width orientated at	P1028	84.07	85.00
		45 degrees to the core axis. Zone contacts strongly sheared and kaolinitic.	P1029	85.00	85.67
		85.80-86.14m Zone containing approximately 5% discontinuous gray-black chalcocite + chalcopyrite	P1030	85.67	86.43
		veinlets 1-2mm in width and 2-3cm in length. The black chalcocite appears to have formed as			
		secondary copper sulphides which border the primary chalcopyrite. The veinlets have a			
		preferred orientation of 70 degrees to the core axis.			
		86.90-88.00m Zone containing 1-2% chalcopyrite+chalcocite blebs 1-2mm in width. Preferred orientation	P1031	86.43	87.50
		70 degrees to the core axis.	P1032	87.50	88.50
		88.00-89.00m Zone containing up to 5% fine grained black chalcocite and chalcopyrite veinlets 1-2mm			
		in width. Preferred orientation 60 to 70 degrees to the core axis. The veins cross-cut the	P1033	88.50	89.50
		the foliation associated with the fault zone at approximately 90 degrees.			
		89.25-89.28m Three centimetre wide chalcocite-chalcopyrite-pyrite vein, sharply defined and sheared			
		contacts orientated at approximately 60 degrees to the core axis.			
		89.70-89.95m Zone containing up to 5% fine grained black chalcocite-chalcopyrite-pyrite veins and blebs	P1034	89.50	90.00
		at 60 degrees to the core axis. The mineralisation within the zone is generally aligned parallel			
		to the overall foliation direction.			
		90.20-90.70m Weak 1% pyrite veinlets 1-2mm in width, with minor quartz-kaolin boundaries. Veins are	P1035	90.00	91.00
		generally orientated at 80 degrees to the core axis.			
		91.20m Basal contact of mylonite/fault zone, weakly sheared, non-mineralised.			
91.20	97.80	QUARTZ SANDSTONE			
		Pale to dark gray, massive, fine-grained quartz sandstone.	P1036	91.00	92.00
		91.20-92.00m Zone containing approximately 5% white, quartz-kaolin stockworked veins typically 1-2mm in	P1037	92.00	93.00
		width. Trace <1% chalcocite-chalcopyrite-pyrite in vughed areas.	P1038	93.00	94.00
		92.00-93.00m Trace 1% white quartz-kaolin veinlets at approximately 45 degrees to the core axis.	P1039	94.00	95.00
		95.60-96.00m Zone of minor brecciation of sandstone infilled by white quartz-kaolin material with trace <1%	P1040	95.00	96.00
		fine grained, black chalcocite.	P1041	96.00	97.00

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FROM (m)	TO (m)	GEOLOGICAL LOG	SAMPLE No	FROM (m)	TO (m)
97.80	99.00	INTERBEDDED QUARTZ SANDSTONE AND SILTSTONE Pale gray, fine grained interbedded massive quartz sandstone and siltstone. Siltstone bands are typically dark gray to black in colour and up to several centimetres in width Siltstone horizones are strongly laminar and orientated at approximately 70 to the core axis. Sharply defined upper contact with the sandstone horizon. Sedimentary structures recognised include cross bedding, flame and slump structures which indicate bedding is right way up although steeply dipping to the core axis.			
99.00	104.20	QUARTZ SANDSTONE Pale, fine grained, massive quartz sandstone. Non mineralised.			
	104.2	**END OF HOLE**			