776034

BROKEN HILL PROPRIETARY CO. LTD.

Exploration Department

DRILL HOLE LOG HEADER SHEET

Project:	EL 12/78 SCAMANDER	**Hole No.:**	NS4
Prospect:	North Scamander Pb-Zn-Cu	**Total Depth:**	282.60m
Local Grid co-ords:	804mW 1346mN	**Bearing:**	047° (collar); *
AMG co-ords:	FQ010118	**Depression:**	-65° (collar); **
Drilling Co.:	Stacpoole Drilling	**R.L. Collar:**	141.40m
Drill Type:	Foxmobile B-80		
Core Size:	NQ	**Commenced:**	12/10/81
Driller:	W Bald	**Completed:**	5/11/81
		Logged by:	D A Steele
		Sampled by:	P A Dubbeld

* 053° (32.6m); 050° (82.6m); 051° (132.6m); 055° (182.6m); 061° (232.6m); 057° (274.5m); 056° (282.60m).

** -64° (32.6m); -63° (82.6m); -63°(132.6m); -63° (182.6m); -63° (232.6m); -62° (274.5m); -62° (282.60m).

Technical Data:

Overburden: 0≈2.5m of loose fill ; 2.5≈6.0m of broken, severely weathered shale; rock roller used to 4.00m, and between 32.8 and 33.8m.

Coring: HQ to 27.7m; removed upon completion of hole.

Water Return: Poor to approximately 40m; partial to full water return to 282.6 metres.

Additives: Ro-Lube, Hydropol, Ro-Trol, Fine Mica, Bentonite.

Oxidation: Approximate depth of total oxidation ~25m; base of oxide zone ~55m.

Other: Downhole survey by Eastman camera.

Project E.L12/78 NORTH SCAMANDER

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Drillhole N° NS 4
Sheet 1 of 6

Box No	METRES	DRILL RUN METRES RECOV	DRILL RUN % RECOV	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL	MINERALISATION FRACT DENST (per m)	% FRACT MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV	ANGL TO LCA	% BLK ROCK MIN	VEIN MINERALOGY CASSIT	WOLF	QTZ	MUSC	SULPH			WALL ROCK ALTERN.	Sulphides. Py Aspy	Cpy Sph	Ga Other	
4.50																												
1	1.30	0.30	23.08	0																								
8.00	3.00	2.35	78.33	4	Deep red brown ferruginized shale with minor 10cm interbeds of sandstone. Sh generally massive, very poorly mineralized Extremely low P.I. generally only kaolin & limonite on breakage planes (fractures) Very broken core. very low RQD Completely oxidized. fracturing sub ll to S_o.			Not Sampled	4.50	11.80																
	3.00	2.45	81.67	18																								
2							23°																					
	3.00	2.97	99.00	27	Fe stnd sandstone & rare ½m interbeds of ferruginized red brown shales. Alteration haloes around veinlets pale green to brown. possible after chlorite. No obvious mineralization. Weakly fractured. Regular fractures post-dated by rare irregular sub-vertical quartzite stringers. Other barren fractures 15/m quartzite - limonite (chlorite) at 60°-70° LCA			NSD 305	11.80	13.80	2.00																
11.80								306	13.80	15.80	2.00	15-20	60	<1-2	<1	30	<1	x	x	very rare	x	x	x	limonite	Fe stng after chl			
	3.00	2.74	91.33	40				307	15.80	17.80	2.00																	
3							25																					
	3.00	2.31	77.00	12				308	17.80	20.50	2.70																	
22.70	3.00	2.99	99.67	56	Fractured sandstone locally brecciated. severely Fe stnd brecciation. sub ll to fracturing Minor green hue to sandstone in places. Black quartzite stringers pre-date ? mineralized fractures Stringers at very low ∠ to LCA. Tension gashes <10/m. 50°-70° LCA barren			309	20.50	22.50	2.00	70	90	1-4	1	30	15	x	x	common	x	x	x	limonite remanant chl.	Fe stng, chl			
								310	22.50	24.50	2.00																	
4	3.00	2.94	98.00	21	Grey to pale brown sandstone locally grading shale. Locally well fractured and/or brecciated Three obvious fractured/veinlet sets Local chloritization of sandstone. Chlorite evident in some veinlets Quartzite stringers <5/m. <10° LCA. rarely limonitic. Other fractures <10/m. 60°-70° LCA. quartzite - limonite & Fe haloes		45	311	24.50	26.50	2.00	20	70	1-6	1-2	20-35	1-2	x	x	occasional	x	x	x	limonite	local Fe stngs			Approx base of complete oxidation.
	3.00	3.00	100.00	33				312	26.50	28.50	2.00																	
29.55					Dominantly shale & interbedded sandstone. So contorted brecciation of both sandstone and shale, very common. Severely ferruginized. Minor Fe stng, along So planes. also chlorite Dominant fractures trend cut by quartzite - limonite stringers sub ll to LCA. Local truncation of veinlets at shale Sandstone contacts. Veinlets <1/m at 50° LCA. 3-6mm, quartzite - chlorite - pyrite Stringers 1-2/m. 4mm wide <10° LCA. quartzite - limonitic. post date veinlets Fractures <10/m. 1mm wide. 60°-70° LCA. barren occassional quartzite post date stringers Fe haloes common			313	28.50	30.50	2.00																
	3.00	2.90	96.67	26			10 20	314	30.50	32.80	2.30	locally >60	90	<1-2	1	25-35	2-4	x	x	occassional	x	x	x	abundant limonite chlorite	Severe Fe stng			
	Rock Roller							N.S.	32.80	33.80	1.00																	
5	2.00	1.73	86.50	91				315	33.80	35.80	2.00																	
37.92	3.00	3.00	100.00	68	Interbedded sandstone/shale. Fe stnd adjacent to fractures Very locally brecciated. stringers sub ll to LCA. common. Weak brecciation/fracturing of sandstone at 36.60m & quartzite - chlorite - pyrite ? infilling. sub-vertical stringers vuggy. Veinlets anastomosing So poorly defined Stringers common to 10mm wide. quartz limonite		15	316	35.80	37.80	2.00	20	80	<1-3	1	35	locally sgen<2	x	x	occassional	x	x	x	chlorite	—			
								317	37.80	39.80	2.00																	
	3.00	2.94	98.00	69	Mainly siltstone grading to sandstone and shale Locally Fe stnd Generally poorly fractured. though locally brecciated Minor offsetting of So along high ∠ (>50° to LCA) fractures. Dominantly grey to brown shale but locally very pale green tinge especially towards base of interval Rare stringers quartzite - limonite - chlorite to 1mm wide 10-15° LCA	ll? graded So	12	318	39.80	41.80	2.00	<10	50	<1	<1	30	<<<1	x	x	x	x	x	x	limonite				
6								319	41.80	43.80	2.00																	
	3.00	2.66	88.67	55				320	43.80	45.80	2.00																	
45.36																												
	3.00	2.65	88.33	77			8	321	45.80	47.80	2.00	20 locally +40	80	<1-3	1	30-50	1	x	x	occasional	x	40-70	x	limonite	Fe stng (only in shale)	100			
7	3.00	3.00	100.00	57	Slumped and brecciated siltstone/sandstone locally chloritized Quartzite + chlorite ± magnetite veinlets as breccia infillings Fracturing somewhat erratic in orientation, although two dominant trends. fractures +20/m. 30-50° LCA. ~5% BRM. ~1% S²⁻ - pyrite: chalcopyrite 9:1. Normal to dominant fracture orientation.		35	322	47.80	49.80	2.00	locally +60		2-20	3	20-40	4	x	x	common	x	~10	x	abundant chlorite		15 -	<5-80	~5	
								323	49.80	51.80	2.00																	

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Project E.L12/78 NORTH SCAMANDER

Drillhole N° NS 4
Sheet: 2 of 6

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT DENST (per m)	MINERALISATION % FRACT MIN'SD.	MINERALISATION VEIN WIDTH mm RANGE	MINERALISATION VEIN WIDTH mm AV.	MINERALISATION ANG TO LCA	MINERALISATION % BLK ROCK MIN	MINERALISATION VEIN MINERALOGY CASSIT	WOLF.	QTZ.	MUSC.	SULPH.			MINERALISATION WALL ROCK ALTERN.	ASSAYS Sn(%)	ASSAYS W(%)		
3·00	2·88	96·00	56	Pale brown-grey sandstone locally cut by abundant quartz veinlets. S_o almost ⊥l to LCA. Quartzite veinlets post dated by rare siderite bearing veinlets Very patchy chalcopyrite - pyrite ± galena ± sph Mineralization very low in places. Veinlets <5/m, <1-2mm wide 50-70° LCA, occassional quartzite - siderite, barren, post- date mineralization.		<10	NSD 324	51·80	52·80	1·00	locally 1b0 generally 25	65	<1-4	2	25	1	x	x	common	x	<5-40	x	x		50 - 80	5 - 10	5 - 10	<5 5
3·00	2·82	94·00	70				325	52·80	54·80	2·00																		
							326	54·80	56·80	2·00																		Base of oxide zone
3·10	3·14	101·29	91	Non fractured grey shale. S_o sub ⊥l to LCA. Rare quartzite stringers ⊥l to S_o		10	327	56·80	58·80	2·00																		
				Massive grey sandstone. Locally mineralized. Cut by regularly orientated quartz and sulphide veinlets. These are post dated by 1-2cm wide quartzite-siderite-pyrite veinlets. Locally sub-vertical mineralized stringers occur. S^2= chlorite-mag.-siderite stringers. <2/m. <1-6mm. ~10° LCA. 1-3% BRM. sulphide. galena. 20:1. occassional. pyrite chalcopyrite. Barren quartz - siderite veinlets. 60° LCA. Other stringers 0-10° LCA, to 5mm wide. 40% S^2 pyrite: chalcopyrite. sulphide: galena ~ 2:3:4:1 ± siderite + abundant chlorite - mag.			328	58·80	60·80	2·00	10-20	80	1-4	1	25-45	2-3	x	x	abundant	x	15-60	siderite	traces chl. mag		<5 - 70 -	5 - -	80 - <5	10 -
3·00	2·96	98·67	81				329	60·80	62·80	2·00	10-15	65	<1-6	1-2	25-40	1-2	x	x	common	x	<10	x	chlorite rare mag.		10 -	<5	80	<5
3·00	3·00	00·00	75				330	62·80	64·80	2·00																		
				Dirty sandstone ± minor thin shale interbeds. Cut by quartz ± carb. ± chlorite veinlets. locally very irregular Very fine shale bands (laminae?) in sandstone. Veinlets vary from 70° to LCA to sub ⊥l ± LCA. Minor movement evident along steep veinlets.		35	331	64·80	66·80	2·00			<1-7	1-2	30	~1	x	x	✓	x	x			weakly chloritized				
3·00	2·91	97·00	75			25	332	66·80	68·80	2·00																		
				Severely slumped and brecciated sandstone grey-green shale. Locally slight Fe stringers. Abundant chlorite and magnetite + S^2 breccia infilling. Very poorly fractured. Mineralization mainly in very irregular veinlets - obvious planar deformation at ≈ 35° to LCA.			333	68·80	70·50	1·70					35°	5-7	x	x	traces	x	15-25	siderite	chlorite	chloritization				
3·00	3·00	100·00	60			?	334	70·50	72·50	2·00															25 -	15	40	20
3·00	3·00	100·00	56				335	72·50	74·40	1·90																		
				Dominantly grey sandstone. locally very pale brown, with minor shale interbeds cut by weakly mineralized quartzite veinlets. generally regular in orientation. Local brecciation ± quartz - chlorite infilling ± S^2. Veinlets very locally anastomizing. Minor offsetting of S_o apparent clay some veinlets. Patches of brecciation contains quartz + chlorite + siderite + S^2 : ± S^2 ≡ 60% py 20% sulphide + minor galena ± chalcopyrite. Magnetite also in breccia. Stringers. <1/m ≈ 2mm. 1% BRM. occassional quartz abundant chlorite ± 80% S^2 pyrite: sulphide varies 1:1 to 4:1. 5-10° LCA. Quartzite - siderite veinlets. <5/m. 1-3mm, 50-70° LCA ± up to 20% pyrite.		10	336	74·40	76·40	2·00																		
3·00	3·00	100·00	62				337	76·40	78·40	2·00																		
3·00	2·98	99·33	93				338	78·40	80·40	2·00	20	90	<1-5	1-2	25-40	2	x	x	common	x	10	x	chlorite		50 -	-	50	-
							339	80·40	82·40	2·00																		
3·00	3·00	100·00	69				340	82·40	84·40	2·00	local +60	30	<1-7	2-3	20-30	3	x	x	abundant	x	traces	traces siderite	x	chloritization	100 -	-	traces	-
3·00	2·95	98·33	85				341	84·40	86·40	2·00																		
3·00	3·05	101·67	76	Very poorly mineralized/fractured sandstone/shale. Cut by large quartz - siderite veinlets.	⇓?	7	342	86·40	88·40	2·00	<5	100	1-3	2	10	<1	x	x	common	x	10-30	x	chlorite		100 -	-	-	-
				Grey-grey/green to pale brown shale very poorly bedded and mineralized. Scour-mark ⇓. Mainly cut by barren quartz veinlets. generally rare.			343	88·40	90·40	2·00																		
3·00	3·00	100·00	89		⇓	11	344	90·40	92·40	2·00																		
							345	92·40	94·40	2·00															50 -	10	40	-
3·00	2·98	99·33	85	Grey to grey brown sandstone generally poorly mineralized except - small areas of brecciation. Generally poorly fractured. Mineralization is mainly pyrite ± very minor sulphide ± chalcopyrite. Rare barren quartzite ± siderite stringers at very low ∠ to LCA. cut by two large quartz and siderite and pyrite veinlets. Stringers ~ 2mm. <10° LCA. <1/m. quartz - siderite - chlorite to 20% S^2. pyrite : sulphide : galena - 8:1:1.			346	94·40	96·40	2·00	15	20	<1-3	1	35	<1	x	x	common	x	<5	traces siderite	chlorite rare magnetite		90 -	-	10	-
3·00	2·90	96·67	81				347	96·40	98·40	2·00																		
						26	348	98·40	100·40	2·00	35-50	80	1-8	1-2	25-35	5	x	x	common	x	10-80	siderite	chlorite		80 - 90 -	30 - 10 -	10 -	traces -
3·00	2·96	98·67	72			28	349	100·40	102·40	2·00																		

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Drillhole N° NS 4
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METRES	DRILL RUN METRES RECOV	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT. DENS° (per m)	% FRACT. MINED	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV	ANGL TO LCA	% BLK ROCK MIN	VEIN MINERALOGY CASSIT	WOLF.	QTZ	MUSC	SULPH.			WALL ROCK ALTERN.	ASSAYS ~~Sn (%)~~	~~W (%)~~	
14				Interbedded shale and sandstone. locally slumped and or brecciated. Generally poorly mineralized. Veinlets locally anastomose graded So implies ↓ Minor offsets of So along fractures at low α LCA Most mineralization occure in irregular patches of veinlets; or stringers. Very pale green/brown tinge to sandstone and shale between top of interval and 104.00m Chlorite ± pyrite sheen very common on bedding surfaces Local occurrences of sub to euhedral pyrite crystals in host sandstone. Mineralized stringers. <3/m or 4mm. 5-15 LCA°. 2% BRM. quartz - siderite - chlorite - magnetite č up to 80% 5°. generally 20% . pyrite. chalcopyrite sulphide. galena - 1: trace : 1 trace, to 1 0 0 0. Veinlets ≤10/m. 50-70° LCA. quartz - siderite chlorite. pyrite																						
104.40	3.00	2.98	99.33	86		↓	37	NSD 350	102.40	104.40	2.00																
	3.00	2.97	99.00	74			35	351	104.40	106.40	2.00	<10-50	30	<1-3	1	30-40	1	x	x	abundant	x	up to 10	traces siderite.	chlorite				
15								352	106.40	108.40	2.00																
	3.00	3.10	103.33	91			30	353	108.40	110.40	2.00																
110.90								354	110.40	112.40	2.00																
	3.00	2.84	94.67	93	Generally massive grey sandstone č very minor shale Locally cut by anastomose veinlets and sub-vertical quartz ± S^{2} stringers. Flame at 113.4 indicates ↓. Clusters of pyrite crystals up to 3mm in sandstone Quartzite - chlorite stringers č 20% pyrite. <1-7mm. 5/m < 20° LCA	↓	29	355	112.40	114.40	2.00																
16								356	114.40	116.40	2.00	30-40	40	1-5	1-2	25-35	<1	x	x	common	x	up to 90	x	chlorite		80 15 - 5 -		
	3.00	3.00	100.00	82																						100 - - - -		
117.80	3.00	2.79	93.00	54	Interbedded sandstone / shale - generally fairly wide beds (20-60 cms) locally fractured. and č minor occurrences of soft sedimentary deformation. Sandier units generally better mineralized than shalier. Euhedral pyrite crystals in sandstone Veinlets locally anastomose, however fracturing generally low F1 Bulk of low grade mineralization occurs in sub vertical or steep stringers. usually discontinous Veinlets. <10/m, 80% mineralized <1-8, <10-20° LCA. quartz - 5^{2} pyrite chalcopyrite; sulphide; galena 5^{1} 3 1 galena up to 20% of sulphide veinlets BRM ~ 1% Other veinlets post date mineralized ones <5/m. 50-60° LCA. quartz - siderite - pyrite to 25%		30	357	116.40	118.40	2.00																
17								358	118.40	120.40	2.00																
	3.00	2.93	97.67	82				359	120.40	122.40	2.00																
124.95	3.00	3.14	104.67	66				360	122.40	124.40	2.00																
	3.00	3.03	101.00	100			29	361	124.40	126.40	2.00														40 - 10 25 25		
18								362	126.40	128.40	2.00	0-70	95	1-7	2-3	20-45	5	x	x	common	x	0-90	-	rare chlorite		100 - - - -		
					Massively interbedded sandstone / quartzite / and shale. Poorly mineralized and fractured Scours and flames indicate downhole younging (↓) Boudinage (pinch and swell) at 135-136m Few mineralized stringers. sub ⊥ to LCA Rare carb + quartz veinlets Chlorite sheen frequently observed along So planes Veinlets / stringers 10/m. 2-5mm; 1% BRM 20-30° LCA. quartz - siderite - chlorite - pyrite - sulphide - galena 5 4:1 Other quartz - siderite ± chlorite veinlets 50-60° LCA č occasional pyrite			363	128.40	130.40	2.00																
131.34	3.00	2.99	99.67	80			7	364	130.40	132.40	2.00	<5	100	<1-6	3-5	0-10	<1	x	x	occassional	x	50	-	chlorite		80 - - 20 -		
	3.00	2.98	99.33	93			~0	365	132.40	134.40	2.00														100 - - - -		
19						√																			50 - - 50 -		
	3.00	3.00	100.00	94			4	366	134.40	136.40	2.00	10-15	60	<1-2	1	30-50	1	x	x	common	x	10-20	x	chlorite	chloritization	40 - - 50 40		
138.65								367	136.40	138.40	2.00																
	3.00	3.00	100.00	99				368	138.40	140.40	2.00																
20								369	140.40	142.40	2.00																
	3.00	3.05	101.67	53			9	370	142.40	144.40	2.00																
145.20	3.00	3.00	100.00	96	Interbedded shale / quartzite generally grading from quartzite dominant at top of interval to shale down at base Beds vary from <1 to >30 cms in width. Uphole facings indicated by graded So Generally poorly mineralized (low Σ 5^{2}) but locally well fractured and brecciated. Mineralization better developed in quartzite / sandstone rather than shale Stringer style quartz + pyrite veinlets common. generally very steep in orientation. locally anastomosing? cut by siderite ± quartz veinlets. Local occurrence of chlorite ± mag. ± pyrite in breccias. Minor occurrences of euhedral pyrite crystals in quartzite Very minor. trace amounts of po in some veinlets Amount of pyrite in veinlets appears to ↓ as abundance of mag ↑ Occassional quartzite - siderite veinlets. <10/m. 60° LCA č occassional pyrite.	↓?	70	371	144.40	146.40	2.00	30-60	90	<1-6	2-3	10-40	2-10	x	x	abundant	x	0-75	occassional	occassional chlorite	chloritization	>80	-	<5	<10	<5	<1
21	3.00	2.99	99.67	92				372	146.40	148.40	2.00																
								373	148.40	150.40	2.00																
								374	150.40	152.40	2.00																

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Project E.L 12/78 NORTH SCAMANDER

Drillhole N° NS 4

Sheet 4 of 6

METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT. DENSITY (per m)	MINERALISATION % FRACT. MINSD	MINERALISATION VEIN WIDTH mm RANGE	MINERALISATION VEIN WIDTH mm AV.	MINERALISATION ANG. TO LCA	MINERALISATION % BLK ROCK MIN.	MINERALISATION VEIN MINERALOGY CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			MINERALISATION WALL ROCK ALTERN.	ASSAYS Sn (%)	W (%)		
157·40													varies greatly															
3·00	3·00	100·00	89																									
							NSD 375	152·40	154·40	2·00	<10-80	>50	<1-9		<10-35	gen. <2 up to 5	x	x	abundant	x	0-60	occasional	chlorite mag.	–	>75	– <5	<10	traces traces.
3·00	2·89	96·33	74			65																						
22							376	154·40	156·40	2·00																		
3·00	2·99	99·67	98																									
158·44							377	156·40	158·40	2·00																		
				Dominant black shale ± very minor 10cm quartzite / sandstone interbeds. Very poorly mineralized but locally well fractured. Fracturing locally very erratic.																									
						~ 65	378	158·40	160·40	2·00	20-110	< 10	<1-3	1	10-30	<<1	x	x	abundant	x	<5	x	abundant	–	40	– –	–	60
3·00	2·94	98·00	52	Dominant assemblage :– quartz + chlorite ± traces S^2. Total S^2 <<1%																			Chlorite.						
23							379	160·40	162·20	1·80																		
3·00	3·00	100·00	89	Massive grey quartzite ± rare 1-2cm interbeds of grey shale. Interval comprises slumped and / or brecciated quartzite + shale to ~ 166m, then a more uniform fractured quartzite. Generally very poorly mineralized except in very localized patches of brecciation. Total S^2 <<1%, barren in most places. Between 162 - 178m quartz ± chlorite ± S^2 veinlets are very erratic in orientation. Locally anastomosing. Below 176m, veinlets more regular. S^2 more common above 176m, carbonate veinlets more widespread below 176m. Pyrite - sulphide stringers fairly common between 166 - 168m. Siderite + quartz ± pyrite veinlets at 60-80° LCA common; generally 2-4 mm wide, up to 15mm. Siderite commonly occurs as a selvedge ± quartz ± pyrite centre to veinlets.			380	162·20	164·20	2·00																					
164·90							381	164·20	166·20	2·00																		
3·00	3·03	101·00	77			35																	Chloritization					
24							382	166·20	168·20	2·00																		
3·00	2·90	96·67	96				383	168·20	170·20	2·00	60-90	>75	<1-3	1	10 - 25	1	x	x	occasional	x	95	x	x	chlorization	>50	– –	≤50	≤10 ≤10
171·88							384	170·20	172·20	2·00																		
3·00	3·04	101·33	97																									
25							385	172·20	174·20	2·00																		
3·00	2·96	98·67	90				386	174·20	176·20	2·00																		
						0?																						
178·62							387	176·20	178·20	2·00	<25	30	<1-10	1	10 - 25	<1	x	x	common	x	<10-100	x	chlorite	–	0-60	– –	0-40	<5 traces
3·00	2·96	98·67	95		11	16																						
							388	178·20	180·20	2·00																		
26																												
3·00	2·98	99·33	76			~ 20	NSD 389	180·20	182·20	2·00	20	60	1-6	1-2	20-70	1-2	x	x	abundant	x	0-20	x	chlorite	chloritization	20	– –	60	10 10	Abundant siderite and quartz veinlets 60° to LCA.
							390	182·20	184·20	2·00																		
3·00	3·03	101·00	82																									
185·43							391	184·20	186·20	2·00																		
3·00	3·10	103·33	91																									
27							392	186·20	188·20	2·00																		
							393	188·20	190·20	2·00																		
3·00	3·04	101·33	89																									
191·90							394	190·20	192·20	2·00																		
3·00	2·98	99·33	89				395	192·20	193·50	1·30																		
				Interbedded slumped quartzite and shale. Weak green brown tint to shale. Quartzite locally grading to sandstone in alteration. Generally well fractured but not abundantly mineralized. Two dominant sets of veinlets - mineralized (10-40° LCA), barren carbonate (50-70° LCA). Rare stringers (po bearing) ⊥L to LCA. Local occurrences of euhedral pyrite crystals – quartzite.			396	193·50	195·50	2·00																		
28																												
3·00	2·99	99·67	92			20	397	195·50	197·50	2·00	60	50	<1-4	1	10 - 70	<1	x	x	abundant	x	0-15	x	chlorite	Silicification chloritization	>30	– –	>40	<10 <20
198·83																												
3·00	3·00	100·00	(71)			40	398	197·50	199·50	2·00																		
							399	199·50	200·90	1·40																		

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Project E.L12/78 NORTH SCAMANDER

Drillhole No NS 4

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198-83	METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT DENSITY (per m)	MINERALISATION % FRACT MINSD.	MINERALISATION VEIN WIDTH mm RANGE	MINERALISATION VEIN WIDTH mm AV.	MINERALISATION ANGLE TO LCA	MINERALISATION % BLK ROCK MIN.	MINERALISATION VEIN MINERALOGY CASSIT.	MINERALISATION VEIN MINERALOGY WOLF.	MINERALISATION VEIN MINERALOGY QTZ.	MINERALISATION VEIN MINERALOGY MUSC.	MINERALISATION VEIN MINERALOGY SULPH.	MINERALISATION VEIN MINERALOGY	MINERALISATION VEIN MINERALOGY	MINERALISATION WALL ROCK ALTERN.	ASSAYS Sn(%)	ASSAYS W(%)	ASSAYS	
29	3·00	2·97	99·00	96	Mineralized massive quartz. Locally intensely fractured, cut by anastomose veinlets. Locally servely chloritized. Po bearing veinlets and stringers becoming † abundant & † depth. Total S^{2-} ~ 1-2 %. One occurrence of magnetite in quartzite at 209·1m. Strongly mineralized stringers pre-dated by barren quartz veinlets at high ∠ to LCA. Minor offsets along barren veinlets by mineralization. Rare vuggy quartz + siderite + pyrite ± po veinlets and stringers either sub ⊥ to LCA or in to LCA.	GLACIAL		NSD 400	200·90	202·90	2·00																		
205-16	3·00	3·00	100·00	91				401	202·90	204·90	2·00	60+	80	1-3	1-7	<10-50	1-2	x	x	abundant	x	0-80	occassional	chlorite	chloritization	to 10	- <10	to 40	to 10 to 40	No magnetite & Po.
								402	204·90	206·90	2·00																		
30	3·00	2·97	99·00	95				403	206·90	208·90	2·00	40+	40	1-6	1	ververnatic	<1	x	x	abundant	x	0-5	rare	maanetite,	chloritization silcfn.	80	- -	20	traces traces	
211·35	3·00	2·95	98·33	83				404	208·90	210·90	2·00																		
								405	210·90	212·90	2·00																		
31	3·00	3·02	100·67	61	Grey shale cut by anastomose stringers and veinlets of generally barren quartz very poorly mineralized intervals. Rare po in veinlets. Very low total S^{2-}. Local stumping chloritic sheen very common along So. surfaces. Rare shallow siderite + quartz... veinlets. Generally lower RQD than previously encountered broken rock. especially ⊥ to So.		18	406	212·90	214·30	1·40																		
								407	214·30	216·30	2·00	30-80	<30	<1-2	<1	20-40	<<1	x	x	common	x	<5	rare	chlorite	chloritization	50	- - -	-	50	Mainly barren shallow quartzite veinlets pre-dating mineralization.
217·95	3·00	2·97	99·00	61			30	408	216·30	218·30	2·00																		
								409	218·30	220·30	2·00																		
32	3·00	3·00	100·00	71				410	220·30	222·30	2·00																		
	3·00	2·95	98·33	81				411	222·30	224·30	2·00																		
224·76					Mineralized quartzite/shale breccia. severely slumped rather than brecciated in places. Abundant anastomose veinlets and stringers. mainly po bearing. Widespread chlorite and chloritization of host rocks. Best pyrrhotite mineralization between 231 - 232·5m ± minor chalcopyrite. Total S^{2-} ~5% locally 40%.			412	224·30	226·30	2·00																		
	3·00	3·03	101·00	91				413	226·30	228·30	2·00	80+	<80	<1-5	2	<10-60	<3	x	x	common	x	0-80	x	chlorite	chloritization silcfn	traces	- - -	-	to 40	
33	3·00	3·05	101·67	99				414	228·30	230·30	2·00																		
231·79	3·00	3·05	100·00	100		pa po		415	230·30	232·30	2·00	100+	100	<1-8	2	10-25	15	x	x	occassional	x	to 40%	x	chlorite	chloritization silcfn	-	- traces	-	to 100	
					Interbedded quartzite and shale moderately well fractured and mineralized. Quartzite dominant. Flame at 234·5m. implies ⊼. So ∿ ⊥ to LCA. Anastomosing po stringers very common in shale. Chloritization haloes obvious.		80	416	232·30	234·30	2·00																
34	3·00	2·99	99·67	100				417	234·30	236·30	2·00	65+	90	<1-4	1-2	<10-40	2-5	x	x	occassional	x	0-80	occassional	chlorite	chloritization	to 80	to 8		to 100	
							80	418	236·30	238·30	2·00																		
238·33	3·00	3·03	101·00	100				419	238·30	240·30	2·00																		
					Strongly bedded shale/quartzite, shale grey to grey/green colour. Locally well fractured and mineralized. Mainly pyrrhotite ± minor pyrite. Orientation of veinlets rather common. Local truncation and/or diffraction of mineralized veinlets at shale/quartzite contacts.		63	420	240·30	242·30	2·00	60+	+85	1-6	1-2	0-60 dom. 30	5	x	x	common	x	0-100	rare	—				
35	3·00	2·98	99·33	93				421	242·30	244·30	2·00																		
	3·00	3·04	101·33	100	Mineralized quartzite ± minor interbeds green/grey Shale. One dominant fracture orientation. but locally anastomose. Flame at 244·70m implies ⊼. Late siderite and quartz veinlets varies. Rare "subvertical" quartz ± S^{2-} stringers.		~45	422	244·30	246·30	2·00	80+	90	<1-6	1	10-30	2	x	x	occassional	x	0-100 dom. 85	x	x	chloritization	-	- - -	-	100	
245·9	3·00	3·03	101·00	96				423	246·30	248·30	2·00																		
36								424	248·30	250·30	2·00																		
	3·00	2·97	99·00	100																									

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Project E.L 12/78 NORTH SCAMANDER

Drillhole No NS 4

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METRES	DRILL RUN METRES RECOV.	DRILL RUN % RECOV.	RQD	DESCRIPTION	VISUAL LOG	ANGLE BEDDING TO LCA	SAMPLE NUMBER	SAMPLE FROM	SAMPLE TO	SAMPLE INTVL.	MINERALISATION FRACT DENST (per m)	% FRACT MIN'SD	VEIN WIDTH mm RANGE	VEIN WIDTH mm AV.	ANG TO LCA	% BLK ROCK MIN.	VEIN MINERALOGY CASSIT.	WOLF.	QTZ.	MUSC.	SULPH.			WALL ROCK ALTERN.	ASSAYS ~~Sn(%)~~ py aspy	ASSAYS ~~W(%)~~ cp sph	ASSAYS gn po
36																											
3·00	2·97	99·00	100	Mineralized quartz ± interbedded shale, similar to above but + shale content. Locally brecciated, more erratic distribution of po. Microfracturing and offsetting of chlorite ± pyrite common on S_o planes. Mineralization occurs in anastomose veinlets and stringers more abundant in quartzite than shale. Total S^{2-} higher than previous interval (~ 10%)			NSD 425	250·30	252·30	2·00													py aspy	cp sph	gn po
253·36																											
3·00	2·99	99·67	95				426	252·30	254·30	2·00	90+	90	<1 - 6 rarely to 10	2	0 - 40	10	x	x	occassional	x	0 - 100	rare	x	silcfn	trace -	<2 -	- ~100
37																											
3·00	3·00	100·00	91			18	427	254·30	256·30	2·00																	
				Massive grey quartzite locally well fractured though generally poorly mineralized. Local occurrences of anastomosing po stringers most mineralization is sulphide and galena in chlorite veinlets. Interval is locally brecciated. Pyrite becoming prevalent over			428	256·30	258·30	2·00															
3·00	2·96	98·67	83				429	258·30	260·30	2·00	30	100	2 - 12	2 - 4	20 - 40	3	x	x	occassional	x	0 - 100 gen. 40	-	abundant chlorite		to 100 -	to 5 to 60	to 20 to 80
260·10				po. Total sulphides is <5%. Barren anastomose quartz stringers and veinlets common - pre date mineralization.																							
38																											
3·00	3·03	101·00	99				430	260·30	262·30	2·00																	
3·00	2·95	98·33	100				431	262·30	264·30	2·00																	
							432	264·30	266·30	2·00	20	85	<1 - 6	2	10 - 50	2	x	x	occassional	x	0 - 100	occassional	chlorite	Silcfn	0-100 -	- 0-20	traces 0-50
267·35				Quartzite / shale interbeds generally ½ - 1m wide, locally slumped, and brecciated at 277·9m. Only quartz as breccia infilling. Interval is very poorly mineralized. F.I. is very low. Total S^{2-} is <1%. Chlorite and pyrite veinlets very common, especially ill to S_o. One large 3cm pyrite + traces siderite veinlets at 274·8m sub ill to S_o. Very local occurrence of anastomosing veinlets, generally quartz ± pyrite - appear to be vuggy, possibly leached. RQD is low in places - core broken along veinlets and sub ill to stringers ill to LCA.		16	433	266·30	268·30	2·00															
3·00	3·05	101·67	50				434	268·30	270·30	2·00																	
39																											
3·00	3·05	101·67	79				435	270·30	272·30	2·00																	
274·68																											
3·00	3·00	100·00	67				436	272·30	274·30	2·00	40	<50	<1 - 4	1	20 - 60 erratic	<<1	x	x	common	x	<10	rare	chlorite	Silcfn chloritization	100 -	- traces	
40						15	437	274·30	276·30	2·00																	
3·00	3·04	101·33	72				438	276·30	278·30	2·00																	
							439	278·30	280·30	2·00																	
280·74																											
3·00	3·00	100·00	62				440	280·30	282·60	2·30																	
41																											
283·60 E.O.H																											

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