

J. TUACH GEOLOGICAL CONSULTANTS, INC.
DIAMOND DRILL CORE LOG

Sheet No. 1

GPS CO-ORDINATES 13076.31 E 7131.33N
GRID CO-ORDINATES L130+00 E 7175 N
ELEVATION 231.48
DIP AT COLLAR -90°
BEARING _____
TOTAL DEPTH 251.0 CORE SIZE NQ
REMARKS ≈ 200 m NW of BE-95-11

Tests Depth	Dip	Magnetic Bearing	Corrected Bearing
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
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Project No. _____ Hole No. BE-97-19
Property Buchans River Ltd.
NTS 12A/15 Grid Name Buchans East
Date started 03/10/97 Completed 07/10/97
Contractor Logan Drilling
Logged by Jim Harris

Depth & Lithology	Description	Alteration	Mineralization
0 - 14.3	Overburden		
14.3 - 46.8	Altered felsic volcanic white and grey - rhyolite, massive silicic groundmass with small quartz phenos and local sericitic laths, likely after plagioclase - local larger white quartz phenos 18.7 - 18.9 - rubbly core - some fault gouge most quartz phenos are cracked and broken brown coloured areas have 20% + , very fine pyrite @ 41.3 - small clay fault gouge, also at 45.4	strong, pervasive silicification local sericitic alteration patchy pink-felsic alteration network alteration locally gives a fragmental appearance	pyrite 5 - 10% but locally 20% + as disseminated clots, stringers and locally as very fine disseminations in the matrix. minor cpy and sphalerite - galena mainly with thin cherty quartz veinlets but locally disseminated i.e. 22.5 - 23.0
46.8 - 51.7	Still altered felsic, but change in alteration and maybe in protholith, (may be crystal tuff) sharp colour change @ 46.8 but gradational contact unit varies from a brown pyritic matrix flecked with abundant white altered plag? phenos and a few quartz phenos to a pale grey green flecked with fairly large pale green and white altered (sericitic) plag "phenos"? altered "phenos" are soft and weakly effervescent with dilute HCl in brown areas and mainly sericite in lighter coloured areas 47.4 - 47.6 - fault gouge and breccia @ 20 - 25° to the core 47.6 - = 49.0 - white phenos show weak alignment at ≈ 40° to the core 46.8 - 49.65 - brown pyritic 49.65 - 51.1 - pale grey-green sericitic 51.1 - 51.7 - mainly brown pyritic	strong sericite, pyrite - quartz alteration more sericite and pyrite than above	pyrite to 50% in brown areas. 10 - 15% in grey-green zones. local Pb-Zn and cpy mainly in lighter coloured zones 49.65 - 51.1 <1% Pb-Zn and cpy

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Depth & Lithology	Description	Alteration	Mineralization
51.7 - 116.0	Quartz - feldspar porphyry (dacite) light brown and grey - hard rhyolitic groundmass flecked with varying percentages and sizes of white, altered plagioclase laths and often indistinct, small quartz phenos and a few flecks of chlorite locally 64.6 - 64.7 - lithic tuff bed at $\approx 40^\circ$ to the core, mainly white and buff altered rhyolite clasts - quite a few black pyritic altered clasts (look like pumice) 72.9 - 73.5 - broken rubbly core - some fault breccia - also 74.4 - 74.8 75.5 - 77.0 - common quartz-carbonate fracture in fill/stockwork 77.1 - 77.7 - lithic tuff as for 64.6 - 64.7 - lower contact at 45° to the core, upper contact indistinct @ 83.6 - small shear @ 60° to the core 54.0 - 57.0 - commonly vuggy silica veining below ≈ 103.0 m - unit is locally brecciated by alteration 105.6 - 106.0 - possible autobreccia (or hydro-breccia) 106.6 - 107.2 - altered lithic tuff/fragmental as for 64.6 - 64.7 107.2 - 108.7 - possible autobreccia 115.8 - 116.0 - cherty brecciated zone - strongly silicified - disrupted banding/layering - may have been cherty sediment? fault zone?	moderate to locally strong silicification some weak to moderate sericitic alteration local black chlorite on fractures local zones to 0.1 m with quartz and quartz pyrite stockwork veining also some quartz - carbonate veining below ≈ 88.0 m more common wormy silicification some greenish cherty quartz stringers and local black chlorite - sericite alteration increasing downhole strong quartz - sericite $\pm$ chlorite and pyrite alteration below ≈ 107.0 m	51.7 - 88.0 - pyrite 2 - 3% disseminated and with quartz stockwork local short zones (≤ 0.1 m) with 10 - 20% py 70.4 - 70.7 - to 10% pyrite as stockwork stringers and to 1% cpy as coarse blobs with py minor disseminated cpy locally 77.1 - 77.7 - minor cpy and sp 88.0 - 107.0 - pyrite 4 - 5% - increase mainly as stockwork stringers @ 90.5 copy with white quartz blob @ 98.1 - 2 cm x 6 cm blob of 50% py - cpy with white quartz 107.0 - 116.0 - 5 - 10% py as disseminations and as a stockwork with silica and black chlorite $\pm$ sericite local cpy
116.0 - 124.0	Altered pyritic quartz feldspar porphyry (or crystal tuff) as for 46.8 - 51.7 - brown to grey brown flecked with large white altered plagioclase crystals and darker white quartz crystals < 5% quartz and quartz-carbonate stringers 116.8 - 117.1 - white silicified zone with $\approx 5\%$ py @ 123.3 - 5 cm lithic tuff bed @ $40 - 45^\circ$ to the core - contains wispy brown to black pyritic clasts as for surrounding pyritic unit 121.4 - 121.6 - quartz - carbonate veining/fracture infill @ 15° to the core plagioclase crystals are locally weakly aligned @ $\approx 45^\circ$ to the core @ 119.0 and 119.1 - small clay, gouge zones	strong pyrite - quartz - sericite alteration local waxy green sericite after plag?	105.8 - 116.0 2 - 3% sulphides py, cpy, sp and ga and Ba 116.0 - 124.0 - 40 - 50% fine pyrite and some coarser pyrite stringers
124.0 - 130.8	Altered felsic volcanic grey to white with plagioclase and quartz phenos also greenish sericitic "clasts" with wispy - feathery edges - look like large pumice fragments maybe a coarse lithic tuff or volcanic breccia, or the textures may be due to alteration @ 129.3 small fault gouge	strong quartz - sericite alteration	3 - 5% pyrite local disseminated sp-ga and minor cpy, especially 124.0 - 124.4 and 125.0 - 126.2
130.8 - 133.8	Fault zone fault gouge and breccia with occasional black fragments (to 0.10 m) are mainly as for overlying unit		pyrite 2 - 3%

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Depth & Lithology	Description	Alteration	Mineralization
133.8 - 170.0	Altered felsic fragmental grey, brown and buff colours "fragments" with large white plagioclase crystals, or large waxy sericite shards and other buff fragments with small plag and quartz phenos fragmentation locally looks like autobreccia but looks more like an alteration or solution breccia below ≈ 143.0 m @ 144.6 - small fault gouge gradational to mostly buff coloured and strongly silicified @ ≈ 145.0, occasional small sericitic clasts or zones of 20 - 50% py @ 145.2 - small fault gouge and breccia 147.0 - 147.9 - mostly fault gouge and breccia 152.4 - 152.9 - mainly fault gouge and breccia 152.8 - 152.9 - disrupted pieces of thin cherty banding likely multiple injection veining but could be cherty sediment 161.6 - 163.3 - fault gouge and breccia zones throughout 165.7 - 166.0 - mainly fine grained buff siliceous groundmass with small quartz phenos gradational to next zone	strong quartz - sericite ± pyrite alteration of groundmass and locally of phenocrysts local pink potassic alteration 145.2 - 146 - pervasive silicification 10% py 148.0 - 149.0 - local pink "potassic" alteration alteration - especially silicification increasing down hole. More common solution breccias below 166.0 166.0 - 167.5 - hydrothermal breccia? 167.5 - 170.0 - strongly silicified with some stockwork veining fairly common green "mica"?	variable pyrite content brown fragments carry 20 - 50% py, others 3 - 10% 133.8 - ≈ 143 ≈ 20% py 143.0 - 3 - 10% py - local bleb of cpy 143.8 - 145.2 - disseminated Pb-Zn and cpy < 1% (144.6 - 144.7 2 - 3% cpy) 147.6 - 147.7 - silicified block with 3 - 5% sp-ga and cpy 149.5 - 150.0 ≈ 30% py, minor cpy 146.3 - 166.0 - minor disseminated sp-ga and cpy 166.0 - 170.0 - fairly common disseminated sp-ga and cpy, especially 166.0 - 167.5 m
170.0 - 184.7	Felsic volcanic as above but cut by white quartz stockwork and grey to white silicification infilling solution breccias @ 171.8 - small fault gouge, also @ 173.3 m strongest stockwork ≈ 172.0 - 182.0 175.7 - 178.8 - commonly brecciated (hydrothermal) white stockwork veins locally cut and broken by later alteration stockwork veining appears to run @ 15 - 20° to the core locally? small fault gouge @ 184.7	170.0 - 184.6 - strong silicification and stockwork veining - some sericitic alteration. fairly common green "mica" 179.0 - 180.0 - common cherty buff silicification - local chloritic alteration (minor)	170 - 175.7 ≈ 2 - 5% py ≤ 1% cpy, sp and ga 175.7 - 178.8 ≈ 10 - 15% py and 1 - 2% cpy, sp and ga 178.8 - 182.0 - 5 - 8% py 1 - 2% cpy, sp and ga 182.0 - 184.7 - py 3 - 5% minor sp-ga, cpy
184.7 - 245.9	Variably altered felsic volcanic light grey and brown to buff as above small quartz phenos throughout, locally fragmental fragmental texture appears to be mainly due to alteration 193.5 - 194.5 - fault gouge and breccia 194.5 - lithic tuff? with fairly large black chloritic and sericitic "pumice" fragments, also minor chloritic and sericitic matrix. Pale pink as well as white feldspars in silicified clasts and in matrix Clasts mainly white to grey silicified rhyolite porphyry, clast supported 200.4 - 200.5 - pyritic clast or bed 201.2 - 201.3 - semi-massive pyrite clast or bed upper contact at 45° to the core - lower contact at 80° matrix much like Buchans River Fm. dacite tuff @ 202.0 - small fault breccia @ 202.7 - small fault breccia 216.8 - 217.0 - fault gouge and breccia, gouge coated fractures down to 217.5 220.0 - 221.0 - fault gouge and breccia	local strong quartz - sericite pyrite alteration 189.5 - 190.4 mostly dense grey silicification below 194.5 black chloritic alteration with silica-sericite alteration, chloritic alteration, mainly in matrix/pumice 212.0 - 217.5 more intensely silicified with wormy white silica flooding locally 229.0 - ≈ 234.0 - strongly silicified below 234.0 - waxy green and yellow "late" sericite on fractures	stockwork mineralization dies out down hole some small mineralized veinlets down to 186.9 m 8 - 10% pyrite <1% cpy and sp-ga disseminated down to 193.5 193.5 - 204 mostly 2 - 3% pyrite with local zones of 10 - 30% no apparent base metal sulphides 200.4 - 200.5 - 30% + pyrite 201.2 - 201.3 - semi-massive py 202.9 - 203.0 - 20 - 30% py heavier pyrite in chloritic matrix 212.4 - 212.8 - < 1% sp-ga-cpy with silicification

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J. TUACH GEOLOGICAL CONSULTANTS, INC.
DIAMOND DRILL CORE ASSAYS

SHEET NO. _____

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HOLE NO. BE-97-19

PROPERTY Buchans East

Sample No.	From (metres)	To (metres)	Length (metres)	DESCRIPTION	Cu* ppm(%)	Pb* ppm(%)	Zn* ppm(%)	Ag* (ppm)	Au* ppb(g/t)	Ba** ppm	
BE-97-19	22.5	23.0	0.5	Altered felsic vol. 10 - 20% py to 1% sp and cpy	58	330	957	3.7	54		
	35.5	36.5	1.0	Altered felsic vol. 20% + py - minor Pb-Zn	26	117	149	9.3	39		
	49.7	51.1	1.4	Sericitic felsic 10% py - minor Pb-Zn	646	6	391	0.5	5		
	70.4	71.0	0.6	Altered felsic 10% py - minor cpy	562	12	55	0.5	5		
	77.0	77.7	0.7	Lithic tuff - minor cpy and sp	212	13	85	0.5	5		
	98.0	99.3	1.3	Altered felsic 5 - 8% py - minor cpy	204	5	21	0.5	5		
	115.8	116.0	0.2	Silicification with 1 - 3% sulphides	1464 (0.14)	0.60% (0.61)	1.01% (1.05)	17.1 (16.0)	245 (0.08)	755	
	117.1	119.1	2.0	≈ 50% fine py	32	67	68	7.2	105		
	124.0	126.2	2.2	Altered felsic 3 - 5% py - minor sp and cpy	27	78	145	1.9	14		
	147.0	148.0	1.0	Fault and altered - minor cpy and sp	222	976	1945	4.3	53		
	166.0	167.5	1.5	Altered felsic 3 - 5% py <1% cpy, sp and ga	88	317	0.28%	3.2	37		
	167.5	169.0	1.5	Altered felsic 3 - 5% py <1% cpy, sp and ga	15	24	16	0.5	14		
	169.0	170.0	1.0	Altered felsic 3 - 5% py <1% cpy, sp and ga	16	42	8	0.5	5		
	170.0	171.9	1.9	Stockwork min	17	36	124	0.5	20		
	171.9	173.0	1.1		997	6	54	0.5	5		
	173.0	174.5	1.5		68	119	679	0.5	30		

* (-) Duplicate assays performed by Bondar-Clegg; Val d'Or, PQ

** Assays performed by Bondar-Clegg; Val d'Or, PQ

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Sample No.	From (metres)	To (metres)	Length (metres)	DESCRIPTION	Cu* ppm(%)	Pb* ppm(%)	Zn* ppm(%)	Ag* (ppm)	Au* ppb(g/t)	Ba** ppm	
BE-97-19	174.5	175.6	1.1	Altered felsic vol. with stockwork min.	424	515	513	0.5	17		
	175.6	177.0	1.4	Altered felsic vol. with stockwork min.	253 (0.02)	0.51% (0.52)	2145 (0.16)	13.7 (12.6)	84 (0.08)	4783	
	177.0	178.5	1.5	Altered felsic vol. with stockwork min.	981 (0.09)	396 (0.04)	1397 (0.09)	4.4 (5.4)	59 (0.06)	1076	
	178.5	180.0	1.5	Altered felsic vol. with stockwork min.	3882 (0.33)	0.26% (0.26)	0.24% (0.19)	10.6 (10.8)	44 (0.03)	994	
	180.0	182.0	2.0	Altered felsic vol. with stockwork min.	2794 (0.24)	983 (0.08)	0.64% (0.60)	10.6 (8.8)	62 (0.06)	869	
	182.0	184.0	2.0	Altered felsic vol. with stockwork min.	863 (0.08)	137 (<0.01)	264 (<0.01)	3.1 (3.6)	33 (0.02)	988	
	188.5	190.0	1.5	Altered felsic 5 - 8% py, minor sp, ga and cpy	351 (0.03)	343 (0.04)	0.26% (0.20)	0.8 (1.0)	26 (0.02)	786	
	212.4	213.4	1.0	Altered felsic 3 - 5% py, minor sp, ga and cpy	105	261	395	0.8	28		
	218.2	219.6	1.4	Altered felsic 4 semi-massive py bands	25	106	193	0.5	5		

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