

Project: FWZ

Hole: NB20-005

Property:	NIDD	Survey Type:	GPS	Logged By:	L.Gibbard	Hole Type:	DDH	
Prospect:	Boundary	Survey By:	J.Milton	Date Started:	2020-09-14	Company:	Fireweed Zinc	
UTM Grid:	NAD83_09	Date Surveyed:		Date Completed:	2020-09-19	Core Size:	HQ3	
UTM East:	422277	Survey Accuracy:	GPS_GLO +/- dm	Drill Company:	NewAge	Casing Status:	Left in hole	
UTM North:	7010313	Grid Convergence:	-1.03	Drill Rig:	A5_2	Casing Depth (m):	36	
Elev. CGVD28 (m):	1129	Declination:	19.5	Drill Started:	2020-09-11	Reduced (m):		
Hole Status:	Complete	Dip:	-50	Drill Completed:	2020-09-16	Reduced Size:		
Hole Purpose:	EXPL	Length (m):	143	Approved By:		Oriented?:	Oriented	
		Comments:					Grouted?:	Yes

Casing to 36 m. Black mudstone rubble (Overburden? Fault? Subcrop?) from 36-55 m. Fuller Lake Member black mudstone from 55-77 m. Fault from 77-80 m. Niddery Lake Member from 80-135 m, some very minor sphalerite/galena mineralization in this interval. Road River Group Sapper Formation from 135- 143 m EOH.

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	TN Azimuth	Mag. Azimuth	Grid Azimuth	Mag. Field	Roll	Accuracy	Confidence	Accept Values?	Comments
0	COLLAR	Unknown	2020-09-20	-50	213.97	194.47	215			Compass +/- degrees	Good	☒	
65	DOWNHOLE	Other	2020-09-14	-51.4	210.6	191.1	211.63	57888		Reflex EZ-trac +/- degrees		☒	
131	DOWNHOLE	Other	2020-09-14	-51.6	193.1	173.6	194.13	52308		Reflex EZ-trac +/- degrees		☒	Hole producing water.

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	ZnEquiv pct	Pb Best pct	Zn Best pct	Cu Best ppm	Ag Best ppm
0.00	36.00	CASE Casing									
Poor recovery in interval. Material recovered is dominantly variably weathered black mudstone (+/-conglomerate) clasts.											
36.00	54.55	OVER Overburden									
Poor recovery in interval. Material recovered is dominantly mudstone clasts (+/- mudstone containing pyritic beds, massive pyrite). Could be subcrop or fault material.											
54.55	77.00	BMST Black mudstone									
		Black VF									
Black carbonaceous mudstone. Black mudstone is massive, contains some bedding parallel (?) pyrite bands, possibly some very minor silt bands, and seems to contain faint scattered radiolaria. Some fractures are coated in a graphitic sheen. Two 10-20 cm scale bed of grey muddy material containing abundant disseminated pyrite and some amount of fine grained barite (2.6 % Ba from XRF). Interval is significantly fractured (likely the damage zone of the fault below the interval) , and few structural measurements are possible. Some probable bedding taken from bedding parallel pyritic bands show alpha angles of 55 degrees. Fracturing intensity increases continuously with depth throughout the interval. A significant section of mostly barren quartz (+/- Fe carb, pyrite) stockwork veining and breccia (black mudstone and massive pyrite fragments are found within the breccia) is found in the interval. No sphalerite mineralization is found in the interval. The interval ends where the intense fracturing becomes gouge rich and starts to look like a fault core.											
<<Struc: 55.52 - 55.52: Bedding>> Taken from bedding parallel pyrite band.											
<<Struc: 58.82 - 58.82: Bedding>>											
54.55	56.00		1.45	3205299							
56.00	57.50		1.50	3205301							
57.50	59.00		1.50	3205303							
59.00	62.00		3.00	3205304							
62.00	63.50		1.50	3205305							
63.50	65.00		1.50	3205306							
65.00	66.47		1.47	3205307							
66.47	68.00		1.53	3205308							
68.00	69.00		1.00	3205309							
69.00	70.00		1.00	3205310							
70.00	71.00		1.00	3205311							
71.00	74.00		3.00	3205312							
74.00	76.22		2.22	3205313							
76.22	77.00		0.78	3205314							

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Zn Equiv pct	Pb Best pct	Zn Best pct	Cu Best ppm	Ag Best ppm
77.00	80.22	GOUG Fault gouge Black VF	77.00	80.22	3.22	3205315					
The gouge rich core of a minor fault. The gouge in this interval is comprised of black clay, containing chaotically mixed mm-cm scale angular fragments of black mudstones and quartz. Some black mudstone fragments have a graphitic sheen.											
80.22	81.00		80.22	81.00	0.78	3205316					
81.00	83.00		81.00	83.00	2.00	3205317					
80.22	135.38	BMST Black mudstone Black VF									
Heavily fractured, poorly mineralized black cherty mudstone. Black mudstone is chert rich, most sections are hard when scratched, appear to be variably polished, and broadly have a bluish tint, while some have very blue tinged cm scale cherty bands. Radiolaria are visible disseminated within the rock, at times concentrated in cm scale cherty beds. Bedding parallel bands, disseminations, and nodules of pyrite are common in the black mudstone. A minor 50 cm scale bed of more silt dominated material is present, distinguishable from the rest of the unit by its massive texture, grey colour, and its distinct rheology (bed is cut by a stockwork of quartz +/- Fe carb veins infilling variably oriented hairline fractures). Some smaller mm - cm scale silt - sand beds are present, but very rare. Interval appears quite deformed, with strong penetrative fabrics and distinct folding obvious in some sections, as well as high degrees of brittle fracturing throughout. Assuming the penetrative fabric is foliation it shows alpha angles of ~35 degrees. Bedding appears variable, with alphas between 40 and 85 degrees (though most commonly ~ 40 degrees). Very minor galena - sphalerite - Fe carb - pyrite mineralization occurs in rare diffuse irregular veins within the interval, and galena within some rare quartz veins (remobilized?). Barren pyrite veins are common. Some rare barren Fe carb stockwork/breccias present. All sets of veins occur at a full range of alpha angles. Some silica rich breccia also occurs, with monomict black cherty mudstone fragments in a jigsaw breccia, surrounded by a matrix of a fine grained light blue-white silica rich material. The interval ends with a gradational contact with a light grey mudstone unit.											
<<Min: 92 - 135.38: 1% Pyrite / 0.5% Siderite / 0.1% Sphalerite / 0.1% Galena>> Very minor galena - sphalerite - Fe carb - pyrite mineralization occurs in rare diffuse irregular veins within the interval, and galena within some rare quartz veins (remobilized?). Barren pyrite veins are common. Some Fe carb stockwork/breccia present.											
<<Struc: 88.18 - 88.18: Foliation>> Penetrative fabric											
<<Struc: 90.75 - 90.75: Bedding>>											
<<Struc: 91.11 - 91.11: Bedding>>											
<<Struc: 92.13 - 92.13: Bedding>>											
<<Struc: 98.42 - 98.42: Bedding>>											
<<Struc: 102.97 - 102.97: Bedding>>											
<<Struc: 109.79 - 109.79: Bedding>>											
<<Struc: 110.49 - 110.49: Bedding>>											
<<Struc: 111.32 - 111.32: Bedding>>											
<<Struc: 122.45 - 122.45: Bedding>>											
<<Struc: 125.92 - 125.92: Bedding>>											
			83.00	86.00	3.00	3205318					
			86.00	87.00	1.00	3205319					
			87.00	88.00	1.00	3205321					
			88.00	89.00	1.00	3205323					
			89.00	90.00	1.00	3205324					
			90.00	91.00	1.00	3205325					
			91.00	92.00	1.00	3205326					
			92.00	93.00	1.00	3205327					
			93.00	94.00	1.00	3205328					
			94.00	95.00	1.00	3205329					
			95.00	97.00	2.00	3205330					
			97.00	98.00	1.00	3205331					

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	ZnEquiv pct	Pb Best pct	Zn Best pct	Cu Best ppm	Ag Best ppm
			98.00	100.00	2.00	3205332					
			100.00	102.00	2.00	3205333					
			102.00	103.00	1.00	3205334					
			103.00	104.00	1.00	3205335					
			104.00	105.00	1.00	3205336					
			105.00	106.00	1.00	3205337					
			106.00	107.00	1.00	3205338					
			107.00	108.00	1.00	3205339					
			108.00	109.00	1.00	3205341					
			109.00	110.00	1.00	3205343					
			110.00	111.00	1.00	3205344					
			111.00	112.00	1.00	3205345					
			112.00	113.00	1.00	3205346					
			113.00	114.00	1.00	3205347					
			114.00	115.00	1.00	3205348					
			115.00	116.00	1.00	3205349					
			116.00	117.00	1.00	3205350					
			117.00	118.00	1.00	3205351					
			118.00	119.00	1.00	3205352					
			119.00	122.00	3.00	3205353					
			122.00	124.00	2.00	3205354					
			124.00	125.00	1.00	3205355					
			125.00	126.00	1.00	3205356					
			126.00	127.00	1.00	3205357					
			127.00	128.00	1.00	3205358					
			128.00	129.00	1.00	3205359					
			129.00	130.00	1.00	3205361					
			130.00	131.00	1.00	3205363					
			131.00	132.00	1.00	3205364					

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	ZnEquiv pct	Pb Best pct	Zn Best pct	Cu Best ppm	Ag Best ppm
			132.00	134.00	2.00	3205365					
			134.00	135.38	1.38	3205366					
			135.38	136.00	0.62	3205367					
135.38	143.00	MDST Mudstone	136.00	137.00	1.00	3205368					
Light Grey VF Unmineralized light grey slightly calcareous mudstone with wispy black laminations. Mudstone effervesces when powdered and reacted with 10% HCl, it does not effervesce normally (could be very slightly calcareous or dolomitic). Wispy black laminations are pervasive, planar, and slightly irregular (they bifurcate, undulate slightly, and fade in and out). The interval is somewhat fractured, but not intensely enough to describe as a fracture zone. Bedding alphas are consistently in the low to medium range, between 23 and 37 degrees, rare beta measurements (n=2) show angles of ~30. No foliation was measured in the interval. Abundant semi massive pyrite generally in fuzzy, irregular, somewhat bedding parallel bands is found in the interval. No sphalerite mineralization was observed. Some barren quartz veins are present in the interval, with alphas of ~45-50 degrees. The interval ends with the end of hole at 143 m. <<Min: 135.38 - 143: 15% Pyrite>> Semi massive pyrite generally in fuzzy, irregular, somewhat bedding parallel bands. <<Struc: 136.55 - 136.55: Bedding>> <<Struc: 136.79 - 136.79: Bedding>> <<Struc: 137.36 - 137.36: Bedding>> <<Struc: 138.73 - 138.73: Bedding>> <<Struc: 141.74 - 141.74: Bedding>>											
			137.00	138.00	1.00	3205369					
			138.00	140.00	2.00	3205370					
			140.00	141.00	1.00	3205371					
			141.00	142.00	1.00	3205372					
			142.00	143.00	1.00	3205373					

End of Hole @ 143