

**Project:** FWZ

**Hole:** EZ18-004

<b>Prospect:</b>	End Zone	<b>Survey Type:</b>	DGPS	<b>Logged By:</b>	S. Bartlett	<b>Hole Type:</b>	DDH
<b>UTM Grid:</b>	NAD83_09	<b>Survey By:</b>	C.Allessandrini	<b>Date Started:</b>	2018-08-26	<b>Hole Diameter:</b>	
<b>UTM East:</b>	433125.049	<b>Date Surveyed:</b>	2018-09-08	<b>Date Completed:</b>	2018-08-29	<b>Core Size:</b>	HQ3
<b>UTM North:</b>	7004924.383	<b>Survey Accuracy:</b>		<b>Drill Company:</b>	New Age	<b>Casing Pulled?:</b>	<input type="checkbox"/>
<b>UTM Elevation (m):</b>	1396.654	<b>Grid Convergence:</b>	-1.19	<b>Drill Rig:</b>		<b>Casing Depth (m):</b>	3.67
<b>Local Grid:</b>		<b>Azimuth:</b>		<b>Drill Started:</b>		<b>Reduced (m):</b>	
<b>Local East:</b>		<b>Dip:</b>	-51	<b>Drill Completed:</b>		<b>Reduced Size:</b>	
<b>Local North:</b>		<b>Length (m):</b>	76.4	<b>Approved By:</b>		<b>Oriented?:</b>	<input type="checkbox"/>
<b>Local Elevation (m):</b>		<b>Comments:</b>				<b>Geotech?:</b>	<input type="checkbox"/>
<b>Hole Status:</b>	Completed						
<b>Hole Purpose:</b>							

Depth (m)	Survey Method	Survey By	Date Surveyed	Dip	Measured Azimuth	Correction Factor	Corrected Azimuth	Mag. Field	Accept Values?	Comments
1.5	GYRO	jl	2018-08-29	-50.83	211.68				<input checked="" type="checkbox"/>	
3	COLL	C.Allessandrini	2018-08-26	-50	212				<input checked="" type="checkbox"/>	
10.5	GYRO	jl	2018-08-29	-50.48	211.85				<input checked="" type="checkbox"/>	
19.5	GYRO	jl	2018-08-29	-50.3	211.52				<input checked="" type="checkbox"/>	
28.5	GYRO	jl	2018-08-29	-50.18	211.17				<input checked="" type="checkbox"/>	
37.5	GYRO	jl	2018-08-29	-50.02	211.26				<input checked="" type="checkbox"/>	
46.5	GYRO	jl	2018-08-29	-49.76	210.99				<input checked="" type="checkbox"/>	
55.5	GYRO	jl	2018-08-29	-49.47	211.23				<input checked="" type="checkbox"/>	
64.5	GYRO	jl	2018-08-29	-49.28	210.63				<input checked="" type="checkbox"/>	
73.5	GYRO	jl	2018-08-29	-49.18	210.56				<input checked="" type="checkbox"/>	

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
0.00	3.67	CASE Casing									
3.67	45.84	MDST Mudstone									
<p>The unit collars into a heavily faulted, broken, blocky, and oxidized interval of dark grey, siliceous silty mudstone interlaminated/interbedded by 1 mm to 10 cm wide grey, siliceous, sandy silty beds. From surface until ~9 m the unit has variable 10 cm wide patches of massive pyrite and white quartz that is heavily weathered. The interval is veined by &lt;2 mm to hairline quartz veining (being &lt;2% of the interval content). &lt;5% of the unit is &lt;10 cm wide beds of clast-supported monomictic diamictite ( e.g. 16.74m). Trace mineralisation is present throughout the unit occurring as 3 mm to 1 cm red laminae of sphalerite and trace galena in discontinuous quartz veinlets. A beige/green sericitic alteration is weakly present throughout selectively altering silty laminae and silty fragments within the mudstone. Bedding through the interval is generally 35 to 50 degrees TCA, excepting a zone from 31.0 to 32.0 m where it lowers to 22 to 18 degrees TCA. At both 40.44 m and 45.24 m, well developed cross-laminations that are truncated uphole and have concave troughs pointing uphole are present, indicating younging uphole. Beginning at 43.83 m, laminae/beds are increasingly pyrite rich with brown pyrite comprising up to 85% of the content of some 1mm to 1cm wide laminae. This pyrite content increases downhole towards the lower contact with massive sulphide. A hairline fault-fracture foliation develops at 45.78 which is sub-parallel to the 7 cm wide fault that separates the mudstone from underlying massive sulphide. From 17.80 m to 18.52 m, minor fine grain mafic dyke material is present and cut by a 10 cm wide quartz vein.</p> <p>&lt;&lt;Min: 3.67 - 9.63: &gt;&gt; Heavily oxidized zone that has one 10 cm section of pitted massive pyrite and hairline ankerite veins throughout.</p> <p>&lt;&lt;Min: 13.2 - 13.25: &gt;&gt; One cryatals of quartz vein-hosted 1mm wide, anhedral galena.</p> <p>&lt;&lt;Min: 15.41 - 15.53: &gt;&gt; One 3mm wide laminations of red sphalerite parallel to beddign at 33 degrees TCA.</p> <p>&lt;&lt;Min: 28.04 - 28.1: &gt;&gt; One crystal of mm-scale galena in a quartz veinlet.</p> <p>&lt;&lt;Min: 30.64 - 30.71: &gt;&gt; One 5mm quartz vein with very fine grained red sphalerite throughout.</p> <p>&lt;&lt;Min: 43.84 - 45.84: &gt;&gt; Brown pyrite is present as very fine grained disseminations within individual laminae. It increases in content from 10% to 40% towards the lower contact of this interval.</p> <p>&lt;&lt;Alt: 18 - 18.61: Strong Quartz&gt;&gt; Silica alteration related to two 5 cm and 10 cm wide quartz veins along with hairline to 5 mm wide cross cutting quartz veins.</p> <p>&lt;&lt;Struc: 8.15 - 8.15: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 15.51 - 15.51: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 18.8 - 18.8: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 19.25 - 19.25: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 24.13 - 24.13: bedding&gt;&gt;</p> <p>&lt;&lt;Struc: 27.2 - 27.2: bedding&gt;&gt;</p>											
3.67	5.00		3207366	0.007	2.2	158.9	700	500			
5.00	6.43		3207368	0.007	6.9	104.9	4300	200			
6.43	8.00		3207369	0.007	1.8	112.3	1200	200			
8.00	9.63		3207370	0.008	1.5	73.1	1000	200			
9.63	11.00		3207371	0.006	0.9	67.6	500	50			
11.00	12.71		3207372	0.007	2.2	54.1	1600	100			
12.71	13.40		3207373	0.007	1	81.3	800	200			
13.40	15.00		3207374	0.007	2.4	24.3	1800	100			
15.00	16.50		3207375	0.006	1.5	63.8	800	2300			
16.50	17.82		3207376	0.007	1.7	67.8	1000	100			
17.82	18.52		3207377	0.006	0.25	46.1	200	100			
18.52	19.90		3207378	0.007	0.7	64.8	400	100			
19.90	21.70		3207379	0.009	0.25	69.8	200	300			
21.70	23.00		3207380	0.007	0.8	48.4	400	50			
23.00	24.50		3207381	0.008	0.5	80.9	200	400			

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 32.38 - 32.38:	bedding>>		24.50	26.10	1.60	3207382	0.01	1.1	45.9	700	500
<<Struc: 32.48 - 32.48:	bedding>>		26.10	27.45	1.35	3207383	0.013	1.5	56.4	900	200
<<Struc: 33.35 - 33.35:	bedding>>		27.45	28.90	1.45	3207384	0.01	2.1	58.5	1200	300
<<Struc: 39.17 - 39.17:	bedding>>		28.90	30.50	1.60	3207385	0.009	1.5	42	500	1300
<<Struc: 40.44 - 40.44:	bedding>>		30.50	33.00	2.50	3207386	0.01	1.3	45.5	300	900
<<Struc: 41.02 - 41.02:	bedding>>		33.00	36.00	3.00	3207387	0.008	0.25	69	50	50
<<Struc: 45.24 - 45.24:	bedding>>		36.00	39.00	3.00	3207388	0.012	0.5	69.6	50	50
			39.00	40.68	1.68	3207389	0.011	0.7	73.9	50	50
			40.68	42.00	1.32	3207390	0.009	0.6	76.7	50	50
			42.00	43.38	1.38	3207391	0.011	0.6	74.4	100	100
			43.38	45.00	1.62	3207392	0.02	0.8	37.7	100	100
			45.00	45.84	0.84	3207393	0.017	46.9	109.1	57600	5800
			45.84	46.32	0.48	3207395	0.017	106	244.3	144800	25100

## 45.84 46.31 MXSX Massive Sulphide

An interval of massive sulphide. Sulphides comprise: pyrite (58%), Galena (15%), Pyrrhotite (8%) sphalerite (6%). The remainder of the interval is white to grey quartz (10%) and ankerite (3%). Pyrite in the interval is anhedral and massive, forming the massive matrix of the interval alongside white quartz. Red/brown sphalerite content is variable throughout reaching up to 40% in 1 cm wide irregular shaped patches, but also present throughout as a very fine grained red/brown dissemination within the pyrite and quartz. Galena content is also highly variable and either completely absent or occurring in 2 cm wide sections where it is up to 50% of content and occurs interstitial to pyrite. Pyrrhotite occurs as a bronze/brown, very fine grained dusting that can concentrate in 5 mm wide patches or else rim the massive pyrite. The lower contact is sharp and marked by the first appearance of altered mudstone.

<<Min: 45.84 - 46.31: >> Pyrite in the interval is anhedral and massive, forming the massive matrix of the interval alongside white quartz. Red/brown sphalerite content is variable throughout, reaching up to 40% in 1 cm wide irregular shaped patches, but also present throughout as a very fine grained red/brown dissemination within the pyrite. Galena content is also highly variable and either absent or occurring in 2cm wide sections where it is up to 50% of content and occurs interstitial to pyrite. Pyrrhotite occurs as a bronze/brown, very fine grained dusting that can concentrate in 5mm wide patches or else rim the massive pyrite patches. The lower contact is sharp and marked by the first appearance of altered mudstone.

<<Alt: 45.84 - 53.87: Strong Quartz / Moderate Sericite>> Silica alteration affects the mudstone selectively throughout this interval, turning it to a hard, tan/grey. Alteration waxes and wanes in intensity on a metre scale-throughout generally increasing to strong and pervasive from selective and moderate in areas of increased strain deformation and sulphide mineralization. Sericite alteration, which may be after silica, increases in intensity from weak to strong proximal to qtz-ankerite veins and alter both the mudstone clasts and matrix in sheared areas to a tan/beige, which is distinguishable from silica alteration due to its relative softness.

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
46.31	52.61	<b>MDST Mudstone</b>	46.32	46.94	0.62	3207396	0.013	174.4	184	238600	34000
<p>The interval is a complex, chaotic melange of various overprinting deformation and mineralisation events. Where most undisturbed/unaltered, the unit is a black, siliceous mudstone with 1 mm to 1 cm wide, light grey sandy silt laminae/beds. In unmineralized/unaltered intervals (e.g. 50.0 to 50.08 m) this silty laminated mudstone can be fractured/internally brecciated with 1 mm to 1 cm wide angular clasts entrained within a black mudstone matrix that forms a shear fabric undulating through the core at 35 to 50 degrees TCA. Silty laminae/beds are variably silica altered (ranging in intensity from weak to strong across individual clasts/beds) changing colour to grey/beige and increasing in hardness. At 47.0 m are several cm scale, attenuated beds/clasts of mudstone in a black muddy matrix (per above) that have silica alteration fronts that increase in intensity across the individual bed and terminate at the contact with the mudstone matrix (INTERP: silica alteration predates deformation/shearing?). Within the unit are 10 cm to 50 cm wide zones where sulphide content exceeds 15% and thus is semi-massive sulphide. Sulphides present include silver-grey galena, brick red sphalerite, brown pyrite, also present is quartz and ankerite. Mineralization within the interval can be broken into two distinct assemblages separated by a relatively unmineralized section from 50.34 m-51.06 m (See mineralisation tab). Of particular note in these mineralized intervals are shear fabrics observed in rotated clasts - at 46.74 m a 5mm rounded clast of red sphalerite and black mud shows a delta shear fabric with sinistral rotation. Bedding throughout the unit is relatively steep at 45 to 50 degrees TCA and the throughgoing fault/fracture/shear foliation is generally sub-parallel to this at 35-50 degrees. A graded 10 cm wide sandy bed at 50.05 m indicates younging up-hole. The contact between the mudstone and underlying conglomerate is sharp and defined by a 5 cm wide zone of pyrite-galena that ends abruptly at the appearance of grey chert clasts.</p>											
<<Min: 46.31 - 50.34: >> Brick red sphalerite comprises 5% of this interval locally concentrating to up to 35% in some 10 cm wide sections. Sphalerite is brick red, and occurs as wispy 1 mm to 1 cm wide laminae and as irregularly shaped, 1 mm to 1 cm wide patches that are entrained within galena. One 5 mm wide red sphalerite clast within galena shows a well developed sigma shear clast with sinistral shear sense. Galena comprises 7% of the interval ,locally concentrating up to 60% in some 10 cm wide intervals. Galena is generally anhedral and massive, forming a pitted appearance where most concentrated. Where galena is present it is texturally destructive cutting laminations in sphalerite and entraining clasts of black mudstone and sphalerite.			46.94	47.81	0.87	3207397	0.012	21.8	127.9	25500	27700
<<Min: 50.34 - 53.84: >> This separate phase of mineralisation overprints the contact of silt laminated mudstone and chert pubble conglomerate. The mineralization is defined by 5 cm to 60 cm wide zones of coarse 5 mm to 1 cm wide tan/brown ankerite, 2 mm to 5 mm wide discontinuous bronze brown very fine grained pyrrhotite patches, texturally destructive cm-scale patches of coarse (<5mm) galena /interstitial pyrite, and red/brown very fine grained crystalline sphalerite that dusts sulphide patches throughout and is present as coarser (5 mm to 1 cm) crystals within white qtz. These quartz-ankerite +/- sulphide patches vary in geometry occurring as <1 cm wide veins, as cm-scale patches, and as massive zones.			47.81	48.85	1.04	3207398	0.012	185.5	82.2	247000	41600
<<Struc: 47.11 - 47.11: foliation>> Throughgoing foliation related to faulting/shearing.			48.85	49.80	0.95	3207400	0.011	87.5	202.9	128100	68800
<<Struc: 48.4 - 48.4: foliation>> Throughgoing foliation related to faulting/shearing.			49.80	50.52	0.72	3207401	0.003	31.9	144.4	44800	600
<<Struc: 49.59 - 49.59: bedding>>			50.52	51.00	0.48	3207402	0.003	0.9	55.4	900	50
<<Struc: 49.85 - 49.85: bedding>>			51.00	51.69	0.69	3207403	0.006	92	435.3	149500	400
<<Struc: 50.04 - 50.04: bedding>>			51.69	52.60	0.91	3207404	0.01	85.5	298.8	142100	1100

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 50.4 - 50.4: bedding>>			52.60	53.92	1.32	3207405	0.004	30.3	309.3	53400	3100
52.61	53.87	CONG Conglomerate									
Though the interval is heavily obscured by qtz-ankerite-pyrite-galena-pyrrhotite-sphalerite mineralisation (See Mineralisation tab), the underlying lithology is a polymictic, matrix supported, chert conglomerate with angular to sub-angular , 1 mm to 5 mm wide clasts of grey, black, and white chert. The matrix is light grey and siliceous, and trace ankerite is present at the margins of clasts (possible alteration?). In the first 5 cm of this interval the matrix is altered to a tan/beige but is still hard (continuation of silica alteration from above?).											
<<Min: 53.84 - 76.4: >> Trace red brown sphalerite occurs as <3 mm wide red sphalerite crystals that overprint white wilty laminae/beds and occur within quartz vein material. Sphalerite observed at 59.89 m, 64.0 m, 73.55 m but is likely present in ttrace amounts through the unit.											
53.87	76.40	MDST Mudstone									
The unit comprises 80% black silty mudstone and 20% white / green tinged siltstone. The unit is very soft with a soapy feel in sharp contrast to the overlying siliceous conglomerate and mudstone. Both the frequency and width of siltstone laminations increases from the upper contact where they are <5 mm wide and <5% of the overall rock content towards the EOH where they are up to 2 cm wide (average size 5 mm to 1 cm) and up to 35% of the rock content. Trace, internally zoned from orange to red, <5 mm wide sphalerite is present in qtz-veins throughout the interval. Structurally, the interval tracks the limb of a fold. Unfortunately, poor recovery of orientation lines (Complete failure on the part of the drillers to block and mark appropriately) has contributed to poor recovery of beta angles for most of the interval. However, one limb of the fold is orientated at an alpha of 50 to 65 degrees TCA. The other limb is shallower at 16 to 24 degrees TCA. A moderately well developed axial planar cleavage/foliation is present at 45 to 60 degrees TCA. Deformation in the unit shows both brittle and ductile fabrics with a rotated clasts at 74.44 m showing sinistral rotation. From 61.76 m to 64.34 m, folding/deformation is chaotic with white silty beds pytmagically deformed and refolding present (INTERP: possibly zone of interference folding?). From 68.91 m to 67.63 m bedding is very low at ~10 degrees TCA but foliation continues to be 45 to 60 degrees TCA and very well developed. Beyond ~69.0 m folding returns to the asymmetrical two-limb style as per above with an S-fold at 72.65 m.											
<<Struc: 54.83 - 54.83: bedding>>											
<<Struc: 55.55 - 55.55: bedding>> Redrilling indicates											
<<Struc: 56.32 - 56.32: bedding>>											
<<Struc: 56.83 - 56.83: bedding>>											
<<Struc: 56.87 - 56.87: foliation>>											
<<Struc: 57.27 - 57.27: foliation>>											
<<Struc: 59.97 - 59.97: foliation>> Redrill at the uphole end of this piece makes me doubt the accuracy of bottom mark											
<<Struc: 59.98 - 59.98: bedding>> Redrill at the uphole end of this piece makes me doubt the accuracy of bottom mark											
<<Struc: 62.78 - 62.78: bedding>>											

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
<<Struc: 64.01 - 64.01:	foliation>>										
<<Struc: 64.25 - 64.25:	bedding>>										
<<Struc: 64.48 - 64.48:	bedding>>										
<<Struc: 64.67 - 64.67:	bedding>>										
<<Struc: 64.73 - 64.73:	bedding>>										
<<Struc: 66.22 - 66.22:	bedding>>										
<<Struc: 67 - 67:	foliation>>										
<<Struc: 67.21 - 67.21:	bedding>>										
<<Struc: 67.39 - 67.39:	foliation>>										
<<Struc: 71.24 - 71.24:	bedding>>										
<<Struc: 73.64 - 73.64:	bedding>>										
<<Struc: 74.09 - 74.09:	foliation>>										
<<Struc: 75.23 - 75.23:	bedding>>										
<<Struc: 75.61 - 75.61:	bedding>>										
			53.92	55.51	1.59	3207407	0.004	0.25	22.1	100	50
			55.51	57.00	1.49	3207408	0.007	0.25	29	50	50
			57.00	58.50	1.50	3207409	0.006	0.25	23	50	100
			58.50	60.00	1.50	3207410	0.004	0.25	18.7	50	50
			60.00	61.45	1.45	3207411	0.003	0.25	31.7	100	100
			61.45	63.00	1.55	3207412	0.005	0.25	32.1	100	300
			63.00	64.50	1.50	3207413	0.004	0.25	20	50	300
			64.50	66.00	1.50	3207414	0.004	0.25	53.1	50	200
			66.00	67.50	1.50	3207416	0.003	0.25	33.3	50	200
			67.50	69.00	1.50	3207417	0.001	0.25	20.2	50	200
			69.00	70.50	1.50	3207418	0.001	0.25	20.3	50	300
			70.50	72.00	1.50	3207420	0.001	0.25	25.5	50	200
			72.00	73.50	1.50	3207421	0.003	0.25	18.2	50	500
			73.50	75.00	1.50	3207422	0.003	0.25	35.9	100	300
			75.00	76.40	1.40	3207423	0.003	0.25	38.4	200	200

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From (m)	To (m)	Rock Type & Description	From (m)	To (m)	Length	Sample #	Au Best ppm	Ag Best ppm	Cu Best ppm	Pb Best ppm	Zn Best ppm
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End of Hole @ 76.4