

Code	From	To	Recov.	No.	Unit	Description						
1	10	14	16	20	22	24	26	28	30	34	35	
	0.0	24.7			84	CASING						
	24.7	AA.1			86							
	AA.1	AA.3			86	(2) 95:05						
						Overburden supporting 1-1.5m blades of UNoxidized, moderately mineralized unit 2 with sand. Poor recovery of sand						
	AA.3	A5.0			7	# @ ±L ±c ± → 72 H						
						Dark brownish yellow, sporadically calcareous, generally non-calcareous unit is very strongly broken, commonly very sandy to friable in sand. Rock fragments are commonly porous and permeable. Barite is noted in places, locally well developed porosity. Hemite is sporadic. Rock fragments are slightly hard, locally moderately friable in sand and had fair to good recovery. Upper and lower contacts are marked by pyritic sand and mud with sporadic rock fragments. Unit appears strongly mineralized and estimated grade is 10-12%.						
	A5.0	A6.4			7	c → 72 → 74						
						Medium grayish brown-purple and dark grayish yellow, weakly calcareous baritic massive sulphides are v. strongly broken above 45.8 and very strongly crushed below. Crushed intervals are dark grayish yellow. Tarnished effect at crushed interval obscures barite estimates and crushed portion may be unit 5. Rocks are moderately						

Code	From		To		Recov.			No.			Unit	Description
	10	14	16	20	22	24	26	28	30	34	36	
	52.8		56.5								72	±c ±g Medium to light gray, rarely dark gray, is weakly calcareous though and host narrow sporadic occurrences of graphite which do not exceed 20cm widths. Gouge is generally tortuosity. Recovery is fairly good. Upper contact is gradational over 10cm with a loss in graphitic matter down hole lower contact is sharp; "1/2 S ₂ "
	56.5		58.7								40	±P → 74 → 20c Medium gray, ^{very slightly} calcareous phyllite hosts a strong shear fabric which has rotated a CS ₂ fabric into a fairly consistent saw angle of 30°. Rock is moderately to strongly broken with minor gouge. Rock is moderately soft and has 0-2% pyrite. Recovery is good. Calcite occurs within matrix of rock.
	58.7		62.0								72	(20c → 40) 80:20 Medium gray, very slightly calcareous gouge hosts a band of competent rock at 59.6 - 59.9. Competent interval is PS ₂ - laminated and host two .2mm bands of slightly calcareous light gray rock. Possibly unit 40. Below

Lithologic Log

Date: Nov 91 Logged By: J Zscheil

Code	From		To		Recov.		No.		Unit		Description
	10	14	16	20	22	24	26	28	30	34	
	166	5	161	7	9					30	±c → 72g ±c
											Dark gray to black is generally non-calcareous - very sandy moderately calcareous unit is moderately to highly graphitic and is gouge. Locally graphitic phyllite fragments exist. Recovery is poor. Upper contact is gradual over 20cm. Lower contact is sharp, irregular and marked by cumulate graphitic phyllite with breccia fragments adjacent massive sulphides. Contact generally trends // S ₂ and banding is sulphide.
	167	9	169	11	4					5	26 (30g ± 44 ^{##} j) 99:01:trace V
											Purple brown and brassy yellow, non-calcareous pyritic massive sulphides hosts very strong to intense Pb+Zn mineralization typically disseminated throughout and sporadically as well defined 2-3mm bands over the upper 30cm of unit. Interval hosts 1-2% chaotic irregular barren fragments of weakly silicified weakly calcareous graphitic phyllite. Interval also supports a 1cm band of strongly altered metabasite // S ₂ 1cm from upper contact. Unit hosts 0-3% open vugs and open fractures up to 3mm wide. Very weak to no oxidation occurs within the open structures. Rock is moderately hard, slightly broken and has good recovery. Upper contact is very sharp and // S ₂ . Lower contact is very irregular.
											Estimated grade is 20%

Code	From	To	Recov.	No.	Unit	Description						
	10	14	16	20	22	24	26	28	30	34	36	
	69.4	70.4			5	# ± @ ± c (30g) trace						
						Slightly laminated dark brownish yellow, non-calcareous to very rarely slightly calcareous unit is sporadically pitted and contains clots bands and veins of high friable massive sulphides. Unit is sporadically strongly mineralized with Pb+Zn and hosts trace 2-3mm fragments of graphitic phyllite that is slightly silicified. Unit may be slightly refractory? Rock is generally slightly to moderately hard and only locally friable. Sand. Rock is moderately broken and has good recovery. Upper contact is very irregular. Lower contact is sharp and // banding.						
						Estimated grade is 10%						
	70.4	70.8			5	± → 74 M → 74						
						Dark brassy yellow, non-calcareous massive pyritic sulphides host patchy and irregular Pb+Zn mineralization - no consistent trend obvious. Locally unit displays a poorly developed fragment supported well healed breccia with locally detrital fragments and matrix. Rock is moderately hard, slightly broken and has good recovery. Upper and lower contacts are sharp and // banding of upper and lower units.						
						Estimated grade is 10%						

Code	From		To		Recov.		No.		Unit		Description
	10	14	16	20	22	24	26	28	30	34	
	70.	8	71.	5					7		Light grayish yellow non-calcareous, highly baritic moderately mineralized interval is well bedded and hosts 20-25% pyrite. Unit is slightly hard, strongly to very strongly broken. Fracture surfaces are commonly slightly to moderately tarnished. Upper contact is sharp and // banding. Lower contact is strongly broken and zones irregular. Estimated grade is 12%
	71.	5	71.	9					5	± → 74	Brassy yellow, locally deep purple, non-calcareous pyritic massive subhedral hosts very irregular clotted very strongly mineralization. Unit hosts very minor vuggy green fractures of highly variable orientations. Unit displays a poorly developed well healed breccia texture that is fragment supported and consisting of locally derived matrix and fragments. Rock is generally moderately hard, slightly broken. Locally strongly broken and has good recovery. Upper contact is strongly broken and zones irregular. Lower contact is sharp and parallel banding in lower unit. Estimated grade is 12-15%.

Code	From	To	Recov.	No.	Unit	Description
1	10	14 16	20 22 24	26 28	30 34 36	
	71.9	72.2			7	(44 ^{wt} j) trace
						light grayish brown, non-calcareous, highly brittle, moderately mineralized interval is well bedded and hosts 20-25% pyrite and rare scattered irregular fragments of strongly altered metabasite. Unit is slightly hard, strong to very strongly broken and has good recovery. Fractured surfaces are very slightly to moderately tarnished black. Upper contact is very sharp and / banding. Lower contact is strongly broken and appears irregular.
						Estimated grade is 12%
	72.8	74.1			5	± ac (44 ^{wt} ± j) 98:02
						Brassy yellow locally tarnished very dark gray → black and vuggy. Vuggy and tarnished intervals are represented by calcareous very porous and permeable clasts and poorly healed fractures. Vugs and fractures are highly friable into sand. Interval is moderately to strongly mineralized in very irregular clasts and bands. Interval hosts 2-3% very irregular strongly altered metabasite fragments commonly 3-5 cm in diameter and most abundant near lower contact. Rock is generally moderately hard, locally soft and friable. Recovery is good. Upper contact

Lithologic Log

Date: Apr 91 Logged By: J. Zsolt

Code	From		To		Recov.			No.			Unit	Description
	10	14	16	20	22	24	26	28	30	34		
	74.1		75.5								7	±gZGc@ (7±@±c) 98:02 Light gray to brown, non-calcareous, well banded, highly basic unit moderately mineralized and is sporadically and rarely pitted, vuggy and supports open structures. All of these rare features are dark gray to black and rarely calcareous, but typically porous and permeable. Unit hosts a single occurrence of vuggy calcareous quartz clott with remobilized PtZn at 75.0. Rock is generally moderately to slightly hard, slightly broken and has good recovery. Upper contact is sharp and // bedding. Lower contact is marked by a band of highly friable pyritic massive sulphides. The lower contact is very irregular. Estimated grade is 12-15%.
	75.5		76.3								5	FF @ @ ±c Very dark gray to black, with hints of yellow, sporadically calcareous unit is extremely friable with pyritic sand, and is extremely porous and permeable. Pores are very fine << 1.0mm. Rock contains a high marcasite content. This rock shows a high chance of refractory behaviour. Rock is soft, and can be easily washed away with water. Recovery is poor. Contacts are irregular and gradational of 1-2cm. Unknown Grade.

Code	From	To	Recov.	No.	Unit	Description
1	10 14 16	20 22 24	26 26 30	34 35		
	76.3	77.2			5	c → 74 (44#j → 72) 99:01 M
						Brassy yellow, locally weakly calcareous and vuggy, pyritic massive sulphides are representative of a very well healed breccia consisting of local fragments & matrix. Breccia is matrix supported with highly angular and highly rotated fragments. Matrix is darker in color than fragments and is sporadically calcareous and porous/permeable. Crude orientation of breccia is at a low angle to core axis. Mineralization is rare and sporadic. Unit hosts 1-2% strongly altered metabasite over the upper 20cm. Rock is generally moderately hard, slightly broken and contains good recovery. Upper and lower contacts are irregular. Estimated is < 7%.
	77.2	78.4			5	c ± @ H
						Brassy yellow, weakly calcareous pyritic massive sulphides are moderately to strongly mineralized with Pb+Zn occurring as irregular clots and veins of no particular orientation. Unit is moderately porous with pores < 1mm in dia and only slightly permeable. Rock is moderately hard, slightly broken with slightly to moderately tarnished fractures. Recovery is good. Upper and lower contacts are irregular. Estimated grade is 12-15%.

Code	From	To	Recov.	No.	Unit	Description								
1	10	14	16	20	22	24	26	28	30	34	35			
	78.4	79.6			5	# @ c F								
						Moderately to strongly tarnished moderately to locally weakly calcareous pyritic massive sulphides is moderately locally extremely porous permeable and friable in pyritic sand. A strong correlation between permeable - friable intervals and calcite content exists. Rock has a high to moderate marcasite content. Mineralization appears to be strong but is locally difficult to determine due to extreme tarnishing on friable nature of rock. Rock is slightly hard locally moderately friable in sand. Upper and lower contacts are irregular. Estimated is (?) 12%. Good potential to alter solubility problems.								
	79.6	81.0			5	Z6 (5# @ c F) 35:15 H								
						Brassy yellow, locally slightly tarnished, commonly weakly to moderately calcareous pyritic massive sulphides hosts 10-15% highly porous and permeable clots and wisp which appear to define a crude irregular banding oriented at low angles to C.A. Unit is strongly to moderately mineralized in irregular clots and wisps of variable orientation. Calcite is most abundant within porous & permeable locals whose sulphides are highly tarnished and slightly friable in pyritic sand. Rock is generally moderately hard slightly brittle and has good recovery. Upper and lower contacts								

Code	From	To	Recov.	No.	Unit	Description
1	10	14 16	20 22 24	26 28 30	34 35	
						are irregular. Estimated grade is 15-17%.
	81.0	82.0			5	22G ± c ± @ c (7H) 98:02 V Brassy yellow and purple brown weakly calcareous pyritic massive sulphides hosts strong PbZn mineralization occurring in 0.5 - 5.0 cm bands trending at very high angles wrt C.A. Unit hosts 20% pin head size porous that are moderately to slightly permeable and lacks strong tarnished nature. Rock is moderately hard and slightly broken. Upper contact is irregular. Lower contact is gradational over 0.5m and is // banding Interval hosts a 5cm band of moderately mineralized baritic massive sulphides @ 81.2m. Estimated at interval is 17-20%.
	82.0	82.4			5	# F @ ± c (44# # 507H) 85:15 ± trace Tarnished brown yellow, weakly calcareous pyritic massive sulphides are commonly highly to moderately permeable, porous (v. fine pores) friable into sand and contains a high marcasite content. Interval supports crushed wires and clots of strongly altered metabasite. Interval also hosts a

Code	From	To	Recov.	No.	Unit	Description
	10	14 16	20 22 24 26 28 30	34 35		1cm band of slightly tarnish baritic massive sulphides. Rock is slightly hard and slightly friable into sand. Upper contact is gradual over 1cm and generally parallel banding of lower upper unit. Lower contact is slightly irregular but parallel S_0 of lower unit. Grade is difficult to estimate (?) 5-10%.
	80.4	84.6			39	$P \pm Q \text{ etc } \rightarrow 72$ Dark gray to black, generally non-calcareous, rarely slightly calcareous graphitic phyllite hosts 2-3% disseminated Pb and lacks any trace of silicification. Unit hosts 2% cm-scale quartz dolomite clots and veinlets. Rock is slightly soft, very strongly broken locally approaching gouge. Recovery is good to poor. Upper and lower contacts are slightly irregular but generally trend $N-S$. Lower contact is also marked by gouge with very poor recovery.
	84.6	85.4			51	$\pm c$ (5# etc) 80:20 Brass yellow locally tarnished dark grayish yellow, generally very weakly calcareous to non-calcareous pyritic massive sulphides are massive to very crudely banded. Upper 15cm and sporadic zones and clots are porous, friable permeable and tarnished. These altered locations are

Code	From		To		Recov.			No.			Unit	Description
	10	14	16	20	22	24	26	28	30	34	35	
												Commonly slightly calcareous. Rock is generally moderately to slightly hard and does not appear to be mineralized with Pb/Zn. Rock is moderately broken and has good recovery. Upper contact is sharp and marked by gouge at upper end. Lower contact is gradational over iron and noted as a loss in friable nature in rock in a band // banding.
	85	4	86	0						7	@ #	(52 #w PA)
												Medium gray, non-calcareous, highly basaltic unit is very porous and extremely permeable. Pores are extremely small and rock has a waxy appearance. Unit is competent and moderately to slightly hard. Unit contains 15% pyrite and 10-12% sphalerite. Unit is locally laminated dark gray and is most permeable there. Unit hosts a 3cm band of yellowish-white sericite unit that is very highly altered. Altered unit hosts 15% clay pyrite elongated into a fabric that is slightly oblique to core axis. Upper and lower contacts are gradational over iron and noted as highly laminated and permeable bands of adjacent units. Estimated grade is 7-10%

Lithologic Log

Date: Apr '91 Logged By: J Zbec

Code	From	To	Recov.	No.	Unit	Description	
1	10	14	16	20	22 24	26 28 30	34 35
	86.0	86.3			51	c ± → 74 (5 th oc)	99:01
						Blossy yellow, slightly tarnished, slightly to moderately calcareous massive pyritic sulphides contain sporadic occurrences of a well healed breccia with local fragments and matrix. Rare occurrences of porous, permeable, strongly tarnished moderately friable bands are rare and limited to upper 3cm. Rock is moderately broken, moderately hard and has good recovery. Upper contact is sharp and // banding in upper unit. Lower contact is sharp, crushed and slicked to 40 tca.	
						Estimated grade is difficult to estimate: 5-10% (B)	
	86.3	87.1			512	#7 PF± c ± e ± → 72	
						Medium gray to yellow, very slightly calcareous, unit hosts 7% wisps of strongly tarnished pyrite/marcasite within a matrix which contains alteration which postdates sericitic alteration. Alteration is suspected to be ground water percolation! Rock is soft, locally crushed to gouge. Recovery is fair. Upper contact is sharp and trends to 40 tca. Lower contact is crushed but appears sharp.	
	87.1	89.1			5	B± e± c → 7 (5B± e± c → 74)	95:05 H
						Blossy yellow to grayish yellow, very slightly calcareous with calcite most abundant within poorly healed tarnished - fracturing. Unit contains 60-70% pyrite and 9-11% barite. Unit is crudely bedded with beds commonly defined by barite rich	

Code	From		To		Recov.			No.		Unit	Description
	10	14	16	20	22	24	26	28	30		
											<p>wisps UnF hosts 10-15% poorly healed + stained fractures which can be washed out with scrubbing. Sand results from scrubbing. Similar nature exists in matrix of a well healed breccia band at 87.6-87.9. Breccia consists of locally leached matrix and fragments - fragments supported, weakly rotated. Rock is generally slightly to moderately hard, slightly broken and has good recovery. Upper contact is crushed and appears sharp. Lower contact is sharp and // bedding. Unit is moderately mineralized with iron pyrite 10-20 rarely 2-3mm clots of sph. Estimated grade is 12-15%</p>
	89.1	1	90.1	7						7	<p>(7# @ C) 98=02</p> <p>Light grayish yellow, non-red calcareous, strongly baritic unit hosts 40-45% pyrite and moderate to strong Pb-Zn mineralization disseminated throughout. Unit is moderately well bedded with variations in pyrite content. Rock is slightly to moderately hard, slightly broken and has good recovery. Upper contact is sharp and // bedding. Lower contact is sharp concerning mineralogy but gradual concerning alteration. Lowest 15cm of unit becomes progressively more pitted, porous, permeable and friable into sand down hole. This alteration is associated with strongly tarnished sulphides and very clay calcareous nature. Estimated grade is 15-17%.</p>

Code	From	To	Recov.	No.	Unit	Description							
	10	14	16	20	22	24	26	28	30	34	35		
	91.0.7	91.1.4	7		5	±@±c ±→74 (74) 92:08							
						brassy yellow, locally, tarnished and slightly calcareous pyritic massive sulphides hosts 15-20% pitted and porous permeable and tarnished poorly healed fractures and clefts. These features crudely define the matrix and what was a well healed breccia. Interval hosts a 10cm band a basaltic massive sulphides at the lower contact. Rock is locally moderately hard and locally slightly friable. Recov. is good. Upper and lower contacts are sharp and // bedding.							
	91.1.4	92.1	1		5	→74 (44%±) 95:05							
						Brassy yellow, very slightly tarnished throughout, very weakly permeable. Non-calcareous pyritic massive sulphides often contain a well healed breccia consisting of locally, disintegrated fragments and nodules. Interval separates two 2-cm strongly altered metabasite bands. Metabasite exists at 91.6 and 91.9. Upper contact is sharp and // bedding. Upper basaltic band. Lower contact is sharp and trends @ 25 wt. C.A.							
						Estimated grade is 5.7% (?)							

Code	From			To			Recov.		No.		Unit	Description
	1	10	14	16	20	22	24	26	28	30		
	92.	1	93.	1							7	(5:5e) 95:04:01 light grayish yellow, non-calcareous, strongly basitic unit hosts 15-20% pyrite and moderate PbZn mineralization. Unit is fairly well banded with variations in pyritic content. Interval hosts a 30cm band of pyritic massive sulphides at the lower contact. Pyritic unit is locally pitted, fractured and permeable and is non-calcareous throughout. Rocks are moderately to slightly brecciated, moderately to slightly broken and has good recovery. Upper contact is sharp and trends 05° with N. lower contact is marked by gouge and trends 290°/35° west S ₂ .
	93.	1	93.	4							30	±7± → 72 (47c) 60:40 Dark grey to black, non-calcareous, graphite phyllite hosts 0-1% pyrite and is gouged at upper contact. Interval hosts 40% 0.5-3.0cm bands of unit 47 that is weakly to moderately calcareous. Interval is slightly soft, very strongly broken and hosts good recovery. All contacts are sharp and // S ₂ .

Code	From			To			Recov.			No.			Unit			Description
	10	14	16	20	22	24	26	28	30	34	35					
	93.4		97.8									20		P Qwk	(72) 97:03	
															Medium gray, non-calcareous, PS ₂ foliated phyllite with 1-2% pyrite, 2-3% quartz - chlorite - ankerite veins and 2-3% gouge bands from 2-3cm wide parallel S ₂ . Bed is slightly sold, strongly biherc and has good recovery. Upper contact is sharp and // S ₂ . Lower contact is crushed.	
	97.8		99.1									30		→ 72		
															Medium gray, non-calcareous phyllite is crushed locally gouge. Generally crushed matrix follows S ₂ at 98.1. 98.3, crushed zone trends subparallel C.A. Recovery is fair.	
			99.1												204	

ASSAY LOG (SAMPLER'S COPY)

Date 1/91

Sampled by

CODE	FROM		TO		SAMPLE		INTR.		REC (m)	UNIT		DESCRIPTION	
	10	14	16	20	22	26	28	30	32	34	36		40
	0.	0	44.	3									WASTE → 73
	44.	3	45.	0					0.	5	7		# @ L = c ± 72
	45.	0	46.	4					1.	1	7		c → 72 → 74
	46.	4	47.	6					1.	2	5		c
	47.	6	48.	5					0.	8	5		c (60 v/c P ± 26) 90:10
	48.	5	67.	9									WASTE
	67.	9	69.	4					1.	1	5		26 (30 g c: 44 [#] j) 99:01: trace
	69.	4	70.	4					1.	0	5		# ± @ ± c (30 g) + trace
	70.	4	70.	8					0.	4	5		→ 74
	70.	8	71.	5					0.	6	7		
	71.	5	71.	9					0.	4	5		± @ ± → 74
	71.	9	72.	8					0.	7	7		(44 [#] j) + trace
	72.	8	74.	1					1.	0	5		± @ c (44 [#] j) 98:02
	74.	1	75.	5					1.	1	7		± g 26 c @ (7 ± @ ± c) 98:02
	75.	5	76.	3					0.	6	5		FF @ ± c
	76.	3	77.	2					0.	9	5		± c → 74 (44 [#] j → 72) 99:01
	77.	2	78.	4					1.	1	5		c ± @
	78.	4	79.	6					1.	1	5		# @ c F
	79.	6	81.	0					1.	0	5		26 (5 [#] c c F) 85:15
	81.	0	82.	0					1.	0	5		226 ± c ± @ c (74) 98:02
	82.	0	82.	4					0.	3	5		# F @ ± c (44 [#] j: 74) 85:15: trace
	82.	4	84.	6					1.	7	30		P ± 2 P ± c ± → 72
	84.	6	85.	4					1.	8	5		± c (5 [#] @ ± c) 80:20
	85.	4	86.	0					0.	6	7		@ # (52 [#] P F
	86.	3	86.	3					0.	8	5		c ± → 74 (5 [#] @ c) 99:01
	87.	1	87.	1					0.	6	152		** P F ± c ± @ ± → 72
	87.	1	88.	1					1.	0	5		B ± @ ± c → 77
SG/02 →	88.	1	89.	1					1.	0	5		b ± @ ± c → 77
	89.	1	90.	4					1.	3	7		
	90.	4	90.	7					0.	3	7		(7 [#] @ c) 60:40
	90.	7	91.	4					0.	7	5		± @ ± c ± → 74 (74) 92:08
	91.	4	92.	1					0.	7	5		→ 74 (44 [#] j) 95:05
	92.	1	93.	1					1.	0	7		(5:5e) 95:04:01
	93.	1	99.	1									WASTE
													EOH @ 99.1m

COPY

