	WE	ESTERN	N MINES LIMITED		Page	e_1_of	3		НО	LE N	O. BS	P-81-24	1	
٦ ا	FEET/	METRES	ROCK TYPE / ALTERATION	GRAPHIC . MINERALIZATION / STRUCTURE				SAMPLE NO.	ASSA			······		
┢	·	1										<u> </u>		
	20	40	Quartz eye - plagioclase porphyry, similar to Premier porphyry.											
	40	48	Gradational change to 56-214 andesite.											
	48	56	Andesite Dike											
	56	214	Felsic andesite - pale green (high Feldspa component, low chlorite)											
			-locally appears to be a 2 feldspar rock (5-10 mm Kspar phenocrysts?) and therefore possible extrusive equivalent of Premier	e										
			porphyry. -weakly developed layered (trachytic) texture.											
	214	299	Intrusive andesite - micro - crystalline texture in a massive light green rock.											
			-plagioclase laths and scattered quartz eye mafic component altered to chlorite -similar to 56-214 but more crystalline.	es.										
	299	301	Quartz vein				N	ASSESSA			CH		-	
	301	309	Andesite tuff agglomerate							Å				
	309	383	Dacite grading to rhyolite(very siliceous) at top of interval	-abundant 'early' quartz veins with pyrite - sphalerite - galena.					C		フ	1		
			-no quartz eyes.	-3% diss. py in siliceous intervals and also conformable		ß				9		-		
			-no sporadic concentrations of 5 mm grey fragments	streaks of pyrite-sphalerite-g	alena.									
	383	580	Andesite - massive, green homogeneous, Feldspar laths.	-core angle for layering=		I		X					4	

Γ	<u></u> ۱۸/۲	ESTERN	MINES LIMITED	<u></u>		Dag	2 2 ~*					10			
-{							e <u>2</u> of		0000	HOI		Ю. вя	SP-81-2	4	·
1	FEET/	METRES	ROCK TYPE / ALTERATION	GRAPH LOG.	* MINERALIZATION / STRUCTURE	SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSA	<u>15</u>	1			
			······							<u> </u>		+			
			431-438 - rhyodacite		· ·										
			- hard, light grey, fragmental - one quartz eye noted.												
	580	646	Premier porphyry						•						
			-green colour; K-feldspar, plagioclase, amphibole porphyritic "		-quartz - calcite - chlorite veins abundant (5-10 per 5 fe	et)									
			-amphibole strongly altered to chlorite and sphere but not pyrite		-'early' quartz - py - galena -(sphalerite) veins much less common.										
	•		-sporadic concentrations of 5 mm angular grey fragments												
	646	732	Andesite lapilli tuff												
	732	996	Andesite - monotonous green flow rock, composition similar to above.		758-770 quartz-calcite-pyrite (galena) fracture veins.										
			<ul> <li>from 940 tuffaceous layering becomes well developed, short lapilli tuff intervals.</li> </ul>		909-916 chert - andesite breccia with galena.										
Ŷ	-				950-956 quartz - py-gn veins i lapilli tuff.	n		*			•				
	996	1007	Andesite - crackle breccia		quartz-calcite-galena veins										
	1007	1011	Chert breccia - andesite fragments also		-5-10% pyrite -galena in matrix										
	1011	1040	Andesite - fractured, brecciated.		-mottled calcite stringers, lesser quartz veins and										
					sparse quartz-galena veins.					 	•				

-

W	ESTERN	MINES LIMITED		. *		e <u> </u>			ΗΟΙ	EN	О. вз	P-81-2	4	
FEET/	METRES-	ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION/STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSA	YS		<u>۴</u>		
1040	1047	Andesite dike												
1047	1175	Andesite ATL (agglomeratic tuffaceous lapillistone) - green												
1175	1244	Andesite ATL - purple and green; ranges from purple and	-	layering at 45° to core axis.				•						
$\bigcirc$		green fragments in purple matrix to all green.												
		- locally matrix and/or fragments are Feldspar porphyritic.		, , , , , , , , , , , , , , , , , , ,										
		- fragments range from round to collapsed pumice								,				
		1223-1227 Porphyry dike - sharp, chilled contacts												
		- plagioclase and altered amphibole phenocrysts.												
E·C	H													
		·												
					•									
		•												

	WE	ESTERN	MINES LIMITED		Page	e <u> </u>	2	······	но	LE N	IO. BSI		<u></u> -	
ſ	FEET/	METRES	ROCK TYPE / ALTERATION	MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE	SAMPLE LENGTH	SAMPLE NO.	ASSA			··		
	4	411	Andesite - green, uniform texture and composition	- compositional layering at 40-45°										
			- silicified from 340-411.	· · · · · · · · · · · · · · · · · · ·										
	411	528	Premier porphyry - light grey; K-feldspar - quartz - amphibole porphyritic											
	)		- very fine grained matrix - weakly trachytic											
			441-450 green (mafic) variety of porphyry with plagioclase laths. Also well	441-450 interval and porphyry above and especially below is										÷
			fractured, rusty, broken ground.	well veined with qtz-gn-sp (trace malachite) -fracture veins are open, rugg	<i>v</i> .									
	528	692	Andesite - colour varies from dark green to light	- compositional layering at 90° @ 532' and 536'.										
			green (bleached).											
	692	720	Mafic andesite - unusually dark green, chloritic.	- numerous (2-3 per metre) py-sp veins at various angle	Б									•
Ŷ	5			to core, appear 'early'.					· · · ·					
	720	816	Chert - andesite breccia - typical fragment size is .5 - 4cm	- layering at 60° - 720-737 highest sulphide										
			- numerous short intervals (2ft) of andesite with 5-10% pyrite but no chert.	content (10% overall, estimate 3% Pb+Zn) in py-sph veins mainly at 45 to core.										·
	816	822	Andesite											
	822	850	Chert-andesite breccia, silicified andesite.	- layering @ 70°						<del></del>				

W	ESTERN	N MINES LIMITED			Pag	e <u>2</u> of	2		НО	LE N	Ю. вя	SP-81-3	6	
FEET/	METRES	ROCK TYPE / ALTERATION	GRAPHIC	MINERALIZATION/STRUCTURE	%	SAMPLE	SAMPLE	SAMPLE NO.	ASSA	YS				
·			LOG.		SULFIDE		LENGTH	NO.						
		<ul> <li>two generations of quartz:</li> <li>(1) early chalcedonic quartz rims</li> </ul>												
		andesite fragments, exhibits sequential deposition.												
		(2) milky white quartz-calcite-galena veinlets.												
9850	876	Andesite - featureless, green flow rock.	C t	ompositional layering @ 70 <sup>0</sup> o core.										
Е	ОН													
<u></u>		· · · · · · · · · · · · · · · · · · · ·												
								•						
		s.											+	<u> </u>

- - -

......

[	W	ESTER	N MINES LIMITED			Page	e <u>_1</u> of	1	•	НО	LE N	IO. BSP	81-39	→	]
	FEET/	METRES	ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION/STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ÀSSA	YS	 			
	0	215	Andesite - homogeneous green fine grained flow rock	-	- compositional layering @ 70°.								<u> </u>	<u> </u>	
	215	286	Chert - andesite breccia, silicified andesite	-	<ul> <li>heavily disseminated pyrite preferentially concentrated</li> </ul>										
			<ul> <li>breccia comprises andesite fragments</li> <li>'floating' in cherty quartz and cross-cut</li> <li>by younger galena bearing gtz veins.</li> </ul>		in andesite fragments. minor py in qtz veins 277 ft - cp occurrence				•				<u> </u>		
	)			-	galena and lesser sphalerite in qtz veins.										
	286	304	Box missing												
	304	331	Premier porphyry - green (mafic) variety with plagioclase												
			<pre>laths and altered amphibole - a few K-feldspar phenos and sparse quartz eyes (eg at 314', 323').</pre>												
	<b>&gt;</b>													_	
											· · · · · · · · · · · · · · · · · · ·				
															•

	WE	ESTERN	MINES LIMITED			Page	e <u>_1</u> of	1		HOI	LE N	Ю. вя	SP 81-4	 ]
ſ	FEET/	METRES	ROCK TYPE / ALTERATION	GRAPH LOG.	· MINERALIZATION / STRUCTURE				SAMPLE NO.	ASSA			 [	 {
														   <b>-</b>
	34	100	Premier porphyry	┝╌╎╶╎	•	<b> </b>			· ·····	ļ				 
			- light grey felsic and siliceous variety, unusually slight alteration.						,					
			- abundant K-feldspar (5-10%) and quartz eyes (5%)											
$\int$			- plagioclase laths (10%) show trachytic texture											 
			- amphibole phenos (5%) are euhedral and fresh				· · · · · · · · · · · · · · · · · · ·				,			 
			- occassional recrystallized andesite inclusions.											 
	100	207	Premier porphyry											
			<ul> <li>pale green, chloritized mafic (compared to above) variety</li> </ul>		- 2 or 3 qtz - calcite - galen veins per metre, 2-15 cm wid	a.								
			- contact between 90 and 100 ft in section of broken ground, oxidation.											
7			- K-feldspar sparse (1-2 %) but persistent - quartz eyes are rare (eg at 117 ft, 127	Et)										 
			- amphibole altered to chlorite, pyrite, leucoxene.	-										
			- plągioclase laths weather brown.											
	207	646	not examined											

ſ	WE	STERN	MINES LIMITED			1	e_1_ of			НО	LE I	Ю. ве	SP 81-5	0	
ſ	FEET/	METRES	ROCK TYPE / ALTERATION	RAPHIC .OG.	MINERALIZATION/STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSA	YS	- <u>-</u>	1		
ł	0	105	not examined												
	105	274	Andesite - uniform, homogeneous, green flow rock		120' compositional layering @ 60										
			146' - lapilli tuff bed		195' comp. layering @ 50 <sup>0</sup> 225' comp. layering @ 65 <sup>0</sup>				•						
S	274 .	295	Brecciated andesite		2-5% diss. py										
			- sheared, gouge at lower contact		crackle breccia filled by calcite-quartz with minor sph,	gn									
	295	310	Premier porphyry - grey-green, pervasive alteration		- oxidized (rusty) fractures.										
			- 30% chalky plagioclase - 5% altered amphibole - no Kspar or quartz												
	310	318	Andesite												
	318	366	Dacite Porphyry - light grey, variable texture		gouge at 346, 357										
q	)		<ul> <li>low phenocryst content;</li> <li>5% quartz, 3% mafic, 5-10% plagioclase,</li> <li>sporadic (1%) K-Feldspar.</li> </ul>		361 - broken ground										
	366	372	Andesite, coarse fragmental (tuff agglomer	te)											
Ī			<ul> <li>upper and lower contacts against porphyr, are bleached</li> </ul>	<b>'</b>					_						
			- andesite fragment and a calcite stringer are both sharply truncated by intrusive porphyry, contact @ 80 to core.						· · · · · · · · · · · · · · · · · · ·						
					÷										e

	WE	STERM	MINES LIMITED			Page	e <u></u> of	2_		НО	LE N	Ю. н	 ·50	
	FEET/	METRES	ROCK TYPE / ALTERATION	GRAPH	C . MINERALIZATION/STRUCTURE	% SULEDE	SAMPLE	SAMPLE	SAMPLE NO.	. ASSA	YS		 ······	,
-									NO.	<u> </u>				
	372	375	Dacite Porphyry					  .						-
			<ul> <li>light grey to tan, massive</li> <li>quartz (to 5 mm), biofite, plagioclase (10-15%) phenocrysts</li> </ul>											
			- plag phenos less abundant and smaller than usual.											
$\left\{ \right\}$	· · · · · · · · · · · · · · · · · · ·		•. 				•						 	
					• 	-								
	-				· · · · · · · · · · · · · · · · · · ·									
					·····									
			·								_			
					<u>-</u>									
					<u> </u>						-			

•

T/ METRES 285	Andesite	GRAPI LOG.		% SULFIDE	SAMPLE INTERVAL	SAMPLE	SAMPLE	ASSA	YS	···· · -			
285	·····	•				LENGIH	NO.			1	T		
	- homogenous, green, fairly massive, fine grained, speckled texture		43' comp. layering @ 85 <sup>0</sup> 117' comp. layering @ 90 <sup>0</sup>										
	<ul> <li>pervasive weak calcite alteration and minor qtz-calcite stringers.</li> <li>78-80' lapilli tuff</li> </ul>		167' comp. layering @ $45-70^{\circ}$ 222' comp. layering @ $90^{\circ}$										
	182' 4cm pyritic fragment		281-285 irregular (patchy)										·
	186-187' tuffaceous lapillistone	_	calcite + silica in andesite, adjacent porphyry contact.		<u> </u>								
	195-198' fuffaceous lapillistone												
327	Premier porphyry												
	- grey green colour, similar to Hole 50, 295-310'		- quartz veins with sparse py, sp, gn; quartz is										
	<ul> <li>contact in broken zone, poor core recovery.</li> </ul>		chalcedonic to coarsely crystalline										
	<ul> <li>plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts</li> </ul>		,										
	- one K-feldspar pheno, near end of inter	val.	· · · · · · · · · · · · · · · · · · ·										
358	Andesite - green, massive												
ЕФН	- fractured, oxidized (rusty) - carbonate altered.						·						
	, ,												
-	358	78-80' lapilli tuff         182' 4cm pyritic fragment         186-187' tuffaceous lapillistone         195-198' fuffaceous lapillistone         327         Premier porphyry         - grey green colour, similar to Hole 50, 295-310'         - contact in broken zone, poor core recovery.         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts         - one K-feldspar pheno, near end of inter         358       Andesite - green, massive         - fractured, oxidized (rusty)         - carbonate altered.	minor qtz-calcite stringers.         78-80' lapilli tuff         182' 4cm pyritic fragment         186-187' tuffaceous lapillistone         195-198' fuffaceous lapillistone         327         Premier porphyry         - grey green colour, similar to Hole 50, 295-310'         - contact in broken zone, poor core recovery.         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts         - one K-feldspar pheno, near end of interval.         358       Andesite - green, massive         50 H       - fractured, oxidized (rusty)         - carbonate altered.       -	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       - quartz veins with sparse py, sp, gn; quartz is         227       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse py, sp, gn; quartz is         - contact in broken zone, poor core recovery.       - quartz veins with sparse py, sp, gn; quartz is         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts       - one K-feldspar pheno, near end of interval.         358       Andesite - green, massive       -         358       - fractured, oxidized (rusty) - carbonate altered.       -	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       - quartz veins with sparse py, sp, gn; quartz is         227       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse py, sp, gn; quartz is         - contact in broken zone, poor core recovery.       chalcedonic to coarsely crystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenorystal.       -         358       Andesite - green, massive       -         359       Andesite - green, massive       -         - fractured, oxidized (rusty)       -       -	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       - quartz veins with sparse py, sp, gn; quartz is         227       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse py, sp, gn; quartz is         - contact in broken zone, poor core recovery.       chalcedonic to coarsely crystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrystal.       - one K-feldspar pheno, near end of interval.         358       Andesite - green, massive       -         359       - fractured, oxidized (rusty)       -         - carbonate altered.       -       -	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       - quartz veins with sparse pyrite + pyrite + contact in broken zone, poor core contact in broken zone, poor core recovery.         - contact in broken zone, poor core recovery.       - chalcedonic to coarsely crystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrystal.       - one K-feldspar pheno, near end of interval.         358       Andesite - green, massive       - fractured, oxidized (rusty)         20 H       - carbonate altered.       - carbonate altered.	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         327       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse PY, sp, gn; quartz is         - contact in broken zone, poor core recovery.       chalcedonic to coarsely crystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts       - one K-feldspar pheno, near end of interval.         358       Andesite - green, massive       - fractured, oxidized (rusty)         - carbonate altered.       - fractured, oxidized (rusty)       - carbonate altered.	minor qtz-calcite stringers.       222' comp. layering 8 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         327       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse py, sp, qm, quartz is         - contact in broken zone, poor core recovery.       chalcedonic to coarsely crystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocrysts       cone K-feldspar pheno, near end of interval.         358       Andesite - green, massive       carbonate altered.         80 H       - fractured, oxidized (rusty)       carbonate altered.	minor qtz-calcite stringers.       222' comp. layering @ 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone	minor qtz-calcite stringers.       222'.comp. layering & 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         327       Premier porphyry         - grey green colour, similar to Hole 50, 295-510'       - quartz veins with sparse pyr, sp. gn; quartz is         - contact in broken zone, poor core       chalcedonic to coarsely orystalline         - plagioclase and amphibole (altered to chlorite + pyrite + leucoxene)       chalcedonic to coarsely         - one K-feldspar pheno, near end of interval.	minor qtz-calcite stringers.       222' comp. layering & 90°	minor qtz-calcite stringers.       222' comp. layering 6 90°         182' 4cm pyritic fragment       281-285 irregular (patchy)         182' 4cm pyritic fragment       281-285 irregular (patchy)         186'-187' tuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         195-198' fuffaceous lapillistone       calcite + silica in andesite, adjacent porphyry contact.         327       Premier porphyry         - grey green colour, similar to Hole 50, 295-310'       - quartz veins with sparse py, sp, gn, quartz is         - contact in hroken zone, poor core recovery.       chalcedonic to coarsely crystalline         - plagloclase and amphibole (altered to chlorite + pyrite + leucoxene) phenocytes       contact in terval.         358       Andesite - green, massive       calcite - green, massive         20 H       - fractured, oxidized (rusty)       carbonate altered.

	WE	ESTERN	MINES LIMITED				e <u>1</u> of					Ю. в	SP 81-	54	
	FEET/	METRES	ROCK TYPE / ALTERATION	GRAP LOG.	HC MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE	SAMPLE LENGTH	SAMPLE NO.	ASSA	YS				·····
	5	50	Andesite				=								
			- massive, green, fine grained		- comp. layering @ 60-70 <sup>0</sup>										
	50	133	Andesite						•						
Ę	)		<ul> <li>light grey-green, only distinction from above is colour change</li> </ul>		78-82 <sup>0</sup> comp. layering @ 80-90 <sup>0</sup>										
			100' - fault; rusty shear, with calcite.												
	133	147	Cherty andesite												
			- weakly developed zone		- sulphide layers contain pyrite only.		 : :						-		
	147	219	Dacite (?)												
			<ul> <li>light grey-green, massive</li> <li>pervasively altered (carbonated)</li> </ul>		2% diss. pyrite										
$\subset$	)		- might be a phase of Premier porphyry, or an altered porphyry												
			<ul> <li>gradational contact from andesite above.</li> <li>plagioclase, altered amphibole and sporadic quartz phenocrysts.</li> </ul>		,										
			200-219 fragmental texture.												
	219 E	250 OH	Premier porphyry - light grey - green - quartz, amphibole, plagioclase phenocryst	s											
			<ul> <li>pervasively altered</li> <li>K-feldspar phenos (?) 1 cm, partly</li> <li>replaced by calcite.</li> </ul>												9

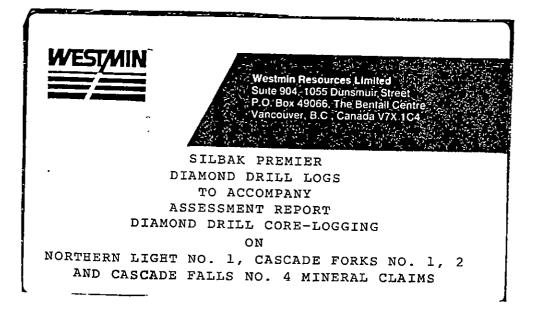
WE	ESTERI	N MINES LIMITED			e <u>_⊥</u> of			НО	LE I	NO. BS	P 81-5	5	
FEET/	METRES	ROCK TYPE / ALTERATION	PHIC · MINERALIZATION/STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSA	(YS				T
7	200	Andesite		ļ									
		- green, massive, fine grained - calcite stringers throughout	37' comp. layering @ 80° 75' fragmental bed @ 90°	1								1	+
		75-95 flattering of shards @ 45-80° to core.	82' pyrite laminae @ 80° to c	bre								<u> </u>	
 †		138 6 cm leucoxene - rich bed @ 75 <sup>0</sup> to core. 193-200 altered (buff green) andesite; no primary texture except for mm scale										<u> </u>	
		black 'lines' @ 90° to core which impart a pronounced cleavage.	· · · · · · · · · · · · · · · · · · ·	<u> </u>									
200	204	Andesite dike - amphibole porphyritic, altered					· · · · ·						
204	208	Andesite - quartz veined											
		- poor core recovery											
208	222	Andesite -brecciated and veined by chalcedonic	- stratabound py bands with min	br									
		quartz	cp. - best one is 25% sulphide over 3 ft.										
222	260	Premier porphyry											
		<ul> <li>light grey, hard, siliceous</li> <li>5% quartz eyes, abundant .5-2 cm K-feldspar and plagioclase phenos but no</li> </ul>	2-3% diss. py										
		<pre>mafic upper contact not well defined in split core.</pre>											
		260' - sharp contact @ 70-75°.								<u> </u>			<b> </b>

WESTERN MINES LIMITED				Page	e <u></u> of	2		HOLE NO. BSP 81-55						
FEET/	METRES	ROCK TYPE / ALTERATION	GRAPHIC LOG.	MINERALIZATION / STRUCTURE	% SULFIDE	SAMPLE INTERVAL	SAMPLE LENGTH	SAMPLE NO.	ASSA	YS		 	· · ·	
260	320	Andesite												
		<ul> <li>massive, green flow rock</li> <li>first few feet are bleached</li> <li>variable composition, eg.</li> <li>275-278 plagioclase laths</li> <li>299-307 hornblende phenos.</li> </ul>												
5		233 307 NOTIDIENCE DIENOS.												
										· · · · · · · · · · · · · · · · · · ·				
											n			
L														
										- <u>-</u>				

•

WESTERN MINES LIMITED					Pag	e <u>1</u> of	2	<u> </u>	HOLE NO. BSP 81-56						
	FEET/ METRES		ROCK TYPE / ALTERATION GRAPHIC · MINERALIZATION / STRUCTURE				SAMPLE	SAMPLE	SAMPLE NO.	ASSA	YS	1			
	10	64	Andesite - green, homogeneous except for weak cherty breccia at 61-64		<u>- comp. layering @ 45<sup>0</sup> 61-64 - sericite, pyrite, trace cp.</u>										
	64	73	Premier porphyry - K-feldspar - plagioclase phenocrysts												
	)		<ul> <li>Kspar replaced by rusty brown weathering carbonate</li> <li><u>quartz eyes rare but present (eg. at 69</u>,</li> </ul>												
	73	86	Andesite											-	
	86	109	Dacite - grey, noticeably less mafic and more massive than andesite which is green and commonly weakly foliated to layered.	1									<u>.</u>		
	109	110	Premier porphyry - plagioclase, quartz phenocrysts												
	110	400	Andesite - typical green, uniform very weakly folia												
			- minor flow breccia 231-258 andesite dike? - especially massive.		146' comp. layering @ 70 <sup>°</sup> 199' comp. layering @ 45-50 <sup>°</sup> 200' comp. layering @ 50-60 <sup>°</sup>										
					258-400 sporadic layering @ 50	•			~		<u> </u>				
	<i></i>														

ESTERN	MINES LIMITED			Page	e of	2	· · · ·	но	LE	NO. BS	SP 81-	56	
/ METRES	ROCK TYPE / ALTERATION	GRAPHIC	MINERALIZATION/STRUCTURE	%	SAMPLE	SAMPLE	SAMPLE	ASSA	<u>YS</u>				
1			· · · · · · · · · · · · · · · · · · ·	305-102			NO.	<u> </u>					<u> </u>
403	Premier porphyry dike			ļ									
	hornblende only phenos.		,										
	to compositional layering (i.e. crosscutting).												
406	Andesite - same as 110-400.												
458	Andesite - as above but fractured and veined with		5% diss. py 406 - first appearance of								:		
	quartz												
470	Silicified breccia - by 462 Premier porphyry is recognizeable within silicified zone.		- minor diss gn, sp, very sparse py.					 					
546	Premier porphyry												
		Ly,	470-490 mineralized; sphalerite predominates over galena.										
	a few scatlered K-feldspar and quartz eyes are rare (eg. 503')				2								
	Y METRES 403 406 406 458 470	METRES       ROCK TYPE / ALTERATION         403       Premier porphyry dike         - very fine grained matrix, quartz and hornblende only phenos.         - excellent chilled contact at 30° angle         to compositional layering (i.e. crosscutting).         406         Andesite         - same as 110-400.         458         Andesite         - as above but fractured and veined with quartz         470         Silicified breccia         - by 462 Premier porphyry is recognizeable within silicified zone.         546         Premier porphyry         - quartz fills fractures and replaces porphyry to 490.         - plagioclase, amphibole phenocrysts main         a few scatlered K-feldspar and quartz	METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.         403       Premier porphyry dike	METRES       ROCK TYPE / ALTERATION       GRAPHC : MINERALIZATION / STRUCTURE LOG.         403       Premier porphyry dike       -         403       Premier porphyry dike       -         - excellent chilled contact at 30 <sup>0</sup> angle       -         to compositional layering (i.e. crosscutting).       -         406       Andesite - same as 110-400.       -         458       Andesite - as above but fractured and veined with quartz       5% diss. py 406 - first appearance of galena + sphalerite. narrow quartz - calcite bands well mineralized with sp. gn.         470       Silicified breccia - by 462 Premier porphyry is recognizeable within silicified zone.       - minor diss gn, sp, very sparse py.         546       Premier porphyry - quartz fills fractures and replaces porphyry to 490. - plagioclase, amphibole phenocrysts mainly, a few scatlered K-feldspar and quartz       470-490 mineralized; sphalerite predominates over galena.	METRES       ROCK TYPE / ALTERATION       GRAPHC LOS.       MINERALIZATION/STRUCTURE       % SUFPO         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       - <td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG       MINERALIZATION/STRUCTURE       % SUFDE       SAMPLE UNTERVAL         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td> <td>METRES       ROCK TYPE / ALTERATION       SWAPE LOG.       MINERALIZATION/STRUCTURE       % SUFPC       SAMPLE INTERVAL       SAMPLE SWAPE         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       <t< td=""><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION / STRUCTURE       % SUNDO NUTERVAL ENGR NO.       SAMPLE SUNDO NUTERVAL ENGR NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       <t< td=""><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPC SUPPC       SAMPLE INFINAL DIST       SAMPLE NO.       ASS/ ASS/ ASS/ ANDEX         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></t<><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       Sample Sumple Log.       Sample Links       Sample Links       Sample</td><td>METRES       ROCK TYPE / ALTERATION       GROPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPLE       SAMPLE WITEWAL       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -<!--</td--><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOC       MINERALIZATION/STRUCTURE       Summe Sample Summe Sample       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td><td>METRES       ROCK TYPE / ALTERATION       GRAPH LOG       % LOG       SAMPLE ENTE       SAMPLE MOTE SAMPLE MOTE SAMPLE MOTE NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></td></td></t<></td>	METRES       ROCK TYPE / ALTERATION       GRAPHC LOG       MINERALIZATION/STRUCTURE       % SUFDE       SAMPLE UNTERVAL         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	METRES       ROCK TYPE / ALTERATION       SWAPE LOG.       MINERALIZATION/STRUCTURE       % SUFPC       SAMPLE INTERVAL       SAMPLE SWAPE         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       - <t< td=""><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION / STRUCTURE       % SUNDO NUTERVAL ENGR NO.       SAMPLE SUNDO NUTERVAL ENGR NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       <t< td=""><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPC SUPPC       SAMPLE INFINAL DIST       SAMPLE NO.       ASS/ ASS/ ASS/ ANDEX         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></t<><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       Sample Sumple Log.       Sample Links       Sample Links       Sample</td><td>METRES       ROCK TYPE / ALTERATION       GROPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPLE       SAMPLE WITEWAL       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -<!--</td--><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOC       MINERALIZATION/STRUCTURE       Summe Sample Summe Sample       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td><td>METRES       ROCK TYPE / ALTERATION       GRAPH LOG       % LOG       SAMPLE ENTE       SAMPLE MOTE SAMPLE MOTE SAMPLE MOTE NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></td></td></t<>	METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION / STRUCTURE       % SUNDO NUTERVAL ENGR NO.       SAMPLE SUNDO NUTERVAL ENGR NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       - <t< td=""><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPC SUPPC       SAMPLE INFINAL DIST       SAMPLE NO.       ASS/ ASS/ ASS/ ANDEX         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></t<> <td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       Sample Sumple Log.       Sample Links       Sample Links       Sample</td> <td>METRES       ROCK TYPE / ALTERATION       GROPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPLE       SAMPLE WITEWAL       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -<!--</td--><td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOC       MINERALIZATION/STRUCTURE       Summe Sample Summe Sample       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td><td>METRES       ROCK TYPE / ALTERATION       GRAPH LOG       % LOG       SAMPLE ENTE       SAMPLE MOTE SAMPLE MOTE SAMPLE MOTE NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td></td>	METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPC SUPPC       SAMPLE INFINAL DIST       SAMPLE NO.       ASS/ ASS/ ASS/ ANDEX         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	METRES       ROCK TYPE / ALTERATION       GRAPHC LOG.       MINERALIZATION/STRUCTURE       Sample Sumple Log.       Sample Links       Sample Links       Sample	METRES       ROCK TYPE / ALTERATION       GROPHC LOG.       MINERALIZATION/STRUCTURE       % SUPPLE       SAMPLE WITEWAL       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       - </td <td>METRES       ROCK TYPE / ALTERATION       GRAPHC LOC       MINERALIZATION/STRUCTURE       Summe Sample Summe Sample       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td> <td>METRES       ROCK TYPE / ALTERATION       GRAPH LOG       % LOG       SAMPLE ENTE       SAMPLE MOTE SAMPLE MOTE SAMPLE MOTE NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -</td>	METRES       ROCK TYPE / ALTERATION       GRAPHC LOC       MINERALIZATION/STRUCTURE       Summe Sample Summe Sample       ASSAYS         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	METRES       ROCK TYPE / ALTERATION       GRAPH LOG       % LOG       SAMPLE ENTE       SAMPLE MOTE SAMPLE MOTE SAMPLE MOTE NO.         403       Premier porphyry dike       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -



part 2 of 2