

ZEEHAN TIN DEPOSITS, WESTERN TASMANIA
PETROLOGICAL DESCRIPTIONS IN ABBREVIATED & TABULATED FORM
1984 - 1986

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2	Williams & Queen N° 5 Dumps
3	Oonah/Comstock
4	Taylor's/Clarke's (adits & stopes)
5	Stormsdown
6	Queen Hill Bench/ZQ1 & Golf Course Opencut
	<u>DRILL HOLE SAMPLES</u>
	Holes, for which samples are described, are arranged sequentially for each deposit. Sample numbers are listed sequentially for each hole.
	<u>QUEEN HILL DRILL HOLES</u> (190 PTS, 49 TS, 16 PS)
8-64	Drill holes (prefix ZQ) 3, 4, 5, 6, 13, 18, 45, 46, 47, 48, 49, 50, 51, 52, 53, 55, 57, 58, 60, 62, 63, 66, 71.
	<u>MONTANA DRILL HOLES</u> (51 PTS, 44 TS)
65-85	Drill holes (prefix ZM) 20, 27, 37, 67, 78, 86, 88.
	<u>SEVERN DRILL HOLES</u> (217 PTS, 69 TS, 8 PS)
86-143	Drill holes (prefix ZS) 39, 40, 41, 43, 65, 69, 72, 73, 74, 75, 77, 80, 82, 87.

EXPLANATORY EXAMPLE SHEET

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS

HOLE No. ZS--Page (for particular drill hole)

Aberfoyle (& UNE)

SAMPLE No. HOLE/DEPTH Sn ** TEXTURE

QZ CB SD MS CL PL TR FL SE TP PO PY MC AS CS ST TE BM OTH.. FI PA PH

SAMPLE No.	HOLE/DEPTH	Sn	**	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH..	FI	PA	PH	
'251689(034)'	*downhole depth			**routine XRF analyses done for Aberfoyle; ppm unless stated in%; NB:- analysed intervals usually much larger(20cm-2m) than that represented by the petrographic specimen	QUARTZ	CARBONATE	SIDERITE	MUSCOVITE	CHLORITE	PHLOGOPIITE	TOURMALINE	FLUORITE	SELLAITE	TOPAZ	PYRRHOTITE	PYRITE	MARCASITE	ARSENOPYRITE	CASSITERITE	STANNITE	TETRAHEDRITE	BASE METAL SULPHIDES	OTHERS				
'251690 TS'	thin section only			- no analysis -4 less than detection																							
'251691 PS'	polished section only																										
d) paragenetic sequence					<p>relative mineralogical content</p> <p>C- constituent (> 5% areally) A- accessory (1-5% T- trace (< 1%)</p> <p>a) diamond drill hole prefix ZQ-- Queen Hill) ZS-- Severn } - respective ore position ZM-- Montana }</p> <p>b) cassiterite description -- size -- shape -- colour -- association</p> <p>c) preliminary fluid inclusion description -- host mineral -- size</p> <p>e) qualitative assessment blank- not observed ? - questionable * - probably reliable & useful ** - important &/or useful</p>																						
e.g. '1) ... → (followed closely by).... 2) ... 3) ...'																											
NB.:- OTHER ABBREVIATIONS USED IN DESCRIPTIVE PASSAGES ARE LISTED ON THE NEXT PAGE																											

is corresponding UNE n.° (R60-prefix)

in bracket

ABBREVIATIONS continued

prob. probable	St stannite	vn. vein	NB. <u>Grainsize approximations</u> fg. (fine-grained) = <100microns mg. (medium-grained) = 100u-1mm cg. (coarse-grained) = >1mm
prox. proximal	stalact. stalactitic	volc. volcanic	
Py pyrite	stockw. stockwork	vs vesuvianite	
Py. pyritic	subang. subangular	vs. versus	
Py' pyrite after pyrrhotite	subeq. subequant		
	subeq. "	wh. white	
	subh. subhedral	wk. weak	
qz quartz	subrd. subrounded	wkly. weakly	
qzite. quartzite	syn. syngenetic		
qzose. quartzose			
	T trace	x twinning	
	t'out throughout	x-cut. cross-cuts	
rdd. rounded	tab. tabular	xd. crossed	
reg. regular	tc talc	xstal. crystal	
repl. replaces	Te tetrahedrite	xstall. crystallised	
rexst. recrystallised	text. texture		
rt rutile	tp topaz	yell. yellow	
	tp. topazised		
	tr tourmaline		
s/w stockwork	tr. tourmalinised	zr zircon	
scatt. scattered	TS thin section		
sd siderite	tuff. tuffaceous	<u>ADDENDUM</u>	
sd. sideritised		adj. adjacent	
se sellaite		acc. accessory	
sed. sedimentary		ca calcite	
sh. shale	u microns	exsol. exsolution	
shr. sheared	U+ uniaxial		
silic. silicified	positive		
sim. similar	U- uniaxial	gen. generally	
slt. siltstone	negative		
sm. small	ui. unidentified	pseudo. pseudomorph	
Sp sphalerite			
spher. spheroidal	var. variable		
sr sericite	vfg. very fine-grained	sde. sulphide	
sr. sericitised	vi vivianite	ser sericite	
sst. sandstone	vlt. veinlet		

ABBREVIATIONS

→ indicates, altered to, followed by	brecc. brecciated	dom. dominant	Jm jamesonite
x twinning	bt magnetite		
ō with	C common	ellip. elliptical	l+ length slow
ōin within	'C' kerogen	equ. equant	l- " fast
// parallels	C carbonaceous	espec. especially	lam. laminated
# cleavage	material	euh. euhedral	lge. large
= equal amounts	C. carbonaceous	evap. evaporitic	lc leucoxene
=. equivalent	C.A. core axis		lent. lenticular
h perpendicular to	cb carbonate	fd feldspar	leuc. leucocratic
.. up to .. (grainsize)	CCF Crimson Creek Formation	feld. "	lith. lithological
	cent. central	fg. fine-grained	lx leucoxene
	cg. coarse-grained	FI fluid inclusions	
	ch chert	fl fluorite	mass. massive
	chalc. chalcedonic	fol. foliated	mat. material
	cl chlorite	fract. fractured	Mc marcasite
	cless. colourless	frag. fragment	med. medium
	clr. clear	fram. framboid(al)	mg. medium-grained
	coalesc.		min. mineralisation, -ed
	coalescing	glom. glomerophytic	ms muscovite
	conc. concentrate	gm. groundmass	mt magnetite
	cong. conglomeratic	Gn galena	
	congl. "	gr. green	o'grown overgrown
	cont. continuous	gran. granular	o'print overprinted
	Cp chalcopyrite	granobl. granoblastic	occ. occasional
	corrod. corroded	gy. grey	oct. octahedral
	cren. crenulated	EYP. gypsumiferous	oth. other
	cs cassiterite		
	cub. cubic	hm hematite	PA paragenesis
		hyd. hydrothermal	pl phlogopite
			plag plagioclase
			pleo. pleochroic
	det. detrital		PH (photographic) feature
	detr. "	incl. inclusions	pheno(s). phenocryst(s)
	diag. diagenetic	interbdd. interbedded	Po pyrrhotite (Poh- hexagonal;
	discont. discontinuous	interlam. interlaminated	poik. poikilitic Pom- monoclinic)
	diss. disseminated	interstit. interstitial	poss. possible
	dissem. "	ir ilmenorutile	pref. preferably
	dk. dark	IR internal	princ. principle
	do dolomite	reflections	prism. prismatic (continued)
	do dolomitic	irreg. irregular	
		isotr. isotropic	
B+ biaxial positive			
B- " negative			
blog. biogenic			
biref. bireflectance			
birefl. bireflectance			
Bl boulangerite			
BM base metal			
br. brown			

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS39 Page 2/2 page 87

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
211135 TS cb.felsic volc- aniclastic	39/237.8	310		C	C					bt C					sde.-	C										zr?
211136 TS Po cb volcani- clastic	39/222.6	1.32%	poss.lath pseudos(fels?)	C	C		C								C				T							

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS40 Page 1/ 3 page 88

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
211131 TS Cl. andesite	40/222.5	-		T	C			C							opaques-	A										plag C
211132 TS	40/226.2	-		A	C			C																		hm-T; oxides A; plag C

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS40 Page 2/3 page 89

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
296790 (350)	40/192.7	-	wkly. bedded fg. clay/qz/hm alt. det. sd; fg.-10u dissem. anh.-subh. & subfram. Py in bedding// concs. & clots-40u	C-	C?										A							C-hm			
296792 (351)	40/211.3	310	bedded clay qz sd fg. sed.; sd-qz fl-euh. Py anh. Gn Sp vn.; Sp- green br. c abt. Cp Gn incl.; anh. Gn gr. adj. to Py	A-A-	A-	C-repl. or sed.				A					A							A-Sp, T-Gn, Cp		?	
296793 (352)	40/213.8	1,650	host- scarce relict areas of flaser fol. fg. qz/opaque(?) c irreg. fg. sd spots; irreg. s/w. of Py' sd (qz) vn.; zone of mass. Py' As sd (qz); rare colloform sd euh. Py lent.; rare irreg. cl repl. sd	C			T								C-Py'		A								*
296794 (353)	40/217.2	4	fg. qz cl gm. c subrd. qz qzose cl frag.-1mm; do patches c ca incl. & sd rims; qz sd (Py) vn.	C-		A		C							T										*

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS40 Page 3/3 page 90

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
296795 (354)	40/241.2	-4	anh. qz qzose silt clasts in dirty fol. ex-clay gm.; Py euh. diss. in sed.; 1) qz vn. 2) qz sd Py vn. sd clots in gm.	C-	A-	C-									C										
296796 (355)	40/256.0	65	interlam. qz silt/ mg. mosaic sd/cl. shale; fol.; clots & vn. Po sd c Py rims; Po speckled fg. Py mg. clear:	C-	C-	A-									A-A-Py' vn. vn.								ui-grey skeletal vn. opaque T- maghemite? Cp		*
296800 (356)	40/271.2	-	contorted lam.- fol. qz sr C silt det. y shale; rare sandy beds & qzose lithic frag.; qz Py vn./clots; qzose abt. anh. diss. Py clots	C-	T	T-									C-							C-C			
296802 (357)	40/293.6	1,650	subrd. qz plasts (sp tr) 30u framed work c tp? sr matrix; rare ms clasts; 0.2-2mm diss. Py anh. c o' growths; qz (gr. ui. Py) vn. cutting earlier C? vlt.	C-		T-				A?			A?		A-								ui-green-blue phyllo-sil. tr? in vn. A-lx T-C		
296803 (358)	40/304.0	-	subrd. qz sand framework c tp. det. sr matrix; interstit. vfg. gr. tr c prox. interstit. anh. Py	C-		A-				A-				C	A-hyd.							T-mt, zr (det.)		?	*
296787 (349)	40/120.2	-	dirty fol. sr qz silty gm. c scatt. det. coarser qz silt blasta; zones of fol. red oxid. sd? cl alt.; trace Py in sd;	C-	A?	C									T									tp/ tr alt. Q	

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS				HOLE No. ZS43 Page 1													page 93									
SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
88963 TS	43/166	-	interbdd.fg.qz cherty/pelite 1)qz cb sde vn. vn.calc.shaly 2)cb qz vn. chert/calclutite	C	C		A								T	A			T?	T?	T?	A-Gn	T-C		?	qz
88964 TS	43/171.5	-	ang.qlastic qz -400u in cl or tuff.volcano- mict qz wacke/ pelite	C	C			C		T	detr.				T							T-Gn	A-			opaque
88965 TS	43/176	-	interbdd.cb fg.qz (cl)rexst. silty/shaly/ calclutite	C	C			A														T-Sp	T-			leuc
88966 TS	43/185.5	-	weakly bdd.cb cl pelitic qz in bedded cb	A	C			C							A							A-Sp	A-			leuc Sp
88967 TS	43/301	1,800	silty argillite ser alt. silty shale/silty sandstone interbeds	C	T		ser C A- ms			T	T-detr. bt				A					A?		A-Cp	A-			leuc sde
88968 TS	43/312	2,000	sde qz fl vn.arg.silty cherty arenite	C	T		A- ser			T	A hyd.				C					T? 40u equ. subh. fl qz br	A?	A?	A-Cp			*

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS				HOLE No. ZS43 Page 2/2													page 94										
SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH		
88969 TS	43/323	-	rounded(milled?) qz & qzose frag. in fg.qz/ser gm. anh.Py repl.silic. frag.;poss.tr clusters; cg.cs in qz Pymosait; prob.fg.cs in gm.	C				C- ser		T?	A				C											*	cs
296892 (409)	43/15.0	-	sd>Py Sp lode (WILLIAMS LODGE)					C							C							C- Sp					

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS65 Page 1/3 page 95

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
233808 Pl qz Po rock	65/249.2	3.900	Py euh.in Po; St±Cp 1)tr qz ap 2)Po Py→Cp St cut Po	C	C	C	C	C	A					C	→A	T	T	A			T-Cp	A-ap, rt A- tc	*	*	St in Po	
233809 Sd Py rock	65/252.4	1.15%	tr incl.in qz; 1)tr 2) euh.qz cs 3)sd Po fl Cp St	A	A	C	A	sr	tr	matte	A	A	repl.by sd	→C T					T-c Cp		T-Cp	tc				
233810 qz Py sd rock	65/257.8	2.10%		C	A	C				T	A			→C				T (qz, Py, C) (sde, qz) C (sde)		T		*	?	cs		
233811 qz Po rock	65/261.3	4.3%	relict bedd- ing by qz	C	A		T						T	C	A					T-Cp					?	cs
233812 qz Po rock	65/261.8	7.2%	lacy inter- granular; *cs in Py	C	C				T?		A	T		C	C	A				T-Cp		*	?			cs
233819 TS cl.greiwacke/ cl.shale	65/234.9	650	qz, ch, ser fd, felsic lava shards	C	A		T	C													A-lx		*			veins
264964 (285) cl.ser.greiwacke	65/147.9	40	fenestral Py	C	A		C	C							C						T-Cp	A-ir				
264967 (286) 1)qz Py (Cp) 2)cb fl vn.	65/171.8	3,800	sed.cut by Py qz vn.then cb fl vn.	C	A	A		C			T				C						T-Cp	T-C' in Py	*			
264971 (288) sheared argillite	65/188.6	140	bedding repl vn. by Py cb trails			A									C						T-Cp		?	?		repl
264972 (289)	65/204.6	1.1%	brecciated			C								A	C						T-Cp					
264973 (290)	65/215.6	460	sheared	C		C	ser /blay C	C		T (cl)				A	C				T (qz)		T-Cp (Po)					
264974 (291) qz sd cs As lode	65/222.7	20.3%	cs euh.corrode euh. qz; Py fills interstices & as vlt.s.in qz & cs; anh. & corrodes cs; fl altered As & Py euhedra corroded by sd.	C	C	T		T	T	T				A	T	C	C-50-300 euh.equ.-321pr interstitial to qz & smaller anh. cs grains in qz				T-Cp	A-ir T-C' as	?	*		Py As

PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS65 Page 2/3 page 96

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH		
264976 (292) min. greiwacke	65/244.5	1,300	intraclasts *1)PyI 2)PyII pl 3)cb	C		T				→C					C						T-Cp		*				
264978 (293) pl Po rock	65/249.3	3,900	weak lam, perv.repl. Cp St *1)pl 2)cs qz? ir→Po cs? sd→Cp St 3)Po→Mc	C						C				C	A	T			T -300 ang. pl near Po		T-Cp	T-ir	*	*	St		
264979 (294) Mc sd rock	65/252.7	5,100	Mc vuggy	C		C										C						A-vl			?	vl	
264984 (296) Po qz se cs rock 1)cs→qz sd→se ap 2)As→Po Cp sd	65/261.0	4.3%	euh.qz δ cb rims; sd rims qz as buffer to Po; cg.rdd.cs is fractured & infilled C Po & Cp	C	A					T incl.in se & ap		C		C	A		A	A	br. qz sde equ.		A-Cp T-Sp	T-rt few	*	*	?	qz cs, Po se cuts As	
264985 (297) tr pl→cs ir→Py→Cp sd St	65/262.7	5.45%	lam.silt- stone relict; ir cut by Cp	C		A				A						C?			T		A-Cp	T-bl?	?				
264986 (298) cl Py vd. argillite *1)PyI 2)PyII cl 3)qz	65/265.9	800	brec. shale SRF's clay? ser C												C								*				
264987 (299) fl cem. Py breccia *1)Py 2)qz →brecciation 3)fl →pl 4)Py→ Cp St Bl sd hm vlt.s.	65/267.3	1,100	euh. vlt.s. trails of fg.rosettes cutting fl	C		A				A		C			C				T C Cp		T-Cp	T-sp	*	*			
264988 (300) brec. shr. argillite qz cl cs rock cs in cl vn.; by Cp & C'?	65/271.1	580	qz→cl→cs Py→sd	C				clay ser C							C												
251689 (034) cs in cl vn.; by Cp & C'?	65/250.7	1,800	cs fract.infilled. 1)qz→sd? 2)cl→cs→Py'C'→sd fl	C		A			C→A						C-Py' after Po			A cl vn. 100-300				A-C' A-ir	*	*		vein	

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PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS72 Page 6/6

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
296783 (348) Py tp alt. sandstone	72/338.2 1)tp tr sr→cs 2)Py	-	fine qz sand framework- sub-rounded, 5% ex-interstitial argillite alt. to tp tr; rare det. tr gr.; dissem. cg. euh. Py c̄ tp? & det. qz/tr incl.	C				A c̄ tp		T				A	C										?	

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PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS73 Page 1/4

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
296817 (366) Py sd qz vn. sd. diag. carbonate alt. silty wacke	73/156.7	-	40sd:60qz rhombs/clasts (20u) in vfg. qz? gm.; Py sd cl? & qz cl? irreg. vn.; scattered Py anh.; cl? cores to sd vn.	A- det.	C- sed.	T- vn.	A? det.								A- hyd.										?	
296818 (367) Py qz As to cs vn.	73/172.2	1.31%	clear subh. cg Py/As c̄ interst. mosaic qz clusters; interstit. tc/pl? c̄ abt. cs clusters; qz occ. stressed;	C- hyd.	A	T	A?								C- hyd.	C	A- subeq. rdd. anh. 10-100 clusters in rare sd, qz							*	*	? in tc
296819 (368) Py cb vn. sd. qz silty wacke	73/183.8	310	sandy-silt size qz/qzose frag. c̄ abt. sd clots; Py ank. vn.	C- det.	A	C- hyd.?									A- hyd.											
296821 (369) Py cl sd qz vn. cl. silty shale	73/193.1	145	fol. cl. gm.; scatt. silt-size qz/cl lithic ang. clasts cl qz sd Py vn. euh. qz, cl repl. o' grows qz	A- vn.	A- vn.	C- vn.																		?	qz rare	
296822 (370) qz cl/sd Po Py vn. cl. silty shale (review for PA) 1)sd Po Py Sp 2)qz cl Py As } cf below	73/196.3	230	subang. qz/cl lith. frag. in cl. gm.; oxid. sd clots; qz cl rosettes sd(cs)vn.; Py repl. sd; cl repl. ?sd; Py/Po c̄ sd; qz c̄ cl; sd rim to Py; Po speckled	A- vn.	A- vn.	C- vn.									C- vn.	C- vn.	A? dull	A- in	T 60	T subeq. clty	A- Cp T- Sp, Gn			*	?	
296823 (371) Py sd(Po cs)vn. qz cl vn. cl. qz lithic wacke 1)qz→cl inner 2)sd→Py(Po) inner 3)hm vlt.	73/199.0	-	ang. qz, qzose, cl. sand-size clasts in cl fol. dirty gm.; diag. qz vlt. qz cl vn. cut by sd Py(Po cs)vn.; sd Py repl. clots in qz cl vn. (d haloes to: Py) vfg. Cp in sd rim to sd Py vn.	C- det.	A- vn.	C- hyd.									T- vn.	A- vn.				T- 30 single subeq. sd	T- Cp	A-lx		**	? cl Py/ sd	

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PETROGRAPHIC SUMMARIES - ZEEHAN DEPOSITS HOLE No. ZS73 Page 2/4

SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	EM	OTH.	FI	PA	PH			
296825 (372)	73/210.6	-	rdd.cl.pl.sd cg. A- clasts & subang. det. sd vn. brecc. qz vn.cl. pl. calcirudite 1)cl pl 2)qz 'C' 3)sd (POVERTY POINT BEDS)	A- sed.	A- sed.	A	C								T								A?- tc A- 'C' in qz vn.	*				
296826 (373)	73/211.6	-	lam.vfg.det.sd. A-C- cb & fg.qz lent. vn.vn.sed. & rare det.qz; A- weak crenulation; sed. blocky areas of subh.mg.Py; irreg.qz sd vlt. broader pb (Py) vn.	A- C- sed.	C- vn.										A													
296828 (374)	73/217.7	-	subang.-subrdd. C- qz,qzose,cl.lith det. tc sand clasts in A-vn. dirty fg.cl. gm. vn. euh.qz vn. & cb Py Gn interstitia; cs in qz vn.;cb vn.& clots cut by pl	C- det.	C- vn.										A- vn.									T- Gn A-lx T? det.fid	? *			
296829 (375)	73/225.2	1,050	mg.sand-size rdd.A- cl.cb clasts(wellvn. sorted & packed) & lesser qz clasts; sd(qz Sp Gn)vn.;qz?euh. in sd C Po -prob.earlier vn. diss.Sp in sed.gm.	A- C- sed.	C- vn.										A	A								A- Gn A- Sp	T- ui in sd (qz?)	*		? Po in sd
296830 (376)	73/225.9	1,050	silt-size qz,fd, C- qzose subrdd. det. (corroded?)clastsA- in vfg.cl.gm.; vn. mg.Py subh.in bands // fol.(bedding?):prob.as Py in irreg.cg.Py'mosaic qz; x-cutting cl(sd)vlt.; also rare to?in sd vlt.;	C- det.	T- vn.										--Py'										A- fd (det)	*		? qz
296831 (377)	73/226.3	1,450	cg.anh.frag.sd & A- As,lam.sed.Mc,cl.chert sr sed.in fg.gran. sd;cg.sd repl.Py;clear As repl.Py cg.qz Py clots;sd lined vugs in sd gm	A- C- sed.	C- vn.										A	C?	C								lx?- in cl	*? *		brecc PA

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	EM	OTH.	FI	PA	PH		
296833 (378)	73/229.2	-	1mm-1cm calcilut. C- ite rdd,frag.in det. matrix of fine A- sand-size subrdd.vn. det,qz in vfg. semi-isotropic cl? gm.;prob.sed.breccia,however some tectonic flowage evident; hazy rexst,sd vn.in sed.sd;relicts of cg,vn,qz o'grown by fg.sd;latter also as fg.patches in inter-clast 'cl'gm.;	C- sed.	A- vn.			C?																		? sed. brecc. text.	
296835 (379)	73/235.1	-	500u-1cm calc- A- ilutite rdd.fragdet. (some det.qz A- bearing) & sd hyd. det./vn.qz m-fg. matrix; qz vn.pre-brecc.;rare sd rexst.vn.;scatt.Py subh.-fg.diss./mg.in interclast areas;	A- sed.	C- vn.										A- hyd.												
296837 (380)	73/240.5	-	cg.silt-fg,sand G- subang.qz,lent. det. ms,rdd.tr grains in 40%high relief granular gm.(tp?);diss,anh.-subh.mg.Py well bedded-lam.;subtle vfg.dark filamental staining --bedding; finer sr.lam.show x-cutting fol.	A- det.	T- vn.					T- det.				C? gm.	C- subh. diss.												
296838 (381)	73/264.3	-	interbedded cl. C- silty qz/coarser det. siltstone/sandy A- siltstone;anh.Py repl.pref.beds; c weak assoc.qz;dull Py'? cores in vn.& clear Py rims repl.earlier sd vn. & cl cores; sd clots throughout	C- det.	T- hyd.					T- det.						C- hyd. A- ->Py!(dull)											?
296840 (382)	73/284.0	-	subang.qz fg.sand C- (tr ms)in tp?.sr det. vn.det. gm.(fg.gran.);Py(sd)replacive vn.	A- det.	T- vn.					T- det.				C?	A- vn.											T-lx T-det. zr	
296842 (383)	73/294.0	-	qz sand grains C- in sr(tp?)gm.; det. qz Po Py As sd C-vn. cl cs vn.-cl margin. euh.qz,sd sds.intergrowth,sd->cl; As subh.fract.d & veined stubby prism, sd,cl,embedded in Py Mc & by Mc & sd; Py subh.o'grow colloform Mc	A- det.	C- vn.					T- det.					A	C	C	A								T- C' Cp	** * CS PA

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
296845 (384) brecc.tc.sd 1)qz 2)sr pl 3)sd →tc	73/304.4	-	subang.silty-sandy qz in fg. gran.silic.or tp. C- det. sr gm.;mod.brecc.hyd. text. C sr relict det. qz/cg.qz pl.inter-frag.arsas & tc.sd vn./patches	C	A	A-sr		A					C?										A-tc?	*	

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
250397 TS sd fl vn.tr sd sr alt. brec.chert	74/368.8	7.450	brec.& shr.vfg. qz(chert)gm.; scattered tr & sr patches;ragged & shr.sd;tr in sd qz sr;xout by sd fl qz Py vn.	C		C A-sr				A A euh. needles					A									*	
250398 TS qz sd vn.Py tr alt.	74/369.5	1.7%	relict detr.qz in fg.tr gm.; euh.in *1)tr sd,& sed frag. 2)tr vn.Py? 3)sd qz repl.of shr.beds(+Py+fl?) 4)qz vn. 5)sd qz vn.	C		A				C T					C anh. E qz									*	
250399 qz Py(tp?)vn. then tr fl cs argillite(?)	74/370.3	8.0%	1)poik.Py anh./qz euh.+ vn.(+ tp?) 2)anh.tr fl cs fg.mesh repl.above; tr needles in fl/qz at gr.margins 3)fl vn.(no cs)	C		T rare in qz				C C					C		C -10-200 subequ. euh. (tr+fl, qz prox.tr or fl)			T- Cp		A-ap	**	** PA cs fl in Py	
250400 TS Py sd alt. interbedded siltstone/ silty argillite	74/371.2	803	interbedded sr-qz & silty qz; 1)Py sd irreg.vn. pref.in qzose beds; 2)sd vn.	C		A C-sr				A?					A									*	
250919 ms sd Py fl qz alt.argillie siltstone	74/373.7	73	mass.- wkly.fol. fg.qz sr; detr.; 1)qz sd fl Py(ap) A irreg.vn. vn. 2)sd vn. 3)thin sd vn.	C		C C-sr vn.				A? T					A							T-ap?	*		

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
264189A (145)	74/370.5	8.0%	fg. relict bedded C qz tr sd; det. irreg. Py clots ̄ tr incl.; sd repl. Py; fl repl. Py; tr may repl. fl?	A						C	C	A			C						T T 50-200 brown incl. rich anh. subequ. (tr prox. fl)	T-Cp		**	*	text.
264189B (146)	74/370.5	8.0%	euh. qz ̄ inter- stit. sd & poik. vn. Py; fl & cs repl. of sd (& qz) espec. along gr. boundaries Py- anh. clear	C							C				C						A -10-120 equ. subh. (sd, qz/Py prox. sd)	T-Cp		**	*	cs in sd
264190 (147)	74/372.0	803	fol. silty qz, tr gm. ̄ lx & equ. det. zr gr.; cl vn.; A- euh. qz ̄ inter- stit. sd; euh. cs in sd (repl. ?); subh. Py repl. of qzose. beds cut by qz sd vn.; granobl. qz vn. poss. earlier as terminated by tr shears	A						C					C						T 20-200 l. br. euh. 2:1 (sd)	T-lx, zr (det.), T- bl.-br. pleo.		**	?	cs sd
264193 (148)	74/378.6	9,300	folded lam. silt- stone/shale ̄ AP det. cleavage; euh. & A- mass. banded Py vn. repl. syngen. look; Py sd vn.; clots of mesh tr; sd lent. & rims to Py; subrd. qz silt gr. in select beds; tr vn. pre-Py; qzose & chert frag.	A	C- sr/ clay					A					C						C conform., euh. vn.			?		

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH		
264194 (149)	74/382.3	82	qz silt gr. in fg. C- qz (sr?) gm.; tr det. vn.; irreg. qz vn.; A- euh. qz/sd ̄ tr vn. incl./cl irreg. vn. (+Py); late hm vn.; cl as rosettes repl. by sd;	A	T-A det.					A					C- Py, C- Py						T -20 subequ. trail (tr/cl)	T-Cp		?	**	*	sd- cl
264196 (150)	74/397.2	968	subrd. det. qz (tr C- zr sp) ̄ tp? cem- det. ent; fg. silty qz C- tr (after argill- vn. ite) domains ̄ wk. bedding; fractured & disrupted; tr vn. sub-// bedding; contiguous ̄ qz Py vn. in qzose beds; qz sd Py tc vn.	T vn.						C- vn. T- det.				A?	C						T-zr det., T-tc			?	*	sd- Py, tc	
264197 (151)	74/295.4	-	lam. siltstone C frag. in gm. of fg. qz mosaic ̄ sd patches & qz prisms; irreg. zones of anh. Po Py, euh. Py, sd cl	A				C							A	C									?		
296888 (408)	74/387.4	668	fg. qz/? host; C- vn.-colloform det. Py', euh. Py As, A- euh. qz in sd fl vn. mosaic; St Cp vn. in Py; Po & Cp incl. in Py	C						T? A				A	C-C euh.,	C					A- Cp	T- ui. needles in fl		**	?	fl	

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH			
263767 TS	80/266.7	-	vfg.sr/clay wkly. T- bedded/qz silty sed. A- equivalent; x-cutting A- fol.; lenses do/sd; do cb(Py)vn. sr/clay (ex-sed.)												T												A-lc	
272082 (325)	80/148.8	-	weakly layered T- fg.do(sd?) C sty-dia.vn. A- lolic fracturing C-do which cuts several stages of cb vn. vfg.diss.Py fram.												A- fram.													?
272083 (326)	80/262.6	-	gran.C bounded A-A- A- (stained) rdd. frag(in- vn.vn. vn. situ)of fg.-20u C-sed. sd/do;cb qz C opaque? vn.cut by sd vn.;vfg.-fg.diss.anh.Py												T-												T-C C-C	*

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH					
250511 TS	81/441.2	1,900	detr.qz in repl.gm. C relict bedding	C		C		C					A		A												A-lx	? qz	? pl, tr	
250512 TS	81/445.7	2.45%	relict bedding f.g.; tr incl. in cs	C		A				C			A		C												T- Cp		? cs/ tr	
250513 TS	81/447.2	2.05%	qz as bdd. chert *1)tr 2)qz secs 3)sd 4)Py	C		A				C			A		C												A-lx		*	
250514 TS	81/449.6	1.08%	Po poik. C tp? * tr ap→qz se Po	C		T				A			T	A	C												A-ap c tr		?	
250515 TS	81/450.6	1.27%	felted tr gm.; tr incl. in se & qz; Po poik. C qz, sd marg. to Po	C		A				C			A		C												T- Cp		?* cs	
250516 TS	81/455.6	2,300	cherty qz; radiating tr in qz; vague bddg.; * 1) sr sd gm.; 2) qz Po vn.	C		C	ser A			A			T		C												T- Cp	A-lx Cp (hi.bir.) Fluorophosphate?	*	
250517 TS	81/459.2	1,900	se in Po em- baymts.; sd rims Po colloformly; **1)tr 2)Po sd se			C				C			T		C												T- Cp	**	* Po sd se	

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
264931 (265)	81/408.2	3,900	lacy, ovoid tr areas; scattered cb blebs; sd rims to Py; Cp atolls to Te	T	A			C?		C					C		C			T	T-Cp		*	?	Te	
264934 (499)	81/435.1	1,300	detr. qz/lith. frags. (var. cl); ang. sand-size; qz cl sde. vn.	C				C						T	T											
264935 (267)	81/443.7	8,100	lam. silty qz gm. scattered qz gr. det. -100; irreg. tr (qz se cs) vn.; cs interstit. to late qz; tr incl. in early qz se; Po ragged scattered & irreg. vn. C tr	C						C	A			C							T-Cp	A-lx det.	**	?	se, euh, cs	
264936 (268)	81/445.6	2.45%	bedded qz silt-stone; dissem. anh. Po C rare sd; tr mesh patches & bedding // zones; irreg. Se patches C abt. tr incl.; euh. qz C no incl. in poik. Po; cherty qz patches	C		T				C	A			C	A						T-Cp		**	?	se	
264937 (269)	81/447.4	2.05%	cherty patches in fg. qz gm.; euh. qz subh. Py se vn.; irreg. Py se tr cs patches & vn; tr needles in se + some qz; tr sl. corrodes Py euh. yet Py Cp cut tr vn.; Py cuts cs vn.	C				C-det. C-hyd.		C	A			T	C						T-Cp	T-it? needles in qz se	**	?	se qz Py PA	

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
264938 (270)	81/449.8	1.08%	euh. rel. clear qz in ragged poik. Po; tr dusted relict se patches; dusty strained qz C ex-incl.; Cp on margins of qz relicts; tr patches & vlt; rare fbl. fg. qz tr -> relict sed. ?; tp repl. by qz & se.	C						C	A			C	A						T-Cp	A-ir	**	?	
264939 (271)	81/451.8	7,900	fg. gran. qz gm.; cg. qz mosaic C abt. incl. relicts; euh. qz C interstit. poik. Po; late euh. Py vn.; rare tr sd patches C some se; cs in euh. qz Po vn.; Cp at Po qz margins; cs embays qz, Po embeds cs, cs o' grows qz Po	C						A	T	C		C	A						T-Cp	A-ir	*	?	cs qz
264940 (272)	81/453.5	1,200	anh. Po C As; Py alt. C sd vn.; fg. cl C ms; sd patches	C		A	C	C		T				C	C									?	
264941 (273)	81/455.4	2,300	fg. qz in cl; irreg. sd patches; tr rosettes C se; cs in qz Po vn. Po & ir cut fluorophosphate; ir corrodes cs; sd rims Po	C		C				C	A	A		C	A										**
264943	81/459.2	1,900	fg. mesh tr repl. sd; anh. Po clots vn. & wispy tr needles in margins of euh. qz; qz cores to As euh.; Po repl. ? As; Cp incl. in As & Po; euh. Py C sd rims repl. Po & As; fl vn. C proximal se; cs in fl; cut by Po.	C		A	T			C	A	T	T?	C	C						T-Cp		?	?	Py C sd

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
264383 (153) Py sd Po vn. coarse silt- stone	81/364.5	4,600	qz sd? silt cloudy gm. c fg. subh. Py; 1) Po → anh. Py' sd 2) sd → tc subh. Py later Py sd tc vn.					C							A C Py Py							A-tc	*			
264384 (154) lithic qz wacke	81/358.4	100	cl lx streaky gm. C- c sd patches + det. ang. qz qzose cl A sd det. frag.; vn. qz poik. Po vn. cut by vlt. of sd Cp 'C' & cl Po; Cp c Po in qz & sd vlt.; fract. anh. in. sd cut by Po vlt.			C		C											A?			T- Cp T-'C' c sd, qz T-ui sm. wh. lamellar sde. (canfieldite?), A-lx	*? *			
296811 (363) qz sd vn. stylolitic mass. sd. limestone 1) sd. 2) qz sd 3) sd	81/302.2	-	stylolitic vn. mass. fg. sd/do; hazy sd vn.; irreg. sd qz vn.; later sd vn.;					T- diag. A- vn. vn. C (staining - dolomitic limestone) sed.																		
296804 (359) sd qz Py (Gn Sp) vn. qz C 'C' brecciated calcilutite	81/95.0	-		A	C	A									A							A- Gn, Sp C-C A- 'C'				

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH	
264451 TS qz, sd(tc?) vn. Py. interbedded sr. siltstone/shale 1) qz 2) sd(tc?) 3) Py	82/92.1	-	sr. qzose. silt- stone/sr. shale; qz vn.; sd(tc?) vn.; late dissem. vn. subh. Py; sd after rhombs	C- det.		C- vn. ms- det.	sr/ -C								A hyd.							A? tc (vn.)	*			
264452 TS cb vn. brecc. Py. chert (sandy & calcareous)	82/99.1	-	chert, qz, dl sub- ang. frags-0.1 to 4mm in vfg; dark mylonite gm.; dissem. fg. anh. Py; late cb vn. + rhombs; brecc. poss. diagenetic as cherty material in some vn.	C- A- vn.	A- C- vn.			T- vn.		T- det.					A											?
264453 TS sd Py qz vn. sd. cong. silty/sandy shale	82/102.6	-	sr. shale, qz, qzite cb, sr. siltstone, det. frag. & beds; sd(Py qz tc) vn. & sd dissem.; x-cutting cleavage	C- det.		A- sr- hyd.				T- det.					A- vn.							A-tc (vn.)				
264454 TS lithic sandy shale c sd (Py) vn.	82/103.6	-	ang. qz, silt., chert sand-size grains in fg. sr. foliated gm.; sd(Py) vn. & dissem.; poss. cb lent. beds	C- det.		C- hyd.									T- vn.											
264455 TS sr. sandy siltstone; weakly sd altered	82/116.7	-100	subrdd. qz, lent. ms, tr, zr sand- grains in sr. silty gm. - well- bedded; dissem. Py/sd; anh.-100; cloud of diss. Py subh.-200u	C- det.		T- sr- hyd.				T- det.					A- dissem.							T-zr (det.)				
264461 TS qz Py, Sp, sd altered carbonate sediment 1) sd 2) qz Py → ? Sp	82/129.7	400	mesh of acicular sd c fg. qz (Py) stylolitic vlt. cb patches & diss. fg. anh. Sp c weak correlation c vlt./stylolites;	C- A- vn.		C									T- vn.							Sp	?	?		

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
251901 (041)	82/94.1	-	brecc. of Fe-dolomite c Fe-poor dolomite interstit. patches, diagen.? dolomite/qz/Py vn.; stained; qz strained	A	C-d										A										? text
251904 (042)	82/106.9	-	subrdd. sand-size qz (fd?) in silty det. sr qz ms gm.; abt. T-vn. diss. subh. Py; qzose & chert & sr frag. some qz frag. c Py or sd o'print; cherty ooids c Py rims (syn.)		C-			A							C-syn.						A-Sp				* Py oxides
251905 (043)	82/113.8	-	vein-palmate sd mesh c ragged interstit. qz trails; Py anh. granules in zones of fg. sd; Sp/Gn c qz trails; late cb vn.; rare tc? vlt.		C-A-C											C					Sp-A, Gn-T				* T-tc?
251906 (044)	82/116.0	-100	subang. qz lent. ms, rdd. tr/zr/sp in interbdd. sr. silty/sr gm.; Py sd Sp Gn vn. c repl. character as relict det. qz trapped; diss. Sp in sed also.		C-			A-sr							A? (after sr gm)						A-Sp, T-Gn				* T-zr (det.)
251908 (045)	82/118.4	1,200	qz mosaic after chert disrupted by replacive sd vn. c Py rims -> skeletal text.; qz zones in sd vn.; Py also anh. clots in sed. gm.; br. ui. opaque (C?) in Py;		C-											C-vn.					Sp-A, Gn-C, A				* Py rims to sd

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SAMPLE No.	HOLE/DEPTH	Sn	TEXTURE	QZ	CB	SD	MS	CL	PL	TR	FL	SE	TP	PO	PY	MC	AS	CS	ST	TE	BM	OTH.	FI	PA	PH
251909 (046)	82/123.6	200	mass. interlocking weakly fractured (diagenetic) qz Sp Gn (Py) vn. sd. mass. carbonate rock		A-										T						A-Gn, C-Sp				* T-tc?
251910 (047)	82/128.2	400	fenestral sd mass. mosaic c diagen. qz patches; trails of replacive Py Sp Gn cs qzcs after qz, as embays qz; cs accidentally embedded in Sp		C-										T A incl. in Sp						C-Sp, A-Gn				* A-subsequ. anh. 1. br. 50u
251912 (048)	82/133.2	300	mass. interlock. mg. sd c stressed qz mg. (stressed or embayed; irreg. Py Sp Gn clots replacing qz sd;		C-											C					A-Sp, Gn				* c qz in sd, Sp
251913 (049)	82/135.1	40	sand-silt-size subang. qz in fg. sd gm.; mod. lam.; T-Py sd (qz sr(tc?) vn. vn.		C-										A-vn.						A-lx (det.) T-tc?				
296859 (393)	82/142.3	-	as above except abt. f-mg. sub-euh. Py in beds -> syn.; sd qz Sp vn.		C-											C-syn.?					A-Sp				* ? syn. Py
296862 (394)	82/148.8	-	contorted/brecc. qz sandy sr. sh dololomite; Py qz sd vn.; beds of vfg. subh. Py (syn.)		A-C											C-hyd. A-bdd.					T-Sp				(embedded in Py)

