Aberfoyle Resources Limited
EXPLORATION DIVISION

DIAMOND DRILL LOG

PROJECT : ZEEHAN CML 36M/81

PROSPECT: SEVERN

121357

HOLE NO: ZS 90
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LOGGED: DJN
DATE: 26/7/89

DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
CO 14.5				Pre-collar - Tricone No Core Recovered.								
14.5 29.0			gn lh Gw	gn lithic Gw intensely brkn and fractured (drill induced?) highly weathered and leached. From 27.5-30.0m there are minor Mst clasts (>0.3cm in diameter).							Core somewhat weathered & possible dissolution cavities present.	
29.0 30.7			gn lh Gw	gn gritty lithic Gw mnr to abundant bk Mst fragments (2-25mm) dispersed throughout the Gw. Contains abundant immature volcanic detritus.				Jointing and small scale fault development @ 45° to CA			Mnr dissolution cavities developed from 29-29.5m Core highly brkn from 29.7-30.7m due to jointing & drill induced fracturing. Some Ca lining fracture surfaces. Bedding possibly @ 40-45° to CA ⇒ from alignment of Mst clasts.	
30.7 33.3			gn lh Gw	gn lh Gw mnr ibd bk Mst & odd large Mst clast.		Mnr 1-3mm Cc vn development & an early 1-2mm vn set @ 30-40° to CA cut by later 2-3mm set @ 50° to CA & @ a high ∠ to the 1st set. Also irregular Cc vn develop't @ low ∠ to CA. At 30° to CA a Cc vn 4-15mm wide is developed @ 33.7m. Mnr irregular 1-2mm Cc vnlts are developed throughout					Mnr dissolution texture from 31-31.5m Wispy Mst layers @ 25° to CA defining bedding.	
33.3 33.8			gn lh Gw	Coarse pl gn gritty lh Gw & abundant 1-50mm irregular to elongate Mst clasts in coarser 0.5-1mm sandy mtx.							Upper contact @ 20° to CA Possibly grading uphole as coarser Mst fragments occur towards 33.8m	

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Depth	Drill Runs	Core Loss	Rock Name	Description	Alteration	Veining	Mineralisation	Structure	Weathering	Visual Log	Remarks
33.8 – 34.0			gn lh Gw	A highly disturbed interval of contorted and disrupted gn lh Gw with clasts and wispy bands of Mst.		Abundant Cc. vns developed @ 40° to CA & irregularly anastamosing throughout the interval.					
34.0 – 36.0			gn lh. Gw	gn lh Gw c̄ mnr wispy bands of bk Mst, somewhat contorted by small scale slumping and partings.		Cc. vns 1-4mm are developed @ 45° to CA in places fracture ∥ veins. A x-cutting narrow < 1mm Cc. vn set occurs @ 15° to CA.		Possibly small scale Flt'g &/or joint develop @ 15-25° & 45° to CA from 35-35.5m.			Narrow Mst bands define a possible So @ 50° to CA.
36.0 – [illegible]			gn lh Gw	gn lh Gw is cut in places by narrow 1-50mm Mst bands in places laminated but generally massive Gw c̄ odd coarse bk Mst clast → to gritty lh Gw in appearance.		Cc. veining 3 generations 1. 2-10mm vns somewhat wavy & irregular @ 50-60° to CA. 2. Narrow < 2mm vns @ 35° to CA. 3. Narrow < 4mm vns resealing jts @ 5°		small scale mov't 1-5cm along jts has been resealed by later Cc. vns but disrupts So & earlier Cc. vn sets. Generally @ 5° to CA with high ∠ 45-50° slickenslided surfaced fractures (possibly Flts?)			So laminations @ 35° to CA.
38.6 – 41.2			bk Mst. lam	bk lam. Mst c̄ mnr ibd gn lh Gw as 1mm to more massive 10cm bands (9:1 = Mst : Gw). From 40.9–41.2m core fractured & brkn c̄ bk Mst → graphitic Mst c̄ some pug developed.		Irregular anastamosing Cc. veinlets 1-2mm wide c̄ assoc. Py cut the Mst. c̄ Sharper 1-5mm vns @ 35° to CA & @ a high ∠ to So.	Mnr Py min^n assoc. c̄ irregular anastamosing Cc. vns Py @ 40.4m & 38.7 & 38.95m	40.9 – 41.2m graphitic & pug lined Flt occurs. Core highly brkn.			well developed So laminations @ 40° to CA.

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DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
41.2			bk Mst ± bd gn lh Gw	Highly contorted & slump disrupted intensely fractured & Cc veined interval of ± bd bk graphitic Mst & gn lh Gw (mg). From 41.2 -41.9m ± bd grggy lh Gw & bk Mst ± some rafting of Mst into Gw ± irregular bed surfaces to the Mst.		Intense anastomosing veinlets 1-2mm of Cc ± mnr assoc. Py x-cut So ± sharper veinlets 1-4mm @ 60° to CA. From 41.9-42.05m broad Cc. vn ± assoc. wispy bk Mst bands.	Mnr Py blebs assoc. ± Cc. veinlets.	From 42.05 -42.6 highly fractured & graphitic & grggy fracture surfaces ± mnr irregular cc. vn develop't			From 41.2 - 41.9m So @ 30° to CA. Strong slickenslide develop't on fracture surfaces @ 15° to CA.	
42.6												
43.8			gn lh Gw	gn lh Gw ± mnr ± bd bk graphitic Mst Gw mg ± Cc & Mst flecks (<2mm).		Intense Cc. veining throughout ± irregular anastomosing veinlets 1-3mm & some x-cutting veinlets @ 40°/60° to CA.	Mnr Py assoc ± the anastomosing Cc veinlets	From 42.9 - 43.1 intense fracturing & filthy? ± Slickenslide graphitic surfaces			Possible So develop't @ 10° to CA? At 42.8m Slickenslide Cc. veined fracture surface @ 10° to CA.	
45.5			gn lh Gw	gn gritty lh Gw ± 1-3mm Mst flecks throughout mg lh Gw.		mnr irregular Cc veining @ 245° to CA ± mnr vns @ 20° to CA.		From 44.3 - 44.5m highly fractured possible faulting? more likely drill-induced				
46			gn lh Gw ± bd bk Mst	gn lh Gw ± bd bk Mst ± (Gw : Mst = 5:1) 45.3-45.6 & 44.6 - 44.8m intervals of bk graphitic Mst.		mnr anastomosing blebs & veinlets of Cc ± veinlets @ 30° to CA @ high ∠ to each other Also some veining sub // to the CA.		Fracturing along Cc veinlets @ 30 & 50° to CA & @ 45.6m mnr slump disruption of So along a plain @ 15° to CA @ 45.3 - 45.5m slickenslide fracture surface @ 20° to CA			Possible So contacts @ 45° to CA b/w Mst & Gw.	
47.3												
47.0			gggn bk Cg → brec. lh Gw	A gn mg lh Gw mtx ± coarse S-rounded to elongate bk Mst clasts dispersed throughout.		Mnr Cc blebs & veinlets dispersed throughout ± mnr vein sets @ 40 & 55° to CA ± some q cosa ± Cc. From 47.7-47.8m thick Cc vn @ 60° to CA.	Mnr Py veinlets @ 47.3 m @ 35° to CA				Possible bedding defined by alignment of Mst clasts @ 20-30° to CA. Lower contact ± bk grggn. Mst @ 30° to CA.	
47.7												

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48.7 – 49.3			bk graph. Mst	A highly fractured interval of bk graph. Mst ± mnr ibd ggg lh. Gw.		Mnr irregular Cc veinlets x-cut So. ± Strong Cc vns developed From 48.5 – 48.6m ± Cc displacing & disturbing remnant Mst.	Mnr Py veinlets developed subll to So.	Fracturing subll to bedding possibly drill induced.			bedding lamanae @ 30-35° to CA.	
49.3 – 51.0			bk graph. Mst	Relatively competent bk Mst ± mnr ibd Ss.		Extensive irregular Cc veins throughout ± some vn sets @ 30 & 50° to CA	At 49.4m Py asse ± Cc as veinlets @ 50° to CA.	Fracturing @ 60° to CA often ↓ed ± angular or paralleled by Cc vns.			Possible So developed from 25° to CA @ 49.6m to 35° to CA @ 50.6m.	
51.0 – 55.1			gn lh Gw ibd bk Mst	Well developed gn lh Gw ibd ± gg bk Mst, in places well laminated. (Gw: Mst = 2:1) Mnr rafts of sedimentary (syngenetic) Py occur ± Mst fragments in Gw. Also mnr Py bands subll to lamanae in more Mst rich intervals.		17 Cross cutting Cc vns of 2-5mm occur throughout, along ± blebs & tension gash infills. Some vns occur subll to So & @ 35° to CA.	53.1, 53.2 & 53.45m syngenetic Py bands 2-3cm wide @ 17° to CA. Mnr Py asse as beds ± irregular Cc vns From 52.95 – 53.1 abundant Py disperse throughout Mst & Cc as isolated grains 0.1-0.3mm. Slightly coarse 1-4mm Py blebs occur	Mnr Small scale bedding dislocation along ↓s commonly reserved by cc vns			Bedding well developed @ 45° to CA as defined by So contacts & fine scale lamanae So decreases 15° to CA by 54.0m Mst bands 1-2mm lamanae & upto 2cm ± odd wider band 5-10cm	
55.1 – 60.4			gn lh Gw	A featureless interval of ggg lh Gw cut in places by narrow Cc vns & veinlets From 59.2 – 59.5m ggg lh Gw → gg bk Mst ± an increased input of flattened 2-20mm clasts of Mst.		V. narrow < 1mm Cc vns & veinlets irregularly x-cut the CA ± slightly broader x-cutting veinlets @ 40, 60, 70 to CA & 1-3mm wide.	v. mnr Py asse. ± the broader Cc vns				Possible So @ 45° to CA from allignment of flattened Mst clasts allignment.	
60.4 – 61.1			gg bk Mst ibd ggg lh Gw	A narrow band of ibd ggg Gw & bk Mst ± bands dominated by Mst ibd ± more sandy beds ± only a mnr input of ggg immature sand sized detritus.		Irregular Cc vns of 1-3mm x-cut & tend to ⊥ the So	Some Py asse ± Cc vns that are sometimes subll to CA.	Bedding @ 40° ± ⊥.			A possible grading upwhole maybe inferred from trend from sandy to more Mst rich material.	

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DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
61.1			gn lh Gw	An interval dominated by (immature volcaniclastic) gn lh Gw ± mnr narrow bk Mst bands & clasts throughout. From 62.15 - 62.2m mnr slickenslide development on fracture faces. A 62.7 low ∠ 10° to CA fracture cuts the core with some assoc. slickenslide & pug develop't. Possibly some assoc. flt. movement.		Mnr wispy irregular <1mm Cc vns occur throughout ± a later x-cutting set of sharp narrow 1-2mm vns @ 60-65 & 20° to CA ± a broad set 3-8mm @ 50° to CA x cutting & parralleling fractures @ 62.7m.		From 63.9-63.6 core highly frac. along ∫ + vn plains ± some assoc. pug develop't Mnr Flttg?			Possible So @ 50° to CA as defined by bk Mst band @ 62.15m. With grading possibly inferred as uphole.	
64.1			Cc. vn	A broad Cc. vn ± mnr inclusions of gn lh Gw.								
64.3			gn lh. Gw	An intensely frac. interval of gn lh Gw, mnr bk Mst clasts & flecks 2-10mm occur in Gw.		Broad 5-15mm Q vns ± assoc. Cc. x cut CA @ 60° ± narrower 1-3mm Q. Cc vns @ 65° to CA. x-cutting broader 10-20mm Cc vns @ 40° to CA.		A sericitic pug lined fracture occurs @ 25° to CA. Core highly broken Frac. @ 64.5m				
64.6			gn lh Gw	An intensely Cc. veined interval of gn lh Gw ± broad Cc. vns @ 64.6-64.85 & 65.4-65.55m. In places becomes gritty ± Mst clasts & fd grains 1-3mm disposed irregularly in fg-mg Gw mtx.		Along ± the broad vns are a No. of narrow vn sets. Commonly vn faces are frac. ± slickenslide surfaces. Narrow 1-3mm vns @ 15° to CA occur along ± irregular vns @ 20° to CA. ± broader vns 0.8-1cm @ 10° & lining areas of broad 1-5cm vns @ 70-75° to CA. This broad Cc veining has some assoc. An at 65% & 66.05m.		Most fracturing is drill induced or developed along vn surfaces & 68.4m intersecting low ∠ 10° to CA fractures occur ± mnr assoc. pug & Cc. slickenslides developed on the fracture surfaces				
68.5												

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DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
68·5 64·6			gn lh Gw	An interval of f-g-mg immature volcanic lh Gw ± mnr intercalated Mst fragments in places appears brecciated.		Irregular Cc vns infill breccia cavities ⩽in Mst frag. Irregular to linear vns cut CA @ 35° ± narrow <1mm vns developed at a high ∠ to and cutting the earlier irregular set @ 75° to CA. At 69·1m major 2-10mm Cc-vn @ 20° to CA large degree of irregular veining sub ll to CA from 68·5 – 69·0m.	At 69·5m mnr An, Cm ± mnr assoc. Gn, Sp cuts CA @ 25°				Some slickenslide Cc develop't on frac. @ 17° to CA @ 68·5m. Further fracturing sets @ 7°, 25° intersecting @ 68·9m ± mnr slickenslide Cc upon the surfaces.	
64·6 71·4			bk Mst	An interval dominated by f-g bk Mst, which in places → Co. grit ± abundant 0·5-1mm Co flecks ⩽in a Mst mtx, often ± large massive Mst clasts ⩽in the grit.		At 70·4m a low ∠ 17° to CA Cc, An vn 4-5mm cuts CA. A somewhat irregular narrow <1mm Cc vn set @ 25° to ct is cut & often displaced by later An vns @ a high ∠.	Mnr 1-2mm Cc, Py vn @ 70·3m. Numerous Cc, An vns ± v. mnr assoc. Sp, Gn cut Mst @ 20-25° from 69·5-69·9m. Py, Cc vn set @ 71·2m @ 30° to CA + @ a high ∠ to An set & truncated by the later. At 70·7m Py blebs ± mnr assoc. Cc occur irregularly ⩽in Mst grit. Broader An vns ± mnr assoc Sp, Gn. Irregular Cc/Py veining sub ll to CA occurs @ 75+-75·8m.				From 70·4 – 71·4m Sc varies from sub ll to CA Mst ltbd gritty Mst to 25° to CA b/w Mst ± gy lh Gw.	
71·4 76·6			gn lh Gw	An interval of f-mg immature volcanicly derived lh Gw in places mnr intercalated Mst from 72·9 – 73·1m. @ 75·6m a narrow 4-5cm Mst band ± mnr Gw & Cc clasts or cavity infills occurs. somewhat brec. in appearance. 76·1m-76·3m large Mst mass occurs again ± as brec. look & Cc. infills.		Cc veining in a no. phases 1. early phase sub ll to CA but often discontinuous as bleb. 2. veining @ 35° to CA 1-3mm 3. vns @ 55°-75° to CA & 1-3mm wide & @ a high ∠ to 1. & 2. An vns are abundant from 71·4 – 72·6m & @ 30-40° to CA ± vns <1-15mm wide, also some irregular An veining truncated by sharp x-cutting vns.		Bedding of Mst @ 73° is @ 30° to CA.				

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DEPTH	DRILL RUNS	CORE LOSS	LITHOLOGY: ROCK NAME	LITHOLOGY: DESCRIPTION	ALTERATION	VEINING	MINERALISATION	STRUCTURE	WEATHERING	VISUAL LOG	REMARKS	DEPTH
76·6			gn lhGw → An lode	An interval of gn F-m-g. Gw ± f-g. <1mm Co. flecks dispersed in f-g. sandy mtx. The Gw is cut in places by mnr Mst rich bands or in some places is brec. ± mud infilling frac. The most striking feature is the extensive An ± Sp. Gn Veining ± minor assoc. Cc vns.		There is extensive An veining throughout often ± mas An horizons : from 77·15 - 77·65 m ± only v. mnr Gw bands from 78·2 - 78·6 m. An veining is phased - i) narrow 1-2mm irregular vns @ 35-50° to CA ii) Sharper 2-15mm vns @ 45° to CA iii) broad vns. @ 50° to CA The An vns are then cut by somewhat irregular Cc vns @ 50-60° to CA or as infills b/w brec. & mineralised An. fragments. An veining is as broad mas. areas in places frac. & brec. by subsequent Cc veins & by Gn, Sp min°. In the more sandy areas where the An veining is less prevelant vns are irregularly x-cutting @ low d's. Mnr remobilisation of Cc, An truncating mineralised bands.	Mnr Py min° occurs, as diss. grains & blebs c. in Cc vns & as Gn/Py blebs c An masses. Sp, Gn ± Cp. Py min° occurs both as a distinct x-cutting Gn rich vn phase @ 80° to CA 77·3m & as dis. grains assoc. ± An frag. Sp rich phase Also Sp rich vns @ 40° to CA @ 78·5m	Progress : 1. 3 phases of An veining 1. mineralisation 3 Cc veining ± assoc. Py			76·6 - 76·7m interdispersed Mst & Gw define a possible So @ 55° to CA From 76·7 - 79·2 m gn lhGw somewhat brec. ± mud infills along frac. planes, becomes less apparent downhole ± only mnr wispy mud horizons from 78 - 79·2m.	
79·2			gybk Mst ibd gygn lhGw → An lode	An interval ± mnr gybk Mst & lesser ibd gygn lhGw cut by extensive An & lesser Cc veining. From 79·2 - 80m dominately mas. An & Cc ± only mnr Mst from 79·2 - 79·3m. From 80 - 80·3m mnr gy lhGw ± some ibd Mst highly brkn & ± extensive Cc vns. From 80·3 - 80·7m mas An.			More extensive than previous lode. Mnr veining @ 40° to CA of Gn, Sp ± Py. Sp & Gn also form blebs interstitial to An x'ls ± stronger fg. Sp ± Gn vns or bands @ 40-45° developed b/w 80·4 - 80·7m. Mnr Cp. Py lines fracture surfaces & 80·3 - 80·4m.				From 80·1 - 80·3m core v. brkn ± some pug developed on frac. surfaces => possible filling. Similar from 79·2 - 79·4m possible fit development. Py. Cp occurances v. minimal.	
80·7												

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80.7			bk Mst	An interval dominated by bk Mst ± mnr interbedded gygn lh Gw, ± some slump & breccia develop't of Gw ± in Mst mtx from 80.7–81.7m.		Mnr torsion gash An Cc infills throughout the interval indicating a degree of strain & post depositional disruption. Mnr irregular An vns @ 50° to CA.		@ 81.8m some pyg & graphite develop't on frac @ 20° to CA. @ 82.1m some slickenside & graph. develop't on frac. surfaces @ 25° to CA.			Possible bs @ 50° to CA but maybe slump alignment of sand & mud.	
82.2												
82.2			gn lh Gw	∩ dominately gn gy lh Gw interval ± mnr ibd bk Mst ± contorted slump structures from 82.35–82.5m.		Irregular Cc veining ± cuts core & infills torsion gashes. V. mnr irregular An veining assoc ± Cc @ 82.25m.	Mnr Py assoc ± Cc veining @ 82.45m				Hole stopped as it had deviated Northwards from planned course & had dipped to an unacceptable level. Hole recollared after rig stepped back 3m as ZS92 and overgrid. Chrome barrel used to limit deviation.	
82.5				EOH 82.5m.								