

**LEFROY JOINT VENTURE
EL 1/95
ANNUAL REPORT 1997 - 98**

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1. SUMMARY

EL 1/95 (Lefroy) covers 80 skm centred on the Lefroy Goldfield in Northern Tasmania. Exploration during 1997-98 comprised the drilling of two diamond drillholes totalling 785m.

Hole L1 (325.6m) was put down under the old Volunteer Mine at the southern end of the field to test for depth extensions of the auriferous quartz reef. The hole was planned to intersect the reef 20m below the deepest stoping but steepened unexpectedly and cut the reef 90m below the stoping limit. The 1.15m intersection of arsenopyrite-bearing brecciated quartz at 276-277.15m down hole, assayed 1.87 g/t Au and 0.65% As. The reef was on the footwall contact of the host Volunteer Reef Fault zone extending from 249.7 - 277.15m, a true width of about 17m.

Hole L1a was wedged from L1 at 245.1m and extended to 283.5m to obtain a second intersection of the reef. This has been kept for reference as all of the reef material in L1 was taken for assay.

Because of the unplanned steepening of the hole the L1 reef intersection is considered too low to be an effective test of the down-plunge potential of the Volunteer gold shoot. Re-drilling is recommended.

At the northern end of the field hole L2 (421.5m) was designed to test unmined parts of both the Pinafore and Chum reefs. The hole intersected the Pinafore Reef as a 14m interval (11m true width) of crushed quartz-veined siltstone and shale at 122-136.1m down hole. The best assay from this zone was 3.4m @ 0.53 g/t Au and 0.32% As. A 1.4m wide footwall branch lode at 151.2-152.6m assayed 1 g/t Au and 0.3% As.

The Chum Reef was represented in L2 by a 16m unbroken interval (9m true width) of quartz veining in sandstone and shale at 383-399m down hole. The best assay here was 1.5m @ 0.33 g/t Au and 0.03% As.

Despite the disappointing tenor of the gold values, the holes showed: a) the known more-productive reefs have depth and strike extensions beyond the limits tested by the old miners, and b) they are hosted by major veined structures with widths of 10-20m.

Gold shoot distribution, shown by the pattern of stoping on the old mine plans, strongly suggests an element of combined structural and stratigraphic control on the mineralization. This control involves anticlinal folds in favourable stratigraphy and is more in a low-angle sense compared to the steep dip of the reef structures. It may partly explain why almost all gold shoots mined to date have been limited to depths of less than 130m, while the reefs themselves have been shown to continue to in excess of 400m.

Several shallow structural-stratigraphic target positions have been outlined and are recommended for drill testing in the coming period.

2. INTRODUCTION

Lefroy lies 12 km east of George Town near the north coast of Tasmania. The goldfield was one of the earliest discovered in Tasmania (1869) and has recorded production, mostly pre-1904, of 187,000 oz of gold (Keele, 1996). This gold came from auriferous quartz reefs within the Early Ordovician to Early Devonian Mathinna Beds, a monotonous sandstone-siltstone-shale sequence.

The goldfield and surrounding area is covered by EL 1/95 (Lefroy) of 80 skm, which is the amalgamated remnant of three licences totalling 451 skm. See Figure 1. The EL is held by Lefroy Gold Mines Pty Ltd, a 100% subsidiary of Central Kalgoorlie Gold Mines NL. In July 1997 Allstate Explorations NL entered into a joint venture with Lefroy Gold Mines to earn 60% equity in the EL through the expenditure of \$700,000 over four years.

Lefroy Gold Mines were initially attracted to Lefroy by the near-total lack of systematic exploration, particularly drilling, in the modern era. Potential for further high-grade quartz vein-hosted gold deposits and bulk low-grade open-cut resources was recognized, but only the latter target type was tested by Lefroy Gold Mines.

This report details exploration carried out at Lefroy by Allstate Explorations in the period October 1997 to April 1998, which commenced testing the potential for high-grade gold deposits in the auriferous quartz veins. The major historic gold-producing reefs, the Chum, Pinafore and Volunteer, were selected for the initial drilling of two diamond drillholes. L1 (325.6m) tested the Volunteer, while L2 (421.5m) tested both the Pinafore and the adjacent Chum.

3. LAND TENURE

EL 1/95 (Lefroy) covers 80 skm and is due to expire on 19 May 2005. The EL is held by Lefroy Gold Mines Pty Limited, a 100% owned subsidiary of Central Kalgoorlie Gold Mines NL. See Figure 1.

In October 1994 Lefroy Gold Mines was granted two EL's surrounding Lefroy: EL 21/94 (Bell Bay) of 219 skm and EL 22/94 (Pipers River) of 202 skm. The contiguous EL 1/95 (Lefroy) covering 30 skm over the main goldfield area was granted to Lefroy Gold Mines in May 1995. All licences carried tenure periods of 10 years.

In October 1996, EL 21/94 (Bell Bay) and EL 22/94 (Pipers River) were reduced to 77 skm and 67 skm respectively. In July 1997 Allstate Explorations NL entered into a joint venture agreement with Lefroy Gold Mines on all three EL's whereby Allstate is required to spend at least \$200,000 by 31 July 1999, and a further \$500,000 by 31 July 2001 to earn 60% equity.

In October 1997, 90 skm was relinquished from the Bell Bay and Pipers River licences. Immediately following the reduction the remaining ground in all three tenements was amalgamated into the current single consolidated EL 1/95 (Lefroy), comprising two areas totalling 80 skm. The amalgamation was ratified by the Director of Mines on 14 January 1998.

EL 1/95 comprises Crown Land, State Forest-Multiple Use Forest Land, part of the Lefroy RAP, part of the Den Ranges RAP, and private property.

Within the licence area but excluded from it are:

- * 20 ha of Crown Reserves
- * 0.5 skm of the Curries River Reservoir
- * 664 ha of Mining Leases (mainly in the Back Creek area).

4. GEOLOGY

The Lefroy Goldfield is hosted by sediments of the Early Ordovician to Early Devonian Mathinna Group, a thick deep-water turbiditic sediment sequence. Exposure is poor as the rocks weather readily. The Palaeozoic sequence is extensively covered by Tertiary basalt and Tertiary-Quaternary gravels and sands. See Figure 2.

The Mathinna Beds at Lefroy comprise a folded and cleaved sequence of interbedded quartz-mica sandstones, siltstones and grey-black shales, striking NW and generally dipping at moderate angles to the SW. These rocks have been described by Powell and Baillie (1992) as being in the transitional contact zone between the basal unit of the Mathinna Group, the Stonyhead Sandstone, and the overlying unit to the NE, the Turquoise Bluff Slate. Although natural outcrop tends to be dominated by sandstone, roadcuts, drillholes, mine exposures and dumps show that the finer-grained rocks are equally represented.

At Lefroy the sediments are affected by conspicuous chlorite-sericite alteration strong enough to cause a regional-scale magnetic depletion centred on the goldfield. Within this magnetically depleted area there are extensive local magnetic lows, some of which appear directly associated with mined gold shoots (eg: at the Volunteer and Reward reefs). However, widespread shallow drilling of alteration anomalies in 1997 found they were unmineralized (Purvis, 1997). It is believed the alteration had an important precursor role in the location of the goldfield, probably by reducing the competency of the host rocks so that they later became a locus for the mineralized structures.

The Lefroy auriferous quartz reefs are hosted by large east-west faults dipping steeply north or south. Some of these structures, eg: the Chum, Pinafore and the Volunteer, are 1-2km long with crush zones 10-20m wide. At least 30 parallel reefs are known, arranged like rungs of a ladder over a distance of 4.5km along the NW strike of the sediments. About 165,000 oz of gold (90% of Lefroy's total production) has come from just four of these reefs: the Chum, Pinafore, New Native Youth and Volunteer.

Within the reefs the gold occurs in high-grade shoots. Historically, mined grades were of the order of 30g/t Au. Almost all the known (now mined out) shoots were less than 130m deep and only traces of gold were found below 150m from surface, although in two cases (the Pinafore and Volunteer) the reefs were tested by underground development to depths of 370-400m. The only notable associate of the gold mineralization is arsenopyrite.

5. RESULTS OF 1997-98 WORK

5.1 DRILLING AT VOLUNTEER MINE

5.1.1 Background

The Volunteer is near the southern end of the Lefroy Goldfield (see Figure 2). The mine was worked prior to 1904, producing over 45,000 oz gold. The yield between 1892-99 (the mine's heyday) was 27,750 oz at an average recovered grade of 81 g/t Au (Twelvetrees, 1899). The gold was won from a 45° west-plunging shoot within the steeply south-dipping quartz reef. See Figure 4.

The shoot was mainly worked above No. 6 Level (463') with the best grades between No. 3 (225') and No. 5 (364') levels. There was almost no stoping beneath No. 7 Level (526') although the main shaft was taken down to 1253' (No. 9 Level).

From the old descriptions it appears the worked part of the reef comprised patchy masses of auriferous quartz (with some associated arsenopyrite, pyrite and chalcopyrite), within a well-defined fault channel averaging 1-2m wide. This lode channel was generally filled with milled and brecciated sedimentary host rock containing patches and veins of quartz.

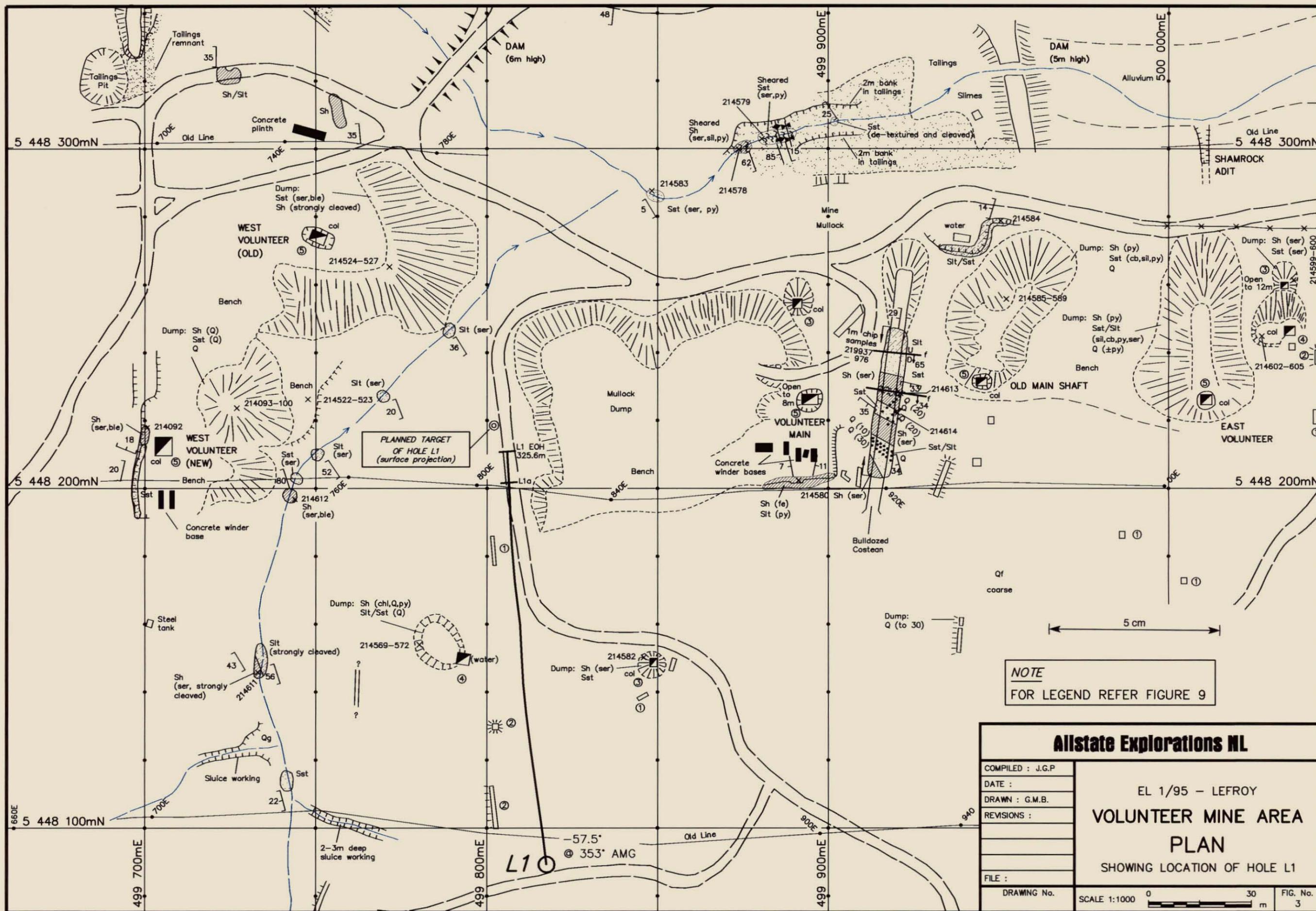
The lode channel occurs within the Volunteer Reef Fault, a strong and persistent E-W structure that has been subjected to repeated episodes of movement, much of it subsequent to the introduction of the gold-bearing quartz (Montgomery 1897, Twelvetrees 1899). The old miners traced the Volunteer Reef Fault for over 2km, making it one of the longest on the Lefroy field.

5.1.2 Hole L1

Hole L1 was spudded in at 5448089mN, 499817mE AMG on 6 December 1997. The hole was angled at -57.5° to 353° AMG. It was designed to intersect the Volunteer Reef down the axis of the west-plunging mined shoot, in the untested area between No. 7 Level (526') and No. 8 Level (628') - see Figure 4. It was intended that the hole be pushed on to test an inferred cross-structure beneath Volunteer Creek (see Figure 9), but because of the deviation outlined below this wasn't done.

The location of L1 is shown in Figure 3, the section in Figure 5 and the log is in Appendix 1. Notes on the structural geology of the core, made by A. Reed of Mineral Resources Tasmania, are appended to the log.

Despite all attempts to control it L1 unexpectedly steepened 20° in the chlorite-sericite altered, foliated and quartz-veined, quartz-mica

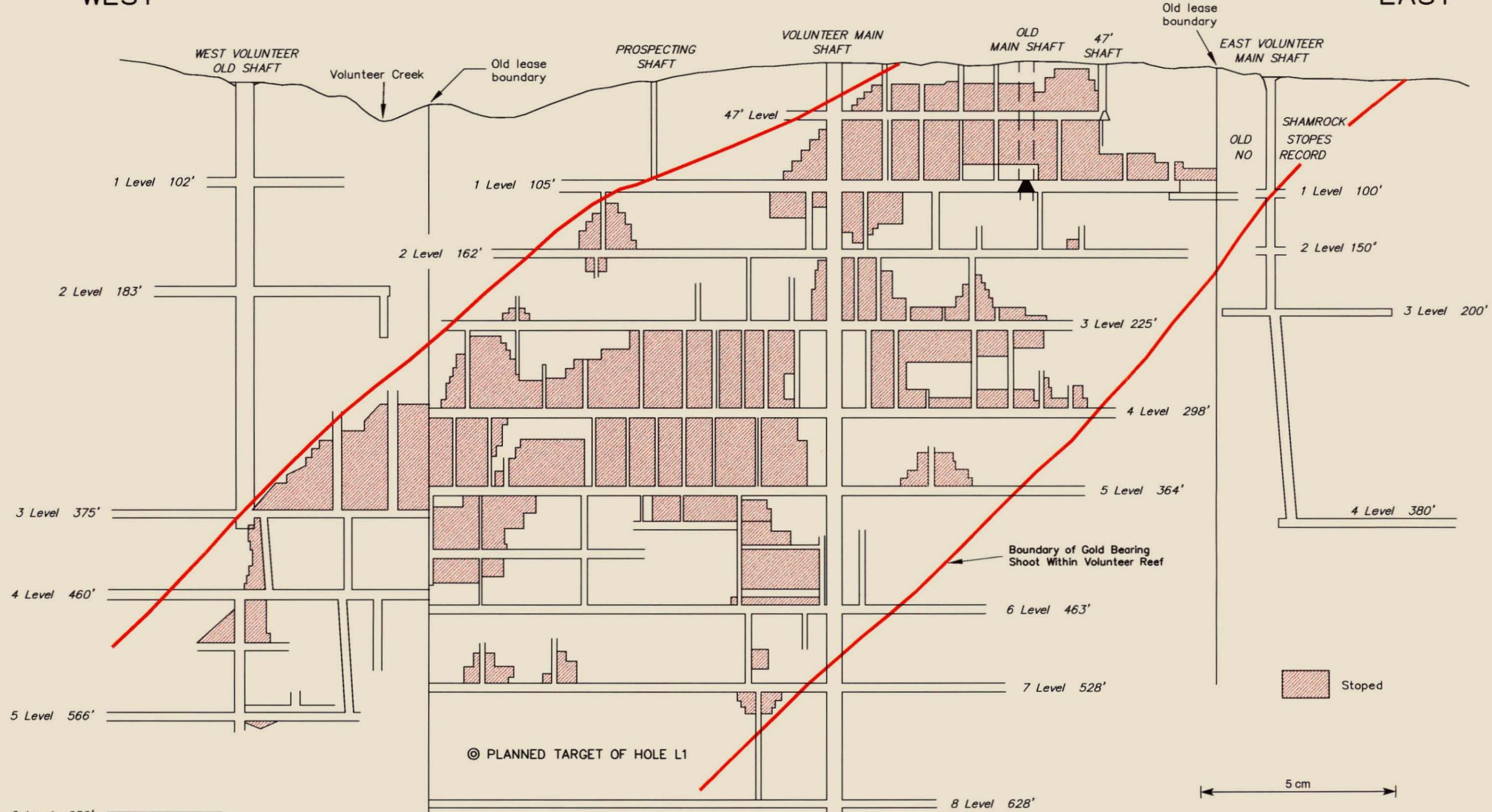


NOTE
FOR LEGEND REFER FIGURE 9

Allstate Explorations NL		
COMPILED : J.G.P	EL 1/95 - LEFROY VOLUNTEER MINE AREA PLAN SHOWING LOCATION OF HOLE L1	
DATE :		
DRAWN : G.M.B.		
REVISIONS :		
FILE :	DRAWING No. SCALE 1:1000	
		FIG. No. 3

WEST

EAST



© PLANNED TARGET OF HOLE L1

● REEF INTERSECTION IN HOLE L1 (1.15m @ 1.87g/t Au)

Shaft continues to 9 Level at 1253'

Allstate Explorations NL		
COMPILED : J.G.P.	E.L. 1/95 - LEFROY VOLUNTEER MINE LONGITUDINAL SECTION LOOKING NORTH	
DATE : April '98		
DRAWN : G.M.B.		
REVISIONS :		
FILE :		
DRAWING No.	SCALE 1:1000	FIG. No. 4

sandstones, siltstones and shales. The hole passed through the Volunteer Reef at 276-277.15m, about a third of the way down the 190m untested vertical interval between 8 and 9 levels, and 70m beneath the planned target point. The brecciated and arsenopyritic quartz vein assayed 1.87 g/t Au and 0.65% As.

The reef was on the footwall contact of a 17m (true width) major fault zone extending from 249.7 - 277.15m: the Volunteer Reef Fault. The fault zone comprised partly crushed sericitized siltstone and sandstone, seamed by quartz-ankerite veins, with minor pyrite and arsenopyrite. Outside the reef itself the fault contained minor gold with a best interval of 6m @ 0.36 g/t Au and 0.14% As, from 261-267m.

A 10cm quartz vein at the upper contact of the fault contained minor pyrite and arsenopyrite but no gold. This is the Volunteer Hangingwall Reef, which was the only reef branch driven on by the old miners in the lower part of the mine, despite the fact that it was the main Footwall Reef that had produced all the gold in the upper levels.

All other faults and veins in L1 were barren of gold.

Throughout L1 a strong S1 cleavage smears and deforms the sub-parallel bedding. A weak S2 cleavage, dipping in the opposite direction to S1, is visible in some shale beds. Tight small-scale folding is visible in places (eg: 307-310m). Quartz veins (\pm carbonate and/or chlorite) to 20cm thick are common, with the veining generally either parallel bedding or orthogonal to it.

Numerous faults occur in the upper half of the hole, including a strongly faulted section from 34-90m centred on a major structure at 61-65m. Most of these faults contain crushed or dismembered quartz veins, some with ankerite, but none contain gold.

5.1.3 Wedged Hole L1A

Upon completion of L1, a wedge was set at 245.1m and hole L1a drilled to 283.5m to obtain a second intersection of the reef. Whole NQ core from the L1 reef was then assayed and the L1a intersection kept for reference. The reef in L1a was at 274.1 - 275.2m but only 0.6m of rubbly core was recovered. Unlike L1 the reef was 1m above the footwall contact of the Volunteer Reef Fault which extended from 249.6 - 276.3m.

5.1.4 Discussion of Results

The unexpected steepening of L1 means the reef intersection was made just below the lower edge of the projected gold shoot (see Figure 4). The hole therefore cannot be regarded as an adequate test of the down-plunge

potential of the shoot and the original intended target point between 7 and 8 levels remains valid. It can be argued that the suggestion from the drilling of a lithostratigraphic control on gold deposition enhances the possibility of the shoot extending to depth (see below).

Reed (pers. comm., 1998 and notes in Appendix 1) interprets the major faulted zone at 34-90m in L1 as a D1 synformal fold hinge with coincident thrust. The black shale unit above this structure is overturned while all rocks below it are essentially upright. Reed interprets most other faults and associated veins as also D1, but notes intense D2 deformation in the Volunteer Reef Fault.

Core from L1 was not orientated but two orientated measurements were obtained in L1a. These measurements, at 249m and 283m downhole, showed bedding and the essentially bedding-parallel S1 cleavage dipping at 50-60° to the south and west. This dip is considerably steeper than that seen in surface exposures in this area which are generally in the range of 5-35°.

If there is a steepening of dip with depth as these measurements suggest, the attitude of the intersection of the stratigraphy against the Volunteer Reef Fault would be similar to the plunge of the mined gold shoot. This raises the possibility that gold deposition in the Volunteer Reef was controlled by favourable characteristics of a certain wallrock unit and that the gold shoot will follow this unit to depth.

5.2 DRILLING OF THE PINAFORE – CHUM REEFS

5.2.1 Background

Over 50% of the total gold won at Lefroy came from two reefs at the northern end of the field: the Pinafore and the Chum. These two parallel, steeply south-dipping reefs are only 100m apart and produced 95,000 oz of gold. Although the reefs were traced and developed on at intervals over distances up to 1.6km, almost all the gold was won from shoots adjacent to each other towards the eastern end of the reefs. See Figure 6.

These shoots, two in the Chum and one in the Pinafore, extended to about 130m below surface and were arched, plunging east and west. Extensive development was carried out in both mines by the old miners, with the Pinafore shaft extending to 1200' depth (366m). This development showed the reefs frequently branched. Crosscutting on the lowest level of the Pinafore intersected eight reefs (containing only traces of gold) over a horizontal interval of 440m. Montgomery (1897) describes the Pinafore as a large "mullocky lode" similar to the Volunteer, with the vein quartz occurring within a wide fault structure showing evidence of repeated movement, much of it post-veining. This contrasts with the Chum

"fissure lode", which he described as "fairly solid quartz between solid walls of country".

As can be seen in Figures 6 and 7, the eastern arched shoot in the Chum has a counterpart in the parallel Pinafore Reef, whereas the adjacent western shoot in the Chum does not. The old records show no development on the Pinafore reef in the area where the "missing" western shoot might be, between the old West Pinafore and West Pinafore Extended shafts. It was therefore decided to drill test this position and to extend the hole to cut the adjacent Chum Reef 125m beneath the stopes in the apex of the arch on the western shoot. This was to test the possibility for a repeated or "stacked" shoot at depth down the arch axis - an area untested by the old miners.

5.2.2 Hole L2

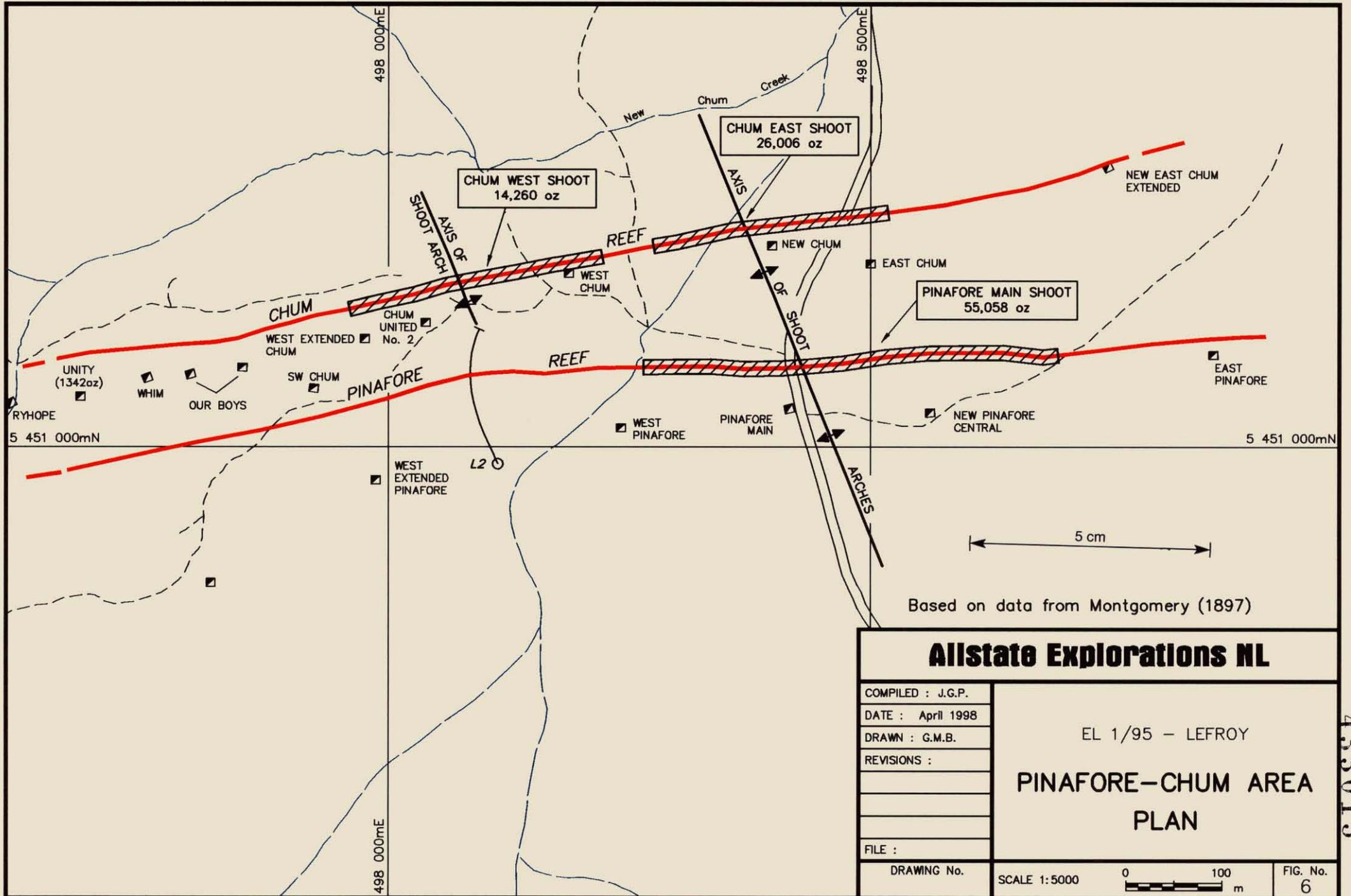
Hole L2 was collared at 5450983mN, 498113mE AMG on 20 January 1998 angled -60.7° to 335° AMG. The hole was completed at 421.5m on 16 February 1998. The hole location is shown on Figure 6, the detailed section of the hole is Figure 8 and the log is in Appendix 2.

Although the hole steepened exactly as anticipated, a 50° easterly swing was totally unexpected. Fortunately, most of this deviation took place in the lower part of the hole and did not prejudice the effectiveness of the drill test. L2 intersected strongly foliated quartz-mica sandstones and siltstones, with bands of grey and black shales. The rocks were sericite-chlorite altered and quartz veined. Although both the Pinafore and Chum reef systems were intersected they were only weakly mineralized.

The Pinafore Reef system was intersected as three discrete lode zones at 71.6-76.5m, 122-136.1m and 148.3-152.6m, broadly corresponding to the Hangingwall, Intermediate and Footwall reefs in the old workings further east. The 122-136.1m zone (approximately 10m true width) was the principal Pinafore structure. The lode zones comprised thin quartz ± ankerite veins in sericitized sandstone and graphitic shale, with minor amounts of pyrite and arsenopyrite. All three zones were characterised by strong brittle faulting of all rocks including the veins, with marked disturbance of the S1 cleavage. This indicates they are D2 features.

The upper lode zone assayed 0.9m @ 0.44 g/t Au, the main central zone 3.4m @ 0.53 g/t Au and 0.32% As (131.9-135.3m), and the lower zone 2.1m @ 0.81 g/t Au and 0.36% As.

The main Chum Reef was intersected as a series of thin quartz-carbonate veins in quartz-sericite altered sandstone and chloritic shale, at 383-399m (approximately 9m true width). Traces of gold were widespread, with 13.5m assaying 0.19 g/t Au and 0.03% As. The zone was different to all



Allstate Explorations NL

COMPILED : J.G.P.
 DATE : April 1998
 DRAWN : G.M.B.
 REVISIONS :
 FILE :

EL 1/95 - LEFROY
**PINAFORE-CHUM AREA
 PLAN**

DRAWING No. SCALE 1:5000 0 100 m FIG. No. 6

433015

other lodes in the hole in that it occurred in unfaulted rocks. The veins were dog-toothed and vuggy, with included rock fragments in places.

Small outliers of the Chum Reef system, mirroring those in the old workings further east, were intersected at 232.9-235.8m (thin barren quartz-ankerite veins in a D2 fault) and 321.9-322.8m (a quartz-flooded structure of D2 age in siltstone assaying 0.9m @ 0.46 g/t Au and 0.25% As).

Orientation measurements were taken at approximately 50m intervals down L2. These showed the essentially bedding-parallel strong S1 cleavage generally dips towards the SW to NW at around 20-40°. The more weakly developed S2 cleavage is steeper, dipping at 50-60° to the north or east. See Appendix 2 for details. Small-scale folding occurs throughout the sequence intersected by L2. Up-hole facing graded sandstone beds were noted between 186-209m, while a down-hole facing was observed at 222m.

6. DISCUSSION

The results of the 1997-98 drilling were disappointing but very informative. The proving of reef extensions into areas not tested by the old miners was a technical success, but the lack of gold in these extensions may suggest they understood the mineralization better than we currently do.

Important points to come out of this year's work include:

1. There is strong evidence for a combined structural-stratigraphic control of D1 age on the location of all but one of the major gold shoots in the known reefs.
2. Such reefs are hosted by strong D2 fault structures confirming the ideas espoused by Reed (pers. comm., 1998).
3. Arsenopyrite is a constant associate of the gold mineralization.

Almost 90% of the gold won at Lefroy came from five large high-grade shoots in just four reefs. Four of these shoots, in the Chum, Pinafore and New Native Youth reefs, were arched, plunging east and west. The exception was the Volunteer where the shoot plunged to the west only (it is possible the eastern limb of the arch remains undetected here).

The plunges and the arching are remarkably similar to the attitude of the folded and overall west-dipping host sedimentary sequence (as documented by mapping and the orientated drillcore measurements). Thureau (1883) documented a broad anticlinal fold coincident with the arched shoot in the New Native Youth mine. Keele (1996) interpreted an anticlinal axis between his RC holes LGC11 & 12 drilled immediately north of and parallel to the arched Pinafore shoot.

Over 95,000 oz was produced from adjacent parallel arched shoots in the Chum and Pinafore reefs (Montgomery, 1897). The axis joining the apices of the principal eastern shoots in these two reefs trends NW - exactly the strike of the enclosing sediments (see Figure 6). The vertical dimension of all three shoots appears to be fairly consistent at about 100m (see Figure 7). Both features are what would be expected if the mineralization in the cross-cutting reefs was being deposited in response to the characteristics of a certain stratigraphic wallrock unit of about this thickness. (A similar host rock-shoot relationship may be present at the Volunteer Mine).

If this is the case, the pattern of stoping in the shoots indicates gold deposition occurs preferentially where the reefs cut across the apex and upper parts of the limbs of D1 anticlinal folds, but less extensively or not at all in the intervening synclines. Clearly, structure is playing a major role as well.

The overall control appears structural-stratigraphic, with gold deposition occurring in the D2 reefs where they cut through D1 anticlines in favourable stratigraphy. Whether this favourable characteristic is physical or chemical or a mixture of both, is not known.

It is concluded that the best drill targets at Lefroy are where the favourable NW-trending structural-stratigraphic controls or axes intersect unworked parts of the prospective E-W reef faults. Initial exploration should focus on shallow targets (<150m depth) for several reasons:

1. The favourable D1 anticlines are only likely to be located with sufficient accuracy at or near surface.
2. At Lefroy D1 folds are known to have flat plunges.
3. The model, which is based on mining experience, indicates that drilling down the arched shoot limbs away from the anticlinal axes is much less likely to find high-grade mineralization.

Theoretically there is no reason why arched shoots shouldn't occur at depth in the reefs, particularly as repetitions down the axes of the productive anticlines (ie: stacked shoots). Hole L2 was directed at this sort of target on the Chum Reef. The major negatives here are that for unknown reasons no such shoots have ever been found at Lefroy, and that finding them would be more difficult and expensive.

Until more is known about the structural-stratigraphic control axes only those that have already produced gold should be considered for shallow diamond drilling using low-angled holes. Drilling should be kept to within about 400m of the known shoots because of the threat of dislocations due to faulting, including the obvious movement that has taken place along the reef faults. If possible, holes would be directed at sites where reef faults were inferred to intersect the axes, particularly in areas of cover where the old miners may have missed locating a reef line.

Identified targets are:

1. **The NW and SE extensions of the axis through the apices of the main (easterly) shoots in the Chum and Pinafore.** Because almost half the gold at Lefroy has come from this feature it is considered the most pedigreed target. There are extensive areas of cover either side of the reefs in the prospective zone.
2. **The extensions NW and SE of the shoot axis in the New Native Youth Reef.** Again, exposure in the prospective area is particularly poor.
3. **The "missing" east-plunging leg of the gold shoot in the Volunteer Reef.** This major shoot is anomalous in only plunging to the west. It is possible the shoot was arched but the apex has been eroded off, leaving the separated east limb of the arch undiscovered in the area immediately east of the East Volunteer shaft. If the old records are to be believed this area has not been tested by any underground development (Montgomery, 1897).

4. **The possible intersection of any NW-trending Volunteer structural - stratigraphic control axis with the adjacent Land O'Cakes Reef.** The latter is one of the largest reef faults at Lefroy and the postulated intersection would be in the poorly tested section between the Bannockburn and Digney shafts.

As mentioned in section 5.1.4, the original target of hole L1 on the down-plunge extension of the Volunteer shoot remains valid and worthy of drilling. There is an acknowledged inconsistency in the argument here that the apparent coincidence of the attitude of the wallrocks and the shoot could suggest the shoot will follow a favourable unit to depth, when the opposite seems to be true in the arched shoots at the northern end of the field.

The point is that it has yet to be determined by drilling if the Volunteer is an arched shoot or not. It could be a unique type amongst the more-productive shoots, lacking any form of anticlinal control and with high-grade extensions at depth.

It is worth noting that the considerable deviation problems experienced in holes L1 and L2, particularly the marked tendency of the holes to steepen with depth, indicates that the deep holes drilled by the Mines Department in the 1930's would not have gone as planned or plotted (Blake, 1937; 1938). As many of these holes were stopped only short distances past their target depths it is highly likely they never intersected their intended reefs.

7. CONCLUSIONS

1. The major auriferous quartz reefs at Lefroy are hosted by strong E-W D2 faults with crush zones 10-20m wide.
2. The largest deposits of high-grade gold appear to occur in the D2 reefs where they cut through D1 anticlines in favourable stratigraphy, giving rise to arched shoots.
3. The west-plunging shoot in the Volunteer is a possible exception, although there is some evidence here also for stratigraphic control. The "missing" east limb of this shoot is a prime shallow exploration target.
4. Exploration is considered best directed along the strike of the shallow structural-stratigraphic control axes adjacent to the most-productive arched shoots, ie: the Chum, Pinafore and New Native Youth.
5. The original target of hole L1, the down-plunge extensions of the Volunteer shoot, remains untested and valid. This target is not rated as highly as those listed above.

8. RECOMMENDATIONS

1. Drilling is recommended to test the shallow postulated NW and SE extensions of the highly productive eastern arched shoot axis in the Pinafore-Chum reefs and the main arched shoot axis in the New Native Youth Reef.
2. This drilling, using low-angled diamond holes should initially aim to test the axes within 400m of these reefs. Holes would be targeted at sites where E-W reef faults may cross the axes, particularly in areas of cover where such reefs may not have been found by the old miners.
3. Shallow diamond drilling is recommended in the untested ground immediately east of the East Volunteer shaft to search for a possible undiscovered eastern arch limb of the Volunteer gold shoot.
4. Following testing of the above, the original target of hole L1 on the Volunteer shoot should be re-drilled making allowance for the anticipated steepening of the hole.

9. EXPENDITURE (P.B. Hills)

9.1 1997-98 EXPENDITURE

Expenditure on Lefroy EL 1/95 in the period May 1997 to April 1998 was **\$147,394**, bringing the total spent on the EL since its granting in May 1995 to **\$488,713**.

Expenditure details for 1997-98 are as follows:

Category

Drilling (inc. Rehabilitation)	\$106,129
Geology	\$19,528
Geochemistry	\$4,760
Administration	\$8,441
Other (Drafting, Survey, etc.)	\$8,536

Total **\$147,394**

9.2 1998 - 99 EXPENDITURE

The following table illustrates expenditure by Lefroy Gold Mines P/L and the Lefroy Joint Venture since the granting of the original licences Bell Bay EL 21/94 and Pipers River EL 22/94 in October 1994.

	EL 21/94	EL 22/94	EL 1/95	Total
Commitment to Date	(164,600)	(148,800)	(225,000)	(538,400)
Expenditure to Date	86,997	75,177	488,713	650,887
Surplus / (Deficit)	(77,603)	(73,623)	263,713	112,487
Commitment 1998 - 99	Nil	Nil	(80,000)	(80,000)
Requirement 1998 - 99	Nil	Nil	Nil	Nil

As illustrated, there is no statutory requirement for expenditure on EL 1/95 to maintain the tenement in good standing during the coming year. However, a programme will be developed to address the recommendations highlighted in this report for execution over the 1998 - 99 summer field season. The scope and size of this programme has yet to be determined.

10. REFERENCES

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APPENDIX 1
Logs of Holes L1, L1A

LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole No. : L1

Date Started : 6 December 1997

Drilled by : Diamond Drilling (Tas.)

Date Completed : 17 December 1997

Logged by : J.G. Purvis

Collar

Northing : 5448089.28
Easting : 499817.47
R.L. : 2172.50
Dip : -57.5
Bearing : 352.98

Hole Details

Final Depth : 325.6
Hole Length : 325.6
Core Size : 0.0 243.6 HQ
 243.6 325.6 NQ

Purpose

To investigate the Volunteer Reef at a point between 7 and 8 Level 250m west of the Volunteer Main Shaft

Summary Results

From	To	Length	Description	Au	Ag	Cu	Pb	Zn	As	S
276.0	277.2	1.2	Volunteer Reef - crushed quartz with arsenopyrite>pyrite	1.87	<1	6	17	37	6500	0.86

Comments

Hole steepened unexpectedly and intersected the reef 57m below 8 Level and 90m below the limit of old stoping.
 Hole L1A was wedged from L1 at 245.1m.
 Explosives damaged HQ casing left in the hole from 170.0 - 243.6m. 3m of HW casing left in the top of the hole with steel screw-on cap.

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LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole L1

Page 1 of 7

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Au	Ag	As	Cu	Pb	Zn	S
0.0	3.0	Triconed - no core.	OPN	nil	3.0	4.5	60	0	3.0	4.5	<0.01	<1	9	33	24	60	0.02
					4.5	7.5	56	10	4.5	6.0	<0.01	<1	10	27	37	65	<0.01
3.0	17.5	Partly-oxidized grey SHALE, SILTSTONE and lesser medium-grained quartzo-feldspathic SANDSTONE. All rocks micaceous and weakly sericitized. Shales are soft and greasy with several 10cm puggy seams. Foliated and mildly deformed, with tiny stretched lenses of shale in siltstone (and vice versa), and smearing of bedding. Bedding 45-55 CA, with S1 cleavage essentially parallel bedding. In places a S2 cleavage is visible in opposite sense to bedding. Minor limonite stains to 14m with occasional quartz-limonite veinlets both parallel bedding and orthogonal to it. Rare pyritic quartz veinlets below 12m. Minor disseminated pyrite below 10m, mainly in shales.	SSH	slt	7.5	10.5	44	18	6.0	7.5	<0.01	<1	8	13	17	58	<0.01
					10.5	12.4	75	21	7.5	9.0	<0.01	<1	6	14	21	97	<0.01
					12.4	14.0	70	0	9.0	10.5	<0.01	<1	4	55	22	88	0.08
					14.0	15.4	82	0	10.5	11.5	<0.01	<1	5	34	20	106	0.03
					15.4	17.1	72	9	11.5	12.5	<0.01	<1	16	89	18	87	0.07
					17.1	18.8	14	0									
					18.8	19.4	93	18	18.8	19.8	<0.01	<1	4	75	10	101	1.12
					19.4	19.6	90	0	19.8	21.0	<0.01	<1	3	60	20	70	1.14
					19.6	20.4	70	0									
					20.4	21.5	69	0	30.5	31.5	<0.01	<1	13	55	25	262	1.55
					21.5	22.4	90	22	31.5	32.5	<0.01	<1	4	51	26	110	1.91
					22.4	24.4	92	43	32.5	33.5	<0.01	<1	5	78	24	126	1.45
24.4	27.6	92	37	33.5	34.5	<0.01	<1	2	76	33	86	1.31					
27.6	28.4	96	1														
28.4	29.6	94	22	42.0	43.2	<0.01	<1	8	81	34	184	0.99					
29.6	30.6	68	14														
30.6	32.1	98	41	45.1	46.1	<0.01	<1	8	53	59	139	1.29					
17.5	18.8	CAVITY - old working?	CAV	nil	32.1	33.8	82	14	46.1	47.0	<0.01	<1	10	20	50	112	0.18
					33.8	34.5	83	0	47.0	48.2	<0.01	<1	9	15	40	122	0.04
18.8	43.2	BLACK SHALE, STRONGLY FAULTED BELOW 34m. Carbonaceous, graphitic and pyritic. Minor thin grey siltstone beds. Bedding 60 CA, consistent despite tight small-scale folding. Well-developed bedding-parallel S1 cleavage. Weak S2 cleavage 20 CA in opposite sense to S1 is visible below 34m. Extensive zones of pug and crushing 34-40m. 10cm quartz vein with minor chlorite and pyrite at 18.8m, and dog-tooth quartz veins 40.7-43m. Elsewhere rare quartz veinlets. 1-3% disseminated pyrite in the	SSH	bsh	34.5	35.6	95	0	48.2	49.4	<0.01	<1	2	16	34	85	0.06
					35.6	37.5	46	0	49.4	50.4	<0.01	<1	11	26	30	133	0.12
					37.5	39.0	67	0	50.4	51.4	<0.01	<1	4	15	26	100	0.12
					39.0	39.7	51	14	51.4	52.4	<0.01	<1	4	21	28	98	0.06
					39.7	40.3	90	0	52.4	53.3	<0.01	<1	3	15	24	64	0.03
					40.3	40.7	95	0	53.3	55.5	<0.01	<1	9	33	30	122	0.08
					40.7	41.8	59	0	55.5	56.7	<0.01	<1	3	24	32	115	0.07
					41.8	42.5	143	0	56.7	57.6	<0.01	<1	8	18	44	118	0.06
42.5	44.9	24	0	57.6	58.5	<0.01	<1	10	26	31	106	0.08					
44.9	45.6	77	0	58.5	59.7	<0.01	<1	7	19	38	112	0.09					

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From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Au	Ag	As	Cu	Pb	Zn	S
		shales.			45.6	46.1	76	32	59.7	60.8	<0.01	<1	6	18	32	84	0.06
					46.1	47.0	66	0	60.8	62.0	<0.01	<1	3	24	35	90	0.09
		Ground conditions fair to 34m, then poor with rubble zones and some pug (core loss here).			47.0	49.4	50	5	62.0	63.5	<0.01	<1	12	30	35	110	0.14
					49.4	50.4	81	10	63.5	64.0	<0.01	<1	4	19	21	55	0.12
					50.4	51.9	85	0	64.0	65.0	<0.01	<1	6	35	45	88	0.16
43.2	44.9	No core recovered.	TCL	nil	51.9	53.3	90	0	65.0	66.1	<0.01	<1	8	38	39	105	0.13
					53.3	55.5	42	0	66.1	67.1	<0.01	<1	11	34	30	97	0.11
44.9	45.1	BLACK SHALE. As for 18.8 -43.2m.	SSH	bsh	55.5	56.7	55	0	67.1	68.2	<0.01	<1	2	43	31	98	0.34
					56.7	57.6	72	0	68.2	69.0	<0.01	<1	<1	25	30	81	0.08
45.1	79.8	MAJOR FAULTED ZONE. In foliated, altered, grey micaceous SILTSTONE and SHALE. Badly broken, with extensive sandy and puggy crush intervals. The principal fault is at 61-65m. The faults contain dismembered quartz (+carbonate-chlorite) veins up to 20cm thick (79.25m). Both the faults and the veins are at a high angle to CA. The host rocks are soft and greasy due to sercite-chlorite alteration, which is strongest in and around the crush zones. Bedding 45-70 CA, with strong sub-parallel S1 cleavage. This overprinted in places by an S2 cleavage at 25-35 CA in the opposite sense. Minor disseminated pyrite in the host rocks - none in the quartz veins.	SSH	flt	57.6	58.5	94	0	69.0	70.2	<0.01	<1	<1	24	24	76	0.08
					58.5	59.7	65	0	70.2	71.0	<0.01	<1	3	20	27	87	0.10
					59.7	60.8	95	0	71.0	72.0	<0.01	<1	2	14	17	53	0.07
					60.8	62.0	58	0	72.0	74.4	<0.01	<1	10	29	19	98	0.28
					62.0	63.5	72	7	74.4	76.0	<0.01	<1	9	34	23	104	0.17
					63.5	64.0	46	0	76.0	77.0	<0.01	<1	10	47	36	110	0.23
					64.0	64.5	76	62	77.0	78.0	<0.01	<1	8	17	17	63	0.22
					64.5	65.0	62	0	78.0	78.9	<0.01	<1	7	21	23	74	0.06
					65.0	65.7	80	0	78.9	79.8	<0.01	<1	2	95	46	218	0.62
					65.7	66.1	90	0									
					66.1	66.8	53	0	85.9	87.5	<0.01	<1	4	22	19	70	0.43
					66.8	67.5	59	0	87.5	88.5	<0.01	<1	5	18	35	72	0.05
					67.5	68.2	89	0	88.5	89.5	<0.01	<1	8	33	27	86	0.07
					68.2	69.5	53	0	89.5	90.6	<0.01	<1	3	19	18	64	0.07
		Ground conditions poor.			69.5	70.2	56	0									
					70.2	71.0	53	0	97.0	98.0	<0.01	<1	2	20	44	86	0.11
79.8	121.4	Grey quartz-mica SANDY SILTSTONE with bands of grey-black SHALE. Sercite-chlorite altered, strongest in areas of quartz veining. Common quartz (+chlorite-carbonate) veins to 20cm, mostly parallel bedding and often associated with faults (puggy crush zones up to 80cm wide). Some of these post-date the veins and break them up. Veining is most abundant in strongly faulted interval 84-90m (centred	SSH	slt	71.0	71.8	94	0									
					71.8	72.6	76	0	102.5	103.5	<0.01	<1	3	16	11	82	0.06
					72.6	73.5	29	0									
					73.5	74.4	51	0	108.5	109.5	<0.01	<1	4	35	25	99	0.13
					74.4	75.0	72	0	109.5	110.5	<0.01	<1	6	33	16	103	0.16
					75.0	76.0	33	0	110.5	111.5	<0.01	<1	4	87	28	163	0.56
					76.0	78.0	79	33	111.5	112.5	<0.01	<1	11	104	15	212	0.69
					78.0	79.4	76	8	112.5	113.5	<0.01	<1	7	81	29	86	0.55

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Au	Ag	As	Cu	Pb	Zn	S
		in crush zone 87.7-88.5m), and below 108m.			79.4	81.0	91	14	113.5	114.5	<0.01	<1	3	27	19	77	0.29
		Graphite occurs around quartz veins in black shale.			81.0	82.5	102	67	114.5	115.5	<0.01	<1	5	12	12	49	0.08
		Bedding 50-70 CA, smeared by a parallel S1 foliation			82.5	84.0	91	30	115.5	116.5	<0.01	<1	8	15	3	68	0.12
		best developed in zone of small-scale folding below			84.0	85.4	89	19	116.5	117.5	<0.01	<1	9	16	20	65	0.10
		106.5m. Folding intense in basal 0.2m. Weak S2			85.4	86.9	62	16	117.5	118.5	<0.01	<1	7	25	18	92	0.14
		foliation 20-40 CA, opposite sense to S1. Minor			86.9	87.5	97	0	118.5	119.5	<0.01	<1	5	31	26	87	0.15
		disseminated pyrite, rarely in quartz except for 20cm			87.5	88.5	80	0	119.5	120.5	<0.01	<1	11	16	22	74	0.07
		quartz-pyrite vein in pyritic black shale at 112.5m.			88.5	89.8	77	0	120.5	121.4	<0.01	<1	23	10	23	46	0.09
					89.8	90.9	68	23	121.4	122.5	<0.01	<1	19	24	24	95	0.21
		Ground conditions fair to poor. Moderately broken			90.9	92.5	100	22	122.5	123.6	<0.01	<1	13	48	29	133	0.23
		intervals interspersed with badly broken zones			92.5	93.6	95	22	123.6	124.6	<0.01	<1	12	32	26	89	0.13
		associated with faults and quartz veins.			93.6	95.2	94	23	124.6	125.6	<0.01	<1	6	8	15	39	0.03
					95.2	96.7	99	20	125.6	126.6	<0.01	<1	32	27	32	81	0.11
121.4	126.6	MAJOR QUARTZ-VEINED FAULT, 65-85 CA.	SSH	fit	96.7	97.9	97	12	126.6	127.6	<0.01	<1	8	21	23	79	0.06
		Crushed sercitic silty sandstone and graphitic schist			97.9	98.5	95	0	127.6	128.6	<0.01	<1	22	30	29	88	0.12
		after black shale, with deformation centred 122.5-			98.5	99.0	46	0	128.6	129.6	<0.01	<1	17	19	25	64	0.09
		124.7m. Puggy breccia zones to 50cm and +70 CA.			99.0	100.5	91	7	129.6	130.6	<0.01	<1	13	63	41	174	1.02
		Numerous quartz-carbonate (+chlorite) veins, the			100.5	101.9	94	16									
		main one being +6cm thick and parallel CA from			101.9	102.5	100	0	141.1	141.9	<0.01	<1	10	34	30	110	0.22
		122.4-123.5m. The carbonate in this vein is yellow			102.5	103.5	99	17	141.9	143.4	<0.01	<1	26	165	46	164	1.58
		and may be ankerite. Elsewhere the veins are			103.5	105.7	99	31									
		irregular, high-angle to CA and up to 20cm thick.			105.7	106.5	93	0	179.0	180.0	<0.01	<1	15	13	23	51	0.04
		Very minor pyrite, only a trace within quartz veins.			106.5	108.7	94	37	180.0	181.0	<0.01	<1	24	10	22	47	0.03
					108.7	109.5	100	56	181.0	182.0	<0.01	<1	2	9	25	36	0.02
		Ground conditions poor.			109.5	110.8	78	11	182.0	183.0	<0.01	<1	19	36	30	103	0.12
					110.8	111.7	80	0	183.0	184.0	<0.01	<1	4	39	31	98	0.25
126.6	249.7	Foliated, grey, micaceous, quartzo-feldspathic SILTY	SSH	sst	111.7	112.5	83	25	184.0	185.0	<0.01	<1	4	47	40	120	0.15
		SANDSTONE and lesser SILTSTONE. Bands of			112.5	113.3	88	0	185.0	186.0	<0.01	<1	15	32	25	95	0.12
		grey-black SHALE to 191m. Sericite-chlorite altered,			113.3	114.5	77	17	186.0	187.0	<0.01	<1	4	26	26	100	0.26
		strongest in zones of faulting and quartz veining. The			114.5	115.5	100	13	187.0	188.0	<0.01	<1	<1	29	25	96	0.24
		black shales are graphitic in these areas. Bedding			115.5	117.1	80	31	188.0	189.0	<0.01	<1	16	34	24	97	0.24
		55 CA at top, 70 CA at base. There is a prominent			117.1	118.5	91	47	189.0	190.0	<0.01	<1	17	14	19	58	0.05
		stretching and smearing fabric, possibly due to the			118.5	119.7	81	0	190.0	191.0	<0.01	<1	49	24	18	90	0.33

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		strong bedding-parallel S1 foliation over-printing a soft sediment deformation (exemplified by calcareous sandy lenses in silt at 236-246m). A S2 foliation 30 CA in opposite sense to S1, is visible in places. Quartz>carbonate (ankerite?) (+chlorite) veins common above 147m, 172-189m (particularly in broken zone at 186-189m), and 215-227m. The veins average <4cm thick (to 12cm) and either parallel bedding or are orthogonal to it. Common small faults at all angles, especially in shales or associated with quartz veins. Strong fault 141.1-143.4m in crushed pyritic quartz-veined shale. Faulted zone 219-226.5m includes fault-hosted 4cm quartz-pyrite-arsenopyrite vein 20 CA at 226-226.5m. Minor arsenopyrite also occurs in thin quartz veins cross-cutting bedding at 176.6m, 179.2m, 190.9m and 195.5m. Overall, there is trace pyrite in sandstone and up to 3% in some black shales, but the quartz veins are generally non-pyritic except where they cut pyritic black shale. Ground conditions fair. Breaking along the greasy foliation planes. Shales tend to be more broken than sandstone. Conditions are best below 191m.			119.7	121.2	87	24	214.8	215.8	<0.01	<1	5	48	23	432	0.23	
						121.2	123.9	103	30	215.8	216.8	<0.01	<1	11	15	22	69	0.07
						123.9	126.7	55	18									
						126.7	129.7	97	41	219.0	220.0	<0.01	<1	7	13	14	58	0.11
						129.7	132.4	95	26	220.0	221.0	<0.01	<1	5	14	15	56	0.12
						132.4	133.2	88	51	221.0	222.0	<0.01	<1	<1	12	18	50	0.04
						133.2	135.1	95	53									
						135.1	136.5	94	0	226.0	227.2	0.15	<1	187	26	12	70	1.11
						136.5	138.1	94	38									
						138.1	139.5	86	59	231.4	232.5	<0.01	<1	6	30	18	102	0.14
						139.5	141.9	92	13	232.5	233.5	<0.01	<1	21	33	22	101	0.23
						141.9	143.6	40	0									
						143.6	145.2	126	46		Cave	0.38	<1	94	71	31	202	1.31
						145.2	148.2	98	43									
						148.2	149.2	109	15	249.7	250.0	<0.01	<1	43	17	24	138	0.55
						149.2	151.5	83	38	250.0	251.0	<0.01	<1	18	26	21	129	0.29
						151.5	154.0	100	23	251.0	252.0	<0.01	<1	23	46	20	1079	0.67
						154.0	155.5	93	7	252.0	253.0	<0.01	<1	25	42	25	310	0.73
						155.5	157.5	101	66	253.0	254.0	<0.01	<1	8	32	14	328	0.5
						157.5	160.5	95	41	254.0	255.0	<0.01	<1	13	39	29	164	0.89
					160.5	163.5	101	16	255.0	256.0	<0.01	<1	15	31	19	108	0.58	
					163.5	166.5	94	46	256.0	257.0	<0.01	<1	30	26	15	116	0.44	
					166.5	169.5	98	51	257.0	258.0	<0.01	<1	29	37	15	115	0.4	
					169.5	172.2	91	39	258.0	259.0	<0.01	<1	44	33	17	95	0.3	
249.7	276.0	FAULTED and VEINED ZONE (the VOLUNTEER REEF FAULT). Centred on major fault at 264-266.8m marked by intense crushing 50 CA. Numerous smaller crush zones occur throughout. Above the main fault is dark grey shale with minor quartzose siltstone, while below is mostly pale grey quartzose silty sandstone. The rocks are sericitized, with local strong quartz-sericite alteration in the main fault and below 274.3m. Strong foliation 20-80 CA, averaging	DRF	flt	172.2	173.3	95	53	259.0	260.0	0.03	<1	16	32	14	104	0.39	
						173.3	175.5	90	33	260.0	261.0	0.08	<1	297	19	15	100	0.5
						175.5	178.1	95	45	261.0	262.0	0.28	<1	753	16	4	110	0.87
						178.1	179.7	93	53	262.0	263.0	0.34	<1	1137	20	9	156	1.11
						179.7	181.5	96	27	263.0	264.0	0.41	<1	1111	37	26	167	1.85
						181.5	183.6	89	17	264.0	265.0	0.42	<1	2538	21	7	120	0.85
						183.6	185.4	94	6	265.0	266.0	0.54	<1	2145	12	9	109	1.11
						185.4	187.5	88	10	266.0	267.0	0.17	<1	836	27	18	118	0.52
						187.5	190.1	85	8	267.0	268.0	<0.01	<1	81	10	9	51	0.23

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		70-80 CA, with intensity increasing towards base of unit. Bedding parallels this foliation. A cross-cutting crenulation cleavage is visible in places. Veining (to 5cm) of quartz-ankerite is common below 259.5m, and strongest 261.4-268m, including a 15cm zone at 262m of intense quartz-ankerite-pyrite-arsenopyrite veining. At the top contact of the unit there is a 10cm quartz vein 30 CA, containing minor pyrite and arsenopyrite (the Volunteer Hangingwall Reef). This is the only veining of note above 259.5m. Sulphides (mainly disseminated in the host rocks) average 1% pyrite with trace to minor arsenopyrite below 259.5m. Below 274.3m there is 1-2% pyrite-arsenopyrite, with the latter predominant at base.			190.1	190.4	93	0	268.0	269.0	<0.01	<1	74	9	8	56	0.27	
						190.4	193.5	95	47	269.0	270.0	0.02	<1	973	18	15	86	1.02
						193.5	196.5	100	75	270.0	271.0	<0.01	<1	65	15	12	62	0.66
						196.5	199.5	95	59	271.0	272.0	0.46	<1	3784	11	11	62	0.7
						199.5	202.5	99	40	272.0	273.0	0.02	<1	250	18	22	86	0.16
						202.5	205.5	100	85	273.0	274.0	0.03	<1	297	14	17	75	0.18
						205.5	208.5	102	47	274.0	275.0	0.23	<1	1328	8	13	55	0.38
						208.5	211.5	98	61	275.0	276.0	0.31	<1	2355	3	11	37	0.6
						211.5	214.5	101	74	276.0	277.2	1.87	<1	6500	6	17	37	0.86
						214.5	217.5	97	59	277.2	278.0	<0.01	<1	7	14	13	54	0.07
						217.5	220.0	96	41	278.0	279.0	<0.01	<1	11	19	34	70	0.06
						220.0	222.7	97	30	279.0	281.0	<0.01	<1	1	11	16	53	0.04
						222.7	223.9	94	10	281.0	283.0	<0.01	<1	<1	17	23	63	0.04
						223.9	226.5	98	22	283.0	290.5	<0.01	<1	4	20	18	77	0.05
						226.5	229.5	100	83	290.5	292.0	<0.01	<1	1	16	17	65	0.04
		Ground conditions poor: numerous crumbly crush zones and associated fractures, but mostly the rock is broken along the greasy foliation.			229.5	232.5	91	43										
						232.5	234.3	99	7			Sb						
						234.3	235.5	98	40	249.7	250.0	1						
						235.5	238.5	96	43	250.0	251.0	<0.5						
276.0	277.2		VOLUNTEER REEF. 0.1m lost.	DRF	min	238.5	241.5	97	54	251.0	252.0	0.8						
		Highly fractured and brecciated quartz vein with very minor carbonate (ankerite?), and 3% disseminated and microveinlet arsenopyrite>>pyrite. Top 25cm is recemented quartz vein breccia. Central 40cm is more solid but highly fractured quartz. Lower 30cm is cataclasite breccia with 70% quartz fragments in matrix of crushed quartz, sericitic siltstone and black graphitic shale. Basal 10cm is sheared sandstone with vein quartz augen. The reef contacts are sharp: upper 20 CA, lower 40 CA. The interval is crumbly due to stressing of the quartz.			241.5	243.6	102	6	252.0	253.0	<0.5							
						243.6	244.7	73	47	253.0	254.0	<0.5						
						244.7	246.0	105	82	254.0	255.0	0.5						
						246.0	247.5	97	63	255.0	256.0	1						
						247.5	249.0	97	71	256.0	257.0	<0.5						
						249.0	251.7	99	22	257.0	258.0	<0.5						
						251.7	253.5	97	0	258.0	259.0	0.9						
						253.5	256.3	100	29	259.0	260.0	1.9						
						256.3	258.1	102	6	260.0	261.0	2.3						
						258.1	259.5	100	16	261.0	262.0	1.6						
					259.5	261.5	100	12	262.0	263.0	1.6							
					261.5	262.7	80	0	263.0	264.0	2.1							
277.2	325.6	Grey PHYLLITIC SILTSTONE and SANDSTONE,	SSH	slt	262.7	264.3	85	0	264.0	265.0	1							

433031

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Sb						
		partly quartzose and micaceous. Very minor dark grey shale. The rocks are chlorite-sericite altered, strongest in zone of quartz-chlorite-sericite-calcite veins above 283m. These veins are up to 20cm thick and generally sub-parallel the strong S1 foliation. Elsewhere there is minor quartz-ankerite(?) veining orthogonal to S1, locally to 10cm thick at 289-291m. S1 is 60 CA at top of unit and 80 CA at base. There is a weaker S2 foliation 20-30 CA in opposite sense to S1. Bedding generally sub-parallel S1 at 65-70 CA however, there is local small-scale folding, most notably a zone of continuous tight folding at 307.5 to 310.3m. Minor disseminated pyrite in the rock, but none in the quartz veins except at 291m (minor pyrite) and 289.3m (trace chalcopyrite). Ground conditions very good: largely unbroken apart from tendency to break along foliation in shale bands EOH at 325.6m			264.3	265.5	71	0	265.0	266.0	2.1						
			265.5	266.2	67	0	266.0	267.0	1								
			266.2	266.9	61	0	267.0	268.0	<0.5								
			266.9	268.5	89	8	268.0	269.0	<0.5								
			268.5	269.1	97	17	269.0	270.0	0.6								
			269.1	270.9	89	0	270.0	271.0	<0.5								
			270.9	271.6	67	0	271.0	272.0	0.6								
			271.6	272.1	56	0	272.0	273.0	<0.5								
			272.1	272.7	78	0	273.0	274.0	<0.5								
			272.7	273.6	68	0	274.0	275.0	<0.5								
			273.6	274.1	66	0	275.0	276.0	0.6								
			274.1	274.8	80	41	276.0	277.2	2.8								
			274.8	276.0	96	32											
			276.0	277.5	86	9											
			277.5	279.0	94	49											
			279.0	280.5	101	14											
			280.5	282.6	96	74											
			282.6	284.7	104	55											
			284.7	286.5	97	89											
			286.5	289.2	98	74											
		289.2	290.6	101	49												
		290.6	292.7	90	69												
		292.7	294.6	106	81												
		294.6	297.2	106	50												
		297.2	298.5	89	58												
		298.5	300.0	99	87												
		300.0	301.3	102	92												
		301.3	304.5	91	88												
		304.5	307.5	99	68												
		307.5	310.5	98	76												
		310.5	313.5	103	64												
		313.5	316.5	100	86												
		316.5	319.5	99	57												

433032

LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole No. : L1A

Date Started : 12 January 1998

Drilled by : Diamond Drilling (Tas.)

Date Completed : 17 January 1998

Logged by : J.G. Purvis

Collar

Hole Details

Northing : 5448089.28
Easting : 499817.47
R.L. : 2172.50
Dip : -57.5
Bearing : 352.98

Final Depth : 283.5
Hole Length : 38.4
Core Size : NQ

Purpose

Duplication of L1 Volunteer Reef package to allow whole core assaying of L1 to be undertaken. Wedged from L1 at 245.1m.

Summary Results

From	To	Length	Description	Au	Ag	Cu	Pb	Zn	As	S
274.1	275.2	1.1	(0.6m recovered). Volunteer Reef - rubbly quartz vein with 2 - 3 % arsenopyrite>pyrite							

433034

LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole L1A

Page 1 of 3

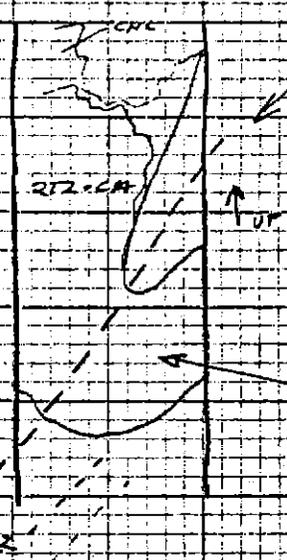
From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Au	Ag	As	Cu	Pb	Zn	S
245.1	248.3	Not cored.	OPN	nil	248.0	248.7	53	53									
					248.7	249.0	87	33									
248.3	249.6	Grey, fine grained, quartz-mica SANDSTONE and SILTSTONE. Minor carbonaceous content. Minor pyrite. ORIENTATION @ 248.8m: Bedding 55 CA (dips 51 to 202 AMG). Basal contact broken.	SSH	sst	249.0	249.4	30	0									
					249.4	249.7	110	0									
					249.7	250.5	104	0									
					250.5	251.7	98	0									
					251.7	253.2	98	7									
249.6	274.1	FAULTED ZONE (VOLUNTEER REEF FAULT). Soft greasy sericite-chlorite altered dark grey SHALE and SILTSTONE, changing abruptly at 263.3m to sericitized quartzose SANDSTONE that is silicified in places, especially below 270.4m. Deformation (fracturing, crush seams, enhanced foliation and quartz>ankerite veining), is strongest in top 1m and below 260.7m. There is a 20cm crush zone with minor quartz-ankerite veinlets at the top contact. Faulting is centred on a puggy cataclasite breccia at 265.1-265.8m, which hosts a fractured 15cm quartz vein at 265.3m. The veining (which averages <2cm thick, is at all angles, and often fractured or brecciated), is particularly abundant at 262-266m. The mainly-shale interval at 250.6-260.7m has only occasional thin crush seams and almost no veining. The veining is associated with disseminated pyrite and arsenopyrite in the wallrocks but little sulphide occurs in the veinlets themselves. To 259.7m: 1% pyrite. 259.7-262m: 1% pyrite, trace arsenopyrite. 262-263.3m: 2-3% pyrite, minor arsenopyrite. 263.3 to 265.8m: 2% arsenopyrite-pyrite. 265.8-274.1m: 1-2% pyrite, minor arsenopyrite. Bedding 58-75 CA. S1 foliation is generally slightly steeper than bedding	DRF	flt	253.2	254.7	95	7									
					254.7	256.2	100	20									
					256.2	257.8	97	9									
					257.8	259.3	86	8									
					259.3	260.8	96	10									
					260.8	262.2	97	0									
					262.2	263.6	93	0									
					263.6	264.7	65	0									
					264.7	265.4	103	0									
					265.4	265.8	60	0									
					265.8	266.4	65	0									
					266.4	266.9	56	0									
					266.9	267.9	86	0									
					267.9	269.1	96	0									
					269.1	269.9	94	0									
					269.9	270.5	73	0									
					270.5	271.5	27	0									
					271.5	272.2	96	0									
					272.2	272.6	42	0									
					272.6	272.8	60	0									
					272.8	273.8	43	0									
					273.8	274.1	117	0									
					274.1	275.4	52	0									
					275.4	276.0	112	17									

433036

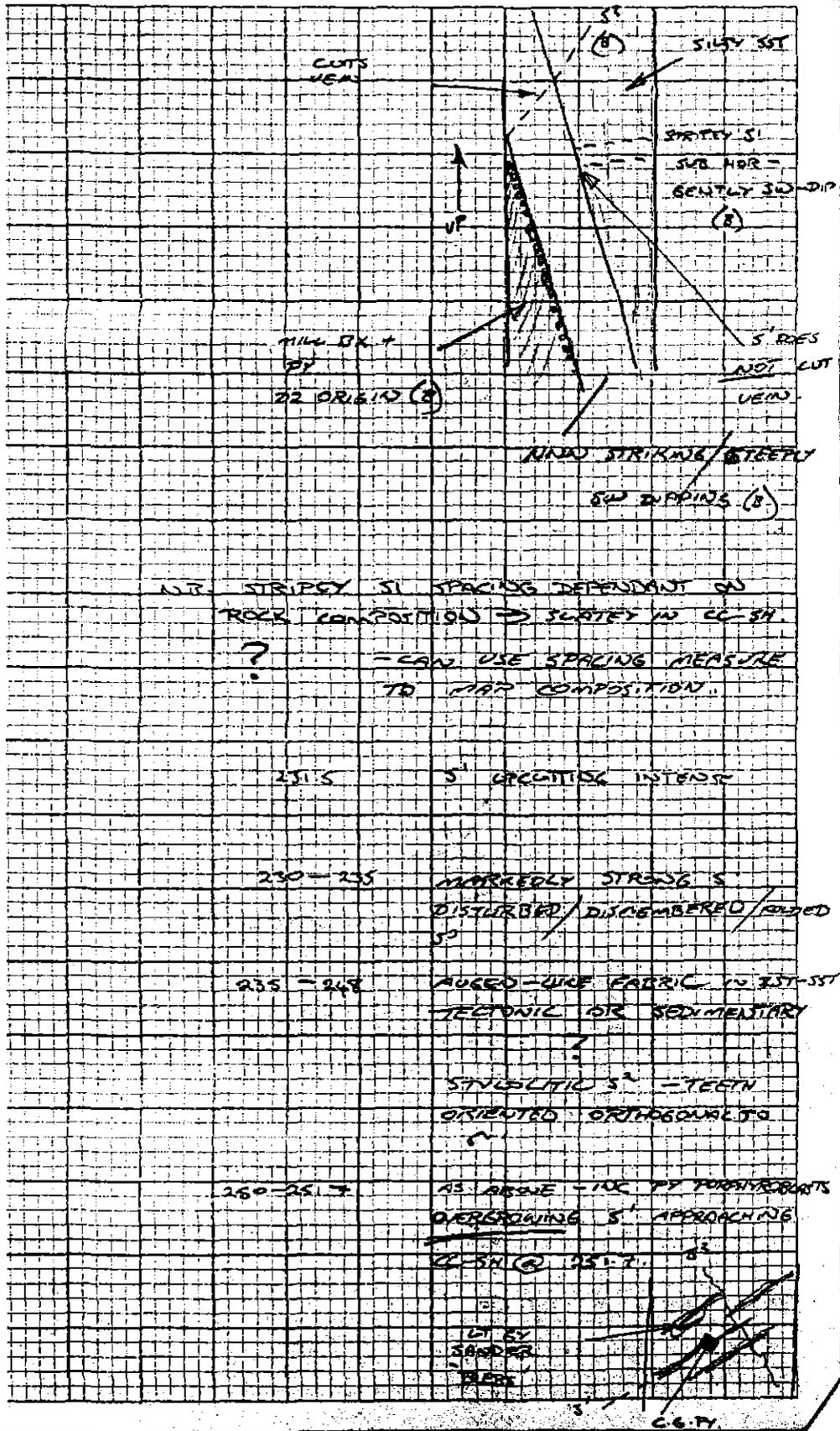
From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		at 75-80 CA. There is a weaker S2 foliation 30-50 CA in opposite sense to S1.			276.0	277.3	89	27										
					277.3	278.9	94	37										
					278.9	280.4	99	15										
		Ground conditions fair to 261m then generally poor with broken zones and much of rock crumbly and partially leached.			280.4	282.0	106	91										
					282.0	282.3	113	73										
					282.3	282.8	96	76										
					282.8	283.0	735	0										
274.1	275.2	VOLUNTEER REEF. 0.6m lost.	DRF	min	283.0	283.2	125	0										
		Rubble, comprising fragments of mottled bluish-grey and white vein quartz (+calcite), faced with greasy pug after crushed sericite-chlorite altered shale. The quartz and pug contains 2-3% arsenopyrite>pyrite. The sulphides are mostly disseminated, with some filling microfractures in grey quartz. Basal 20cm comprises crushed greasy black shale with broken quartz-ankerite veinlets, underlain by an intact 5cm quartz>ankerite-arsenopyrite vein 65 CA.			283.2	283.5	107	33										
275.2	276.3	VOLUNTEER REEF FAULT - basal section. Abundant quartz-ankerite veinlets in grey, strongly foliated (30-70CA), silicified quartzose sandstone. Veinlets average <5mm, at all angles, and are deformed by movement along the sericitic foliation. 2% disseminated arsenopyrite-pyrite, little in the veinlets. 30cm above basal contact is a 6cm fault breccia 25 CA with quartz fragments and several % arsenopyrite>pyrite. Sharp basal contact 70 CA. Slightly broken.	DRF	flt														
276.3	283.5	Grey, fine grained, quartz-mica SILTY SANDSTONE. Chlorite-sericite altered. Patchy carbonatization below 280m. Bedding at 282.7m: 40 CA. Generally bedding is deformed by the slightly steeper S1	SSH	sst														

433037

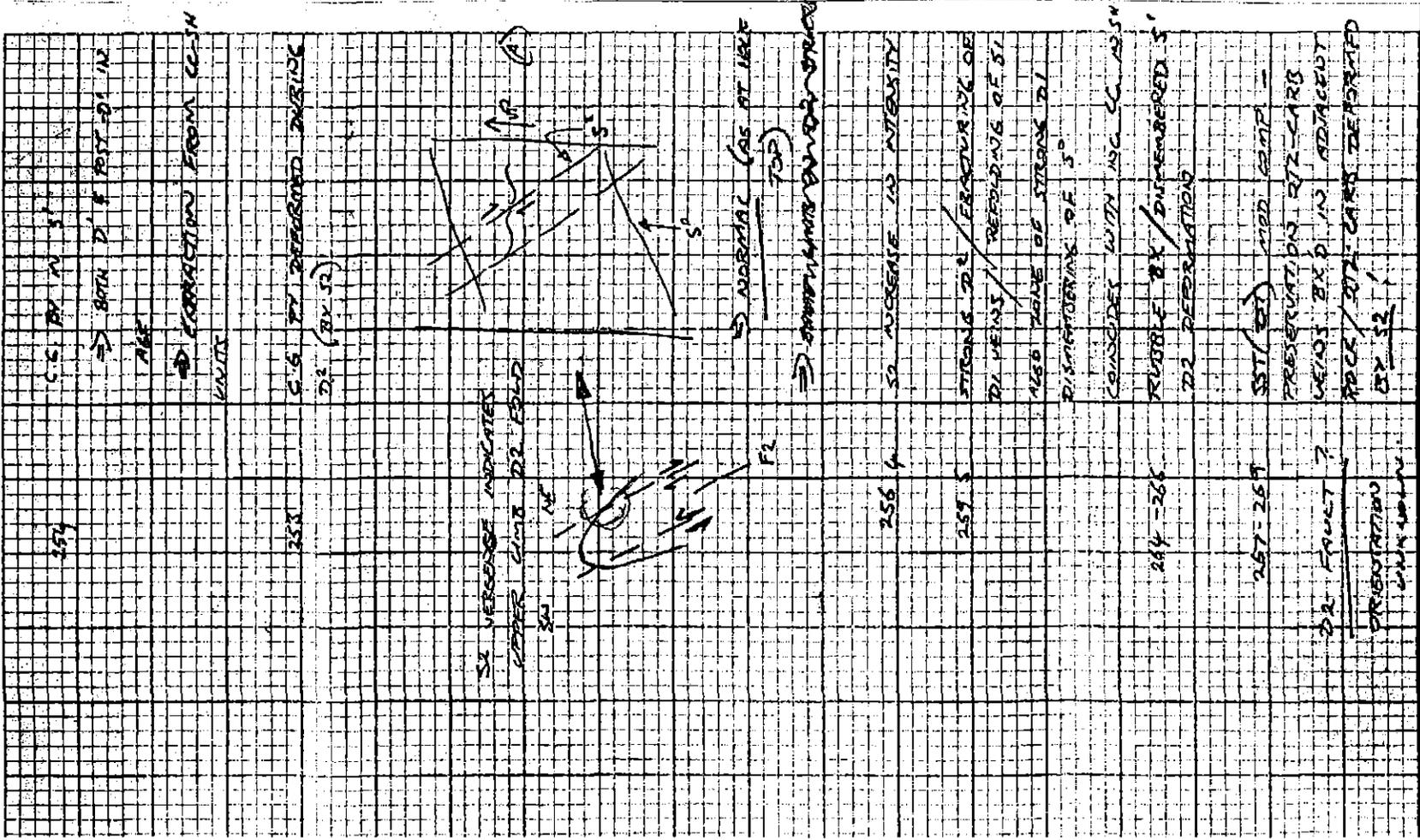
		-CORRECT ORIENT -CHECK WITH
	128m	S° DIP E40 - S60
UP OK		SUN # TO S1 STRIPEY CLEAVAGE S1 CUTS UP THROUGH S° (A)
	126.0	S° OF CONSISTENT ORIENTATION ALBET SOME POSSIBLE REFRACTION SILTY/SANDY SLTSTONE
	140.2 - 143.4	ZONE OF INC. DZ INTENSITY COMMENCING WITH FOLDED 2cm Q12 - CARB - CHL UNITS WITH AXIAL-P S2 CLEAVAGE AGAIN TO COINCIDENT WITH MORE CARBONACEOUS BAND
		TWO LINEATIONS ON BROKEN CORE SURFACE 5 TO 10° APART L1/L2? S° DIPPING SHALLOWLY TO N?
		CONSISTENT WITH BEING OF D1 AGE (SEE ABOVE) - FORMED ORTHOGONAL TO S1 IN CARBON UNITS (SEE 415m)
	149m	S1 + F2 IN SANDY SLTSTONE S1 DIPPING 30° TO SW
O.T.	150.5	S° APPARENTLY ^{DOWN} POINTING THROUGH S° - OVERTURNED (B) MAY BE FOLD HINGE BACK AT 143.6m
O.T.	153	RELATED SHARD S°/S° S° OVERTURNING WRT S° (B)
	155	S2 FOLDED Q12 - CARB UNITS



151	151	3' DISCONTINUOUS WIRT, 5°
FOLD HINGE?? - NOT AT ALL CLEAR		
	165	5' STEEP TO SW, UP-CUTTING AND TAGGED BY DE
		5' SUB-HOR - GRTZ N-DIPPING
		5' CUTS GRTZ-CARB-CAL VENS
		<p style="text-align: center;">↓</p> TEND TO FORM CLOSER TO BEDDING + S' IN FLOOR - GRAVED CUTTS.
	166.5	UPWARD YOUNGING (C) SCAR CONSISTENT WITH BEDDING CLEARANCE UP CUTTING (D)
	188	SW 5°/1 GRTZ CARB VENS X-C BY S2 (B) 5' SHALLOW UP-CUTTING WIRT 5° - SO RIGHT WAY UP (B) POORLY DEVELOPED L.
	192 - 192.8	5' UP CUTTING (C) S2 POORLY DEVELOPED
	204	SMALL (L) UP CUTTING FT (?) (B) URGENT FOLD IN DIAGENESIS (?) CARB VENS IN CLSH BED TO 15cm THICK
	226	



N.B. STRIPY SL SPACING DEPENDANT ON
 ROCK COMPOSITION → SLATES IN CC-SH
 ? = CAN USE SPACING MEASURE
 TO MAP COMPOSITION.



S.C. BY N.S.

⇒ BOTH D₁ & D₂ IN N.E.

⇒ CONTRACTION FROM CC-SH UNITS

S.G. BY DEFORMED OVERLIE D₁ (BY S)

S1 VERGE INDICATES CENTER LINE D2 FOLD

S2 N.E.

F2

S2 INCREASE IN INTENSITY

STRONG D₂ FRACTURING OF D1 VEINS / REEOLING OF S1 ALSO NONE OF STRONG D1 DISMEMBERING OF S

CONSIDER WITH INC. CC. AS SH

TRUBLE BY / DIMEMBERED S₁ D2 REEOLATION

SST (BY) MOD CAMP - PRESERVATIONS RIZ-CARS WEI'S BY D IN ADJACENT FACE / 20% CARBON DEMENTED BY S₂

D2 FAULT ?

ORIENTATION WITH UNITS

257-259

244-266

256 4

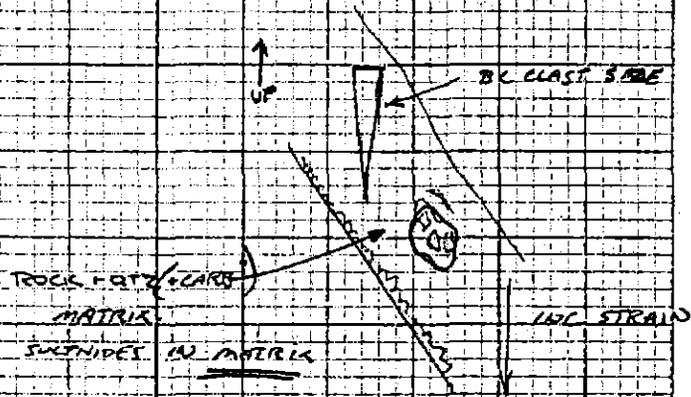
257 5

269-278.2

5' STEEPLY CLEAVED ZST (SST)
 DECOMPOSITION OF CORE
 ON 5' PROBABLY AS RESULT
 OF DEFORMATION OF ROCK
 BETWEEN ABOVE FAULT
 AND THAT AT 278.2

278.2-277

RUBBLE
 BL-SULPHIDIC - MULTIPLE
 FRACTURE EPISODES INC
 STRAIN TO BASE

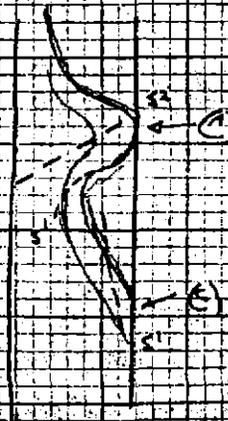


277

MASSIVE
 DEC IN DR INTENSITY
 S2 CLEAVED QTZ VEINS

289.3

5° STEEPLY DIPPING
 S2D



		ANGULAR FLOATING BK GLASTS IN QTL - CARBONATE (?) VENS
TO E.O.H.	321	ORIENTED SUB-ORTHOG TO S'
S2 SPORADIC S1 INTENSE? ROCKS FOLDED		HIGH FLUID P
	323	S ² NORMAL VERGE
	326.6	E.O.H.
SUMMARY	CORE CAN BE ORIENTED USING S2 AS REFERENCE.	
<p>① D¹ ISOLATION STRONGLY DEVELOPED THROUGHOUT HOLE</p> <p>② D¹ RESULTED IN TIGHT TO SUB-ISOLINAL FOLDS</p> <p>③ MUCH OF THE MOTTLED (AUGER-LIKE) TEXTURE COMMON TO THE SILTY SST COULD BE TECTONICAL (D)</p> <p>④ QTL-CARB-CHL VENS TO 15CM (APPR) FORMED DURING D1 ORTHOGONAL TO S' (S1) IN MORE BRITTLE UNITS BUT AT A MORE ACUTE ANGLE IN SHALES (CONSISTENT WITH FIELD OBSERVATIONS)</p> <p>⑤ D1-S' SPACING STRONGLY RELATES TO ^{TO} ROCK COMPETENCY</p> <p>⑥ HIGH STRAIN D1 ZONES WHERE SHALES INTERBEDDED WITH MORE COMPETENT UNITS</p> <p>⑦ D2 SPORADIC - NOT CONSISTENTLY DEVELP THROUGHOUT HOLE</p>		

STRONGEST AT 140-150 M
 267-277 M
 HERE, THERE IS;

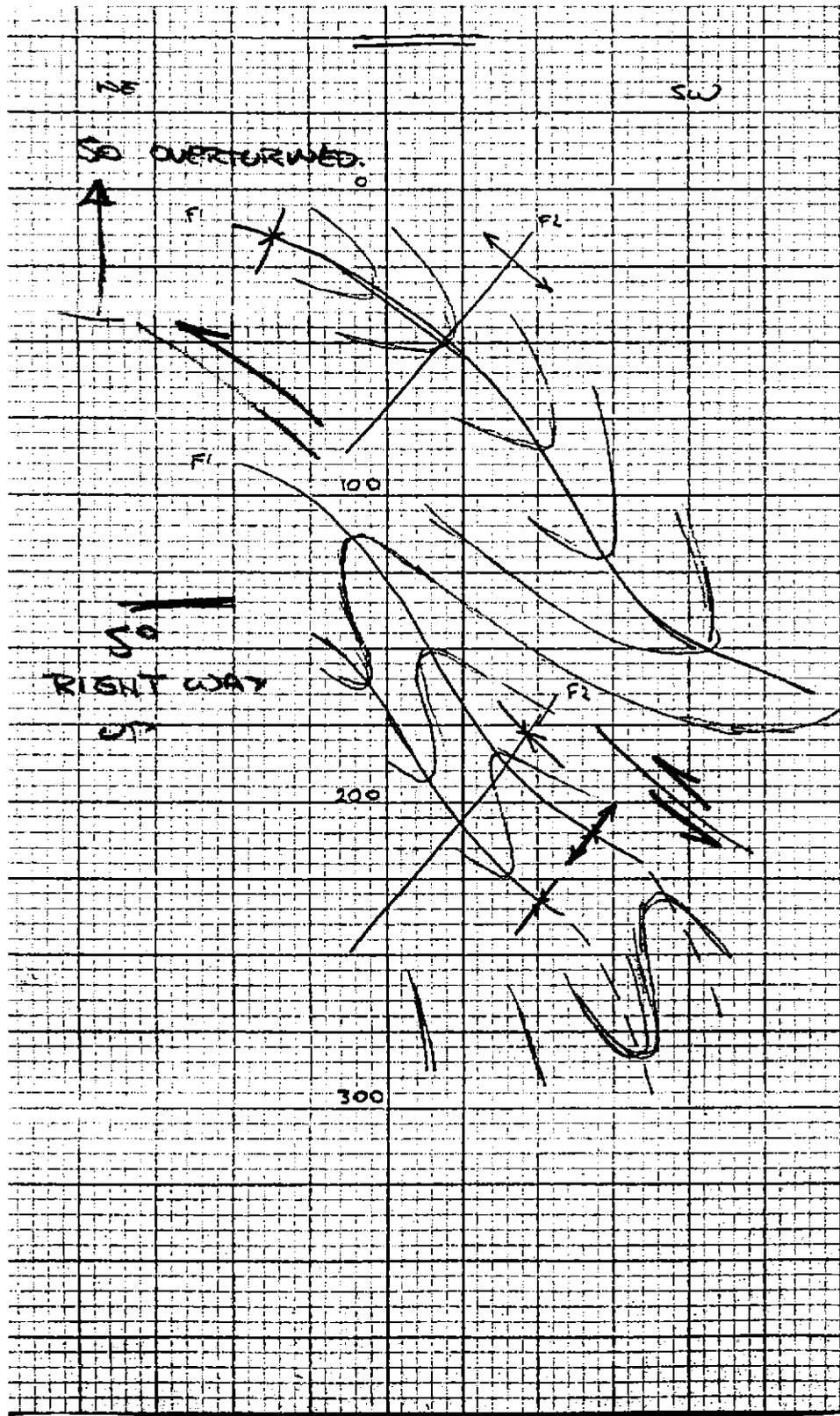
(A) Bx'D D1 VEINS
 (B) W/ S² IN ROCKS ADJACENT
 (C) ROTATED + RE Bx'D WEAKLY
 SILICIFIED ZONES = FAULTS
 (D) SULPHIDES IN MATRIX

(E) CIG PY IN A NEAR CESSA CATE-D1 TO PRODR
 IN AGE PROBABLY REPRODUCED BIOGENIC
 SULPHIDE

(F) THERE IS AT LEAST ONE D2 FOLD IN HOLE
 AS INDICATED BY REVERSAL OF S² VERGENCE
 SHEAR

(G) AS ES ONLY AT 277 = GNY? = MINIMAL CC
 COMPARED TO ~~FAULTS~~ D2 FAULTS ELSEWHERE
 CONC - S² - CARB - CHLORITE - ALTS - A D
 PHENOMENON, POSSIBLY THE SAME
 ASSEMBLAGE FORMED DURING D2 (AS
 INDICATED BY D2 FACET ISX MATRIX
 + BEACONS FOLD ASSEMBLAGE)
 (⇒) IMPLICATIONS FOR EXPLORATION

- AES IS A D2 FEATURE /
 - ASSAYS REQUIRED TO REEVALUATE AURIFEROUS
 ZONES TO STRUCTURE
 - ALL DATA CONSISTENT WITH DISPERMUTICUS
 OF SURFACE GEOSCY /





Our reference : BU014170
 Your reference : WCAO 342038
 Project code : Diamond Drill Core
 Date received : 08/01/98
 Date reported : 22/01/98

Analabs Pty. Ltd.
 ACN 004 591 664
 14 Thirkell St. Burnie
 Tasmania 7320
 Telephone : (004) 31 6837
 Facsimile : (004) 31 8890

Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Number of pages of results : 2
 Number of Samples : 32
 First Sample : L1-3.0-4.5
 Last Sample : L1-64.0-65.0

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :

Modem / /
 Facsimile / /
 Disk Report / /

Preliminary Reports :

12/01/98 Report
 15/01/98 Report

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory
 for preparation and/or analysis as requested by the client.



Our reference : BU014170
 Your reference : WCAO 342038
 Project code : Diamond Drill Core
 Report date : 22/01/98
 Report status : Final
 Page : 2 of 2

Analabs Pty. Ltd.
 ACN 004 591 664
 14 Thirkell St. Burnie
 Tasmania 7320
 Telephone : (004) 31 6837
 Facsimile : (004) 31 8890

ANALYTICAL DATA

Sample	Cu	Pb	Zn	Ag	As	
L1/3.0-4.5	33	24	60	<1	<50	
L1/4.5-6.0	27	37	65	<1	<50	
L1/6.0-7.5	13	17	58	<1	<50	
L1/7.5-9.0	14	21	97	<1	<50	
L1/9.0-10.5	55	22	88	<1	<50	
L1/10.5-11.5	34	20	106	<1	<50	
L1/11.5-12.5	89	18	87	<1	<50	
L1/18.8-19.8	75	10	101	<1	<50	
L1/19.8-21.0	60	20	70	<1	<50	
L1/30.5-31.5	55	25	262	<1	<50	
L1/31.5-32.5	51	26	110	<1	<50	
L1/32.5-33.5	78	24	126	<1	<50	
L1/33.5-34.5	76	33	86	<1	<50	
L1/42.0-43.2	81	34	184	<1	<50	
L1/45.1-46.1	53	59	139	<1	<50	
L1/46.1-47.0	20	50	112	<1	<50	
L1/47.0-48.2	15	40	122	<1	<50	
L1/48.2-49.4	16	34	85	<1	<50	
L1/49.4-50.4	26	30	133	<1	<50	
L1/50.4-51.4	15	26	100	<1	<50	
L1/51.4-52.4	21	28	98	<1	<50	
L1/52.4-53.3	15	24	64	<1	<50	
L1/53.3-55.5	33	30	122	<1	<50	
L1/55.5-56.7	24	32	115	<1	<50	
L1/56.7-57.6	18	44	118	<1	<50	
L1/57.6-58.5	26	31	106	<1	<50	
L1/58.5-59.7	19	38	112	<1	<50	
L1/59.7-60.8	18	32	84	<1	<50	
L1/60.8-62.0	24	35	90	<1	<50	
L1/62.0-63.5	30	35	110	<1	<50	
L1/63.5-64.0	19	21	55	<1	<50	
L1/64.0-65.0	35	45	88	<1	<50	
Method Units Detection Limit	A102 ppm 2	A102 ppm 3	A102 ppm 2	A102 ppm 1	A102 ppm 50	

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received



ANALYSIS DESCRIPTION

Job number : BU014170 Order number : WCAO 342038

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



Our reference : BU014173
 Your reference : WCAO 328119
 Project code : Diamond Drill Core
 Date received : 09/01/98
 Date reported : 22/01/98

Analabs Pty. Ltd.
 ACN 004 591 664
 14 Thirkell St. Burnie
 Tasmania 7320
 Telephone : (004) 31 6837
 Facsimile : (004) 31 8890

Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Number of pages of results : 2
 Number of Samples : 27
 First Sample : L1-65.0-66.1
 Last Sample : L1-115.5-116.5

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :

Modem //
 Facsimile //
 Disk Report //

Preliminary Reports :
 13/01/98 Report
 15/01/98 Report

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014173 Order number : WCAO 328119

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



Our reference : BU014181
 Your reference : WCAO 328108
 Project code : Diamond Drill Core
 Date received : 12/01/98
 Date reported : 03/02/98

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Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Number of pages of results : 2
 Number of Samples : 37
 First Sample : L1-116.5-117.5
 Last Sample : L1-262.5-268.5

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :
 Modem //
 Facsimile //
 Disk Report //

Preliminary Reports :
 16/01/98 Report
 19/01/98 Report

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory
 for preparation and/or analysis as requested by the client.



Our reference : BU014181
 Your reference : WCAO 328108
 Project code : Diamond Drill Core
 Report date : 03/02/98
 Report status : Final
 Page : 2 of 2

Analabs Pty. Ltd.
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 Tasmania 7320
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ANALYTICAL DATA

Sample	Cu	Pb	Zn	Ag	As
L1/116.5-117.5	16	20	65	<1	<50
L1/117.5-118.5	25	18	92	<1	<50
L1/118.5-119.5	31	26	87	<1	<50
L1/119.5-120.5	16	22	74	<1	<50
L1/120.5-121.4	10	23	46	<1	<50
L1/121.4-122.5	24	24	95	<1	<50
L1/122.5-123.6	48	29	133	<1	<50
L1/123.6-124.6	32	26	89	<1	<50
L1/124.6-125.6	8	15	39	<1	<50
L1/125.6-126.6	27	32	81	<1	<50
L1/126.6-127.6	21	23	79	<1	<50
L1/127.6-128.6	30	29	88	<1	<50
L1/128.6-129.6	19	25	64	<1	<50
L1/129.6-130.6	63	41	174	<1	<50
L1/141.1-141.9	34	30	110	<1	<50
L1/141.9-143.4	165	46	164	<1	<50
L1/179.0-180.0	13	23	51	<1	<50
L1/180.0-181.0	10	22	47	<1	<50
L1/181.0-182.0	9	25	36	<1	<50
L1/182.0-183.0	36	30	103	<1	<50
L1/183.0-184.0	39	31	98	<1	<50
L1/184.0-185.0	47	40	120	<1	<50
L1/185.0-186.0	32	25	95	<1	<50
L1/186.0-187.0	26	26	100	<1	<50
L1/187.0-188.0	29	25	96	<1	<50
L1/188.0-189.0	34	24	97	<1	<50
L1/189.0-190.0	15	19	58	<1	<50
L1/190.0-191.0	24	18	90	<1	<50
L1/214.8-215.8	48	23	432	<1	<50
L1/215.8-216.8	15	22	69	<1	<50
L1/219.0-220.0	13	14	58	<1	<50
L1/220.0-221.0	14	15	56	<1	<50
L1/221.0-222.0	12	18	50	<1	<50
L1/226.0-227.2	26	12	70	<1	187
L1/231.4-232.5	30	18	108	<1	<50
L1/232.5-233.5	33	22	101	<1	<50
L1/262.5-268.5	71	31	202	<1	94
Method Units Detection Limit	A102 ppm 2	A102 ppm 3	A102 ppm 2	A102 ppm 1	A102 ppm 50

Notes: N.A. = not analysed, -- = element not determined, I.S. = insufficient sample, L.N.R. = listed not received



ANALYSIS DESCRIPTION

Job number : BU014181 Order number : WCAO 328108

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.

433061

A N A L A B S



Our reference : BU014211
Your reference : WCAP 458152
Project code : Diamond Drill Core
Date received : 21/01/98
Date reported : 06/02/98

Analabs Pty. Ltd.
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Peter Hills
Project Geologist

Allstate Explorations NL
PO Box 58
Beaconsfield

TAS 7270

Number of pages of results : 2
Number of Samples : 26
First Sample : L1-250-251
Last Sample : L1-275-276

Invoice to:
Peter Hills
Project Geologist

Allstate Explorations NL
PO Box 58
Beaconsfield

TAS 7270

Electronic Data Transmission :
Modem //
Facsimile //
Disk Report //

Preliminary Reports :
27/01/98 Report

Results to:

Results to:

Remarks :

Authorised by
On behalf of:

Richard Newman
Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014211 Order number : WCAP 458152

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : G109 - Volatile digest, Geochemical samples

Potassium Chlorate, Hydrochloric, Nitric Acid
Volatile element digest (HClO₃, HCl, HNO₃),
Geochemical samples.

Scheme code : H109 - Hydride AAS analysis

Hydride AAS analysis after G109 digest.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.

ANALYSIS DESCRIPTION



Our reference : BU014205
 Your reference : WCAO 328069
 Project code : Diamond Drill Core
 Date received : 20/01/98
 Date reported : 04/02/98

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Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Number of pages of results : 2
 Number of Samples : 2
 First Sample : L1-249.7-250.0
 Last Sample : L1-276.0-277.15

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :
 Modem //
 Facsimile //
 Disk Report //

Preliminary Reports :
 21/01/98 Report
 03/02/98 Report

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014205 Order number : WCAO 328069

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : G109 - Volatile digest, Geochemical samples

Potassium Chlorate, Hydrochloric, Nitric Acid
Volatile element digest (HClO₃, HCl, HNO₃),
Geochemical samples.

Scheme code : H109 - Hydride AAS analysis

Hydride AAS analysis after G109 digest.

Scheme code : G103 - Triple acid digest, Ore Grade samples

Triple acid digest, (HCl, HNO₃, HClO₄), Ore grade
samples.

ANALYSIS DESCRIPTION

433069



Job number : BU014205

Order number

A: wd No 328069 L A B S

Scheme code : A103 - AAS analysis

AAS analysis of sample after G103 digest.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.

Our reference : BU014216
 Your reference : WCAO328131
 Project code : Diamond Drill Core
 Date received : 23/01/98
 Date reported : 06/02/98

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Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Number of pages of results : 2
 Number of Samples : 8
 First Sample : L1-277.15-278.0
 Last Sample : DECLINE EAST

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :

Modem //
 Facsimile //
 Disk Report //

Preliminary Reports :
 29/01/98 Report
 04/02/98 Report

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014216 Order number : WCAO328131

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : G109 - Volatile digest, Geochemical samples

Potassium Chlorate, Hydrochloric, Nitric Acid
Volatile element digest (HClO₃, HCl, HNO₃),
Geochemical samples.

Scheme code : H109 - Hydride AAS analysis

Hydride AAS analysis after G109 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.

ANALYSIS DESCRIPTION

433074



Job number : BU014216

Order number

A: WDN032831 L A B S

Scheme code : G103 - Triple acid digest, Ore Grade samples

Triple acid digest, (HCl, HNO₃, HClO₄), Ore grade samples.

Scheme code : A103 - AAS analysis

AAS analysis of sample after G103 digest.

APPENDIX 2

Log of Hole L2

LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole No. : L2

Date Started : 20 January 1998

Drilled by : Diamond Drilling (Tas.)

Date Completed : 16 February 1998

Logged by : J.G. Purvis

Collar

Northing : 5450982.82
Easting : 498113.39
R.L. : 2081.99
Dip : -60.7
Bearing : 334.8

Hole Details

Final Depth : 421.5
Hole Length : 421.5
Core Size : NQ

Purpose

To test the Pinafore and Chum reef systems at the northern end of the Lefroy field.

Summary Results

From	To	Length	Description	Au	Ag	Cu	Pb	Zn	As	S
131.9	135.3	3.4	Main Pinafore Lode Zone	0.53	<1	22	13	90	3183	1.58
150.5	152.6	2.1	Pinafore Footwall Lode	0.81	<1	12	5	38	3582	0.60
384.5	398.0	13.5	Main Chum Lode Zone	0.19	<1	26	25	94	316	0.59

Comments

Hole swung 50 degrees to the east. 3m of HW casing was left in the hole with a steel screw-on cap.

433076

Survey Sheet

LEFROY JOINT VENTURE

Diamond Drill Core Log - Down Hole Survey Data

Hole Number L2

Depth	Dip	Brg (A.M.G.)	From	To	Length	Sin.Dip	Vertical Difference	R.L.	Cos.Dip	Horizontal Difference	Cos.Brg	Diff. N	Northing	Sin.Brg	Diff. E	Easting
Collar								2081.99					5450982.82			498113.39
0	-60.7	334.8	0	7.5	7.5	-0.87	-6.54	2075.45	0.49	3.67	0.90	3.32	5450986.14	-0.43	-1.56	498111.83
15	-62.6	330	7.5	22.5	15	-0.89	-13.32	2062.13	0.46	6.90	0.87	5.98	5450992.12	-0.50	-3.45	498108.38
30	-63.6	334.5	22.5	45	22.5	-0.90	-20.15	2041.98	0.44	10.00	0.90	9.03	5451001.15	-0.43	-4.31	498104.07
60	-64.5	336	45	75	30	-0.90	-27.08	2014.90	0.43	12.92	0.91	11.80	5451012.95	-0.41	-5.25	498098.82
90	-66.0	338	75	105	30	-0.91	-27.41	1987.49	0.41	12.20	0.93	11.31	5451024.26	-0.37	-4.57	498094.25
120	-67.5	342.5	105	135.5	30.5	-0.92	-28.18	1959.31	0.38	11.67	0.95	11.13	5451035.39	-0.30	-3.51	498090.74
151	-69.0	344	135.5	166.3	30.75	-0.93	-28.71	1930.61	0.36	11.02	0.96	10.59	5451045.98	-0.28	-3.04	498087.70
181.5	-70.4	348.5	166.3	196.3	30	-0.94	-28.26	1902.34	0.34	10.06	0.98	9.86	5451055.85	-0.20	-2.01	498085.70
211	-70.7	353	196.3	221.5	25.25	-0.94	-23.83	1878.51	0.33	8.35	0.99	8.28	5451064.13	-0.12	-1.02	498084.68
232	-71.5	355	221.5	241	19.5	-0.95	-18.49	1860.02	0.32	6.19	1.00	6.16	5451070.29	-0.09	-0.54	498084.14
250	-71.8	357.5	241	262	21	-0.95	-19.94	1840.08	0.31	6.58	1.00	6.57	5451076.86	-0.04	-0.29	498083.85
274	-72.3	2.5	262	281.5	19.5	-0.95	-18.58	1821.50	0.30	5.93	1.00	5.92	5451082.79	0.04	0.26	498084.11
289	-72.5	4	281.5	302.5	21	-0.95	-20.03	1801.47	0.30	6.31	1.00	6.30	5451089.09	0.07	0.44	498084.55
316	-72.5	8	302.5	329.5	27	-0.95	-25.75	1775.72	0.30	8.12	0.99	8.04	5451097.13	0.14	1.13	498085.68
343	-73.0	13	329.5	353.5	24	-0.96	-22.95	1752.77	0.29	7.02	0.97	6.84	5451103.96	0.22	1.58	498087.26
364	-73.5	16	353.5	374.5	21	-0.96	-20.14	1732.64	0.28	5.96	0.96	5.73	5451109.70	0.28	1.64	498088.90
385	-74.0	17.5	374.5	400	25.5	-0.96	-24.51	1708.12	0.28	7.03	0.95	6.70	5451116.40	0.30	2.11	498091.02
415	-74.5	24.5	400	421.5	21.5	-0.96	-20.72	1687.41	0.27	5.75	0.91	5.23	5451121.63	0.41	2.38	498093.40

433077

LEFROY JOINT VENTURE

Diamond Drill Core Log

Hole L2

Page 1 of 9

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays								
									From	To	Au	Ag	As	Cu	Pb	Zn	S
0.0	10.0	Triconed - no core.	OPN	nil	10.0	10.5	92	0									
					10.5	13.0	46	0									
10.0	15.0	TERTIARY SAND, GRAVEL and LIGNITIC CLAY.	TER	snd	13.0	16.5	24	0									
		Mostly white quartz-mica sand and gravel with pebbles to 1cm. Flat bedding in the brown clay.			16.5	19.5	25	3									
					19.5	21.0	41	0									
					21.0	22.5	33	7									
15.0	31.0	HIGHLY MICACEOUS GREY SHALE. Greasy and soft, with very poor recovery. Entirely micaceous sand below 22.5m. Minor black pyritic shale.	SSH	sh	22.5	25	32	0									
					25.0	28.5	8	0									
					28.5	31	6	0									
					31.0	34.5	43	0									
31.0	71.6	Pale grey medium grained quartz-mica SANDSTONE with micaceous SILTSTONE and grey-black SHALE bands. Strongly foliated and sericite-chlorite altered, latter strongest 31-39m in soft greasy micaceous shales with crush seams and minor pyrite, including quartz-pyrite veins to 4cm in silicified black shales at 31m and 34m. Crush seams, often coinciding with quartz-chlorite veins in shale bands, occur down to 55m. Overall, veining is minor, averages <2cm, is either parallel or orthogonal to the S1 foliation, and is typically quartz-chlorite above 60m and vuggy quartz carbonate below. Bedding, coincident with a strong S1 foliation, 40-55 CA. ORIENTATION @ 58.5m: S1 45 CA, dips 33 to 281 AMG. An S2 foliation 35 CA in opposite sense to S1, is visible in places. A F1 fold axis with pyritic quartz veinlets occurs 39-42m. There are small-scale folds at 44.5m and 69.3m. Overall, minor disseminated pyrite, uncommonly in the quartz veins.	SSH	sst	34.5	37.5	63	7	31.0	34.5	<0.01	<1	<1	28	8	212	0.19
					37.5	40.5	49	4	34.5	37.5	<0.01	<1	1	36	14	135	0.40
					40.5	43.0	73	4	37.5	40.5	<0.01	<1	2	23	22	86	0.30
					43.0	46.5	34	6	40.5	43.0	<0.01	<1	9	20	13	90	0.20
					46.5	49.5	81	7	43.0	46.5	<0.01	<1	13	27	13	92	0.11
					49.5	51.7	66	5	46.5	48.0	<0.01	<1	5	20	156	71	0.09
					51.7	52.5	93	28									
					52.5	53.6	103	12	53.6	54.6	<0.01	<1	4	30	13	83	0.24
					53.6	54.6	88	12									
					54.6	55.5	63	11	59.5	60.8	<0.01	<1	<1	24	14	80	0.06
					55.5	56.7	95	64									
					56.7	57.7	94	71									
					57.7	58.5	84	38									
					58.5	59.7	92	54									
					59.7	60.0	73	0									
					60.0	60.7	89	0									
					60.7	61.5	98	50									
					61.5	62.2	99	50									
					62.2	63.3	98	27									
					63.3	64.4	43	0									
		Ground conditions poor to 48m, improving to largely			64.4	67.5	93	45									

433078

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays										
									From	To	Au	Ag	As	Cu	Pb	Zn	S		
		good below 55m.			67.5	70.5	98	56											
					70.5	73.5	96	20											
71.6	76.5	LODE ZONE. Strongly milled, folded, foliated and veined grey sandstone, siltstone and shale. Centred on fault 70 CA at 72.5-73.3m. Immediately above and below this fault the S1 foliation is strongly folded and cut by an S2 crenulation cleavage 70 CA, indicating the structure is a D2 feature. Below 74m (to 81m) bedding is folded but S1 maintains a 65-80 CA attitude, with S2 20-30 CA in opposite sense. Common quartz-carbonate veining at all angles, to 3cm thick. Minor vein fragments occur in the main crush zone. Minor disseminated pyrite>arsenopyrite but veining is generally non-sulphidic.	DRF	min	73.5	75.0	103	24	70.2	71.6	<0.01	<1	3	22	7	73	0.07		
					75.0	76.5	87	9	71.6	72.5	<0.01	<1	47	18	19	68	0.07		
					76.5	79.5	100	69	72.5	73.3	0.03	<1	136	21	21	80	0.18		
					79.5	82.5	93	43	73.3	74.1	<0.01	<1	92	19	18	84	0.13		
					82.5	84.3	96	50	74.1	74.75	0.19	<1	238	21	19	80	0.27		
					84.3	86.7	93	50	74.75	75.6	0.07	<1	153	20	17	80	0.18		
					86.7	88.5	97	50	75.6	76.5	0.44	<1	232	19	19	85	0.32		
					88.5	90.3	96	67											
					90.3	91.5	94	54											
					91.5	93.1	88	48											
		93.1	94.5	103	71														
		94.5	96.0	102	60														
		96.0	97.5	93	89														
		97.5	99.3	100	67														
		99.3	101.7	99	82														
76.5	117.3	Pale grey, fine to medium grained, STRONGLY DEFORMED and FOLIATED QUARTZ-MICA SANDSTONE. Occasional bands of grey SHALE. Very strong S1 foliation 40 CA at top, 60 CA at base. ORIENTATION @ 94.5m: S1 50 CA, dips 61 to 206 AMG. Bedding is transposed into the foliation, often producing augen texture. Folding of bedding evident only where it parallels CA : axes at 77.5m, 90m and 98m. A S2 crenulation cleavage 20 CA in opposite sense to S1 is visible in shales. Chlorite-sericite alteration around the occasional quartz-carbonate veining (to 10cm thick). The larger veins are either parallel or orthogonal to S1 and some are associated with small crush zones. Very common carbonate microveinlets at all angles. 20cm fault at 108.8m 60 CA (opposite sense to S1). Trace pyrite, rarely in the	SSH	sst	101.7	103.5	93	73	82.8	83.8	<0.01	<1	9	19	21	89	0.09		
					103.5	106.5	98	55											
					106.5	109.5	97	56	90.3	91.3	<0.01	<1	5	20	22	94	0.07		
					109.5	112.5	100	70											
					112.5	115.5	98	69	108.6	109.2	<0.01	<1	18	13	20	71	0.11		
					115.5	118.5	96	73											
					118.5	121.5	94	54	113.7	114.7	<0.01	<1	1	16	20	89	0.11		
					121.5	122.6	91	47	114.7	115.3	<0.01	<1	1	29	34	100	0.12		
					122.6	124.1	85	43											
					124.1	124.5	115	70											
		124.5	126.3	93	34														
		126.3	127.5	87	38														
		127.5	130.0	77	38														
		130.0	131.6	86	21														
		131.6	133.5	79	18														
		133.5	134.8	79	17														

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		quartz veins.			134.8	136.5	82	8										
					136.5	138.3	98	62										
		Ground conditions good: rock is not hard and has tendency to break along the foliation.			138.3	140.1	90	31										
					140.1	142.5	98	62										
					142.5	145.5	96	60										
117.3	122.0	Grey to black SHALE with minor fine SILTY SANDSTONE. Weak sericite alteration. Strong S1 foliation 40-70 CA. Weak S2 foliation parallel CA at 120m. Abundant carbonate microveinlets, typically along the foliation, with patches of similar carbonate as alteration in the sandstone. Minor pyrite.	SSH	sh	145.5	148.5	95	59										
					148.5	150.3	95	6										
					150.3	151.5	84	8										
					151.5	154.5	97	94										
					154.5	157.5	95	54										
					157.5	159.0	97	78										
					159.0	162.0	92	56										
		Ground conditions fair to good.			162.0	163.5	95	44										
					163.5	164.7	94	68										
122.0	136.1	PINAFLORE LODGE ZONE. D2 faulted zone with quartz veins, centred on major faults at 122-125m and 129-134.2m. Details as follows:	DRF	min	164.7	166.5	97	74	122.0	123.0	0.02	<1	11	57	33	174	0.73	
					166.5	167.5	102	71	123.0	124.0	0.03	<1	5	51	22	129	0.47	
					167.5	169.5	88	80	124.0	125.1	<0.01	<1	11	20†	78	342	2.75	
		122-125.1m: Partly crushed and dismembered quartz veins in sheared black graphitic shale. Main veining at 122-122.4m with quartz-ankerite veins to 8cm.			169.5	172.5	96	78	125.1	126.0	<0.01	<1	6	15	7	59	0.11	
		Shearing 40 CA. S1 foliation generally parallels this but is warped and crumpled. 1% pyrite in shale, trace only in quartz veins.			172.5	175.5	96	71	126.0	127.0	<0.01	<1	10	15	14	59	0.05	
					175.5	178.5	97	57	127.0	128.1	<0.01	<1	5	37	14	111	0.23	
					178.5	181.5	100	62	128.1	129.0	<0.01	<1	5	15	10	57	0.04	
					181.5	184.5	97	71	129.0	130.6	<0.01	<1	10	15	6	59	0.04	
					184.5	187.5	99	63	130.6	131.9	0.04	<1	97	17	9	71	0.3	
		125.1-129m: Sericitized grey sandstone and shale. Very strong S1 foliation 45 CA, warped by crush seams at all angles. Weaker S2 65-85 CA (opposite sense to S1). Three quartz veins 1-4cm thick along S1 at 128m. Elsewhere, microveinlets of carbonate (some ankeritic). Trace pyrite.			187.5	190.5	97	8	131.9	133.5	0.74	<1	3999	23	15	101	2.73	
					190.5	193.5	98	82	133.5	134.2	0.53	<1	3019	16	8	79	0.76	
					193.5	196.5	99	91	134.2	135.3	0.23	<1	2101	23	14	82	0.44	
					196.5	199.5	99	93	135.3	136.1	0.07	<1	704	22	18	122	0.26	
					199.5	202.5	97	84										
					202.5	205.5	101	87										
		129-134.2m: Strongly crushed sericitized sandstone, centred on pug zone 130.6-131.8m, 45 CA. S1 is disrupted and tightly folded. Common quartz-ankerite veinlets, often broken up. 131.9-133.25m: 2% pyrite			205.5	208.5	94	67										
					208.5	211.4	102	67										
					211.4	214.5	82	59										
					214.5	217.5	101	74										

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		and arsenopyrite, disseminated. 133.25-133.5m: (5 cm core) 20% pyrite-arsenopyrite in crumbly quartz. 1% pyrite-arsenopyrite below 133.5m.			217.5	220.5	99	61										
					220.5	223.5	99	80										
					223.5	226.5	97	83										
		134.2-136.1m: Sericitized siltstone and sandstone with crush zones, the largest below 135.35m hosting partly-crushed quartz(+ankerite) veins 3-5cm thick and at high angle to CA. Common quartz-ankerite veinlets orthogonal to foliation. 1% disseminated pyrite-arsenopyrite, but only trace in quartz veins.			226.5	229.5	100	90										
					229.5	232.5	98	56										
					232.5	235.5	98	70										
					235.5	238.5	100	56										
					238.5	241.5	99	74										
					241.5	244.5	97	96										
					244.5	247.5	98	56										
		Ground conditions poor: rock is soft and broken.			247.5	250.4	100	44										
					250.4	253.5	98	73										
136.1	148.3	Grey quartz-mica SILTY SANDSTONE with bands of BLACK SHALE. 138.5-145.5m the shales host 10 irregular quartz-chlorite-ankerite(?) veins up to 30cm thick, along the strong bedding-parallel S1 foliation (40-50 CA). Numerous quartz-ankerite(?) veinlets, some forming matrix to bands of weak brecciation at low angle to CA. Trace pyrite. Weakly magnetic pyritic porphyroblasts to 5mm at 143m.	SSH	sst	253.5	256.5	98	68	139.9	140.8	0.04	<1	23	15	17	70	0.04	
					256.5	259.5	97	84										
					259.5	262.5	100	76	143.0	144.3	<0.01	<1	7	20	22	91	0.07	
					262.5	265.5	99	81										
					265.5	268.5	98	78										
					268.5	271.5	100	23										
					271.5	274.5	100	56										
					274.5	277.5	100	34										
					277.5	280.5	100	25										
		Ground conditions fair to good.			280.5	283.5	100	81										
					283.5	286.5	98	69										
148.3	152.6	LODE ZONE. Faulted and quartz-veined sandstone. 148.3-150.5m: Grey foliated (40-55 CA), sericitized quartz-mica sandstone, faulted above 149m. Minor quartz-carbonate veinlets and rare pyrite.	DRF	min	286.5	289.5	100	69	148.0	149.3	<0.01	<1	2	8	18	43	0.04	
					289.5	291.5	100	60	149.3	150.5	<0.01	<1	161	10	14	46	0.07	
					291.5	294.5	100	68	150.5	151.2	0.56	<1	4829	30	10	89	0.91	
					294.5	297.5	98	79	151.2	152.6	0.93	<1	2958	3	<3	12	0.44	
		150.5-151.2m: Sericitized black shale with ankeritic veinlets, 1% disseminated pyrite>arsenopyrite, and crushed quartz veins in fault (45 CA) at top contact.			297.5	300.5	100	51	152.6	153.5	0.15	<1	481	7	4	20	0.16	
					300.5	303.5	95	50										
					303.5	306.5	100	74										
		151.2-152.6m: Main lode. 30% quartz net-veins in brecciated sandstone. Much arsenopyrite in 30cm crush zone at top contact and in 3cm quartz vein (25			306.5	309.5	99	77										
					309.5	312.5	98	51										
					312.5	313.5	93	87										

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays											
									From	To	Au	Ag	As	Cu	Pb	Zn	S			
		CA) on basal contact. Elsewhere, minor arsenopyrite >pyrite (extends to 153.5m in unit below).			313.5	316.5	99	77												
					316.5	319.5	98	88												
					319.5	322.5	97	66												
		Ground conditions poor: mostly broken and crumbly.			322.5	325.5	98	84												
					325.5	328.5	99	89												
152.6	232.9	Grey quartz-mica SANDSTONE, SILTSTONE and SHALE. Becoming finer grained and less siliceous with depth. Sericite-chlorite altered. From 175-200m sandstones are weakly silicified and very strongly foliated. Strong S1 foliation, 50 CA at top, 60 CA at base. Weak S2 foliation visible in shales, 20-35 CA. ORIENTATIONS: @ 157.7m: S1 55 CA, dips 46 to 210 AMG; @ 220.6m: S1 65 CA, dips 24 to 262 AMG and S2 20 CA, dips 63 to 024 AMG. Bedding generally parallel S1 except in zone of tight small scale folds 174-175m, and in probable S0 fold axes at 194.5-195.5m and 202.5-205.5m. Uphole-facing graded beds at 186.3m, 199.3m and 209m. Downhole-facing grading at 222.4m. Minor veining, mostly in the coarser rocks above 194m where there are quartz-chlorite veins to 15cm. The smaller veins and veinlets tend to be quartz-ankerite(?). Veining is either along the S1 foliation or orthogonal to it, and is non-mineralized except for 1% pyrite-arsenopyrite associated with strong quartz-ankerite veining 191.3 to 192.6m. Trace pyrite - some in pyrite>magnetite porphyroblasts to 5mm.	SSH	slt	328.5	331.5	98	94												
					331.5	334.5	100	95												
					334.5	337.5	99	91												
					337.5	340.5	96	80												
					340.5	343.5	99	85												
					343.5	346.5	98	68												
					346.5	349.5	96	74												
					349.5	352.5	97	91	191.3	192.6	0.42	<1	1318	9	15	61	0.59			
					352.5	355.5	99	92												
					355.5	358.5	97	80												
					358.5	361.5	96	95												
					361.5	364.5	96	74												
					364.5	367.5	99	75												
					367.5	370.5	97	75												
					370.5	373.5	100	86												
					373.5	376.5	97	89												
					376.5	379.5	98	84												
					379.5	382.5	98	23												
					382.5	385.5	97	66												
					385.5	388.5	99	70												
					388.5	391.5	98	83												
					391.5	394.5	98	68												
					394.5	397.5	99	91												
		Ground conditions good: rock generally unbroken.			397.5	400.5	97	43												
					400.5	403.5	99	44												
232.9	235.8	D2 LODE FAULT. Upper contact 40 CA, in opposite sense to S1 in unit above. Highly deformed and foliated zone, comprising fine S0/S1 laminae of	DRF	flt	403.5	406.5	96	40												
					406.5	409.5	98	81												
					409.5	412.5	98	73												

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays									
									From	To	Au	Ag	As	Cu	Pb	Zn	S	
		strongly sericitized grey shale, black graphitic pyritic shale and silicified sandstone, contorted, folded and broken up by a S2 foliation averaging 50-70 CA in the opposite sense to S1. 10cm wide pug zone 50 CA at 233.8m. Common quartz(+ankerite) veining, including: tiny poddy veinlets both cross-cutting and parallel the S1 laminae; regular veinlets cutting S1 at 70-80 CA; and (below 235m) quartz-chlorite veins to 8cm, parallel S1 and folded by F2. 2% pyrite, in patches and disseminated, but little in quartz veining. Ground conditions good: generally unbroken.			412.5	415.5	98	64	232.8	233.8	<0.01	<1	5	104	23	193	1.39	
					415.5	418.5	100	89	233.8	234.8	<0.01	<1	8	106	39	241	1.32	
					418.5	421.5	97	89	234.8	235.8	<0.01	<1	3	90	41	131	1.49	
235.8	292.5	Grey, fine to medium grained quartz-mica FOLIATED SANDSTONE. Bands of grey SHALE, common below 285.5m. All rocks sericite-chlorite altered. Bedding 30-70 CA, generally coincident with or at a lesser angle than, the strong S1 foliation 55-70 CA. Minor folding of bedding (eg: 252-254m). A S2 foliation 30-40 CA, opposite sense to S1, visible in shales. ORIENTATION @ 268.5m: S1 70 CA, dips 28 to 224 AMG. Common quartz (+carbonate or chlorite) veins to 30cm thick, occur sub-parallel the the S1 foliation, particularly 248.5-252m and below 288.5m. 1% disseminated pyrrhotite>pyrite to 250m (rock is weakly magnetic), decreasing with depth to trace below 272m. 1cm quartz>pyrite-arsenopyrite at 268.4m (minor disseminated arsenopyrite 268-271 m). Quartz veins generally non-sulphidic. Ground conditions good.	SSH	sst					246.8	248.8	<0.01	<1	2	31	20	100	0.68	
										248.8	250.8	<0.01	<1	8	39	57	100	0.46
										268.3	269.8	0.16	<1	992	14	41	60	0.23
										269.8	271.3	0.01	<1	164	17	40	77	0.13
										290.5	292.5	<0.01	<1	5	16	38	65	0.42
292.5	321.9	Dark grey greasy chloritic SHALE, grey micaceous	SSH	sh					298.8	300.8	<0.01	<1	30	39	54	123	0.23	

433083

From	To	Description	Unit	Code	From	To	Rec (%)	RQD (%)	Assays											
									From	To	Au	Ag	As	Cu	Pb	Zn	S			
		SILTSTONE, and minor quartz-mica SANDY SILTSTONE. All rocks chlorite>sericite altered, locally strongly in shales. Bedding typically 40-60 CA but commonly folded (F1) and deformed by the strong S1 foliation (60-75 CA). A low-angle S2 foliation in opposite sense to S1, is visible in places. ORIENTATION @ 316.5m: S0 60 CA, dips 30 to 300 AMG; S2(?) 20 CA, dips 52 to 343 AMG. Common quartz-chlorite-carbonate veining to 25cm, generally at high angle to CA and sub-parallel the S1 foliation, but often irregular and sometimes folded. Some veinlets contain pyrite and rare chalcopyrite. Minor to 1% disseminated pyrite throughout.																		
		Ground conditions good. Rock is not hard.																		
321.9	322.8	LODE ZONE. Upper contact gradational, lower sharp 35 CA and cutting across the S1 foliation in rocks below. Pale grey, intensely-foliated (70 CA), quartz flooded siltstone with 1-2% disseminated and veinlet pyrite-arsenopyrite. Very common quartz-carbonate veinlets cross-cut the foliation. Partly broken.																		
322.8	383.0	Grey, quartz-mica SILTY SANDSTONE. Bands of dark grey to black, greasy chloritic SHALE towards top and bottom of unit. All rocks are chloritized but most notably the shales. The sandstone is weakly silicified in places and rarely carbonatized. Occasional quartz-carbonate(+chlorite) veining to 15 cm, generally at high angle to CA. Bedding variable, generally 30-50 CA, with numerous small-scale folds in shale bands 325-331m and 371-378m. Strong S1 foliation 65 CA and a weaker S2 foliation 20-25 CA in	SSH	sst																

433084



Our reference : BU014307
Your reference : WCAO 458612
Project code : Diamond Drill Core
Date received : 13/02/98
Date reported : 23/02/98

Analabs Pty. Ltd.
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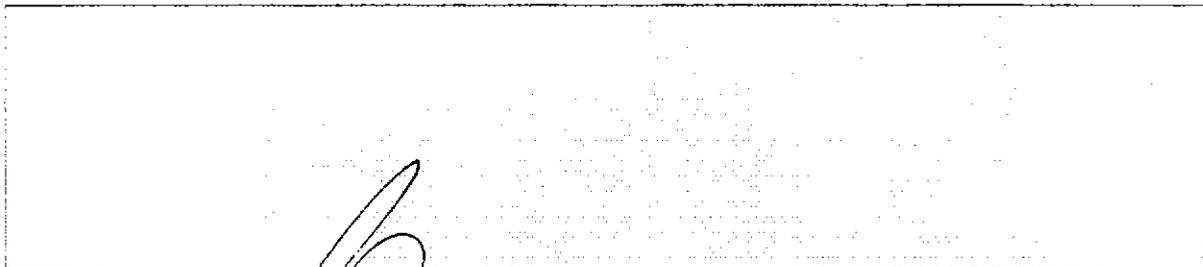
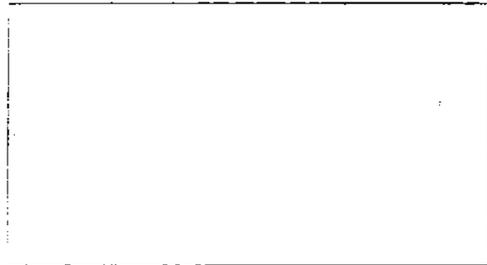
Peter Hills

Beaconsfield Mine Joint Venture
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TAS 7270

Number of pages of results : 2
Number of Samples : 20
First Sample : L2 31.0-34.5
Last Sample : L2 114.5-115.3

Electronic Data Transmission :
Modem //
Facsimile //
Disk Report //



Authorised by
On behalf of:

Richard Newman
Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014307 Order number : WCAO 458612

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



Our reference : BU014355
 Your reference : **WCAP 458620**
 Project code : Half Drill Core
 Date received : 24/02/98
 Date reported : 08/03/98

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Peter Hills
 Project Geologist

Allstate Explorations NL
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TAS 7270

Number of pages of results : 2
 Number of Samples : 14
 First Sample : L2-122-123
 Last Sample : L2-139.9-140.8

Invoice to:
 Peter Hills
 Project Geologist

Allstate Explorations NL
 PO Box 58
 Beaconsfield

TAS 7270

Electronic Data Transmission :
 Modem //
 Facsimile //
 Disk Report //

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory
 for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014355 Order number : WCAP 458620

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation, Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



Our reference : BU014364
 Your reference : WCAP458619
 Project code : Half Drill Core
 Date received : 25/02/98
 Date reported : 08/03/98

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Peter Hills

Beaconsfield Mine Joint Venture
 P.O. Box 58
 BEACONSFIELD

TAS 7270

Number of pages of results : 2
 Number of Samples : 6
 First Sample : L2-143.0-144.3
 Last Sample : L2-152.6-153.5

Invoice to:
 Peter Hills

Beaconsfield Mine Joint Venture
 P.O.Box 58
 BEACONSFIELD

TAS 7270

Electronic Data Transmission :

Modem //
 Facsimile //
 Disk Report //

Results to:

Results to:

Remarks :

Authorised by
 On behalf of:

Richard Newman
 Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory
 for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014364 Order number : WCAP458619

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore,Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl,HNO3,HClO4), Geochemical
samples.

Scheme code : A102 - AAS analysis

AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



A N A L A B S

Our reference : BU014423
Your reference : WCAP458617
Project code : Drill Core
Date received : 13/03/98
Date reported : 25/03/98

Analabs Pty. Ltd.
ACN 004 591 664
14 Thirkell St. Burnie
Tasmania 7320
Telephone : (004) 31 6837
Facsimile : (004) 31 8890

Peter Hills

Beaconsfield Mine Joint Venture
P.O.Box 58
BEACONSFIELD

TAS 7270

Number of pages of results : 2
Number of Samples : 26
First Sample : L2 191.3-192.6
Last Sample : L2 399-400

Invoice to:
Peter Hills

Beaconsfield Mine Joint Venture
P.O.Box 58
BEACONSFIELD

TAS 7270

Electronic Data Transmission :
Modem //
Facsimile //
Disk Report //

Preliminary Reports :
24/03/98 Report

Results to:

Results to:

Remarks :

Authorised by
On behalf of:

Richard Newman
Laboratory Manager

The results in the following analytical report pertain to the samples provided to this laboratory for preparation and/or analysis as requested by the client.



ANALYSIS DESCRIPTION

Job number : BU014423 Order number : WCAP458617

Scheme code : S033 - Drillcore/Rock; Dry, Jaw crush, Fine pulv, Ring

Sample preparation. Drillcore, Rock samples; Dry,
Jaw crush, Fine pulverise, Ringmill, <3.5kg

Scheme code : F630 - 30g fire assay, Lead collection, AAS

Fire assay, Lead collection, Aqua Regia digest,
AAS, 30g sample.

Scheme code : G102 - Triple acid digest, Geochemical samples

Triple acid digest, (HCl, HNO₃, HClO₄), Geochemical
samples.

Scheme code : A102 - AAS analysis

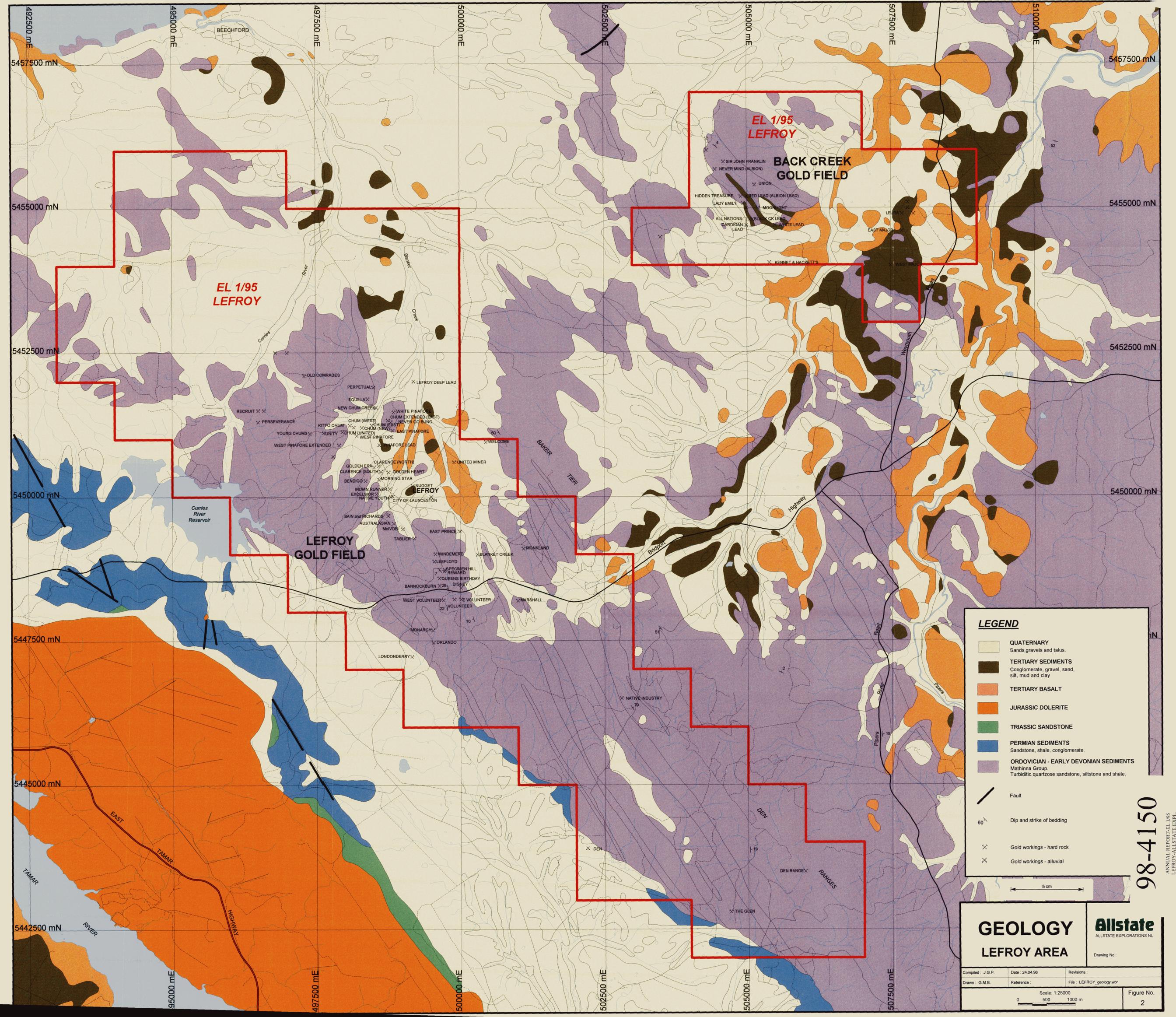
AAS analysis of sample after G102 digest.

Scheme code : V821 - Total Sulphur Analysis

Leco tube furnace, Total Sulphur.

Scheme code : H102 - Hydride AAS analysis

Hydride AAS analysis after G102 digest.



LEGEND

- QUATERNARY
Sands, gravels and talus.
- TERTIARY SEDIMENTS
Conglomerate, gravel, sand, silt, mud and clay
- TERTIARY BASALT
- JURASSIC DOLERITE
- TRIASSIC SANDSTONE
- PERMIAN SEDIMENTS
Sandstone, shale, conglomerate.
- ORDOVICIAN - EARLY DEVONIAN SEDIMENTS
Mathinna Group.
Turbiditic quartzose sandstone, siltstone and shale.
- Fault
- Dip and strike of bedding
- Gold workings - hard rock
- Gold workings - alluvial

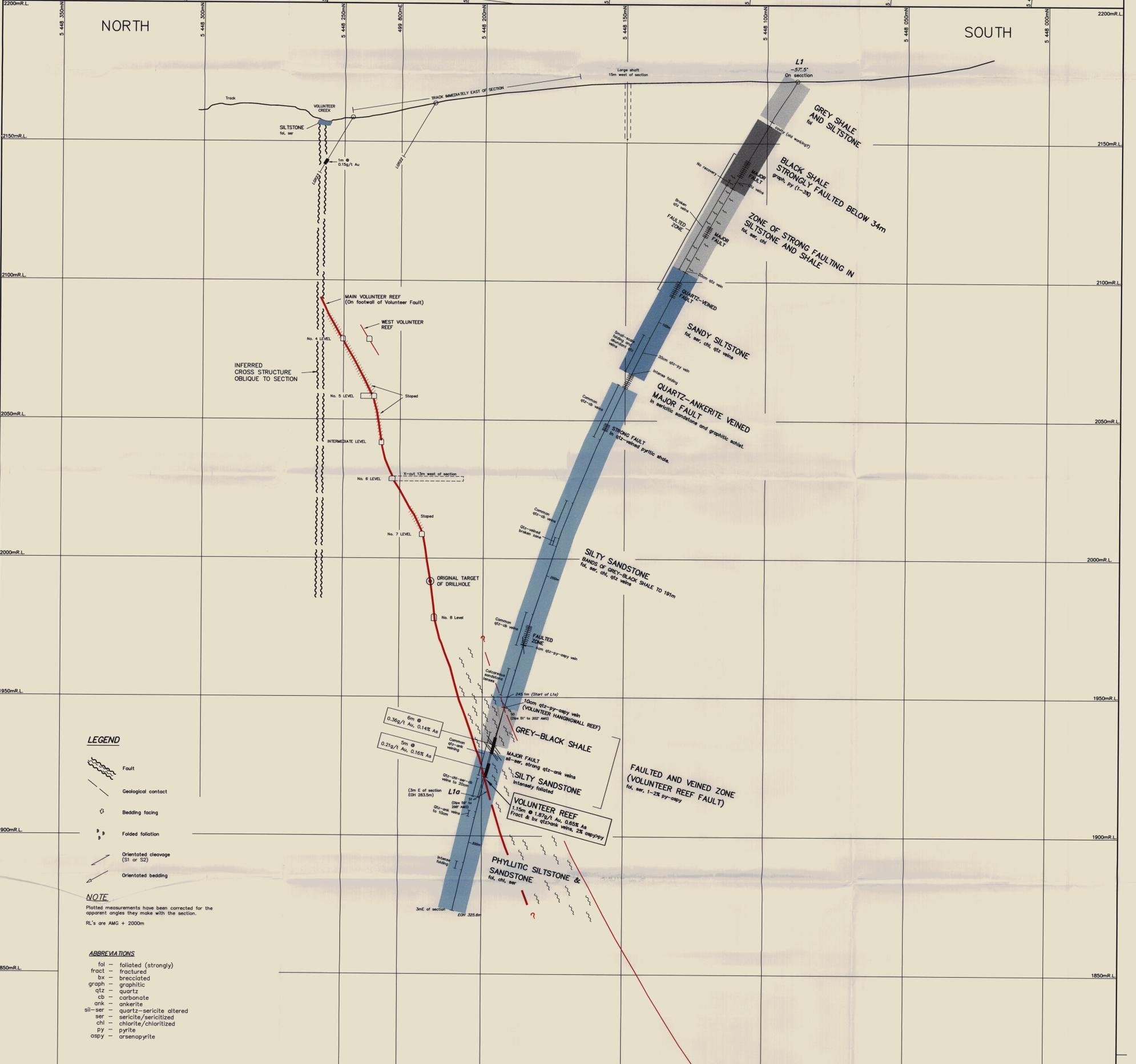
5 cm

GEOLOGY
LEFROY AREA

Allstate
ALLSTATE EXPLORATIONS NL
Drawing No.:

Compiled : J.G.P.	Date : 24.04.98	Revisions :
Drawn : G.M.B.	Reference :	File : LEFROY_geology.wor
Scale: 1:25000		Figure No.
0 500 1000 m		2

98-4150
ANNUAL REPORT-EL 1/95
LEFROY-ALLSTATE EXPL.



LEGEND

- Fault
- Geological contact
- Bedding facing
- Folded foliation
- Orientated cleavage (S1 or S2)
- Orientated bedding

NOTE

Plotted measurements have been corrected for the apparent angles they make with the section.
RL's are AMG + 2000m

ABBREVIATIONS

- fol - foliated (strongly)
- fract - fractured (strongly)
- bx - brecciated
- graph - graphitic
- qtz - quartz
- cb - carbonate
- ank - ankerite
- sil-ser - quartz-sericite altered
- ser - sericite/sericitized
- chl - chlorite/chloritized
- py - pyrite
- aspy - arsenopyrite

NOTE

Drillhole was directed parallel to strike of the rocks, which dip at low to moderate angles to the SW. Thus the bedding and the sub-parallel S1 cleavage dip towards the observer in this sectional view. The S2 cleavage is believed to dip to the NE, away from the observer (A. Reed, pers comm, January 1998).

The old mine records show the Volunteer Reef Fault strikes at right angles to the drillhole and dips steeply south, as shown. The attitude of other faults in the hole is uncertain. Two orientated measurements of S0 and S1 were obtained in hole L1a and are shown, with allowances for the apparent angle they make with the section. Core from L1 was not orientated.

SECTION

98-4150

ANNUAL REPORT-EL 1/95
LEFROY-ALLSTATE EXPL.
G FURVIS

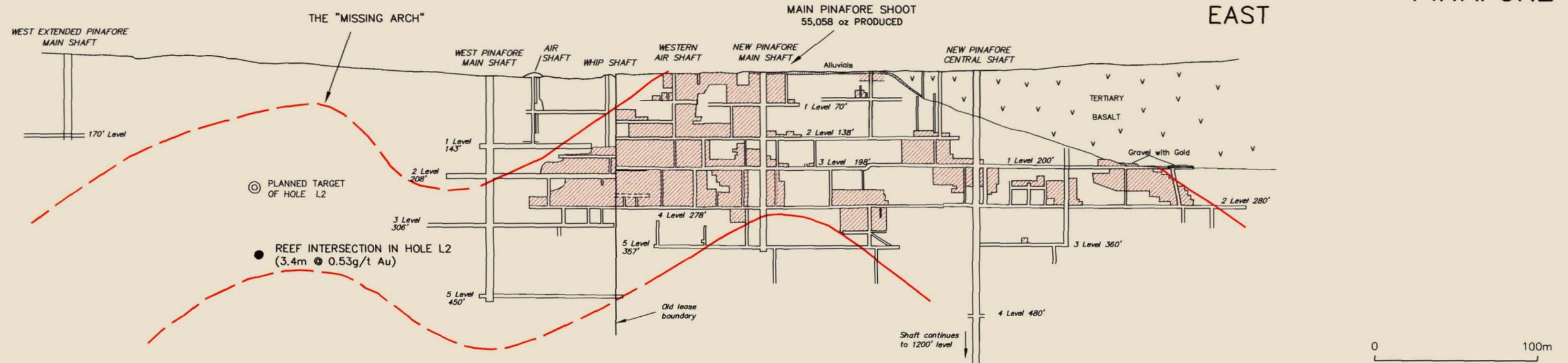
Allstate Explorations NL

COMPILED : J.C.P.	E.L. 1/95 - LEFROY
DATE : Jan. 1998	VOLUNTEER MINE
DRAWN : G.M.B.	CROSS SECTION
REVISIONS :	DRILLHOLE L1
FILE :	BEARING 353° AMG
DRAWING No.	SCALE 1:500
	FIG. No. 5

433103

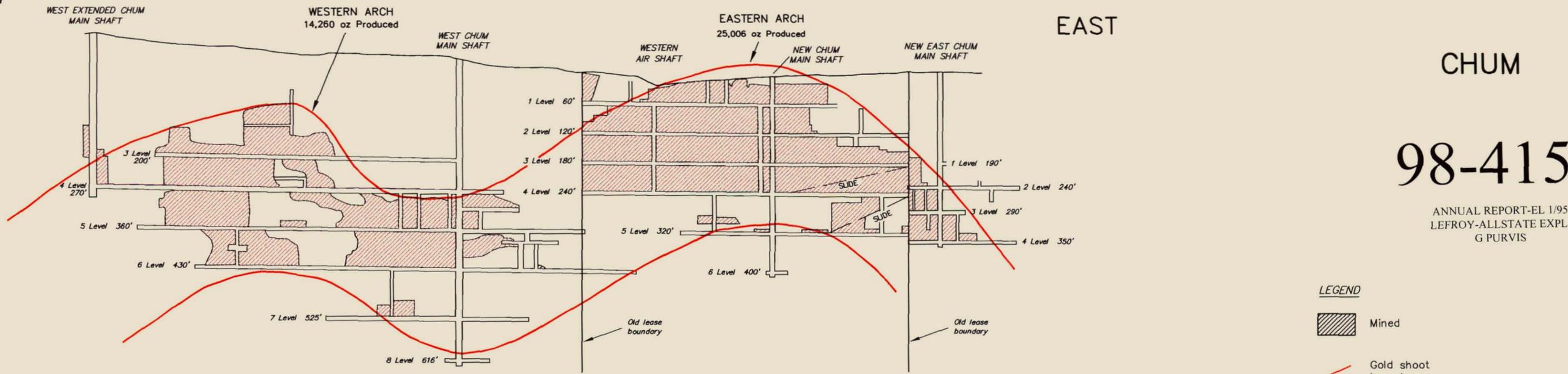
WEST

PINAFORE



WEST

CHUM



98-4150

ANNUAL REPORT-EL 1/95
LEFROY-ALLSTATE EXPL.
G PURVIS

LEGEND

Mined

Gold shoot boundary

Based on plans by Montgomery (1897)

5 cm

Allstate Explorations NL

COMPILED : J.G.P.
 DATE : April '98
 DRAWN : G.M.S.
 REVISIONS :
 FILE :

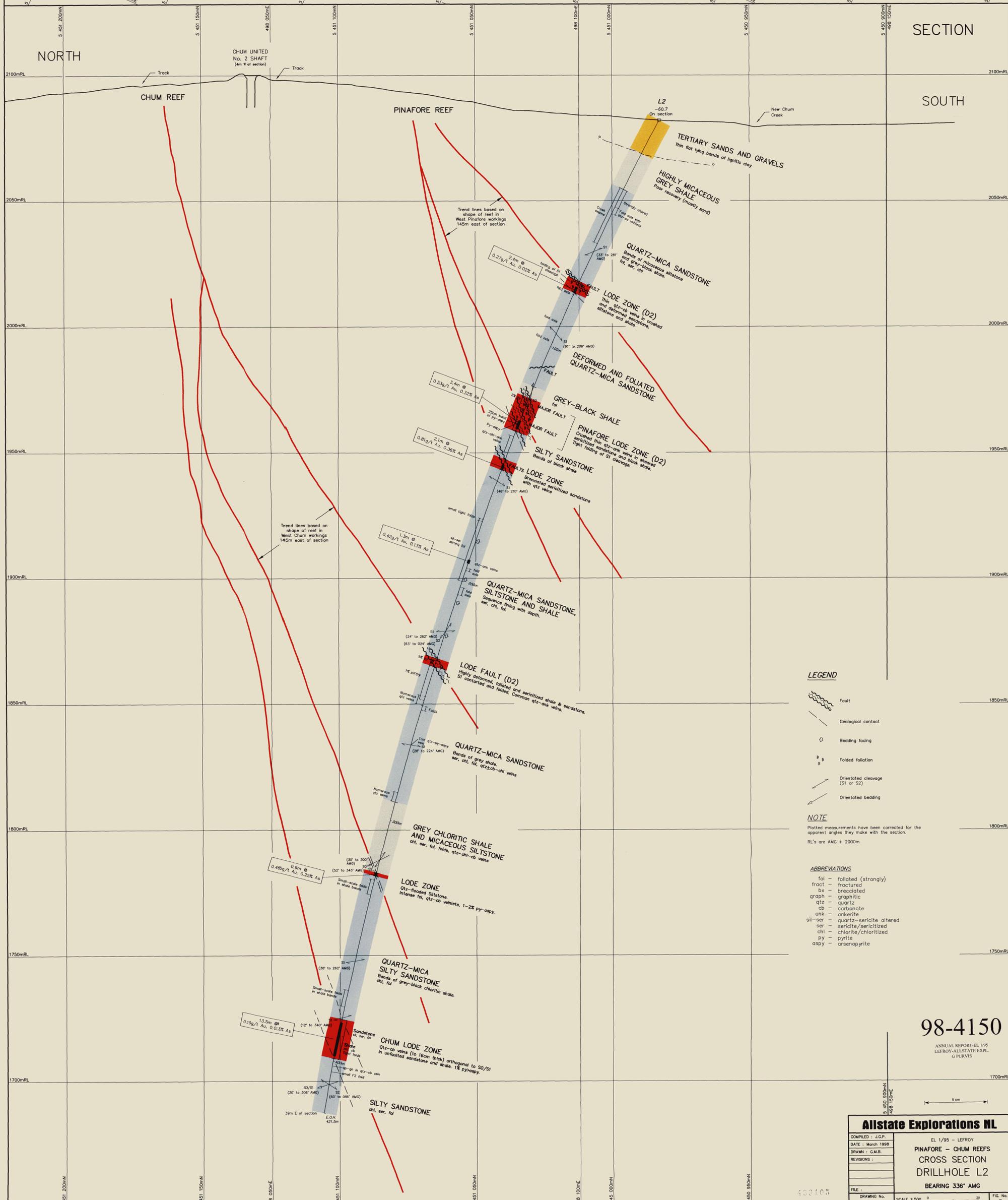
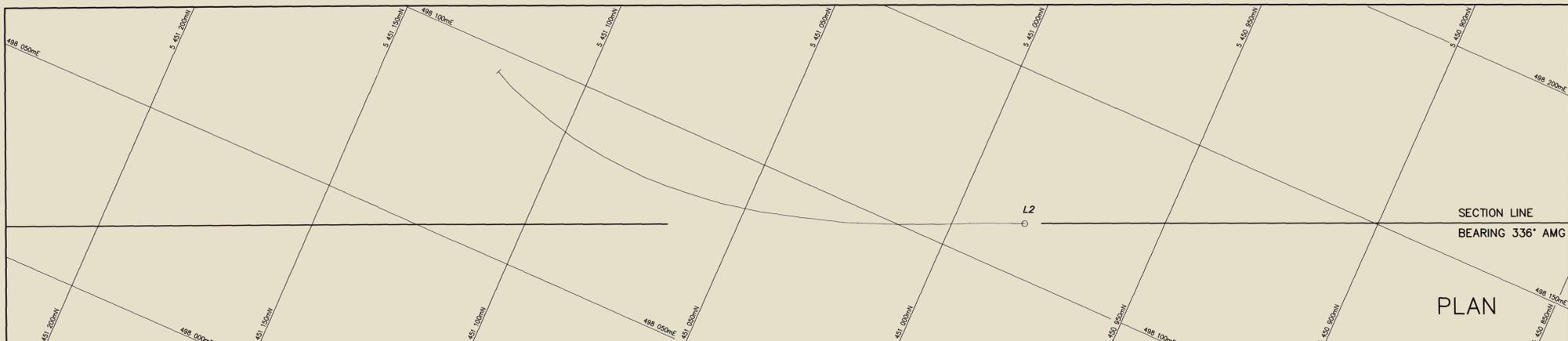
E.L. 1/95 - LEFROY
PINAFORE & CHUM REEFS
LONGITUDINAL SECTION
 LOOKING NORTH

DRAWING No. SCALE 1:2000 FIG. No. 7

⊙ PLANNED TARGET OF HOLE L2

● REEF INTERSECTION IN HOLE L2
(13.5m @ 0.19g/t Au)

43101



LEGEND

- Fault
- Geological contact
- Bedding facing
- Folded foliation
- Orientated cleavage (S1 or S2)
- Orientated bedding

NOTE

Plotted measurements have been corrected for the apparent angles they make with the section.
RL's are AMG + 200m

ABBREVIATIONS

- fol - foliated (strongly)
- fract - fractured
- bx - brecciated
- graph - graphitic
- qtz - quartz
- cb - carbonate
- ank - ankite
- sil-ser - quartz-sericite altered
- ser - sericite/sericitized
- chl - chlorite/chloritized
- py - pyrite
- aspy - arsenopyrite

98-4150

ANNUAL REPORT-EL 195
LEFROY-ALLSTATE EXPL-
G PURVIS

Allstate Explorations NL	
COMPILED : J.G.P.	EL 1/95 - LEFROY
DATE : March 1998	PINAFORE - CHUM REEFS
DRAWN : G.M.B.	CROSS SECTION
REVISIONS :	DRILLHOLE L2
FILE :	BEARING 336° AMG
DRAWING No.	SCALE 1:500
	FIG. No. B

