

215002



'Hill Trench' Long Struggle area.

SUMMARY

Approximately 1000 metres of trenches, between the Mt. Victoria and Long Struggle Mines have been constructed. The trenches have unearthed one previously unknown reef (termed Icelandic Lode), and three reefs, that were speculated to outcrop based on underground diamond drilling (Twelvetrees Reef and an un-named lode at The Mt. Victoria Mine) and from mapping (Wally's Reef).

The Icelandic Lode, although appearing highly prospective in hand specimen, contains gold grades of approximately 1.0 g/t. The lode has been examined in two trenches, with two further trenches, dug along strike without exposing the mineralisation. Lodes of this style are probably limited in strike and down dip extent.

Diamond drilling carried out by Mancala in 1994, indicated that the narrow low grade drill intersections may outcrop, and it was theorised that their grade and width may increase closer to the surface. It is highly probable that two of the three reefs encountered in the drilling are continuous with the surface exposure (Twelvetrees and Wally's). At both surface and underground these are narrow (less than 30cm) and low grade (less than 4g/t Au).

The un-named reef located in drilling at The Mt. Victoria Mine (MVM1) has been loosely correlated with surface outcrop of 20 cm grading approximately 0.5 g/t Au (adjacent stringer veining gives 2.8 g/t Au over 20 cm). The spatial separation of the drill result and the trench result is in the order of 100 metres.

The geology of the region surrounding the Long Struggle Mine has been interpreted to involve parasitic folding on the eastern limb of a regional anticline. The folded strata appears to have influenced deposition of auriferous lodes.

A limited data set of repeated gold assays indicates very erratic distribution of gold within the assayed sub-sets of individual samples. The repeatability of low grade (less than 1 g/t Au), samples is as erratic as higher grades. The highly erratic nature of gold distribution within samples is probably reflected, on a larger scale, within the reefs.

A recommended field-work program involving a geologist and an assistant for three weeks, mainly in the Mt. Victoria Mine region has been preposed. Recommendations for further drilling or trenching would follow the field program.

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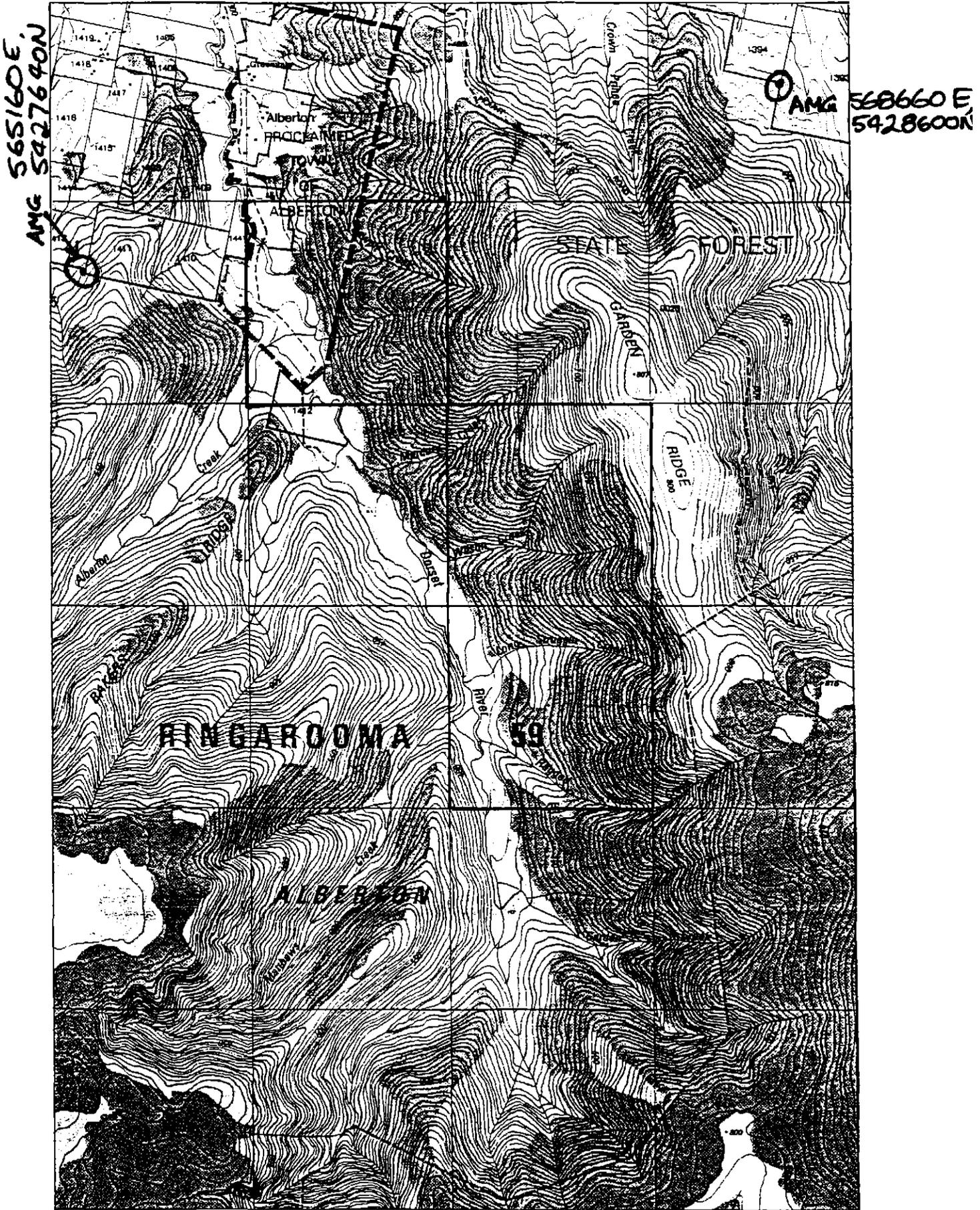


FIGURE 1. Location of ML 6M/95. Extract from Tasmap 1:25,000 scale Victoria map.

5 cm

AMG REFERENCE POINTS ADDED

INTRODUCTION

The mining lease 6M/95, comprising some three square kilometres, is located approximately seven kilometres south east of the township of Ringarooma (Figure 1). The area encompassed by the ML hosts at least thirty documented gold deposits. The majority of these are very limited in extent, although reported production grades average 25 g/t Au. The Ringarooma United (255 kg Au), The Long Struggle (22 kg Au) and the Mt. Victoria Mine (145 kg Au) represent the major producers in the ML (Taheri, 1993).

The ML is a consolidation of three former ML's, 45M/88, 44M/88 and 46M/88, forming one kilometre square blocks in two parts (Figure 1). The Dorset River flows in close proximity to the ML's western boundary, from which the topography rises rapidly eastward to Garden Ridge. The creek gullies of Garden Ridge are heavily forested with temperate rainforest species, while the slopes are densely vegetated by Eucalyptus species with a heavy undergrowth. State forest constitutes the slopes of Garden Ridge and the southern end of the Dorset River alluvial plane, while the northern extension of the plane is private farm land.

Access to the lease is via the Alberton road, with further vehicular access provided by dozer tracks constructed by previous tenement holders. The dozer tracks are generally only passable to 4WD vehicles in dry conditions. A number of old tram tracks, water races and walking tracks provide access for personnel on foot.

BACKGROUND

Mancala P/L is an active small scale, Tasmanian based, exploration and mining company with operating mines within Tasmania and contractual operations Australia wide. Mancala exercised an option to purchase agreement with the previous tenement holder (Tas Tiger Mines P/L) in late 1993. During and following the option period Mancala expended \$500,000 diamond drilling and exploratory driving in some of the major deposits within the ML.

The current work program aims to 'follow up' diamond drilling intersections by searching for their expression on surface and exposing potential extensions to known mineralised lodes. The program followed the proposal of Liff, (1994a), with modifications allowing for field conditions.

PREVIOUS WORK

During the Alberton Goldfield's heyday (1880's to 1930's) the field was visited on numerous occasions by the Tasmanian Department of Mines geologists. The workings were inspected and described. Substantial reports include Twelvetrees (1901 and 1904), Hills (1923), Blake (1933), Nye and Blake (1934, which includes detailed plans of the workings) and Hughes (1952).

Diamond drilling has been conducted on the ML by the Tasmanian Mines Department in two separate programs. Three holes were drilled at the Long Struggle in 1937 (Blake, 1938), and a fence of four holes were drilled in the Ringarooma United region between 1967 and 1970 (Unknown, ?).

Exploration in the region has generally been limited to literature reviews and non-systematic rock chip, dump and stream sediment sampling. Goldfields Exploration held tenements that covered the ML in the mid to late 1980's. During their work program 95 rock chip samples were collected from various mines in the region, and were analysed for Cu, Pb, Zn, Ag, Bi, As and Au (Herrmann, 1987). Coincident with the sampling, the old workings were mapped and compass and tape surveyed in a comprehensive manner.

During 1994, Mancala undertook an underground diamond drilling program, totalling some 1,014 metres at the Ringarooma United, Long Struggle and Mt. Victoria Mines (Iloff, 1994b). In all the mines, the drilling attempted to define extensions to known lodes and discover new lodes.

At the Ringarooma United Mine, five holes totalling 255 metres were drilled from two sites. Two holes were targeted to determine the extent of stoping in the Rosalind Reef below the Long Adit level. The three other holes aimed to define the intersection of the Rosalind and Premier Reefs below and to the north of the Long Adit (Iloff, 1994b).

The initial holes at Ringarooma determined that stoping had extended to at least 20 metres below the Long Adit, and development to the "Ballroom" determined that it had collapsed (Iloff, 1994b). Drilling to the north, at the confluence of the Rosalind and Premier lodes, showed that the grade in the reef (0.5 metre drill intersection width) at that point was between 1.1 and 2.8 g/t Au.

Drilling at the Long Struggle Mine totalled 530.8 metres, in five holes from two sites. At the Mt. Victoria Mine the drilling totalled 228.8 metres, in three holes, collared at separate sites. The drilling results and their relationship to surface features are discussed below.

TRENCHING PROGRAM

OBJECTIVES

It has been recognised by Iliff (1994a) that there may be a depth limiting factor with the gold lodes in the Alberton Field. For what ever reason, the strong, gold rich lodes of Ringarooma United, Long Struggle and the Mt. Victoria do not appear to extend to a depth below the lower adit of each mine. It is clear that the reefs extend to depth, but economic gold mineralisation (lode matter) does not.

The results of drilling at the Long Struggle and Mt. Victoria Mines have indicated previously unrecognised reef material (narrow and high grade and/or narrow and low grade) adjacent to the known lodes.

Considering the above, Iliff (1994b) proposed an excavator trenching program, aiming to test the surface extensions of known lodes and to test the surface extension of lodes projected from the underground drilling.

Iliff (1994b) proposed a total of 55 trenches, requiring approximately 1.2km of earthworks. The proposed trenches extended from the Ringarooma United Mine area, south to the Mt. Victoria Mine, encompassing many small workings. The proposed program of Iliff (1994a) was significantly modified owing to the steep and heavily forested hill slopes. This avoided extensive earthworks and tree felling. The program was modified by not excavating some trenches at all, and in most other instances orienting the trenches normal to the prevailing slope.

The program was restricted to the region between the Mt. Victoria Mine and the Long Struggle Mine. Access to regions around the Ringarooma United Mine was not possible without significant earthworks. Prior to Mancala's interest in the ML, a series of bulldozer tracks were constructed from the Long Struggle to Mt. Victoria Mines (Plate 1). This track was utilised for access, and in part was excavated to form a continuous exposure of rocks from the Mt. Victoria Mine to the Long Struggle Mine at about 520 mRL (Figure 2).

LOGISTICS

The earth moving contractors, RG & SD Gerke of Scottsdale were contracted to perform the excavator operations at Alberton. After initial inspection of the work required, a 18 tonne Kato excavator was mobilised to site on the 16/6/95 (Plate 2). Excavator operations continued until the 19/6/95, during which time approximately 1000m of 1.4 metre wide trenches had been constructed (Figure 2). The depth of the trenches down to bed rock was generally 1.5 to 2 metres. In a number of instances bedrock was not encountered up to 4.5 metres below surface, at which point safety considerations regarding the trenches stability halted excavation at that depth.

The construction of trenches off formed dozer tracks required initial clearing, avoiding large trees, steep slopes and old mine workings. This process was very slow, with approximately 15 metres being completed per hour. Trenching of formed tracks was accomplished at approximately 40 metres per hour.

During trench construction attempts were made to place topsoil to one side of the trench, and subsoil on the other (generally the down hill side). Where slopes were excessive, the soil cover was



PLATE 1. Dozer track prior to trenching. Top Trench, Ref. point No. 4.
Entrance to Scotchmans adit in middle fore ground.



PLATE 2. 18 tonne Kato excavator constructing an access track prior to trenching Trench No. 2.
Viewed from south end of Trench No. 1.

thin and the placing material on the up hill side of the trench was not considered safe. Considerable effort was made not to disturb large trees, and to limit the spread of sub-soil down hill.

Although efficient at removing the majority of the material from the trench, the trench's floor required cleaning by hand to expose bedrock (Plate 3). During the mapping, sampling and cleaning operation considerable rainfall occurred, which curtailed operations during the day. If rainfall occurred during the night, commonly the trench sides would fall in, requiring them to be re-cleaned.

MAPPING AND SAMPLING METHODOLOGY

Following the cleaning operation, which generally exposed 15 to 50cm of bedrock, the trenches were surveyed by compass, marked up at one metre intervals and reference points established at approximately 30 metre intervals. Mapping was conducted at a scale of 1:100, either in a horizontal format (floor of trench) or a vertical format (wall of trench). Sampling was carried out on any prospective veining, fault gouge or bulk lithological interval.

The trenches were named and numbered in logical succession from the Mt. Victoria area to Long Struggle (Figure 2). Trenches excavated along the dozer track were named Top Trench and Hill Trench, with mapping being conducted along them located with reference to a fixed and flagged point (Ref. points). Excavator trenches were numbered 1 to 11 also with fixed reference points. Three trenches (No. 12 to 14) were dug, by hand, along strike from a significant mineralised zone in the top trench (Plate 4).

A 46 metre escarpment, located at the start of the Top Trench, directly over the Mt. Victoria Mine workings was termed the Mt. Victoria Escarpment (Figure 2).

Appendix 1 contains all mapping sheets from the trenches.

Prior to the trenching operation on the ML a traverse was conducted up Wilson Creek (Figure 2) with exposures being mapped and sampled. The lower (390 mRL) adit of the Long Struggle was mapped (1:100 scale) from the Cross Reef cross inward. The Marrs, Scotchmans, Beckers, Ragged Youth (upper and lower adits), the Caxton No. 2 and the Rich Youth Reefs were mapped and sampled (Appendix 2). The Telegraph and Battery workings were located, although not entered owing to safety considerations. The Old Wilson Tram was traced from its origin near the Mercury Mine to a point where it is totally overgrown in the vicinity of the Wilson Adit.

The lower (No. 4) adit of the Mt. Victoria Mine was examined, although not mapped, and the No 3 adit was examined to a point where a blockage occurs. Numerous surface stopes, shafts, and trenches in the vicinity of the Cross, Caxton No. 1 and 2, Long Struggle, Montana and Mt. Victoria Reefs were located.

Following the completion of trench mapping, the results of the 1994 drilling program were reviewed in light of the underground and surface mapping. The drill core was not re-examined or re-sampled. The collation and interpretation of all relevant data has been included herein.

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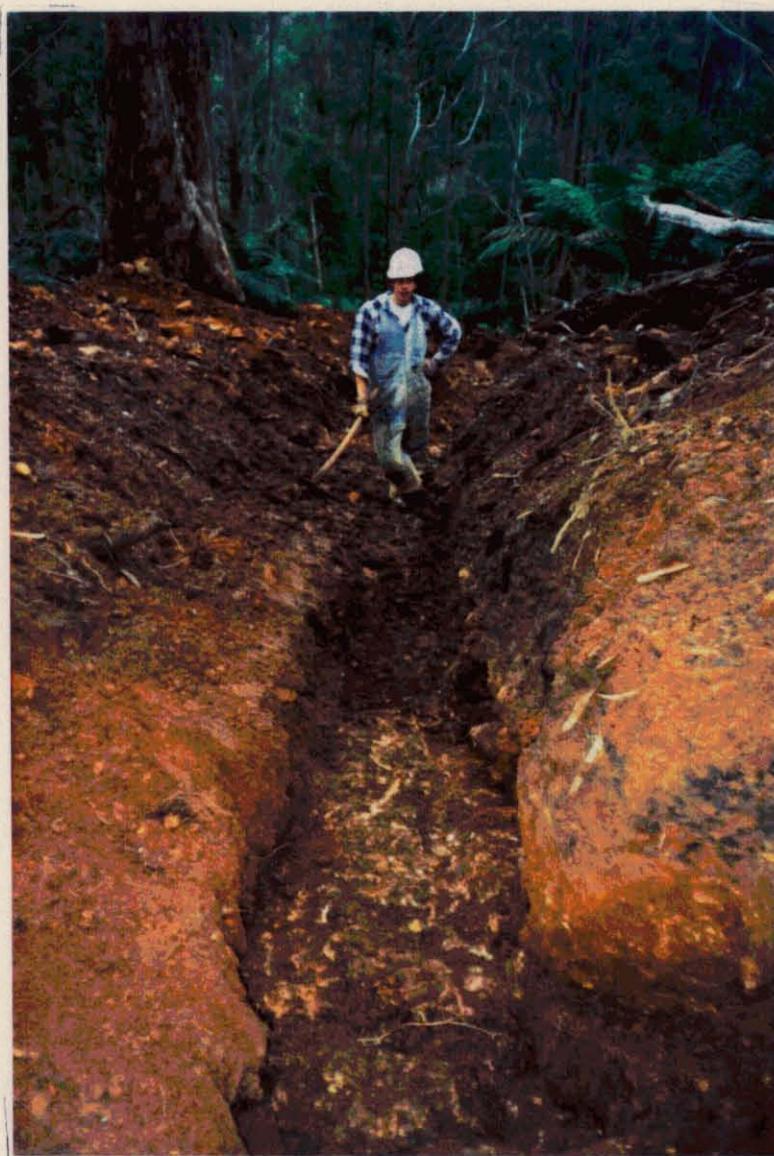


PLATE 3. Hand cleaning of Hill Trench Ref. point No. 3.



PLATE 4. Hand dug Trench No. 12. Note pile of Icelandic Lode 'floaters' on the top right hand side of the trench.

REGIONAL GEOLOGY

The regional geology of Tower Hill-Alberton area, encompassing the ML, has been described by Taheri (1993). The Alberton goldfield, the southern portion of which is covered by the ML, form a portion of the 70km Mangana to Lyndhurst gold lineament. Within the approximately 2km wide, north-westerly trending lineament gold mineralisation is hosted by the probable Silurian to Devonian Mathinna Beds.

The Mathinna Beds consist of an apparently monotonous sequence of interbedded, fine to medium grained, commonly graded quartz rich sandstone beds and pelrites (Taheri, 1993). The Mathinna Beds are unconformably overlain by probable Carboniferous and Permo-Triassic sedimentary sequences of the Parmeener Supergroup.

The Mathinna Beds have been intruded by granites and graniodiorites, of Devonian age, the thermal alteration halo of which is sporadically mineralised with tin and tungsten. The age of gold mineralisation is uncertain, although it is probable that deposition occurred concurrently with folding and cleavage development, prior to the Devonian granitic intrusives.

Regionally, the Mathinna beds are folded about Northwest-trending axes to form small scale and kilometre scale wavelength tight to moderate folds. Axial plane cleavage development takes the form of a slaty cleavage in the pelitic units (Taheri, 1993). Folding is asymmetric with local steep overturning to the west in some cases (Pearson, 1993). A subsequent deformation has produced regional mega kinking about steep, northeast trending kink planes, and numerous steeply dipping kink-bands with both *sinistral* and *dextral* geometries (Goscombe and Findlay, 1989, in Taheri, 1993).

The origin of gold mineralisation and its relation to the structure of the goldfield is uncertain, with a number of theories having been forwarded. Hill (1923), Powell (1991) and Keele et. al. (1994) have all invoked deep seated thrusts models while Taheri (1994) has modelled a pre-Permian extensional dextral jog with dextral transcurrent faulting. At present little field evidence is available to support or disprove the models.

LITHOLOGICAL CHARACTER OF THE MATHINNA BEDS AT ALBERTON

In hand specimen, the lithologies mapped from both underground and surface range from medium grained, quartz rich sandstones to black carbonaceous shale. Predominating in the southern, lower RL area (Trenches 1 & 2) is a medium grained, white to tan coloured, iron oxide stained argillaceous sandstone, with occasional one to five centimetre, grey/tan siltstone and black shale interbeds. Flakes of muscovite are present, sub-parallel to bedding. This unit is generally massive and featureless.

In closer proximity to the Montana and Mt. Victoria lodes the proportion of siltstone and black shales increased to approximately 70% of the rock mass.

Further northward, along the Top Trench (Figure 2) the lithologies consist of an irregular sequence of medium to fine grained, argillaceous to siliceous, white/tan sandstone with 2-30cm beds of grey siltstone and occasional black shale beds (Plate 5 & 6). Bedding is generally uniform, although rare wispy black shale beds are present in the sandstone. Soft sediment deformational features may be represented by desecrate pinching and swelling of the shale beds. However this may be tectonic, as clearly shale has been stressed, forming a strong slaty cleavage. No distinct facing directions were observed in this area.

At the northern limit of the Top Trench, bedding is sub horizontal, defined by occasional grey siltstone and black shale units within massive tan, argillaceous sandstone. In the southern section of trench No. 3 the lithologies of the top trench are repeated. Outcrop in the northern section of trench No. 3 was obscured due to a significant thickness of scree (Plate 7).

Hill Trench (Ref. point 1) and trench No. 4 consist of the argillaceous sandstone of the Top Trench, interbedded with occasional grey siltstone and black shale beds, with the addition of tan to purple, strongly cleaved argillite.

Within trench No. 6, cross bedding within grey/brown siltstone gave a *younging direction westward*.

Traversing westward, down slope toward, trenches 5, 6, 7 and the Hill Trench the proportion of argillite in the succession increases, until the Cross Reef outcrop, where argillite comprises approximately 80% of the rock mass. From the Cross Reef further west, argillite becomes totally dominant, displaying a strong cleavage, sub-parallel to bedding (Plate 8).

Very dirty walls limits underground lithological exposure. Chipping the walls at various locations gives spot observations, although successions are difficult to determine. In the Long Struggle Mine adit Herrmann (1987) reports thinly bedded (at low angle) sandstone with thin interbeds of siltstone and grey slate. Considering, the lower portion of the Hill Trench is approximately 20 metres westward, and from 10 to 30 metres above, and consists entirely of relatively steeply dipping argillite, a considerable facies change is evident. The fold limb in this region must flatten considerably (see below).

The mapping of Herrmann (1987) in the No. 2 (450 mRL) adit of Long Struggle indicates thickly bedded sandstone with thinly interbedded grey slate. Significantly, a fold hinge has been interpreted occurring in massive sandstone. (Figure 3).



PLATE 5. Argillaceous tan/white sandstone interbedded with grey siltstone (lower right hand side)
Sample SRC053 (BDL) of quartz veining within steeply dipping, N-S oriented fault.
Top Trench, Ref. point No. 2.



PLATE 6. Gentle flexure in steep
westerly dipping massive
tan sandstone. Top Trench
Ref. point No. 4.
Area represented is that in
the background of Plate 5.

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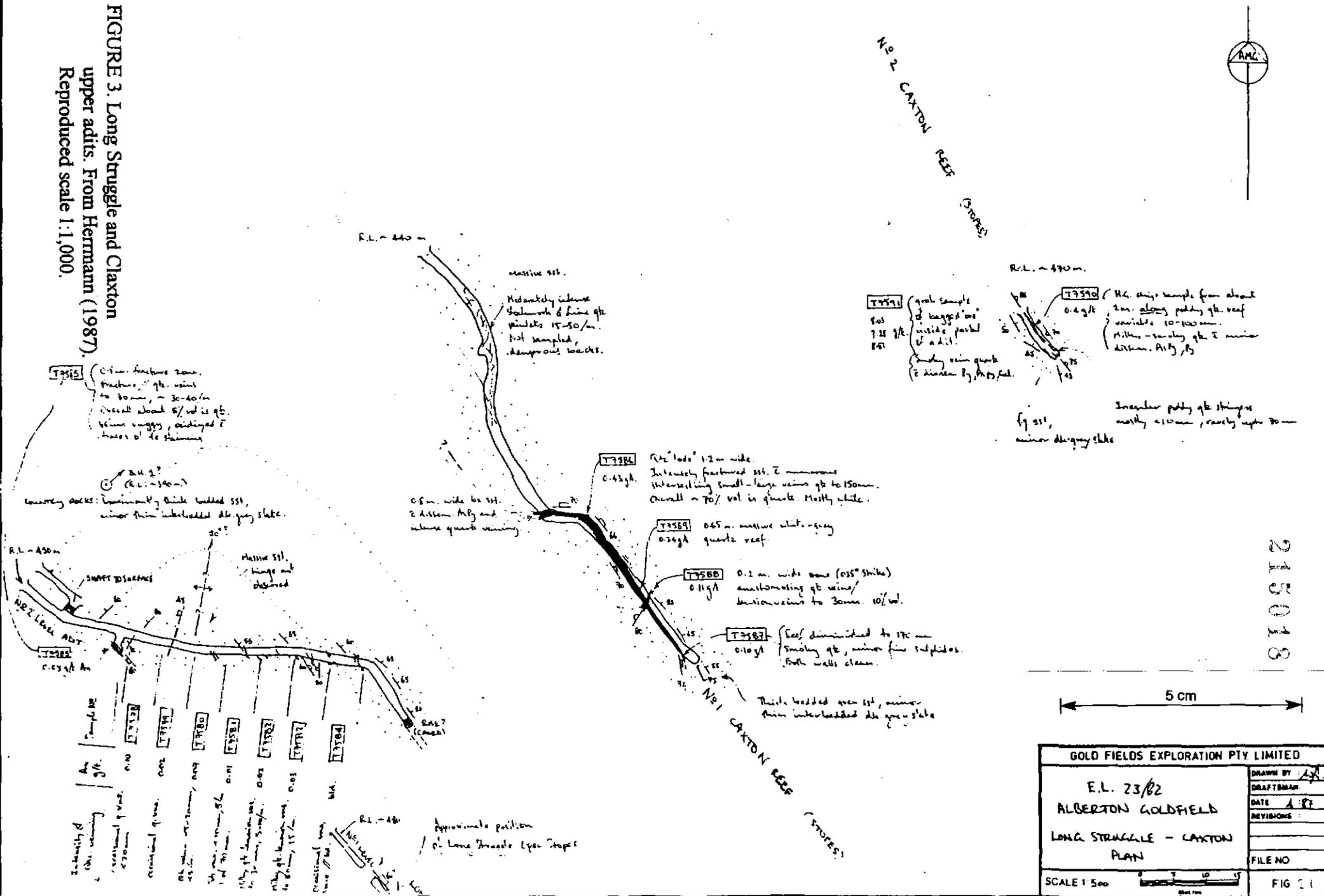


PLATE 7. Four metre accumulation of scree in Trench No. 3. Floor of trench just below lower right hand corner of plate.



PLATE 8. Massive tan coloured argillite. Hill Trench Ref. point. No. 8. Sample SRC120 (0.08 g/t Au) of 2cm grey quartz vein.

FIGURE 3. Long Struggle and Claxton upper adits. From Hermann (1987).
Reproduced scale 1:1,000.



At Mt. Victoria No. 3 adit (410 mRL) Herrmann (1987), mapped the initial 110m of the adit as fissile, buff to grey coloured slate with minor siltstone. The fissility in the slate is sub-parallel to bedding. The remainder of the workings consisting of thickly bedded sandstone with subordinate interbedded siltstone and dark grey slate.

In summary, the gross lithological characteristic in the area comprises a sequence of interbedded sandstones, siltstones and black shales, with sandstones predominating where dips are of a low angle and an argillitic sequence to the west.

STRUCTURE OF THE MATHINNA BEDS LONG STRUGGLE TO Mt. VICTORIA

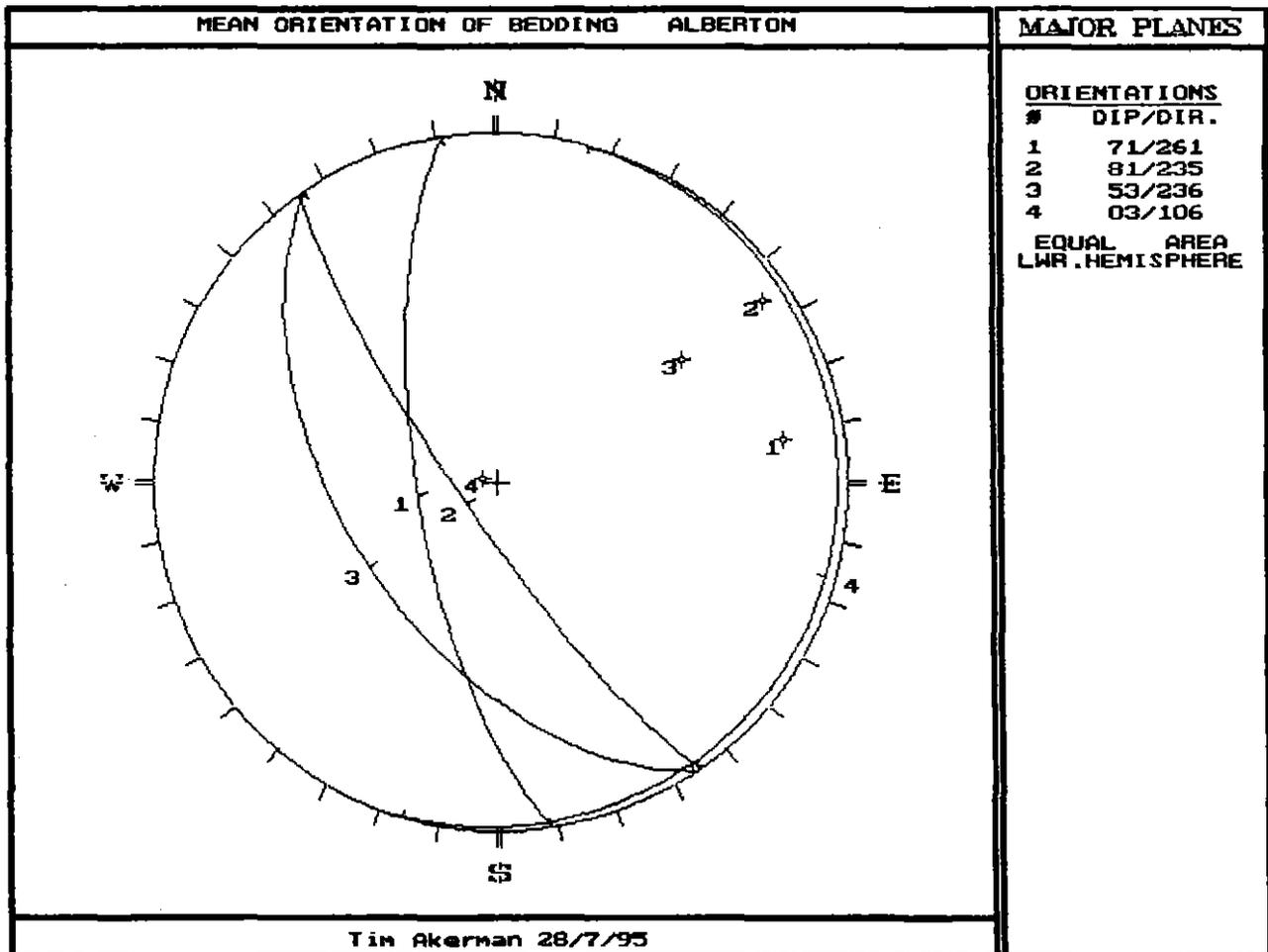
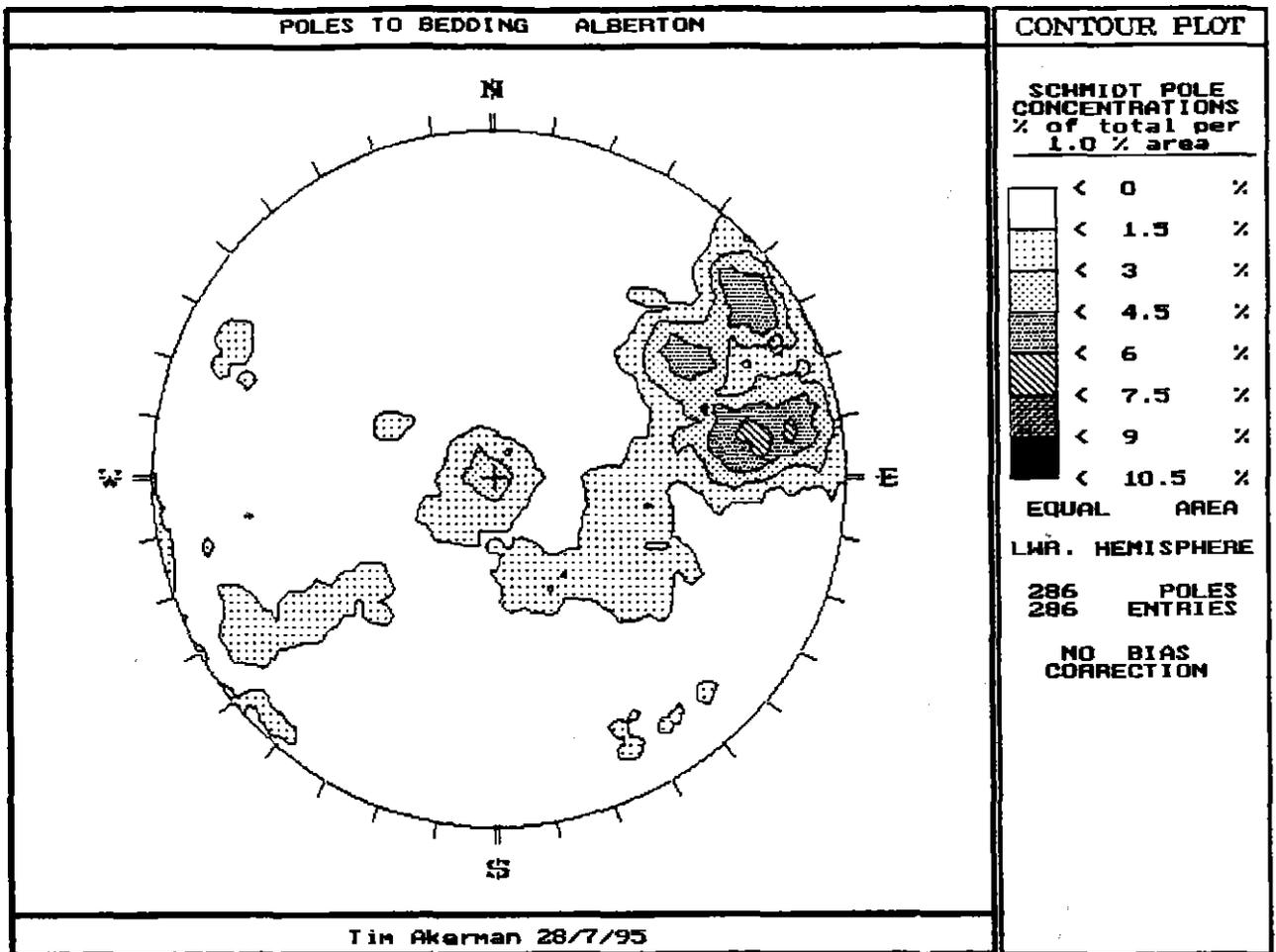
FOLDING

During the mapping of the trenches and underground at Long Struggle, the orientation of the bedding was recorded at 233 locations. A further 53 bedding orientations were measured from the plans of Herrmann (1987) in the Long Struggle upper adits, Claxton adits and the Mt. Victoria Mine workings (Appendix 3).

A plot of poles to bedding and the planes formed by the major clusters (Figure 4), displays the mean orientation of bedding to be steeply dipping to the west and southwest, with a spread from sub-horizontal to dipping steeply eastward. Geographically, the west to south-westerly dipping are wide spread through out the mapped area (Figure 2). The sub-horizontal bedding is restricted to the northern portion of the Top Trench and the southern portion of trench No. 3. Bedding dipping to the east is restricted to the northern extremity of the Top Trench and the northern extremity of trench No. 4.

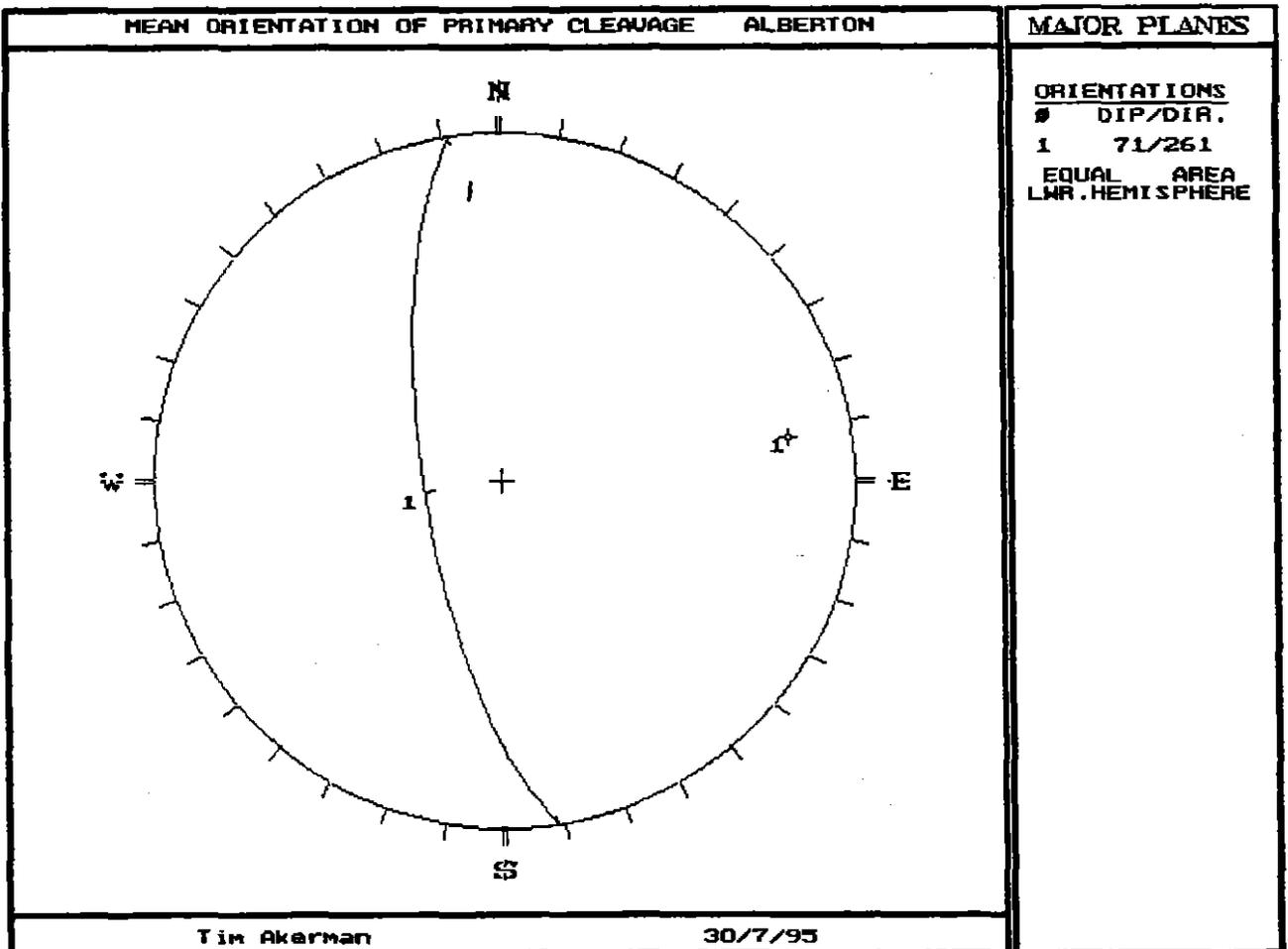
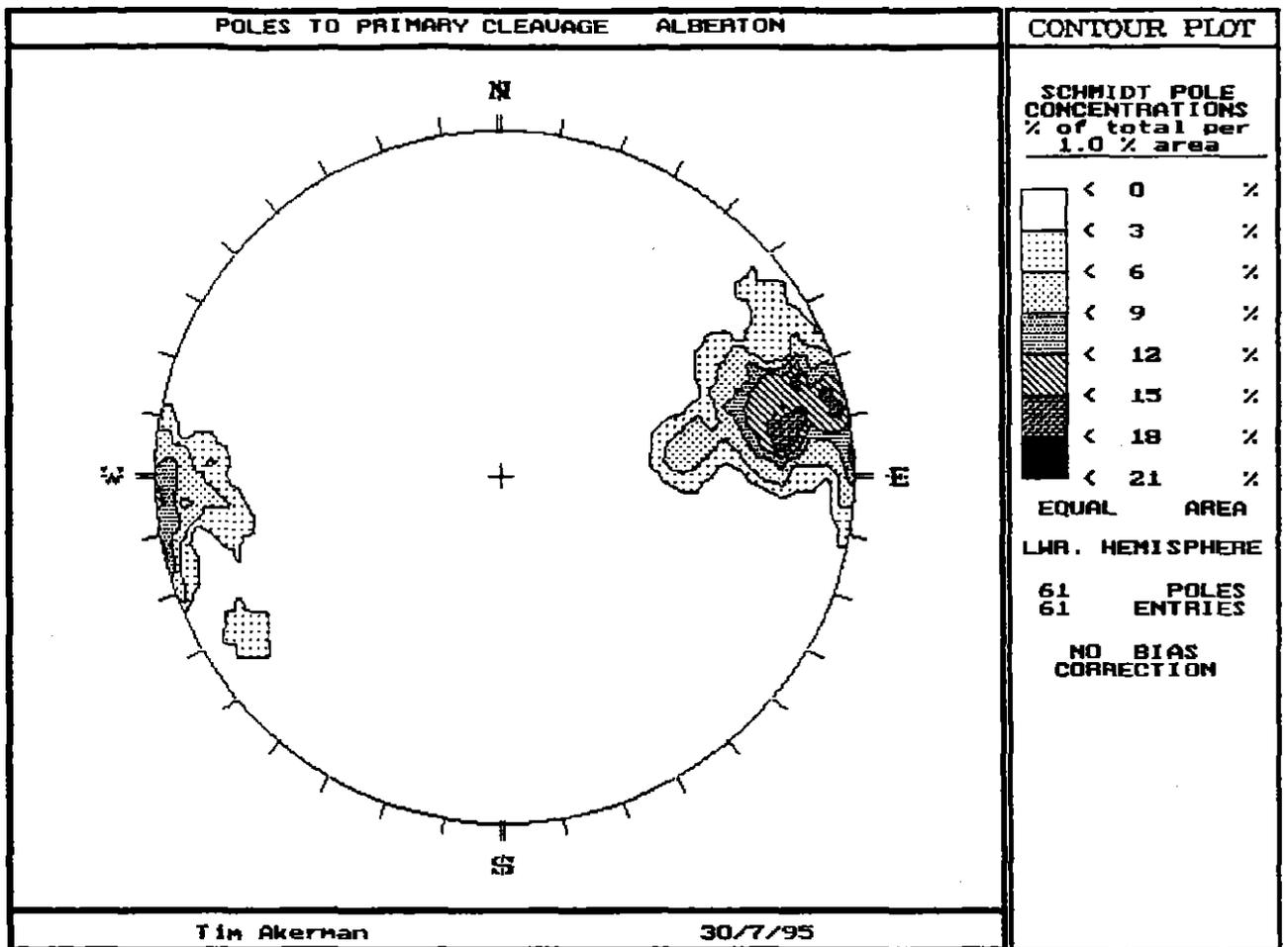
A slaty to fissile cleavage was recorded from 61 locations in the mapped area. The cleavage is generally absent or poorly defined in the sandstone and siltstone sequences, but is strongly displayed in the argillite and shale units. The most reliable cleavage measurements are obtained from interbedded argillite and siltstone, where bedding is clearly distinguishable from cleavage.

A plot of poles to all cleavage orientations (Figure 5) displays a tight cluster, whose mean orientation strikes 351 degrees and dips 70 degrees westward. Only 19 outcrops displayed reliable divergent bedding and cleavage orientations. Frequently, cleavage development in thin black shale beds parallels the enclosing bedding and in the argillitic sequence the slaty cleavage is nominally parallel to bedding. From the calculated bedding/cleavage intersection data (Figure 6), assuming axial planar cleavage, fold axes in the region generally plunge 20-60 degrees to the northwest and southeast. Subordinate fold axes appear to be oriented plunging shallowly to the north and south.



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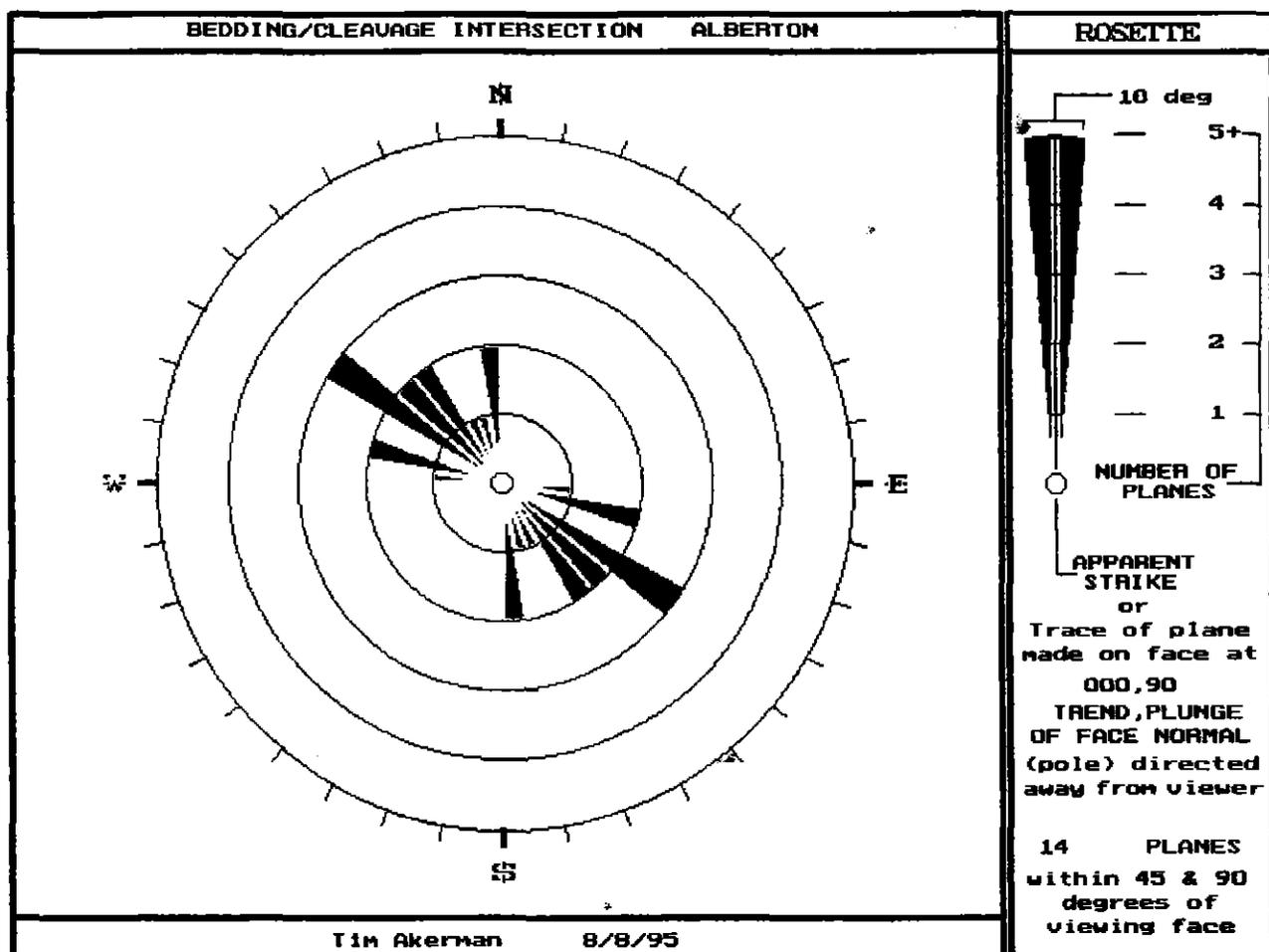
FIGURE 4. Bedding orientations from the Mt. Victoria Mine to the Long Struggle Mine. Observations from surface and underground mapping.



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FIGURE 5. Poles to primary cleavage and mean cleavage orientation. Alberton area.

5 cm



5 cm

FIGURE 6. Bedding/cleavage intersection data, Alberton.
Inferred major fold axes plunging moderately to the NW and SE, from
19 calculated intersections.

JOINTING

Observations of jointing were recorded from 169 locations in the mapped area. Generally the joints are spatially restricted to the massive sandstone units, occurring in a density ranging from 100 per metre to 1 per metre. In the majority of cases, jointing could be considered simple dilational, with occasional associated quartz veining.

A plot of poles to jointing, and of the major planes inferred by the clustering of poles (Figure 7) indicates a mean jointing orientation steeply dipping to the northwest, with a spread westward. A second order cluster is apparent dipping moderately to the southeast. The pole to the major joint set indicates that during joint formation the orientation of least principle stress was steeply dipping toward the SSE.

Veining, whose relationship to faulting, jointing or bedding parallelism could not be demonstrated was recorded from 29 locations in the mapped area. The veining consists of quartz, generally of the milky white 'buck quartz' variety. A plot of poles to vein orientations, and the major planes formed by the pole clusters indicates two distinct vein sets, both steeply dipping to the east and south east with 45 degrees separating their strike (Figure 8). Owing to the massive internal nature of the veins, features that would allow the determination of principle stresses are absent. However, the gross orientation of the vein sets indicated that they are probably extensional features associated with the north-westerly trending fold axis.

FAULTING

Faulting in the mapped area has long been recognised as being important in the history of gold mineralisation. The Cross, Montana and Mt. Victoria reefs were recognised by Twelvetrees (1901) as major faults striking northeast. During mapping, both on surface and underground 104 individual faults were recognised. These were identified by being discordant to bedding, in some instances displacing bedding, generally being associated with quartz veining and frequently they contain sheared black shale, immediately adjacent to massive sandstone.

The poles to faulting (Figure 9) display a wide spread around the equator of the plot, indicating dominantly sub vertical structures, with five distinct clustering sites. The majority of recorded faulting strikes east/west and dips between 60 to 70 degrees south. Less numerous faults strike northeast/southwest and dip steeply to the southeast.

Locally, where faulting is sub-parallel to the enclosing sediments the faults appear to follow the course of maximum competency contrast. This is generally a sandstone/siltstone or sandstone/shale bedding contact. In the latter case, shearing occurs and gold grades are elevated.

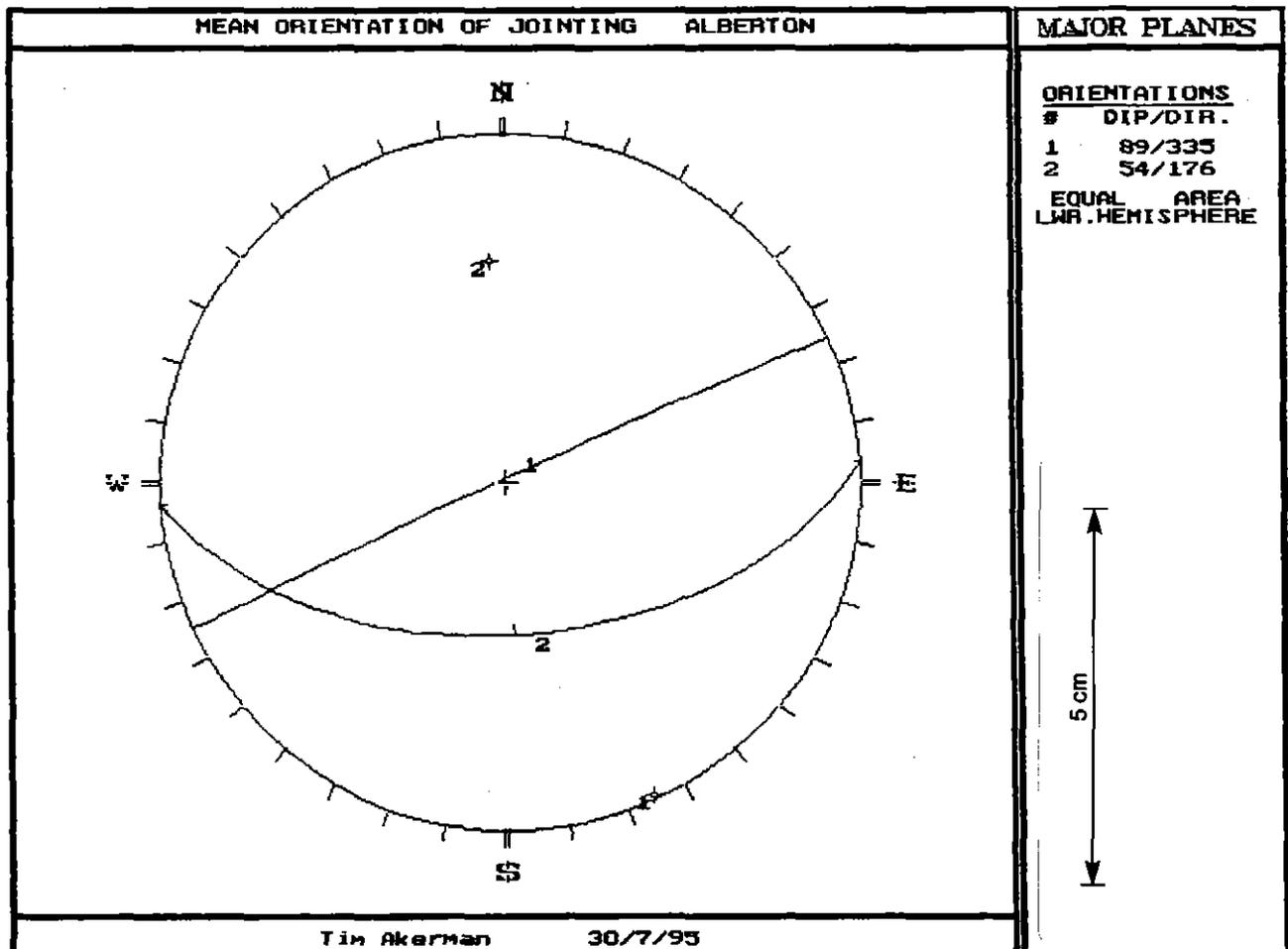
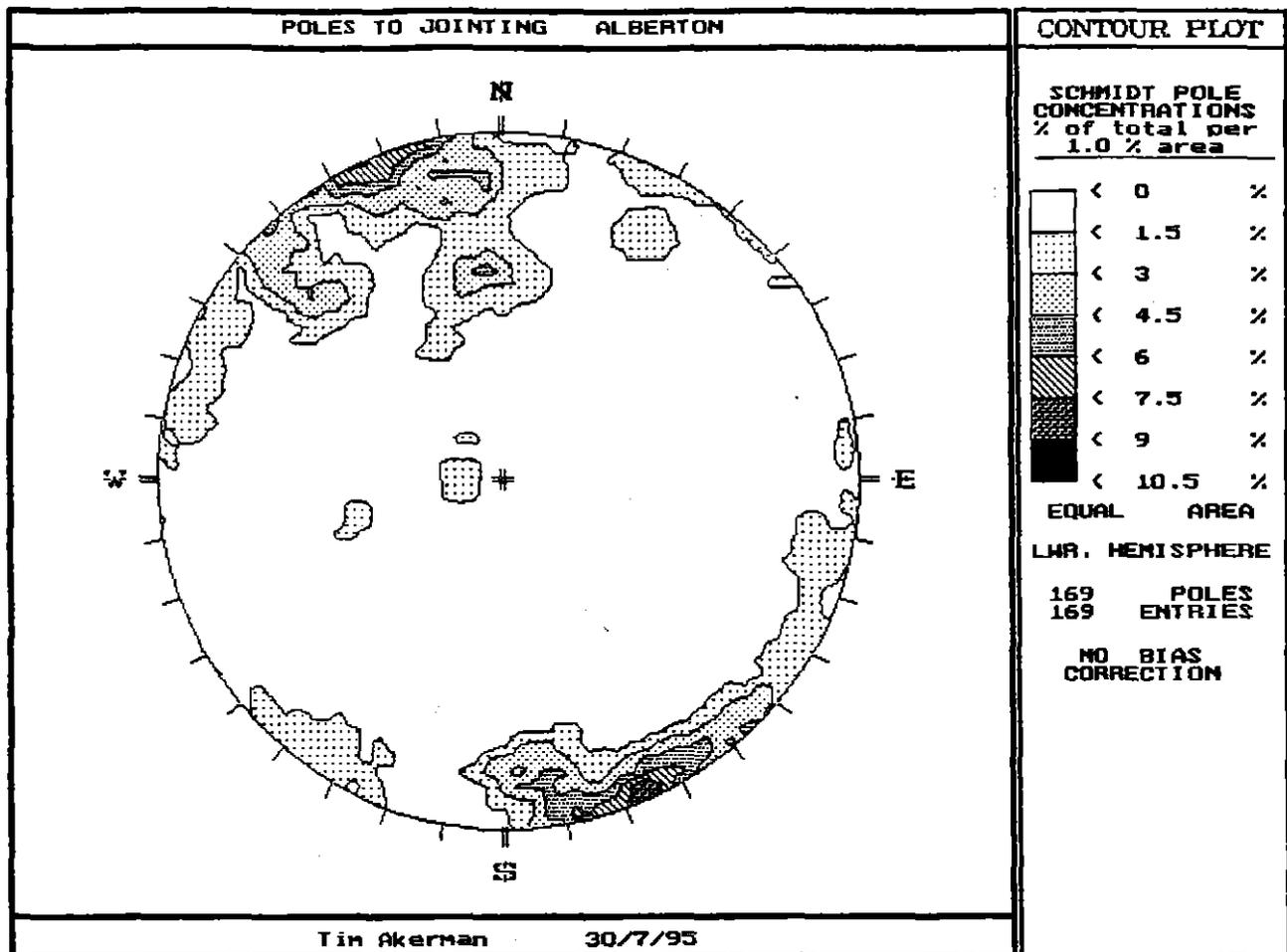
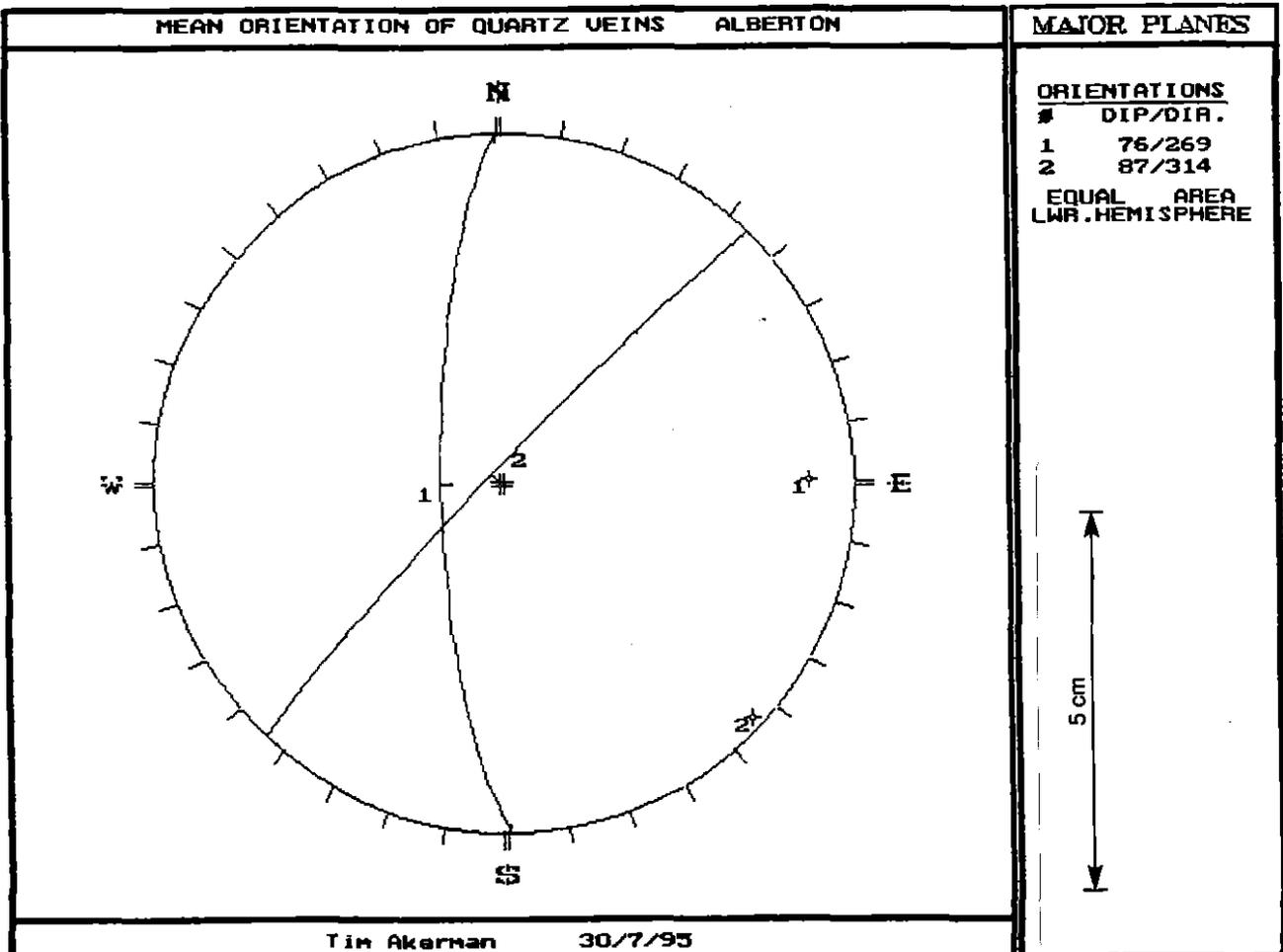
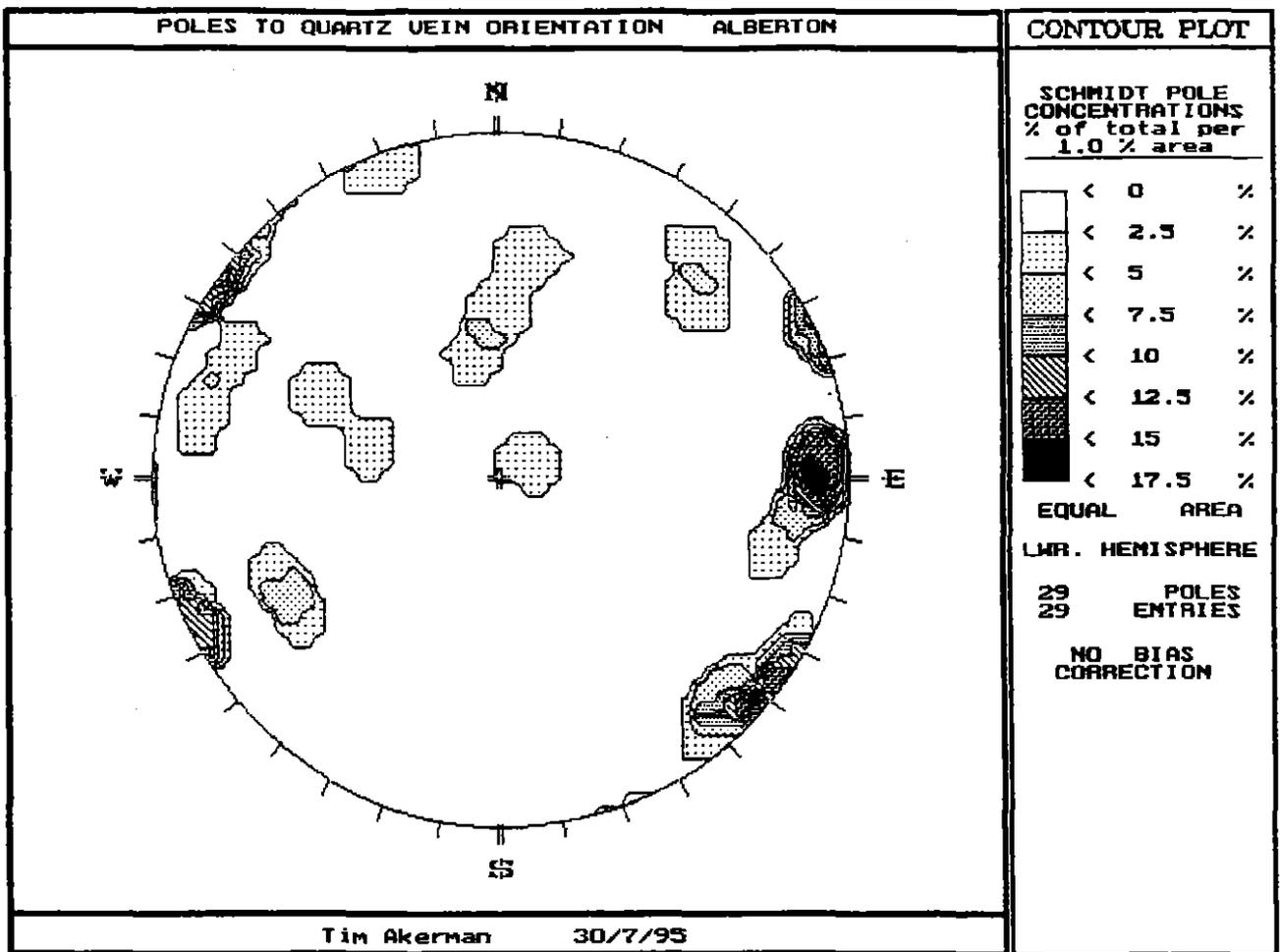
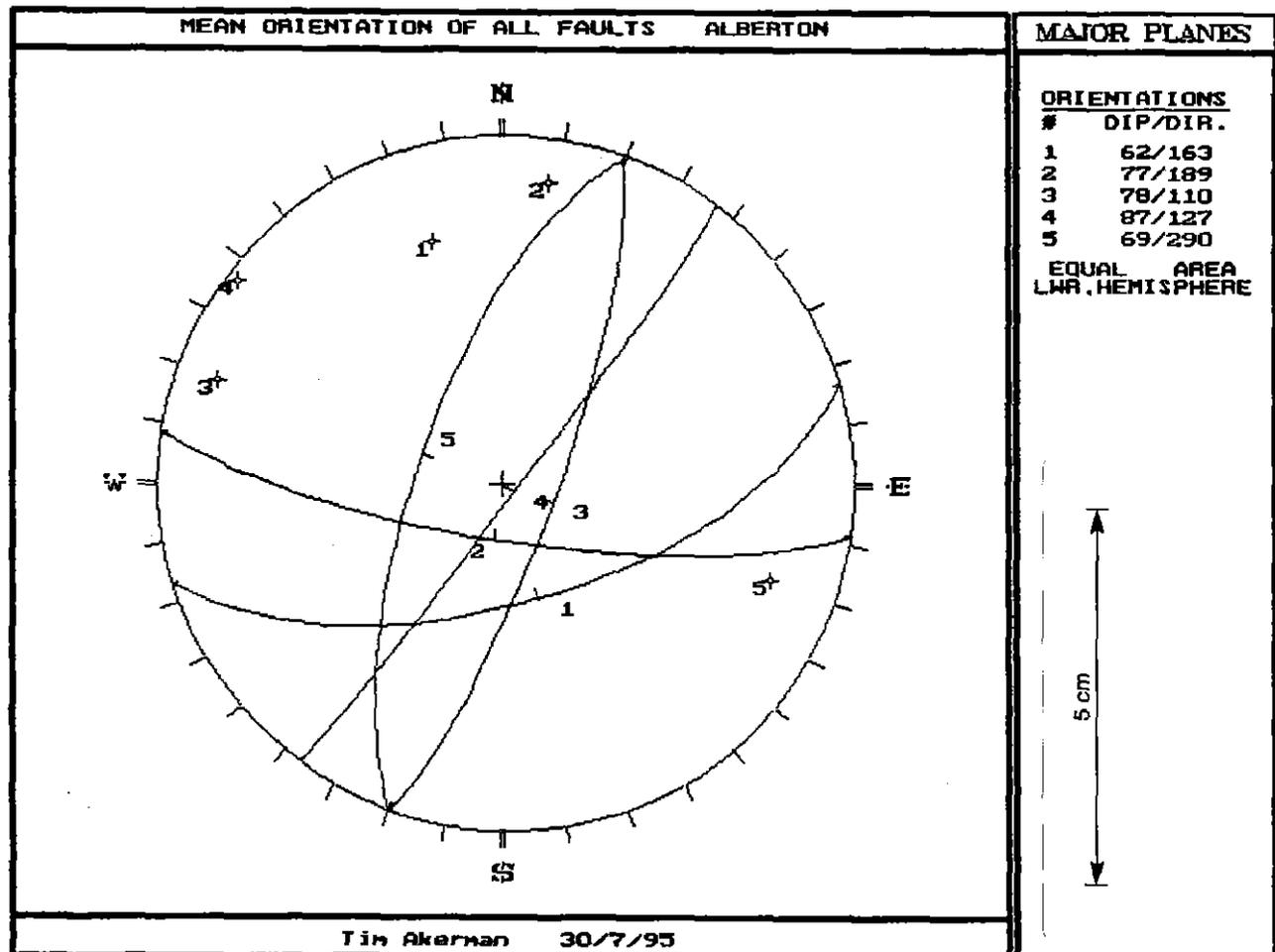
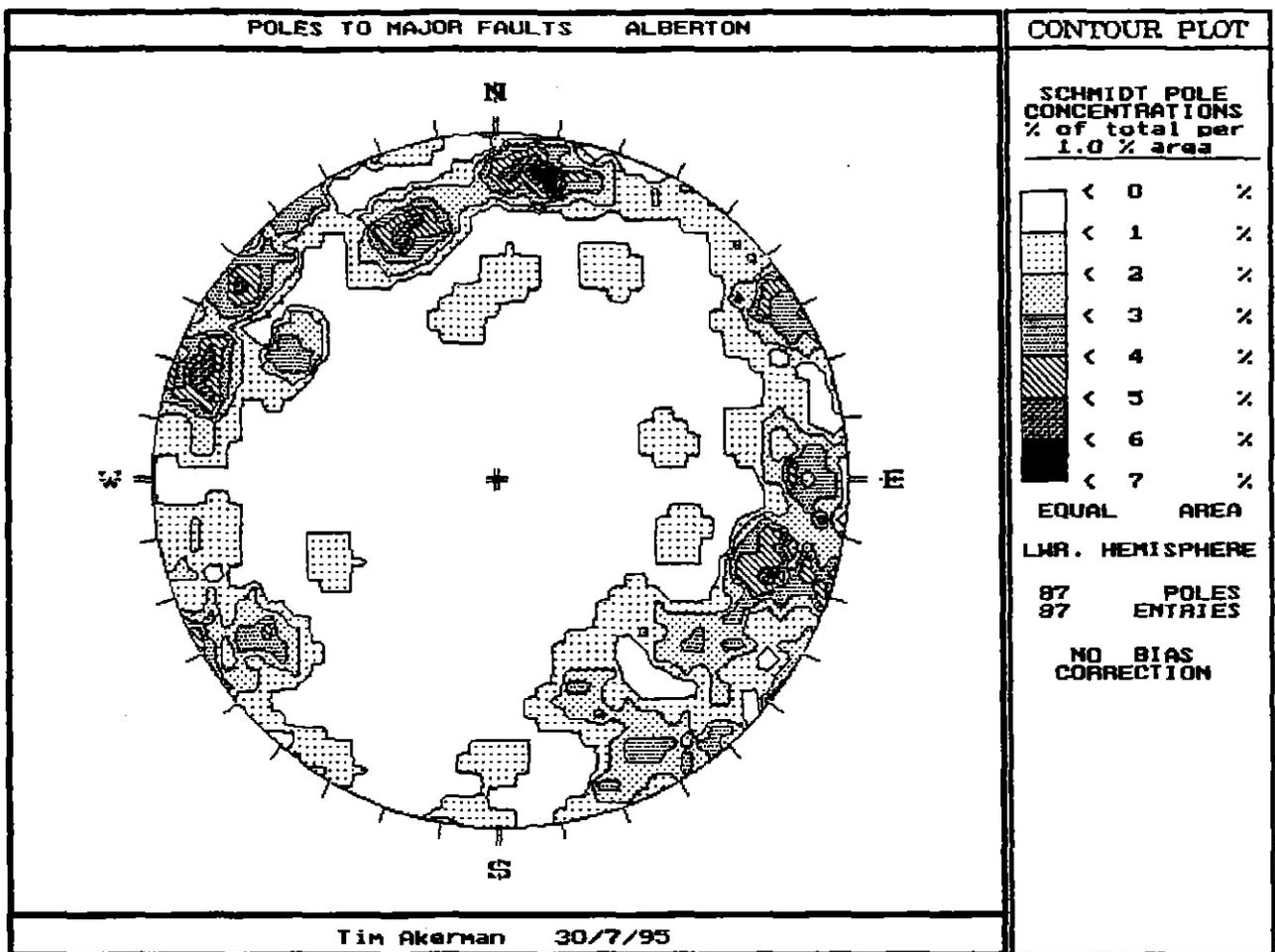


FIGURE 7. Poles to jointing and mean jointing orientations, Alberton area.
Note: Joint sets are approximately normal to inferred fold axes.



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FIGURE 8. Poles to and mean orientation of quartz veining which is unrelated to jointing or faulting, Alberton area.



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FIGURE 9. Poles to and mean orientation of faulting, Alberton area.

SURFACE GEOLOGY

The surface geology of the mapped area is depicted as form lines in figure 10. The orientation of bedding throughout the mapped area clearly defines a broad anticline. Facing directions in the form of graded and cross bedding in the western limb of the fold define a westward younging direction. The fold axis appears to trend north westward with faulted displacements. In the northern portion of the mapped area the axis appears to swing northwards to coincide with the fold axis mapped by Herrmann (1987) in the Long Struggle No. 2 adit. The mapping of Herrmann (1987, Figure 3), indicated a the fold axis plunges northward at 50 degrees. This is in agreement with the limited statistical analysis from bedding/cleavage intersections depicted in figure 6. Sub-ordinate fold axes trending westward are apparent from the form line mapping (Figure 10).

Lithologically, massive sandstones appear to be restricted to the fold hinge line, with a fining upward sequence on the western limb. The sequence grades from massive sandstone, sandstone with siltstone interbeds, an increasing proportion of siltstone to massive argillite. The fining upward sequence on the western limb of the anticline may extend as far south as the No. 3 adit to Mt. Victoria, where a extensive sequence of westerly dipping slate was mapped by Herrmann (1987).

Faulting in the area is complex, with a prominence of east/west, southerly dipping faulting restricted to the component sandstone dominated successions in the major anticlinal hinge. Major (Cross Reef etc.) and minor (Scotchmans) mineralised faults appear to be restricted to a north westerly trend with a southeasterly dip (apart from in the Mt. Victoria area where north westerly dips are prominent).

The location of the bedding parallel Long Struggle and Caxton No. 1 lodes on the eastern limb of a anticline is a common feature of the Alberton region, with other lodes including Mercury No. 2, Premier and Point lodes in a similar setting (Herrmann, 1987).

GEOLOGICAL OVERVIEW: LONG STRUGGLE AREA

Historically it was recognised that the Caxton and Long Struggle Reefs were conformable to bedding (Hills, 1923), with dips ranging from 45 to 80 degrees to the northeast. The Cross Reef and other smaller lodes (e.g. Martins Cross, Scotchmans and Beckers) were recognised as being fault fissure fillings.

MAPPING AND DRILLING AT THE LONG STRUGGLE MINE

Iloff (1994b) describes the results of a 531 metre diamond drilling program conducted from underground, which aimed to define extensions to known reefs and discover new reefs. The data presented by Iloff (1994b) has been combined with historical data (e.g. Hills, 1923, Blake 1934, Blake, 1938) and the more recent data of Herrmann (1987) and the surface and underground mapping of the current program.

No survey work, beside basic compass and tape traverses, was undertaken during the program. This has presented a number of difficulties in relating the surface and underground exposures presented by Iloff (1994b), Herrmann (1987) and that of Blake (1934). Basic compass and tape work, relating

surface features to one another has revealed that there is a reasonable degree of accuracy in the work of Blake (1934). If it is considered that there was probably limited vegetation on the hill slopes at the time (i.e. having been cleared or burnt by miners) surface features could have been related to one another by line of sight measurements resulting in reasonable accuracy.

Both Herrmann (1987) and Iliff (1994b) locate the Long Struggle No. 1 and No. 2 adits approximately 20 metres east of that depicted by Blake (1934), although, individually there are differences between Herrmann (1987) and Iliff (1994b). This has significant ramifications when their dips is considered and their continuity to the lower adit is interpreted. It must be noted however that the current interpretation is one of 'best fit', and for definitive inter-relationships of the levels survey must be undertaken.

The lower (approx. 390 mRL) adit of the Long Struggle Mine was mapped at a scale of 1:100, and comprehensively sampled (Figure 11). The adit to the Cross Reef position had been mapped previously by Herrmann (1987) and was not re-mapped. Herrmann (1987) mapped a series of thickly bedded sandstones with minor thinly interbedded siltstone and slate dipping shallowly to moderately to the northwest. Surface mapping westward of the adit revealed argillites dipping steeply to moderately to the west.

At the Cross Reef position Herrmann (1987) indicated that the lode dipped south westward at 60 degrees, thus conforming to its attitude on surface. The reef position clearly cuts across the main access drive to be located in the northwest wall of the northeast cross cut (Figure 11). Apparently splitting from the Cross Reef, the development has followed a north easterly quartz filled fault which dips north westerly at 40 to 60 degrees. The north eastward lode can be traced along strike in the backs for approximately 60 metres from the cross cut, at which point it is lost in the wall. Sampling of the lode gives grades ranging from 0.05 to 0.1 g/t Au over a maximum width of 0.6m.

A short northerly drive has been driven on a fault trending north and dipping 50 degrees west. Ten centimetres of quartz veining in the fault carries gold at 1.3 g/t. This was apparently not driven far enough to intersect the Cross Reef.

A southerly drive, containing a winze, also contains a fault of similar attitude to that in the north drive, although offset from it by approximately two metres. This would appear to indicate the north-easterly lode has had a component of dextral movement of two metres. The winze has been developed on a vertical fault, containing quartz grading 0.20 g/t Au.

At 75 metres from the main adit crosscut, the drive has followed a fault trending northeast and dipping from vertical to 66 degrees to the southeast. The fault hosts a quartz vein ranging in thickness from 5cm to 35cm with gold grades of 0.90 g/t. The bedding abuts this structure, being sub-parallel to its strike, and dipping consistently away from the fault (Figure 11). A similar style, fault is present in a sub-parallel drive dipping north westward at 65 degrees.

The relationship of the faults observed in the 390 mRL adit to the historical accounts of the workings above are difficult to relate. Twelvetees (1904) indicates that the width of the lode varies from nil to 25cm with grades ranging from 30 to 104 g/t Au. He describes two shafts to a maximum depth of 27 metres. While Blake (1934) indicates four shafts to a maximum depth of 37 metres. The 37 metre shaft is located 60 metres northwest of the lower adit cross cut point, and approximately at 445 mRL. This indicates that there exists approximately 18 metres vertical extent of unworked ground in the Cross Reef lode above the 390 mRL adit.

Twelvetrees (1904) description of the Cross Reef workings indicates the reef bends in dip at certain points and has a "flattened underlay". At the points of change in dip elevated gold values were reported. Herrmann (1987) mapped the Cross Reef upper adit, indicating the reef dipped 70-75 degrees to the south east. This geometry would place the reef in the north western wall of the north easterly cross cut for its entire length. A number of slightly auriferous faults appear to be sub-parallel to the Cross Reef. These are located in the development and in the initial 50 metres of LMS1 and LMS2.

The Cross Reef, at 390 mRL has only been tested at one location (main adit intersection), where low gold grades have been reported. The apparent splitting of the lode at this location and the presence of sub-parallel faults may indicate that the gold deposition at the 390 mRL has been disseminated amongst a number of smaller structures.

From the main adit cross cut until approximately 25 metres past the start of the easterly drive the lithologies exposed are sandstones with subordinate siltstone and shale. From the 25 metre point until the limit of development the succession is dominated by shale which has been locally silicified.

From the point where the north easterly drive turns easterly (Figure 11), the bedding dips consistently eastward at shallow angles for approximately 20 metres. For a further 30 metres a zone of faulting, shearing, cleavage development and bedding reversals is present. For a further 15 metres, until the first north/south cross cut, the bedding dips moderately to the south west.

Within the first north/south cross cut a quartz reef is exposed dipping nominally 80 degrees to the west. The reef is developed from a fault plane in the form of vein swarms which irregularly joins to form a massive white/grey reef attaining a maximum thickness of 45cm. Brecciation and inclusion of shale within the quartz is irregularly developed. A slickensided surface, on the fault plane indicates a component of dip slip movement, with an east block down sense. The reef clearly cross cuts the bedding at a high angle. Sampling indicates grades of 3-4 g/t Au. This reef has been correlated with the Long Struggle Reef by previous workers (e.g. Iliff, 1994a), its change in attitude being explained by overturning.

Further east in the Long Struggle workings from the first north/south cross cut, the bedding continues to dip south westward at shallow angles and tension gash veins are prominent. At 15 metres from the first reef a second is present. Near its southern exposed limit the reef consists of massive (65 cm) white buck quartz, with 20cm of quartz+shale breccia (0.13 g/t Au) in its footwall selvage and 15 cm of laminated quartz (0.14 g/t Au) in its hangingwall selvage. The northern exposure consists of the laminated and brecciated quartz 40cm to 15cm in width (7.0 to 16 g/t Au), thinning to the north. The strike of the lode swings in the drive from 15 degrees to 30 degrees west of north, from north to south in the drive respectively. The dip varies according to strike, with the more northerly orientation dipping 60 east to 45 degrees east in the southern portion of the drive. Iliff (1994b) correlated this lode with the Caxton No. 1 lode, by projection from upper workings and the high grade intersection encountered in the 1937 drilling program.

1937 DRILLING PROGRAM

Blake (1938) has briefly described the results of a drilling program carried out at the Long Struggle Mine in 1937. The orientation that Blake (1938) gives for the drill holes appears to be erroneous. Significant assay intervals include 2.44 metres at 15.26 g/t Au and 0.63 metres at 3.57 g/t Au from borehole No. 1. The former interval is significant and requires comment as to its likely position.

Blake (1938) states that borehole No. 1 was collared in the end of a north-easterly crosscut 139 metres from the main (lower) adit crosscut. It was directed south-easterly direction to test the northerly extension of the Long Struggle Reef. As Herrmann (1987) points out, directed south-easterly would orient the hole sub-parallel to the strike of the lode. Herrmann (1987), suggested this may be a typographical error and the correct direction should be north-easterly. Herrmann (1987) plotted the *inferred* position of the high grade intersection and correlated it with the bedding conformable Long Struggle Lode.

A detailed search has been undertaken to locate the collar of the hole and it has not been found. Blake (1934) states the collar was "in end of north-easterly cross-cut...", apparently indicating it was collared in a face of a drive. The presence of a small cut in the backs, at 139 metres from the main adit cross cut may have been excavated to accommodate the drill string and swivel for drilling the -55 degree down hole at this point (pers. comm. Iliff, 1995).

If the conditions at the time are considered, it is probable that having encountered a high grade intersection in a drill hole, it would have been exploited in the easiest, most cost effective way, i.e. following the drill hole. This would account for the lack of collar hole to be seen anywhere in the workings, for the face in which it was collared in, no longer exists. Consequently, it is probable that the No. 1 borehole was collared in a pre-existing face and directed easterly along the course of the present drive.

If the mapping from the drive and the limited data from the drill hole are compared (Figure 12), considerable similarities exist. Quartz veins mapped in the development coincide with where 'lode matter' was logged and sampled in the drill hole. The steeply dipping reef encountered in mapping is probably represented by the 'lode matter' logged at 27.2m (1.8m wide and 'trace' of Au) and the high grade intersection (15.26 g/t over 2.4m) is probably the second lode encountered in mapping.

It is interesting to note the a specimen of coarse free gold was removed from the high grade intersection (Blake, 1938). Free gold, especially coarse grained, is extremely rare in the Alberton goldfield. Gold of this type has historically only occurred within white bucky quartz, which apparently results from secondary remobilisation and deposition (Taheri pers. comm., in Iliff, 1994b). The presence of extensive buck quartz in the second mapped reef would seem to add credence to the interpretation. The extremely erratic nature of gold grade and distribution within this style of mineralisation would explain the variance within the underground sampling and its variance to the drill hole sample.

The second hole was stated by Blake (1937) to have been depressed at 55 degrees. Presumably the *direction* of the hole was as the first, i.e. eastward. Herrmann (1987) could not determine the rational this down hole orientation, as not having mapped the lower adit, he believed the first intersection to be the Long Struggle reef and that it dipped north eastward. The interpretation was based on the drill hole oriented north eastward, rather than parallel to the drive.

The lode encountered in the first north/south cross cuts dips westward at 80 degrees and cross cuts the bedding. If Blake (1938) recognised the cross cutting nature of the first wide (1.8m) intersection then a down hole at 55 degrees from the horizontal would be the logical location to test it down dip. It must be noted that at the time of collaring the down hole, assay results (which returned trace) would probably not have been available to Blake and the decision was probably based upon width. In a similar manner the high grade intersection could also have been recognised to be cross cutting the bedding and interpreted to dip westward. Unfortunately, the two intersections in the second hole returned only a trace of gold. The first of which, aligns well with the down dip extension of the 80 degree dipping reef (Figure 12).

A third borehole was commenced by Blake (1937), its collar location is also in doubt, although it is somewhat inconsequential as it was abandoned after 10 metres and did not intersect any quartz.

1994 DIAMOND DRILLING PROGRAM

Five diamond drill holes (LSM1 to LSM5), were drilled at the Long Struggle Mine, 250.7 metres of which are contained in LSM1 (Appendix 4). Drilling was conducted with a Kempe pneumatic drill rig, which produced TT46 corc. The drilling was conventional, and equipment was hired from Tasmanian Diamond Drilling of Zeehan. Mancala's personnel conducted the drilling.

During the current program the holes were not relogged, although this would be considered useful to gain data on bedding to core axis angles and to determine any cleavage orientations. The logs were manually plotted both on the appropriate section/plan and on graphical summary sheets (Appendix 4).

The holes LSM3 to LSM5 were collared some 46 metres westward of the eastern-most extension of the Long Struggle Mine workings. These holes are located the closest to mapped mine openings, consequently correlations between which are the most reliable.

LSM3 was drilled on a AMG bearing of 117.5 degrees with a flat dip (Figure 11). This orientation was selected to test the likely southerly extensions of reefs exposed in the adjacent workings. The hole was drilled for 75.5 metres through a sequence of interbedded grey, quartz bearing sandstones and dark siltstone. The only planar structural feature observed in the hole was at 59.5 metres where shearing and brecciation (plus grey mineralised quartz) was noted with an associated gold grade of 0.42 g/t. This intersection occurs 15 metres along the projected strike of the second reef encountered in the workings.

An interval 26.45 to 26.85 was logged as black siltstone with minor quartz veining. Samples over this interval, 26.30 to 26.70 and 26.70 to 26.85 returned assay results of 0.40 and 18.6 g/t Au respectively. The interval 26.85 to 26.95 was logged as a quartz vein with minor stockwork veining and apparently was not sampled. The 15cm interval (potentially 25cm?) high grade interval is located approximately (slight swing to the west required) eight metres along strike of the first reef intersected in the development.

Further intervals in the hole that grade >1.0 g/t Au are at located at 71.1 to 71.3 and 71.8 to 72.3 (1.6 and 1.7 g/t Au respectively). These were logged as folded grey quartz veins with arsenopyrite and small quartz veins with arsenopyrite and pyrite. They are not correlatable with any known underground features.

LSM4 was collared in approximately the same location as LSM3, was drilled as an up hole at +21 degrees on a bearing of 107.5 degrees AMG for a total hole length of 51.4 metres. The lithologies exposed in the core are similar to those in LSM3 and mapped in the development, being an interbedded sequence of grey quartz bearing sandstone and black siltstone. Broken core intervals are recorded at 8.0, 9.5 and 21.1 metres down hole. The former intervals correlate well with the dip and strike extension of a fault mapped in the development, while the latter does not have expression in the development below.

Quartz veining was logged over the interval 27.9m to 28.1m. Assay over the interval 27.95 to 28.5 returned results of 0.41 g/t Au. The interval 28.5m to 28.9 was not sampled. Quartz stockwork veining was logged over the interval 28.6m to 29.6m. Assays from 28.9m to 29.6m returned an average result of 2.9 g/t Au, including 11.0 g/t Au for the interval 29.45m to 29.60m. Sampling was not conducted immediately beyond 29.6m. The projection of dip and strike from the first reef encountered in the development correlates well with this intersection (Figure 13).

The interval 33.5m to 33.7m was logged as a quartz vein in sandstone. An isolated assay over the interval 33.45m to 33.70m returned the result of 1.0 g/t Au. This position in the hole correlates well with the dip and strike extension of the second reef encountered in the development if the true dip of the lode is increased from 45 to 55 degrees.

If the true dip of the second lode has increased to approximately 70 degrees, then it may be represented by the interval logged as stockwork quartz veining from 39.4m to 40.4m. The average of two assays over the interval 39.4m to 39.7m returned a result of 0.61 g/t Au. The interval 39.7m to 39.85m was not assayed. The interval 39.85m to 40.10m returned a result of 0.48 g/t Au.

For interpretative purposes the 33.5m to 33.7m interval has been correlated with the second lode encountered in the development. The interval 39.4m to 40.1m may correlate with the interval 72.1m to 72.3m (in LSM3), if this is correct the separation of the two lodes has reduced from 12m (LSM3) to 6m (LSM4). If the dip of the second lode is increasing, with respect to the dip of the eastern most interval, then the decrease in separation distance would be accounted for.

LSM5 was collared in approximately the same location as LSM3 and LSM2. The hole was angled up at +20 degrees on a bearing (AMG) of 125.5 degrees. The hole was drilled to 68.8 metres aiming to test the southerly extensions on mineralisation encountered in LSM4 (Figure 14).

The lithologies encountered in LSM5 duplicated those in LSM3 and LSM4. Presumed faulting correlating to that in LSM4 and the development is present in the first 15m of drilling.

The interval 30.7m to 34.6m was logged as quartz veining in sandstone and siltstone with chlorite alteration and sphalerite. An assay over the interval 30.7m to 31.35 returned a result of 1.10 g/t Au. A repeat of a portion of this interval (31.25m to 31.35m) returned 2.40 g/t Au. The interval 31.35m to 31.50m was not sampled. The interval 31.5m to 35.15m assayed an average of 0.16 g/t Au (with 15 cm not sampled). The isolated interval 35.25m to 35.60m assayed 1.40 g/t Au.

The interval 41.1m to 41.45m was logged as mottled quartz veining within black siltstone. No assay is available. A brecciated reef, consisting of bleached quartz sandstone with quartz breccia, pyrite, galena and chlorite alteration occurs between 61.4m and 61.6m. Assay over the interval 61.50m to 61.90m returned a result of 0.18 g/t Au.

The three +1 g/t assayed intervals can be tentatively correlated with similar spatial intervals in LSM3 and, with slight changes in dip or strike with the development (Figure 14).

Facing directions were recorded from the three drill holes, unfortunately the angle that bedding makes with the core axis was not. The facing data is conflicting, with younging directions conflicting between closely spaced holes. Either the sedimentary succession has been extensively deformed (i.e. overturning) in a limited spatial extent, in which case the geology is extremely complex, or some errors have occurred in the logging. The faulting near the collars of the holes may have acted to reverse facing orientations, but where apparently continuous successions are separated by 10 metres, there is difficulty in accounting for reversals in facing.

In general the majority of the facing directions indicate a sequence younging westward. If the bedding directions from development mapping are extrapolated to the holes then the area in the vicinity of the drill holes forms a portion of either the western limb of an anticline or the eastern limb of a syncline. With mapping from surface indicating an anticline axis to the west, and knowledge that the Long Struggle and Caxton No. 1 lodes were bedding conformable, considerable complexity exists.

Two speculative drill sections are presented in figures 13 and 14. These combine information from surface and underground mapping and the suspected location of the 1937 drilling program and the recent drilling. Notable features are:

1) The shallow apparent dip of the Long Struggle mineralisation, and given the current survey data, the inability to simply project the mineralisation from surface to the 390 mRL workings. Consequently, as 'best fit' interpretation places the Long Struggle Lode as the second reef encountered in the workings and is truncated by the first reef. The first reef is an un-named, fault fissure type reef that contains erratic gold mineralisation and is oriented sub-parallel to the Long Struggle and Caxton No. 1 Lodes. The fault has had dip slip, east block down sense of movement across it. The reef would outcrop (given a continuation of dip and strike) some 15 metres from the Caxton No. 1 lode. This area to date has not been investigated. It may be coincidence that some 90 metres along strike to the northeast a fault was mapped in Wilson Creek which has a similar strike, dip and east block down component of vertical movement. Sampling around the structure was not conducted at the time of mapping. Given the knowledge of complex faulting and folding the extrapolation of this fault to surface (80 metres) and along strike 90 metres may be stretching the limits of meaningful interpretation.

2) The Cross Reef has been interpreted directly from surface to the 390 mRL workings. There are a number of significant faults in area located in LSM1, LSM2 and underground which could correlate to the surface expression of the Cross Reef, with variable dips, or form a series of faults correlatable with the Cross Reef. The direct correlation must be considered highly speculative with the knowledge that its dip varies greatly.

3) Faulting mapped in the 390 mRL workings abuts variably oriented bedding units against one another over short distances. The presence of relatively small scale faulting may be significant in the area.

4) The shear zone encountered in mapping may act to displace the Long Struggle lode in a similar manner to that interpreted for the un-named fault fissure reef. It may also act to abut the eastern

limb of the anticlinal fold (mapped from surface and Herrmann, 1987, Long Struggle No. 2 adit). with the westerly dipping sequence observed near the end of the 390m RL workings.

5) It is interesting to consider that good grade was reported from both the Long Struggle and Caxton No. 1 Lodes to an indeterminate depth at which point grades and width diminished. Could this feature be related to a point where the fault fissure lode becomes discordant to bedding (Figure 15). Similar (although not exact) features have been developed in the Bendigo area (Sharpe and MacGeehan, 1990). In such a scenario gold mineralisation would occur when the fault traversed a course where it was sub-parallel to bedding, exploiting the competency contrast between sandstones and siltstones (graphitic shale aiding Au deposition?). Where discordant to bedding the fault remained 'tight' and void space was minimal.

6) The scenario outlined in 5) above would appear to conflict with the observation of the Long Struggle lode on the 390 mRL workings, where the quartz veining is up to one metre wide. However, it is probable that the thick 'buck' quartz veining that constitutes the Long Struggle lode on the 390 mRL represents a reactivation and infilling, post gold mineralisation.

7) In attempt to explain the geometric relationships between features observed in mapping surface and underground exposures and the drill holes, a parasitic fold has been interpreted to exist on the eastern limb of the regional anticline. Post folding faulting with northwest and northeast orientations has added further complexity. The presence of a limited thickness of relatively incompetent slate may have acted as a locus for parasitic folding and later faulting. Being based on the limited data available these interpretations must be considered speculative. A simplified pre-faulting reconstruction is presented in Figure 15 .

Drillholes LSM1 and LSM2

These holes were drilled to test the premise that the 1937 drilling program had been had been collared the distance stated by Blake (1938) from the portal of the lower (390 mRL) workings and were directed in an north-casterly direction (as per Blake, 1938) but aimed to test the southerly rather than the northerly extension of the lodes.

LSM2 was collared approximately 26 metres from the easterly extent of the pillar at the main adit/Cross Reef intersection. The hole was directed 80.5 degrees (AMG) along a flat course for 84.4 metres. The hole passed through a series of interbedded grey quartz sandstones and dark siltstones. Faulting was encountered throughout the hole, with which the easterly extension of the Cross Reef series of faults has been tentatively correlated (Figure 11). Assaying of the hole returned results which were all less than 1.0 g/t Au. Notable highs above detection limit (0.05 g/t Au) occurred at 20.85m to 20.90m (0.97 g/t Au), 30.30m to 30.70m (0.60 g/t Au), 45.80m to 46.40m (0.75 g/t Au) and 62.40m to 63.20m (0.42 g/t Au). All of these anomalous intervals are associated with faulting which can be tentatively correlated to faults sub-parallel to the Cross Reef.

LSM1 was collared approximately five metres south west of the collar of LSM2. The hole was directed on a flat course for 250.7 metres on a bearing of 98.5 degrees (AMG). Iliff (1994a) gives an account of the drill results and assayed intervals.

The bearing of LMS1 directed it away from the development openings on the 390 mRL of the Long Struggle Mine. The eastern crosscut (Figure 11) is some 60 metres distant from the hole while the

hole is between 50 and 150 metres from surface. With knowledge of the geological complexities in the area any interpretation from the hole to surface or to the workings must be considered speculative.

If the geological model presented in Figures 13 and 14 is extrapolated to the LSM1 drill section and the geology from surface and underground extrapolated, the drill section of figure 16 results.

Notable features of figure 16:

1) The un-named lode located in LSM3, 4, 5 and the development is probably represented by an assayed interval 156.15m to 156.75m which returned results of 6.5 g/t Au (including 12.8 g/t over 20 centimetres). The extrapolation requires the lode to swing in strike to the east by approximately 15 metres over 60 metres. The swing in strike and the close proximity of the Caxton No.1 and Long Struggle Lodes on this section suggests that the un-named lode would intersect the Caxton No.1 Lode above the projection of known workings?

2) The Long Struggle lode may be represented in the hole by the interval logged as breccia reef containing a ptigmatically folded quartz vein. Assay of this interval (194.05m to 194.35m) returned a result of below detection limit. A swing in strike to the east of approximately 15 metres is required to align the Long Struggle Reef from the development with the intersection in the hole. From the surface plan of Blake (1934) a swing to the east of both the Caxton No. 1 and Long Struggle Reefs is evident. The Claxton No.1 Reef may be represented by the interval 229.0m to 229.2m where brecciated reef assayed 0.2 g/t Au. If more significant easterly swings in strike are invoked, then an interval of 0.6m from 249.4m (0.46 g/t Au) may be the Caxton No. 1 and the Long Struggle is represented by the 229 metre interval. In either case grades and widths are minimal.

3) Twelvetrees (1904) reported the presence of a significant, although low grade lode on the surface in the footwall of the Long Struggle Lode. This (termed Twelvetrees' Lode), was probably the mineralisation located during surface trenching in Trench No. 4 (Plate 9 and 10).

On surface, the lode consisted of 25 cm of massive white/grey mottled quartz with a brecciated hanging wall and footwall. Arsenopyrite and pyrite are abundant as distinct clusters of coarse (1-2mm) crystal aggregates. Two samples over the lode averaged 1.73 g/t Au. Twelvetrees (1904) also sampled the lode with similar (trace) results. The lode was described by Twelvetrees (1904), "It is a reef that ought not to be neglected, being as promising looking a lode as anyone would wish to see, and some parts of it may well be gold bearing". Twelvetrees' Lode is probably represented in LSM1 by the interval (123.6m to 123.8m) described as a broken quartz zone in sandstone and assayed at 3.60 g/t Au. Alternatively, with a steeper dip the lode may be represented by the intervals 97.2m to 97.65m (2.80 g/t Au) or 100.5m to 101.2m (3.00 g/t Au).

Twelvetrees (1904) comments that the lode has been traced further north, although the holes were not deep enough to fully test it (Plate 9). The lode, when projected along strike would intersect the Hill Trench approximately 60 metres southeast of it's known location. At this location in the Hill Trench no outcrop was observable. (Figure 10).

In plan, the Twelvetrees' Lode can be extrapolated from the drill hole to intersect the development at a position that corresponds with either of two westerly dipping shears, neither of which contains significant quantities of quartz, or a 30cm tension gash vein which contains 0.30 g/t Au. Detailed sampling of the wall would be required to determine whether the lode extends as far north as the Long Struggle workings.



PLATE 9. Twelvvetrees Lode.
Old workings above
trench.
Trench No.4



PLATE 10. Twelvvetrees lode.
Orientation of lode
broadly defined by
Samples SRC88 and
average 1.73 g/t Au.
Trench No. 4

Twelvetrees' Lode has been unexploited, is known to extend down dip for probably 90 metres and extends along strike for an unknown distance. The lode is sub-parallel to the Long Struggle Lode, and is grossly conformable to bedding. Texturally the lode is not typical of Alberton style mineralisation, in being white quartz with clusters of sulphide minerals present. At the two known locations the grades are poor, although as Twelvetrees (1904) pointed out some parts of the lode may well be gold bearing.

4) Facing directions from LSM1 are varied for the initial 50 metres. When combined with probable bedding orientations from the development, a complex, faulted series of bedding reversals is apparent (Figure 16). At 68.5m down hole the bedding was logged to be almost parallel to the core axis. This feature combined with a change in facing direction at 75.35m would appear to indicate a fold axis near this location in the hole. The major anticlinal axis trending north to Northwest mapped from surface is located on an 80 degree westward dip above this point (Figure 16).

Eastward from the interpreted anticlinal axis in the hole, the direction of younging is consistently eastward. This direction does not coincide with the observations from LSM3, 4 and 5 and may indicate that the interpreted parasitic fold (presumably plunging northward) exists above the hole.

GEOLOGICAL OVERVIEW Mt. VICTORIA MINE AREA

The Mt. Victoria Mine (comprising the Montana and Mt. Victoria Lodes) was the second largest gold producer in the Alberton field. Taheri (1993), indicates that 145.8 kg of gold was produced. Twelvetrees (1901), reports that stoping had been carried out over a down dip distance of over 100 metres. Grades were reportedly in the order of 65 g/t Au in the early mining phase, but fell off later to the order of 25 g/t Au.

The mine was accessed by four adit levels, and stoping was reported to have been carried out to within eight meters of the backs of the lower level (No. 4). On the No. 4 level the Montana Lode was not intersected, in the form which it had above. The lode was reportedly (Twelvetrees 1901) cut off by a floor just above the backs of the No. 4 workings.

A brief inspection of the lower (No. 4) adit workings indicates that the Montana Lode intersects the workings in the form of a 75 to 100cm fault bounded cataclasite zone. A limited degree of stoping and driving has been undertaken on the zone. Virtually no quartz is observable and gold grades are reported to be low (Iliff, 1995. pers. comm.). The persistence and strength of the lode zone in a vertical sense has been well demonstrated above the lower adit, however below the level it is totally untested. The along strike continuation of the lode to the north was apparently tested from the No. 3 adit level, where, north of the stopes, the lode was followed in development for 21 metres until it was terminated by a cross fault. Within the 21 metres of exploration development the lode was described as being "pinched and a little bit of stone was found, becoming poorer in quality as the cross fault was reached" (Twelvetrees, 1901). No information is available regarding the southern continuation of the lode.

Herrmann (1987) mapped and sampled the No. 3 adit level (Figure 17). Sampling was carried out in an area that contains a moderate to high intensity of quartz (milky grey with arsenopyrite) stringer veins. The veining is located in the footwall of the Montana Lode, extending for approximately 15 metres normal to the lode. The veins are confined to sandstone units within the interbedded sandstone and siltstone succession. Sampling by Herrmann (1987), within six metre intervals

revealed one interval containing 6.93 g/t Au. This was bounded by intervals of below detection limit and 0.14 g/t Au. Herrmann (1987) interpreted that this interval was the along strike and down dip continuation of the Mt. Victoria Lode (Figure 17).

Newnham (1992), in reviewing the work of Herrmann (1987), bulked the 6.93 g/t interval with an adjoining 12 metre interval (6m @ 0.14 and 6m @ 0.50 g/t Au) to give 18 metres at 2.5 g/t Au. Newnham (1992) noted that stringer veining of similar grades and dimensions were located in the upper levels of the New Golden Gate Mine (254,000 oz production) above the main lodes.

Considerable difficulty has been encountered correlating the surface mapping, surface features of the mine and the underground workings. Surface survey, tied into underground is required prior to any meaningful interpretation between surface and underground can be attempted.

The results of the 1994 diamond drilling program are presented by Iloff (1994b). The most significant result of the drilling program was a broad zone of mineralisation encountered in MVM1. The interval 36.4m to 42.3, although not totally sampled, probably grades around 2.0 g/t Au (includes material logged as 'reef', of 10cm at 16.6 g/t and 30cm at 6.1 g/t Au). This broad zone was presumed by Iloff (1994b) to strike sub-parallel to the Montana Lode.

During the mapping of Trench No. 1, a highly silicified mound was located in the trench (Plate 11). The mound consisted of silicified (pale green) sandstone with abundant, erratic, arsenopyrite bearing quartz veins. The veins are generally less than one centimetre in width. Sampling over the one metre exposure returned results of 0.15 g/t Au. This exposure may be the south westerly continuation of the Montana Lode, as it appears approximately along strike, although its dip is south easterly as opposed to the north westerly dip of the Montana Lode.

The No. 2 Trench was located just below two sub-parallel open stopes (Plate 12). These are separated by a distance of approximately seven metres. During field work these were described as the Montana and Mt. Victoria Lodes. However, the available literature (Blake, 1934 and mine plans) indicates a lode separation of 15-20 metres. This inconsistency has not been resolved. Further investigation of the mine workings and survey would probably solve the problem.

Within the floor of the trench, the stopes were observed to be either filled or collapsed. In the footwall of the Montana(?) Lode, up-casting air flow was observed in open jointing. Between the lodes, intense silicification and quartz veining is present within sandstone (Plate 13). Bulk sampling of the sandstone over a 3.0 and 3.3 metre interval returned results of 0.61 and 0.28 g/t Au.

During the mapping of the Mt. Victoria Escarpment, old mine workings were observed, although their relationship to either mine plans or the Montana or Mt. Victoria lodes is uncertain (Figure 2, Appendix 1). The workings consist of a drive developed upon a narrow brecciated lode (20cm at 0.110 g/t Au). Approximately six metres further north westward another drive (with associated rise) is developed on a fault. This development (and fault) can be seen to intersect the first, truncating it. This relationship could represent the Montana Lode being truncated in a similar manner to that described by Twelvetrees (1901) on the No. 3 level, some 90 metres below.

South eastward of the workings exposed in the in the Mt. Victoria escarpment a zone of intense shearing is present (3m at 0.030 g/t Au), oriented NNW, over which a reversal of the bedding's dip occurs. Adjacent to the shear, and apparently truncated by it, a fault containing 2cm of bucky quartz



PLATE 11. Intense silicification within sandstone. Continuation of Montana Lode?
Samples 4.0m to 5.5 (SRC036 to 038) metres averaged 0.15 g/t Au.
Trench No. 1



PLATE 12. Mt. Victoria Lode? open
stope above Trench No.

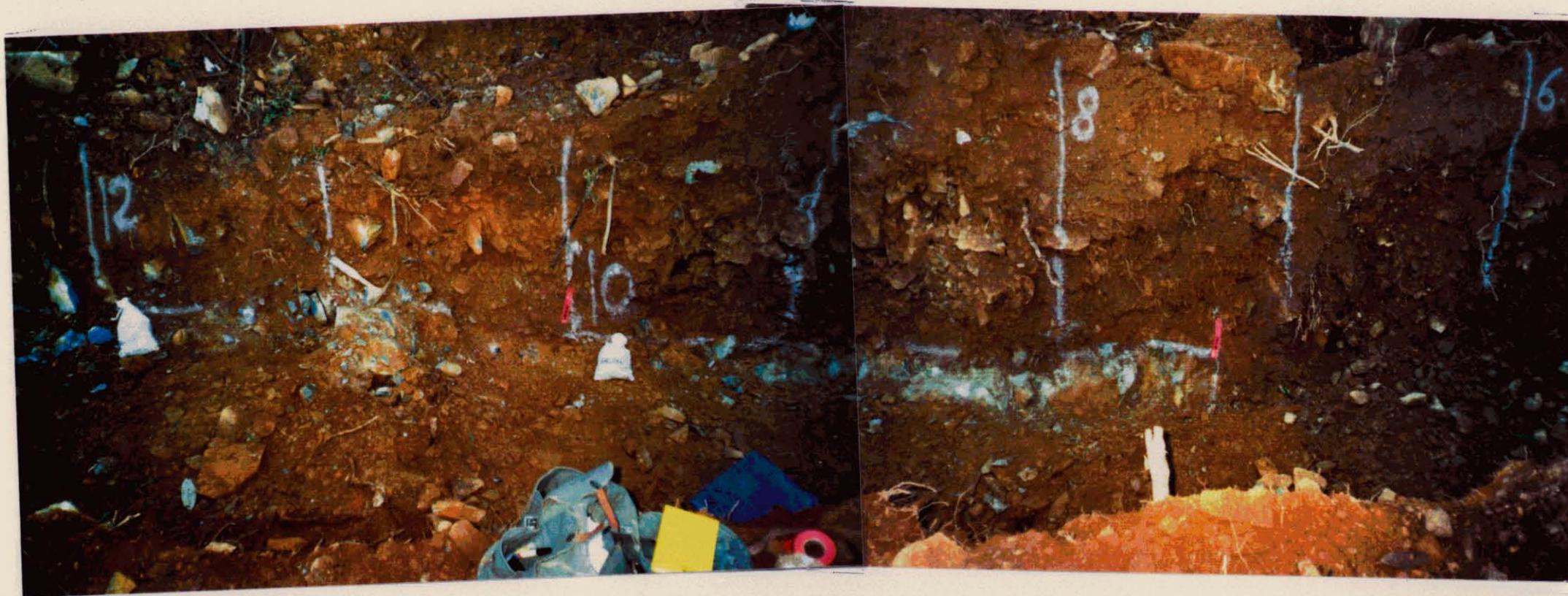


PLATE 13. Intense silicification and quartz veining between the Mt. Victoria Lode? (collapse/
fill rubble, right hand side) and the Montana Lode?.
Sampling 7.3m to 13.3m (SRC044 and 045) averaged 4.2 g/t Au.
Trench No. 2.

215040

is present. This structure is approximately along strike from the open stopes located down hill and the exposure of the Mt. Victoria Lode(?) located in Trench No. 2

Approximately 14 metres from the lode located in the old workings on the Mt. Victoria Escarpment an additional lode has been located. This lode is fault bound, 20cm in width is sub-vertical striking 255 degrees AMG. Mineralogically, the quartz is mottled with arsenopyrite giving a colour range from white to grey blue. Siliceous alteration within sandstone is intense adjacent to the lode and associated with stringer quartz veining. Sampling returned an average grade for the lode material and the stringer veining of 0.568 and 2.757 g/t Au respectively. Interestingly, the massive arsenic rich (ave. 0.598% As) lode material contains a lower gold grade than the relatively arsenic poor (0.1599% As) stringer mineralisation.

The along strike surface continuation of this mineralisation may be represented by a structure in Trench No. 2. This fault contains 3cm of iron stained quartz and 7cm of brecciated, puggy shale that grades 0.15 g/t Au.

If the strike and dip of this mineralisation is projected downward to the lower No. 4 adit level (despite very loose survey control) it could be continuous with a portion of the mineralisation encountered in MVM1. The extrapolated distance is over 100 metres and thus must be considered extremely tentative.

MINERALISATION

The general style of mineralisation in the Alberton goldfield has reviewed by Taheri (1993).

ASSAY DATA

During the trenching program and underground mapping samples of 0.25 to 1.00kg were routinely collected from potentially auriferous faults, veins and lithologies. The samples were analysed for gold by fire assay at the Westbury lab of Aquatic Labs. Selected samples were analysed for arsenic and base metals by Analabs in Burnie. Samples to check the reliability of the Aquatic Lab data were also despatched to Analabs.

From the limited data set of repeated assays of individual samples (Table 1), a complete spectrum in repeatability is apparent. The low repeatability of samples containing relatively high grades is common throughout many gold bearing provinces. This is attributed to the coarse nature of the mineralisation, and analytical techniques have been devised to overcome the problem (i.e. techniques which involve a screening process).

Although little petrological work has been conducted on the Alberton lodes, traditionally the gold has been known to be fine grain and probably associated with arsenopyrite and pyrite. Coarse grain visible gold has only been reported from buck (remobilised?) type reefs. However, it would appear the relatively coarse grained gold may also be associated with the blue/grey massive quartz type lodes also. Sample SRC027, was collected from the Scotchmans lode, the analysis of which ranged from 6.65 to 30.6 g/t Au. In a similar manner, the Long Struggle Lode in the 390 mRL workings has been sampled on numerous occasions, generally returning grades between 3-4 g/t Au. Sample URC021 returned a results ranging between 5.16 to 16.4 g/t Au. Both of these samples were of blue/grey, massive type lodes.

Of a more disturbing nature is the variation in grade that occurs at low grades. Some of the repeat analyses of these samples display over 100% variation from the initial to repeat sample (Table 1). The reason is unknown, and clearly petrological work is warranted to determine grain size and distribution.

The variation in repeatedly of assays, would have a dramatic impact in drilling operations. In a number of cases in the NE Tasmanian goldfields single drill holes have been drilled below known lodes, have intersected wide reefs but returned very poor gold grades. This result may have been due to erratic gold distribution in the lode and also in the sample taken for assay. A reappraisal of some of these results may be warranted. It is interesting to note that in all the diamond drilling conducted at Alberton (admittedly limited) only one hole has returned a wide interval at high grade (hole No. 1 from 1937), the interval of which has not been repeated in development.

The repeatability data set is not comprehensive enough to perform statistical analysis. However, it can be seen that if a result of 4 g/t is achieved from a chip sample, in reality the gold content may be as high as 16? g/t Au or conversely as low as 0.5 g/t Au. A reappraisal of analytical procedures may be warranted.

The inability to predict global grades from normally adequate sampling, impacts on exploration rational. Small lodes may well be discovered but predicting their grade will be extremely difficult without a vast sampling program. Larger lodes, however, could be sampled by bulk methods,

REPEATS AND SPLITS OF GOLD ASSAY DATA

All data from Aquatic labs unless identified with *

BDL- Below detection limit (Aquatic Lab 0.05 g/t Au, Analabs 0.008 g/t Au)

Sample Number	INITIAL Au g/t	Repeat Au g/t	LOCATION				
SRC028	0.25	0.28					Qtz. Vein Wilson Creek Traverse.
SF022	7.00	7.30					Beckers Lode
URC009	0.29	0.27					Cross Reef Sub Parallel lode, 390 mRL
URC011	1.00	0.835*	0.842				Cross Reef Sub Parallel lode, 390 mRL
URC015	0.10	0.11					Cross Reef Sub Parallel lode, 390 mRL
URC021	7.50	5.65*	5.16*	16.4*			Long Struggle Reef 390 mRL
URC027	14.50	6.65*	30.6*	6.85*	30.3*	12.6*	Scotchmans Reef
SRC041	1.03	0.641	1.38*				Montana Lode stope Remnant, above Trench No. 4
SRC044	0.61	0.169*	0.941*	0.147*			Stringer qtz. veining, Trench No. 2
SRC045	0.28	0.135*					Stringer qtz. veining, Trench No. 2
SRC052	BDL	BDL	0.241*				Qtz. vein, Top Trench Ref. point No. 2
SRC055	BDL	0.014*					Qtz. stringer veining, Top Trench Ref. point No. 2
SRC063	0.79	0.93	0.013*				Icelandic Lode Top Trench Ref. point No. 4
SRC065	1.26	0.758*	0.643*	0.571*			Icelandic Lode Top Trench Ref. point No. 4
SRC066	0.24	0.422*					Icelandic Lode Top Trench Ref. point No. 4
SRC078	0.10	BDL					Qtz. vein, Top Trench Ref point No. 6
SRC089	1.40	2.10					Twelvetrees Lode, Trench No. 4
SRC098	0.12	0.35					Bucky qtz. vein, Trench No. 6
SRC109	0.10	BDL					Bucky qtz. vein, Trench No. 7
SRC112	11.80	10.00					Martins Cross Reef, Hill Trench Ref. point No. 4
SRC113	0.25	0.14					Fault gouge, Hill Trench Ref. point No. 4
SRC116	BDL	0.07					Bucky qtz. vein, Hill Trench Ref. point No. 6
SRC117	0.06	0.05					Qtz. vein, Hill Trench Ref point No. 7
SRC118	0.06	0.09					Silicified sandstone, Hill Trench Ref. point No. 7
SRC127	0.416*	0.488*					Brecciated black shale, Mt. Vic. Escarp., Ref point No. 1
SRC119	4.1	4.8					Sulphidic qtz vein, Hill Trench Ref point No. 7
SRC129	4.23*	2.47*	1.57*				Stringer qtz veining, Mt. Vic. Escarp. Ref. point No. 1
SRC130	0.530*	0.775*	0.621*				Lode qtz., Mt. Vic. Escarp. Ref. point No. 1

TABLE 1

without depleting the resource and if favourable, mined with some degree of confidence as to the grade of the resource. Consequently, a minimum target resource should be selected bases on tonnes not grade.

From the 97 samples collected during the surface trenching operation, and some 30 samples collected various from underground workings the vast majority were of vein quartz. (Appendix 6). Very few of these samples returned a value of below detection limit, with the majority falling in the range of 0.1 to 0.4 g/t Au . Considering the veining is probably of different ages (associated with the various folding and faulting events), then gold would appear to have been mobile during all stages of deformation. However, economic concentrations of gold appear to be restricted to either events of a certain age or set of local geochemical conditions. Consequently, rock chip assay results of less than 0.4 g/t can not be considered anomalous.

A certain degree of alteration appears to be associated with mineralised lodes. From both underground and surface exposures where the lodes transect sandstone units silicification is common. In finer grain sediments, spotting (cordierite?) is common. Based on very limited data, the extent of siliceous alteration from the lodes appears to be in the order of three to four times the lode width (except in the case of stringer type mineralisation, where it is far greater). The cordierite halo appears to be in the order of ten times the lode width.

ICELANDIC, SCOTCHMANS AND BECKERS LODES

During the mapping of the Top Trench a new lode was discovered, which was probably prematurely termed Icelandic Lode (for its location NW of Scotchmans Lode and the prevailing weather conditions). In hand specimen the lode consists of dense, dark grey quartz with abundant arsenopyrite. In outcrop it is 30cm wide, with a brecciated hanging wall containing shale. The lode is clearly of fault fissure origin trending northeast and dipping steeply southeast (Plate 14). Combined assays of the hanging wall portion and footwall portion of the lode returned grades of around 1 g/t Au.

The Icelandic Lode was traced along strike by hand digging trenches approximately six meters and a further eight metres to the southwest and eight metres to the north east (Trenches 12, 13 and 14, Figure 2, Plate 15). Only in the initial trench six metres to the southwest was the lode unearthed. At this location its grade was 0.40g/t Au, its strike was similar to that in the top trench but its width has decreased to 25cm. Within the other two trenches further excavation may uncover the continuation of the mineralisation, although this is considered unlikely.

Two known mineralised lodes of similar strike and dip occur in the vicinity of the Icelandic Lode. Scotchmans Lode is located slightly up hill from the Top Trench and approximately 15 metres south westward of the Icelandic Lode (Figure 2, Appendix 2). The lode is approximately 13 metres in length, thinning to the southwest to a simple fault plane and truncated to the northeast by a major (one metre wide) shear/fault zone. A 10cm quartz vein, representing the lode material within the workings was sampled and returned a gold grade of 14.5 g/t. Ten metres along strike to the southeast of the sample site, the fault hosting the Scotchmans Lode outcrops in the Top Trench (Ref. point No. 3). At this point the lode is represented by a poorly developed fault without any associated quartz veining or brecciation. Two metres further northwest of Scotchmans Lode fault



PLATE 15. Icelandic Lode, Trench No. 12
Sample SRC133 contained 0.301 g/t Au.



PLATE 14. Icelandic Lode. Top Trench, Ref. point No. 4
Samples SRC065 and 066 average 0.86 g/t Au.

and parallel to it, is a fault containing 15cm of slightly brecciated shale with minor quartz veins (assayed at 0.08 g/t Au).

Approximately 50 metres north westward of Scotchmans Lode, Beckers Lode is located between the Top Trench and Trench No. 3. Sampling of the exposed open stope revealed 20cm of highly sulphidic quartz lode material (7.0 g/t Au), trending and dipping sub-parallel to the Scotchmans and Icelandic Lodes. In neither the Top Trench nor the No. 3 Trench is there a structure that may be extrapolated along strike to join the Beckers Lode fault. Consequently, the lode has a maximum strike length of 20 metres. Hills (1923) reported a strike length of 12 metres, widths of 30 to 45cm and grades of 43 g/t Au.

There would appear to be a series of limited strike length lodes, containing erratic gold grades in close proximity to the interpreted anticlinal hinge line. The lodes are oriented almost normal to the hinge line and probably represent local tensional openings associated with folding. Their corresponding prospectivity is low.

MARRS REEF

The Marris Reef adit is located approximately 40 metres from the main Alberton road, at an altitude of approximately 350 mRL (Figure 2). It consequently represents one of the most easily accessible reefs in the area. Although little historical data exists concerning the lode, and recent sampling (Appendix 2) revealed low gold grades, the size of the structure upon which it is developed is significant.

The reef is oriented north-westerly with a moderate south-westerly dip. In the adit level, the reef consists of a highly sheared cataclasite developed within shale and siltstone. The structure hosting this is 1.5 to 2 metres in width. Sampling of quartz veining from within the cataclasite returned 0.1 g/t Au over 10cm.

The workings above the adit level consist of a shaft with drives (Blake, 1934). These have not been inspected.

Approximately 200 metres along strike (southward), within the Mt. Victoria No. 4 adit, Twelvetrees (1901) reports the Marris reef as crossing the development as a large rubblely fault. Initial inspection of the location confirmed Twelvetrees description. Sampling has not been undertaken.

The presence of such a extensive structure, although not displaying high gold grades, is unusual in the area. Other similarly extensive structures with a north-westerly orientation include the Point Reef and the line represented by the Caxton No. 2, New Wilson, Wilson and possibly the Mercury No. 2 reef (Figure 17). The Point Reef has been traced for over 400 metres. Workings are confined to 58 metres of strike length and limited production of grades ranging from 16 g/t (Twelvetrees, 1904), to the recent sampling of Herrmann (1987) of 23.3 g/t Au over 7cm.

The line of lodes commencing in the south with the Caxton No. 2 Reef until some 600 metres north westward would appear to be a major structural feature. The surface stopes of the Caxton No. 2 Reef are very impressive, with an exposed strike length of 100 metres and widths of 1 to 2 metres. Sampling of remnant lode material within the reef at surface returned grades of 1.0 g/t. Little historical data is available on the reef.

Some 40 metres to the northwest the Wilson Lode occurs. No historical information is available and the adit has not been located in the field.

A further 90 metres Northwest the New Wilson Lode occurs. This lode was reportedly 61 metres long and 40cm to 60cm wide. Hills (1923), described the lode as being very pronounced and had been stoped over a vertical distance of 46 metres. Gold grades are not known.

The Mercury No. 2 Reef, (which combined with the sub-parallel No. 1 produced approximately 46kg of gold grading 28 g/t, Taheri, 1993) is a approximately 350 metres along strike from the New Wilson Reef.

This consistent line of lodes is unusual, and would appear worthy of further investigation.

MARTINS CROSS REEF

A small cross reef, sub-parallel to the Cross Reef was described by Twelvetrees (1904). Grades were not quoted although it was stated to be 5"-6" wide. This reef was located in Hill Trench Ref. point No. 4 (Figure 2, Appendix 1) in the vicinity of old workings. The reef consists of typical grey quartz containing arsenopyrite and pyrite in a laminated habit. The reef is clearly fault hosted, striking northeast and dipping steeply southeast, is 5cm wide and returned an assay result of 10.9 g/t Au.

WALLY'S REEF

Wally's Reef was located by Herrmann (1987) in the adit of the Long Struggle Mine. The reef was described as being a 0.65 metre wide shear zone assaying 26.08 g/t Au and trending NNE. Since Herrmann's (1987) location of the reef, it has been partially extracted for a depth of 1.5 metres. The existing exposure of the lode is 30 cm wide and assays 0.16 g/t Au (G. Iliff pers. comm.). No indication of a shear zone hosted reef was found in the mapping of the lower portion of hill trench. The only evidence of mineralisation was in Hill Trench, Ref. point No. 8, where a fault sub-parallel to bedding contained 2cm of quartz filling grading 1.01 g/t Au. If the strikes and dips of each location are extrapolated it is possible that the trench fault is the continuation of Wally's reef.

WILSON CREEK VEINING

During the mapping of Wilson Creek an array of quartz veining was located in a escarpment just below a large waterfall (Figure 2). The veins are dipping at 85 degrees eastward and strike north-south. The veins occur over a 3 metre interval within black siltstone. The sampling of 40cm of which returned 5.0 g/t Au (approx. 70% qtz and 30% siltstone).

TIMING OF MINERALISED EVENTS

Although there is little definitive data available regarding the timing of mineralising events some speculation can be performed relating to style, mode of occurrence and geometry.

Three styles of fault fissure lode are apparent with an additional strataform style. There does not appear to be a discreet feeder system to any of the lodes. Data of Bottrill et al., (1993), based on isotopic evidence suggests that the gold bearing quartz veins were derived from metamorphic fluids.

A speculative generic association of mineralisation and tectonic events may take the form of:

1) Gentle open folding about northwest oriented axes. Where the hinge lines cross relatively massive sandstones tensional fissures form oriented northwest. These are infilled with auriferous quartz if permeable pathways to fluid sources are present. These are generally limited in strike extent and depth (i.e. Scotchmans, Icelandic etc.) . The mineralisation may locally be very high grade but erratic (i.e. Rich Youth, Ragged Youth style).

2) Coeval with or following 1), the formation of parasitic folds on the eastern limbs of major anticlines. Limited limb thrusting allowing the deposition of auriferous fluids in association with bedded graphitic slates.

3) A significant rotation in regional strain orientations and the onset of brittle deformation resulting in auriferous bearing major north-easterly faults (Cross Reef etc.). This may be coincident with the megga kinking event of Goscomb and Findlay (1989).

4) Alternatively to 3). the rotation of strain resulted in the north-easterly faults and north-westerly faults as transcurrent faults and dextral jogs in a manner of the model of Taheri (1993). The transcurrent faults are represented by the Marrs, Claxton-New Reef lodes and the jogs by the Cross Reef style of structure.

5) Post mineralised faulting (carrying minor remobilised Au?) directed in a east-west orientation.

CONCLUSIONS AND RECOMMENDATIONS

Mineralisation in the Alberton field is closely related to the folding and faulting events associated with two major tectonic events. Early stratabound and tensional faulting resulted in erratically mineralised, limited strike extent lodes. Later cross faulting resulted in extensive faults, with proven potential to host lodes of significant size.

Undiscovered small lodes containing erratic gold mineralisation undoubtedly exist in the area, their location may be determined by extensive trenching and drilling. However, considering the steep topography and the probable erratic gold mineralisation the economics of exploring for such lodes are in doubt.

Targets based on a minimum tonnage criteria (5-10,000 tonnes?, Montana Lode type target) are recommended. Such targets would probably be of a fault/fissure type origin requiring a fault of significant dimensions (minimum widths of one metre?) and 100's of metres strike length.

Long Struggle Area

The Long Struggle and Caxton No. 1 reefs probably become semi-stratabound below the 390 mRL level workings. At this point they may become well mineralised again. However, the intersection in LSM1, 60 metres to the south does not appear to indicate that they are significant. Drilling from the 390 mRL workings could determine their down dip extension. Low priority is placed upon this work.

The un-named westerly dipping fault fissure reef contains very erratic grade distribution. Up dip from the 390 mRL the grade may improve, although if it was significant previous mining would have followed it downward. Sampling in Wilson Creek of it's possible continuation is recommended, along with surface mapping at its projected outcrop position.

Detailed re-sampling of the 5 g/t Au quartz veining in Wilson Creek is highly recommended.

The Cross Reef has been at least partially mined to within 18 metres of the backs of the lower adit. It appears that it has split into a series of sub-parallel faults, all of which are slightly auriferous. These may develop again at depth. Drilling, assigned a low priority, would determine the depth continuation.

Twelvetrees' Reef

The along strike continuation of the reef should be tested during the rehabilitation of the trenches. If the grade is seen to improve along strike a shallow drill hole from surface may be warranted. Current indications are that it is a low grade, narrow bedding sub-parallel lode with limited strike extent. The proximity of it and it's similar style to Long Struggle Lode could indicate a potential for improved grades and widths between the 90 metres of existing exposures.

The possibility that Twelvetrees' Reef is located, in some form, in the easterly cross cut in the Long Struggle workings should be investigated by detailed wall sampling.

Isolated Reefs

The probable limited strike extent and low grades of the Icelandic Lode style of mineralisation indicate expenditure is warranted on this style of lode. Re-sampling of current exposures could be undertaken to determine grade variations.

Martins Cross Reef.

In a similar manner to Twelvetrees Reef the along strike continuation of the lode should be sought during rehabilitation work.

Wally's Reef

Additional sampling of its current exposure in the Long Struggle workings is warranted.

Mt. Victoria Area

Comparatively little work has been undertaken in this area to date. The stringer mineralisation (6 metres at 6.9 g/t , Herrmann, 1987) located in the No. 3 adit should be resampled at a closer spacing and the orientation of the vein systems determined. The No. 3 adit is currently blocked. It would require 2-3 hours of manual digging to clear it.

The No. 4 adit should be comprehensively mapped and sampled. Features to take particular note of would be the significant fault hosting the Marrs Reef mineralisation, the potential for the stringer mineralisation of the No. 3 adit continuing downward and a structural analysis and sampling program of the exposed lodes.

The upper adits of the Mt. Victoria mine should be located and the sampling of Herrmann (1987), repeated in the light of erratic gold distribution in previous sampling programs.

Some form of survey control is needed in the area. This must be completed prior to any proposed drilling (e.g. depth continuation of stringer mineralisation).

Regional Targets

Large, strike extensive faults are known to exist in the Caxton No. 2 to New Wilson Lode line and the Marrs Reef area. Little historical information is available on the grade of mineralisation in these structures. It is probable that it is less than the average for the field, and hence did not receive the attention that some of the higher grade lodes did.

Both the major fault lines require investigation by the mapping and sampling of old workings. The eastern most fault (Caxton No. 2 etc.) is very inaccessible, while the Marrs Reef line is relatively close to formed tracks. The access will determine the type of further work undertaken.

PROPOSED WORK PROGRAM

It is proposed that a geologist and a field assistant spend approximately two to three weeks in the field conducting the following:

- 1) Access the No. 3 Mt. Victoria Adit, map and sample.
- 2) Map and sample the No. 4 Mt. Victoria Adit and reef exposures.
- 3) Re-sample and attempt to trace along strike the Wilson Creek veining.
- 4) Sample the walls of the eastern drive in the Long Struggle Mine in an attempt to locate the Twelvetrees' Reef.
- 5) Re-sample Wally's Reef intersection in the Long Struggle adit.
- 6) The Wilson and New Wilson Reefs be located, the workings mapped and sampled.
- 7) The north-westerly continuation of the Caxton No. 2 lode traced down hill toward the creek.
- 8) The surface workings of the Marrs Reef examined, mapped and sampled if possible (shaft access).

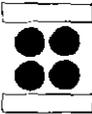
Following the work program, an assessment will be made as to the viability of further trenching programs. Drilling may be warranted in the Mt. Victoria Mine, dependent upon sampling results.

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APPENDIX 1

Mapping sheets from trenching program.



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A.C.N. 056 204 267

215055

P.O. Box 240
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TENEMENT
6M/95

MAPPING SHEET

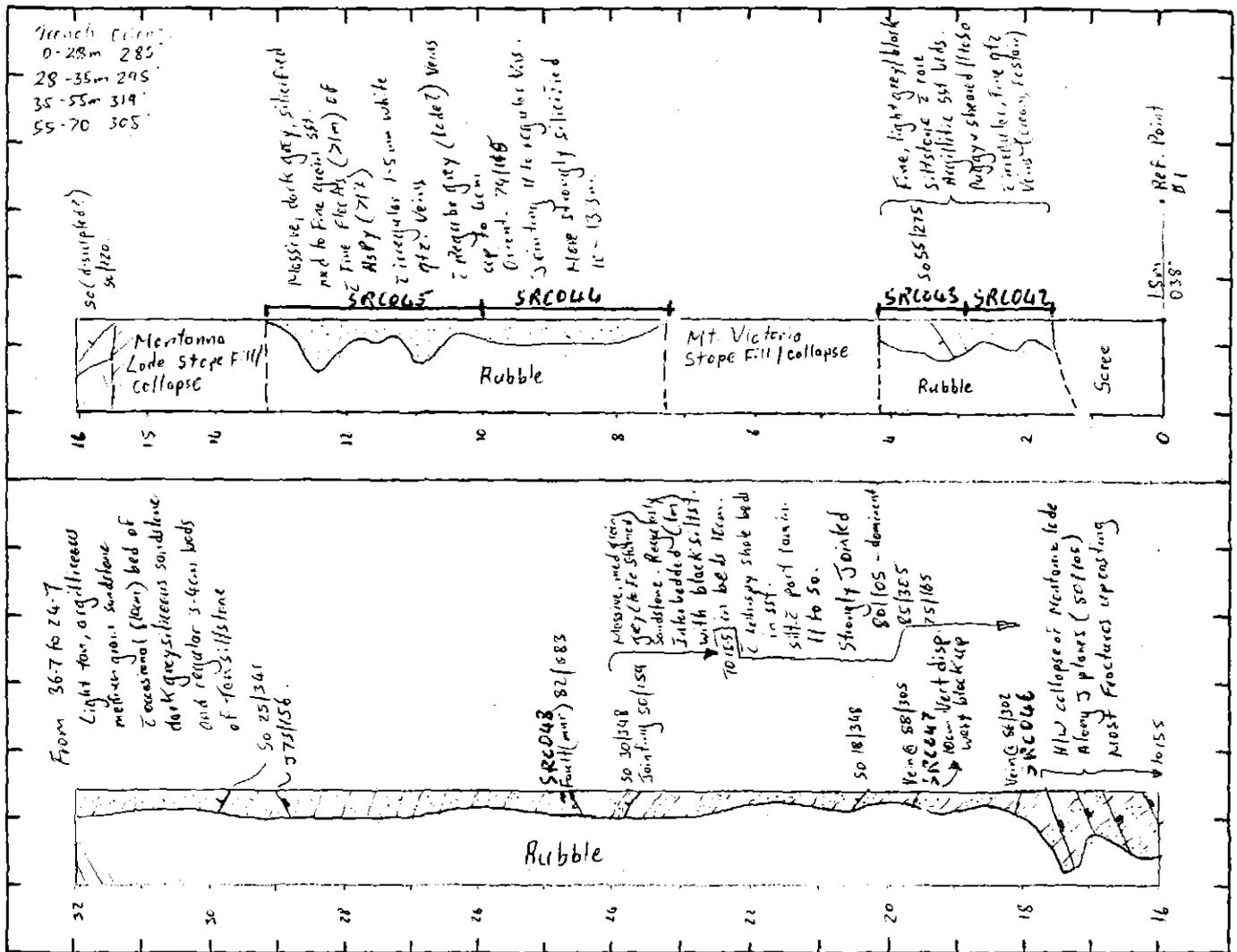
GEOLOGIST
TEP

SCALE 1:100

DATE 19/6/95

PAGE 1 of 3

LOCATION Trench #2 Mt. Victoria Area



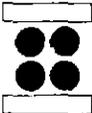
SAMPLING

5 cm

ASSAY BY Aquatic Labs

ASSAY DATE 12/6/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SRCD42	2.0	2.8	0.13		
D43	2.8	4.2	0.11		
D44	7.3	10.0	0.61		
D45	10.0	13.3	0.28		
D46	18.0	18.0	0.10		
D47	19.5	19.5	0.15		
D48	24.7	24.8	0.08		



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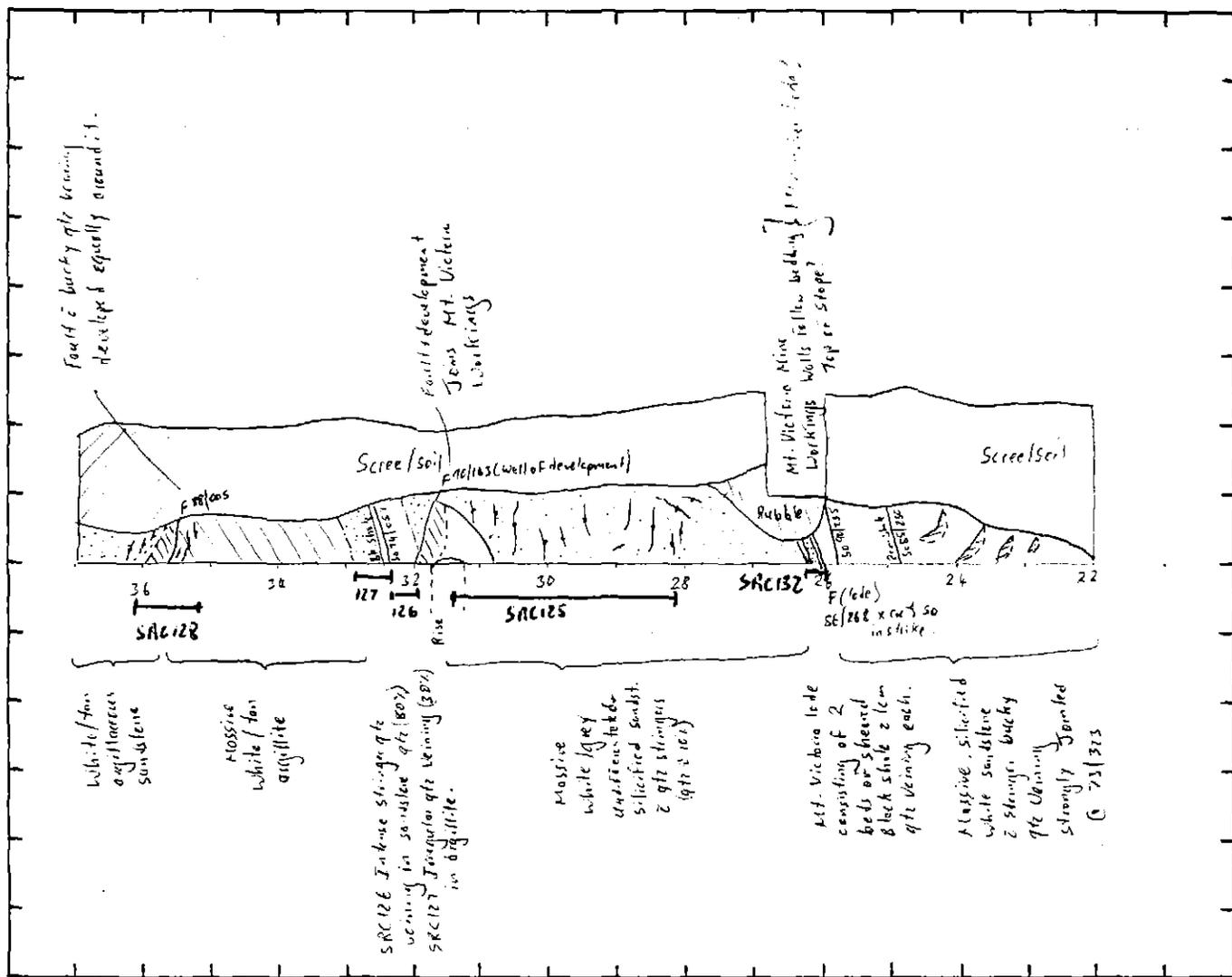
TENEMENT
6M/95

MAPPING SHEET

GEOLOGIST
TCT

SCALE 1:100 DATE 18/7/95 PAGE 2 of 3

LOCATION Mt Victoria Escarpment - Ref Point E1

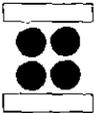


SAMPLING

ASSAY BY Anolabs

ASSAY DATE 18/8/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SAC125	28.2	31.3	0.232		0.2745
126	31.8	32.4	0.370		0.0962
127	32.4	33.0	0.416		0.2390
128	35.1	36.1	0.299		0.2566
132	26.0	26.2	0.110		0.0692



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TENEMENT
6M195

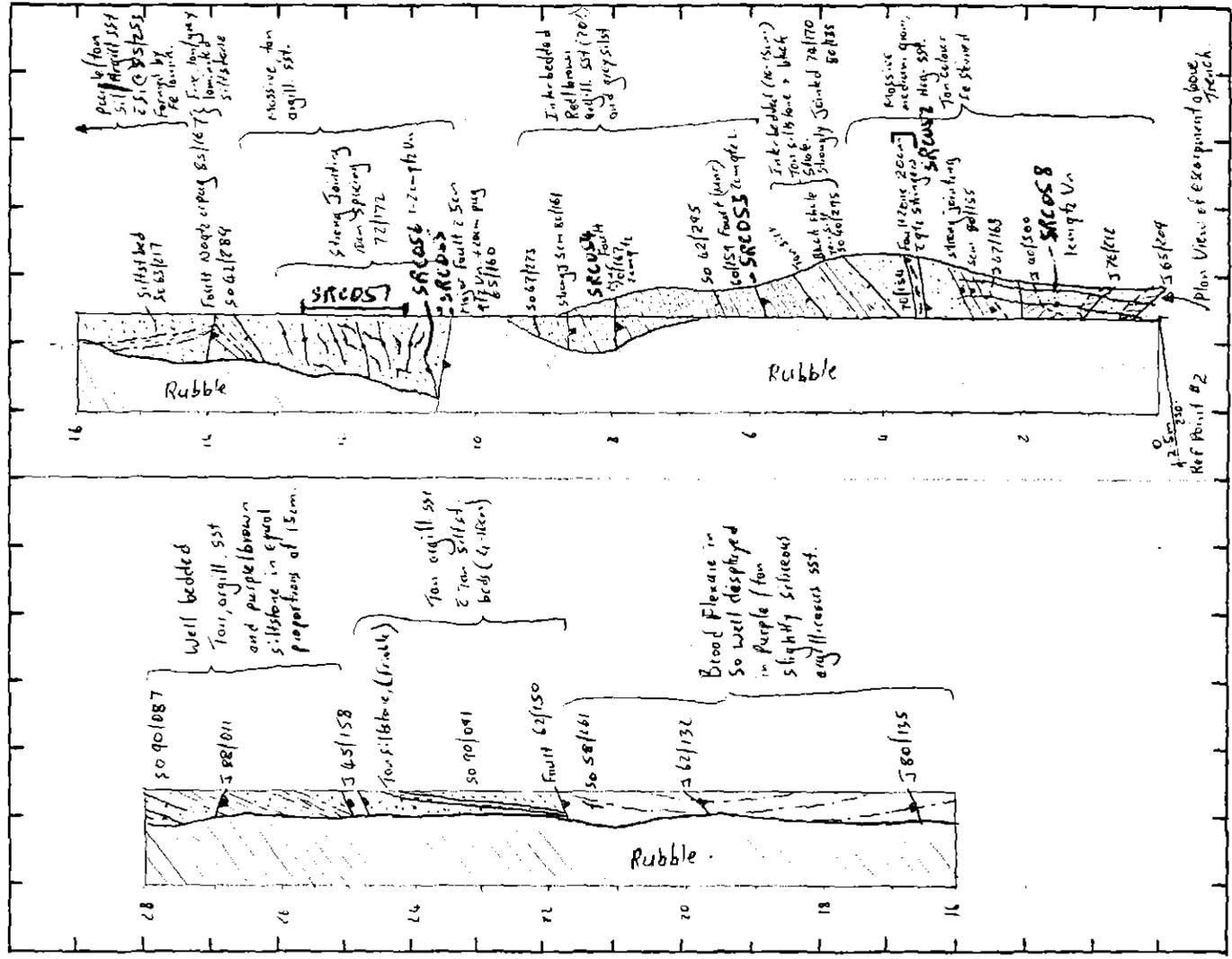
MAPPING SHEET

GEOLOGIST
TEA

SCALE 1:100 DATE 22/6/95 PAGE 1 of 1

LOCATION Top Trench - Mt. Vic. Mine to Long Struggle Mine

End of Trench
28 m 227



SAMPLING

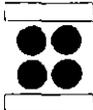
5 cm

ASSAY BY Aquatic Labs

ASSAY DATE 12/6/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SRCD52	3.4	3.6	0.03		
053	5.7	5.7	0.03		
054	8.0	8.0	0.08		
055	10.5	10.5	0.03		
056	10.8	10.8	0.06		
057	11.1	12.6	0.03		
058	0.4	2.1	0.05		

* 1.5 cm width



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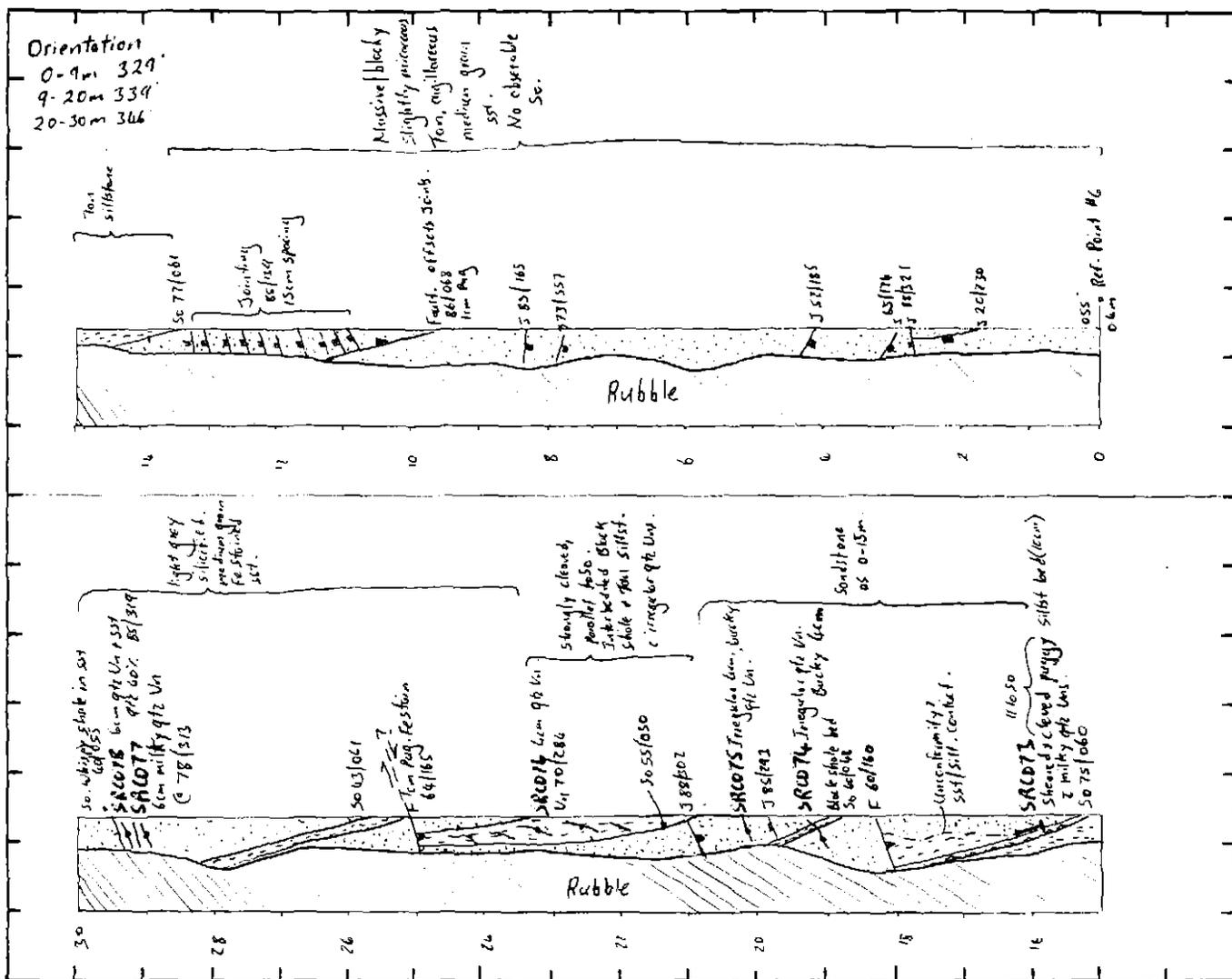
TENEMENT
6M195

MAPPING SHEET

GEOLOGIST
TEA

SCALE 1:100 DATE 26/6/95 PAGE 1 of 1

LOCATION Top Travers. Ref. Point #6



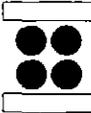
SAMPLING

5 cm

ASSAY BY Aquatic lab

ASSAY DATE 24/7/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SR073	15.1	16.3	1.6		
074	19.2	19.2	0.10		
075	20.1	20.1	0.23		
076	21.0	21.0	0.50		
077	28.5	28.6	0.15		
078	28.8	29.0	0.10		
SUM					



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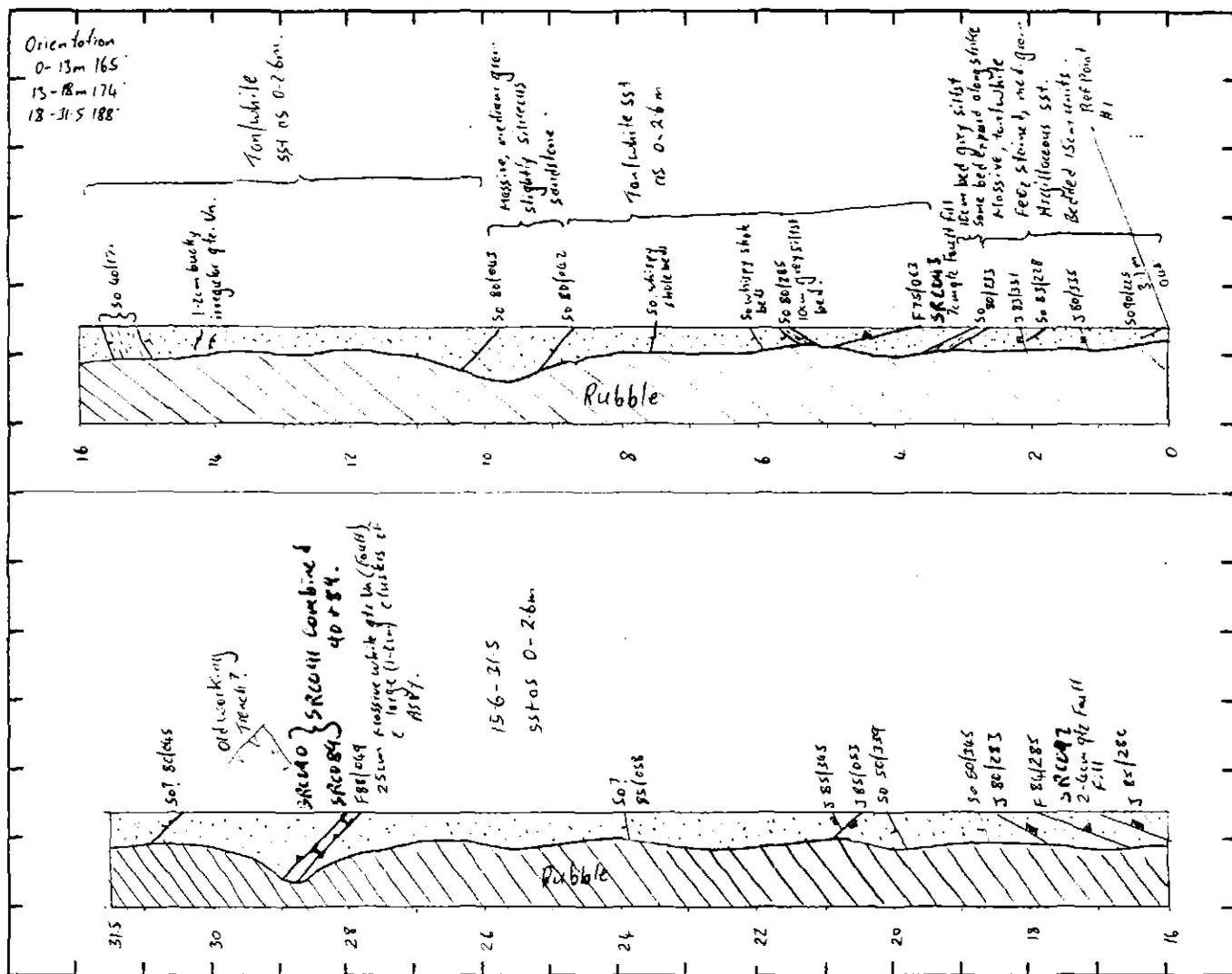
TENEMENT
6M/195

MAPPING SHEET

GEOLOGIST
TEA

SCALE 1:100 DATE 29/6/95 PAGE 1 of 1

LOCATION Trench #4 Ref Point #1



SAMPLING

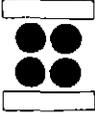
5 cm

ASSAY BY Aquatic Lab.

ASSAY DATE 30/7/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SRC089	28.3	28.5	1.75		
090	28.3	28.5	1.7		Along strike.
091	28.3	28.5	0.88		Combined.
092	17.7	17.7	0.22		
093	3.5	3.5	0.06		
SUM					

7cm



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6M/95

MAPPING SHEET

GEOLOGIST

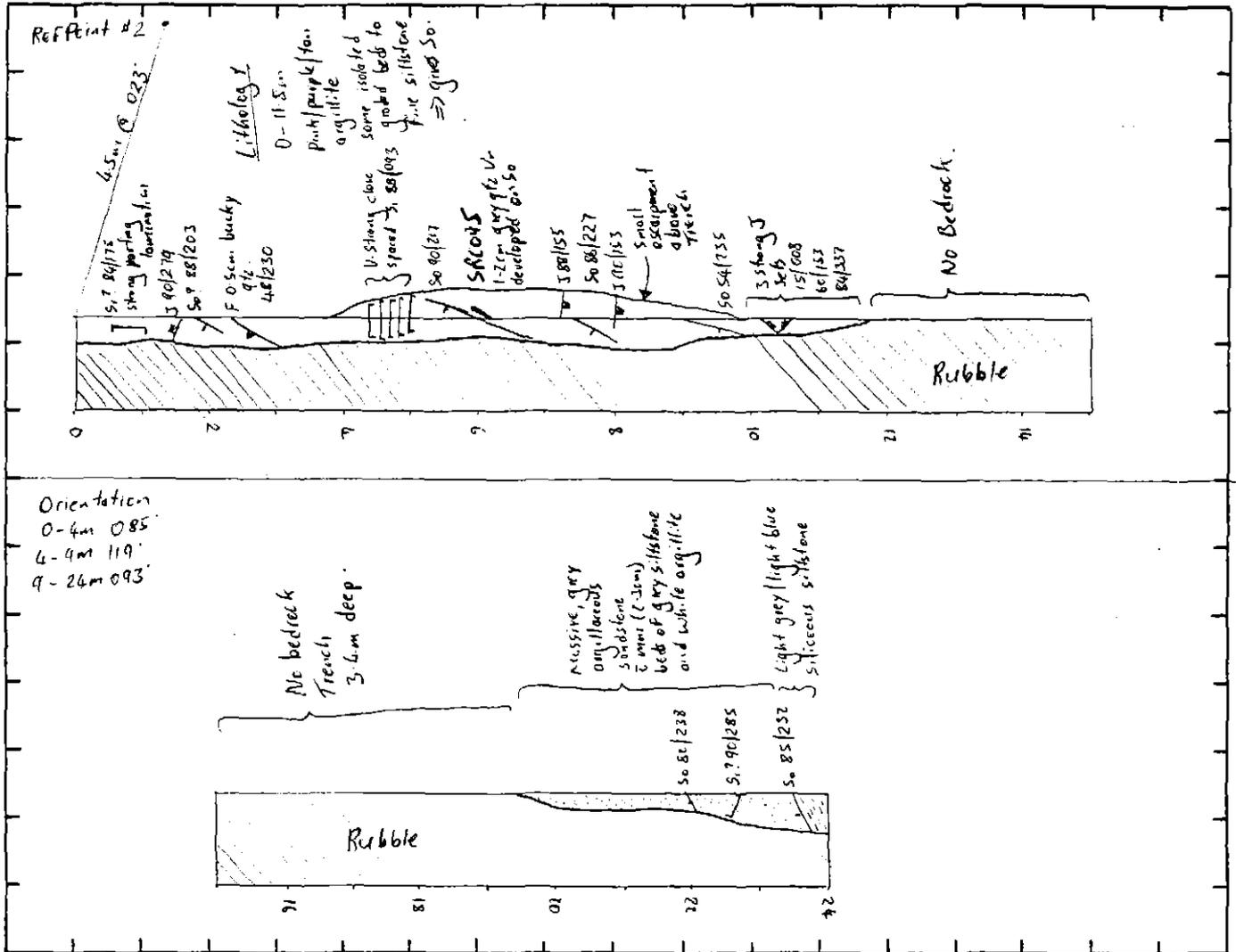
TEA

SCALE 1/100

DATE 2/7/95

PAGE 1 of 1

LOCATION Hill Trench Ref Point # 2



Orientation
0-4m 085°
4-9m 119°
9-24m 093°

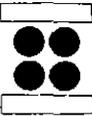
SAMPLING

5 cm

ASSAY BY Aquatic Lab.

ASSAY DATE 30/7/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SRC095	7.4	7.4	0.56		
SIIM					



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TENEMENT
6/1/95

MAPPING SHEET

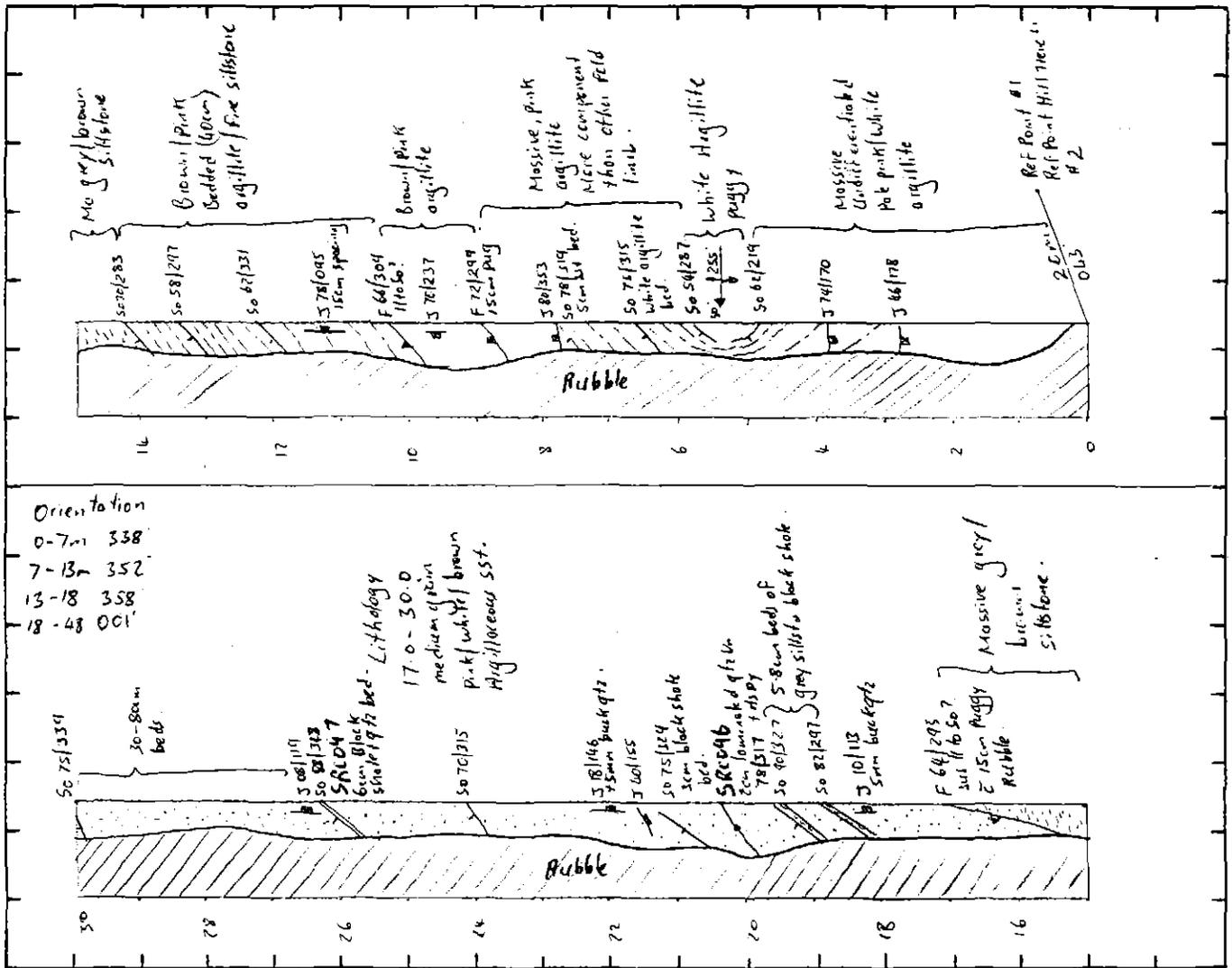
GEOLOGIST
TENT

SCALE 1:100

DATE 5/7/95

PAGE 1 OF 2

LOCATION Trench #6. Ref Point #1



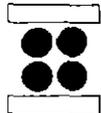
SAMPLING

5 cm

ASSAY BY Aquatic Lab

ASSAY DATE 30/7/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SR046	20.5	20.5	0.58		
047	26.0	26.0	0.55		
SUM					



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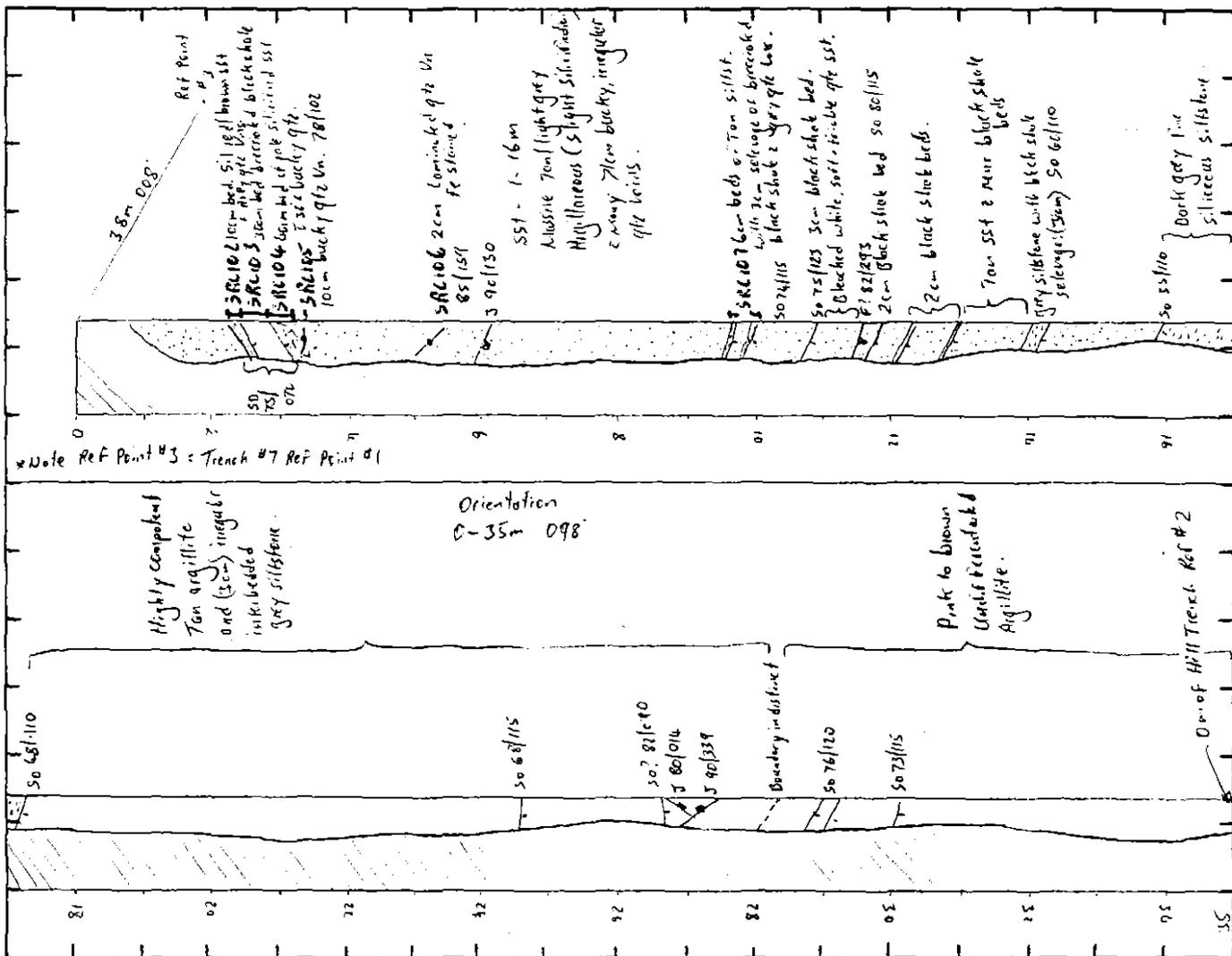
TENEMENT
6M/95

MAPPING SHEET

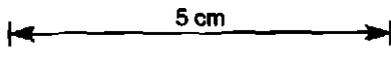
GEOLOGIST
TEA

SCALE 1:100 DATE 7/7/95 PAGE 1 of 1

LOCATION Hill Trench Ref point #3



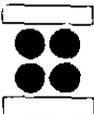
SAMPLING



ASSAY BY Aquatic Lab

ASSAY DATE

Sample No.	From	To	Au g/t	Ag g/t	As %
SRC 102	25	26	0.23		
103	26	28	0.27		
104	28	31	1.2		
105	31	32	0.04		
106	50	50	0.04		
107	98	98	0.15		
SIIM					



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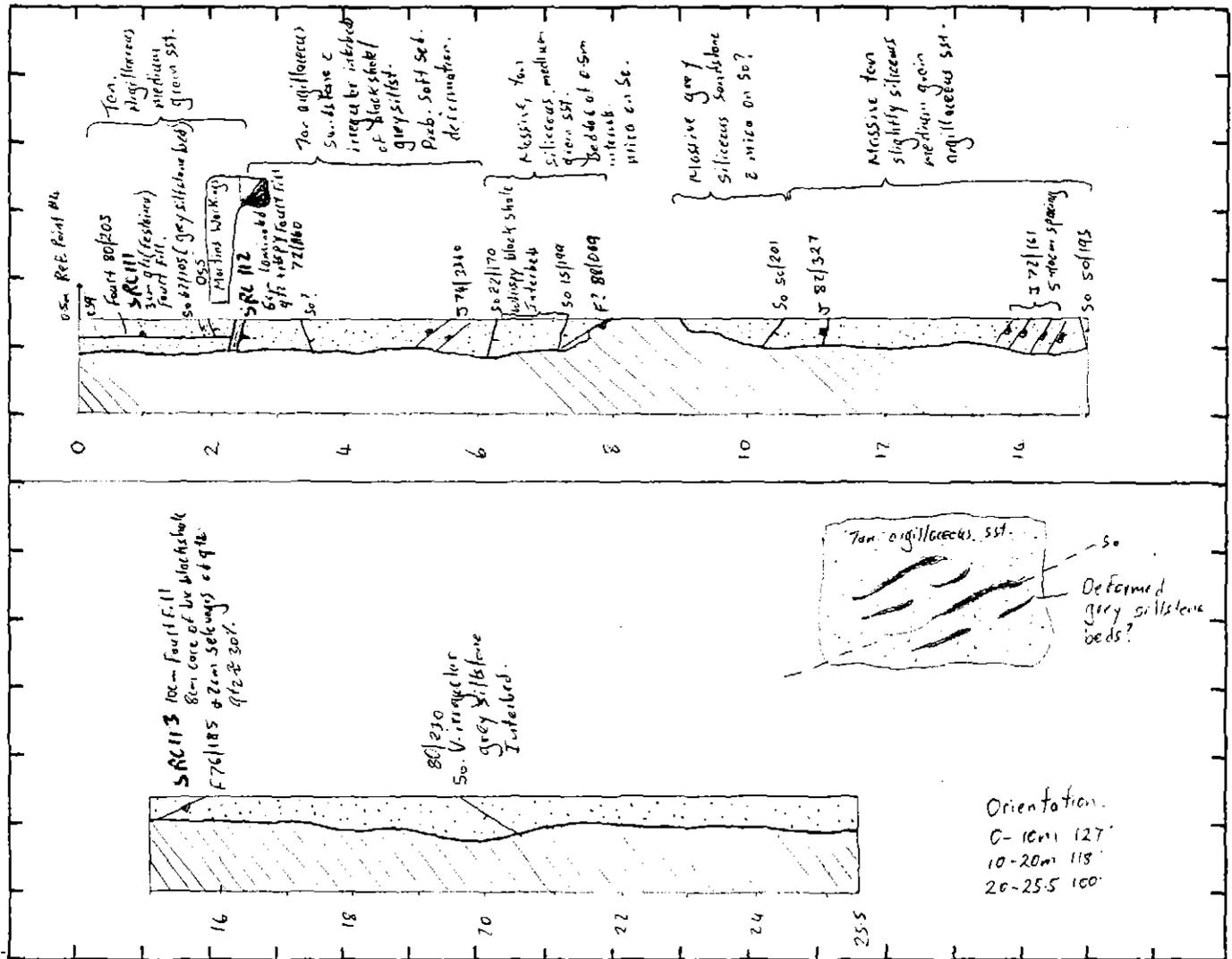
TENEMENT
6M/95

MAPPING SHEET

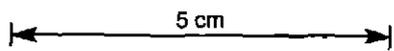
GEOLOGIST
TET

SCALE 1:100 DATE 10/7/95 PAGE 1 of 1

LOCATION Hill Trench Ref Point #4



SAMPLING



ASSAY BY Aquatic Lab.

ASSAY DATE 30/7/95

Sample No.	From	To	Au g/t	Ag g/t	As %
SRC 111	0.5	0.5	0.07		
112	2.4	2.4	10.9		
113	15.8	15.8	0.20		
SUM					

APPENDIX 2

Mapping sheets from minor adits.

Claxton #2 Lode

3m below Claxton lode crossing of Wilson Creek (southerly tributary)

Interbedded sst (50cm beds) & silt (30cm beds)

- Regular interbeds

Striking $\approx 320^\circ$ & dip 40° to NE.

Adit Flagged as "Claxton #2 Lode Adit"

Lode extends ~ South as open slopes for $\approx 60m$ from creek

• " " " " " " " " $\approx 50m$ " " " " " " " "

Flagged Adit appears to have been put in later: as floor of northerly open slope extends across creek, below the Adit level!

: Possible lower Adit, below Flagged one, which surface slopes extended too.

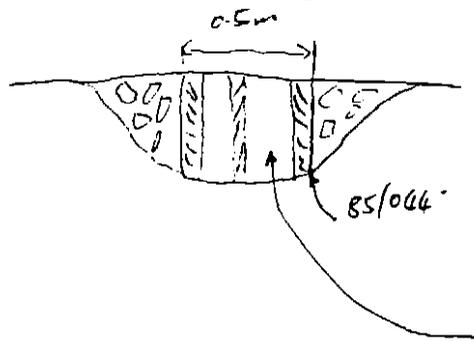
: Adit terminates in stringer like Qtz veins - Ref. Herрман

Claxton #2 Lode

Lode c/c between open slopes at 16-21m on Traverse

215091

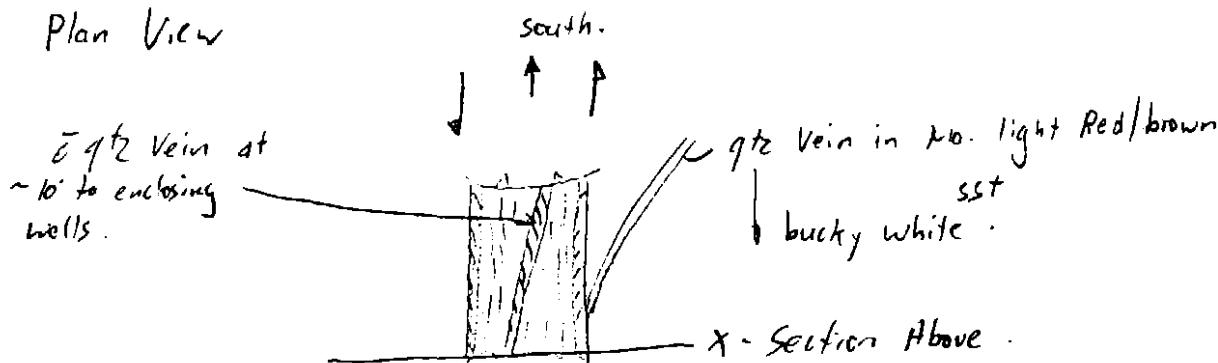
X-Section of Lode Looking S.E



Reef Type Qtz
 - Grey, massive \bar{c} Py? + As Py (Fine)
 Total width 12cm
 (6cm per vein)
 SRC031 1.0 g/t.

Gangue Fine, micaceous brown
 siltstone H500Z
~~SRC~~ SRC032 0.18 g/t.
 - Appears Hornfelsed

Plan View



* Gangue Material appears to be a hornfels? equivalent of surrounding lithologies

At Portal:

Bagged ore: SRC033 1-2 g/t.

Bedding angle increases as approach lode/Fault

From 38/056 At 3m West of Lode

70 58/061 at 0.5m West of Lode

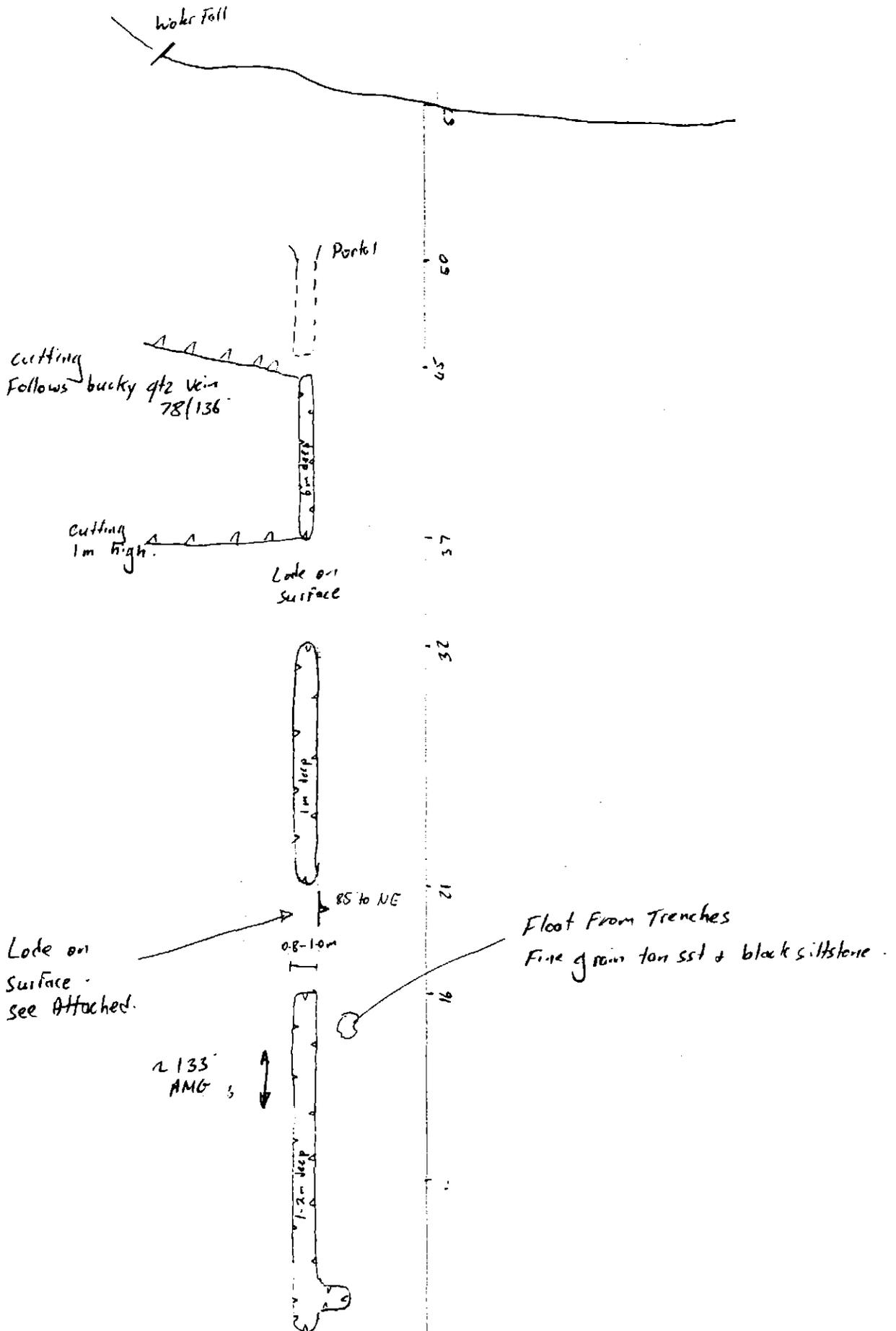
-> Drag West Up Sense of movement

-> Total Movement Western block South & Up

Cloxtan #2 Lode Southeastly open slopes

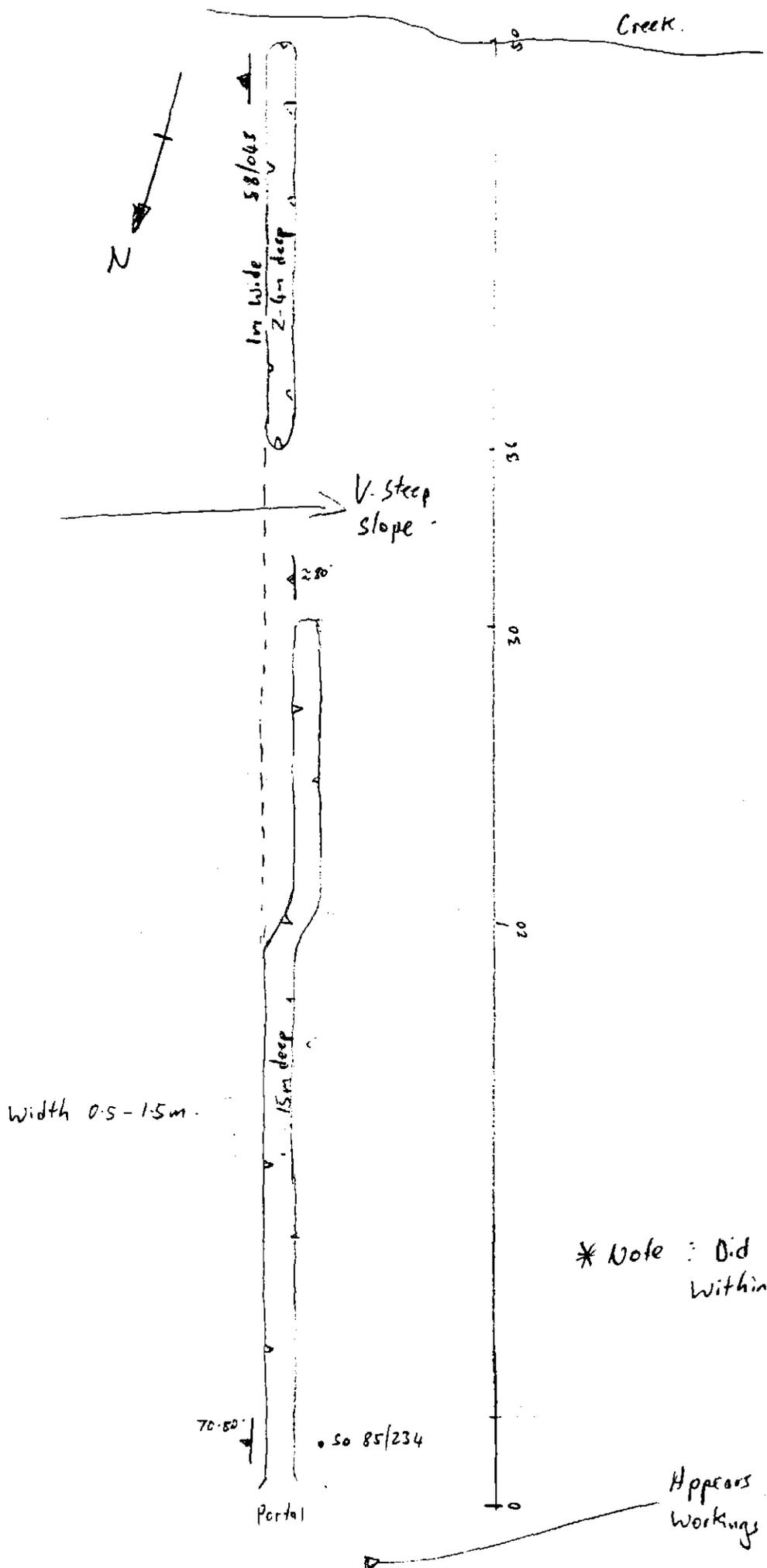
31/5/95

215002



Northern Extension of Claxton Open Stope.

215093

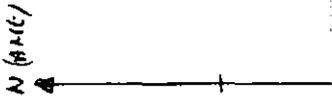


* Note : Did not inspect workings within stope.

Appears to be no lower workings than this Portal.

so 85/234

5 cm



Scale 1:200

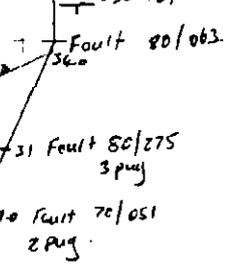
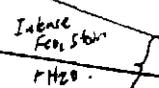
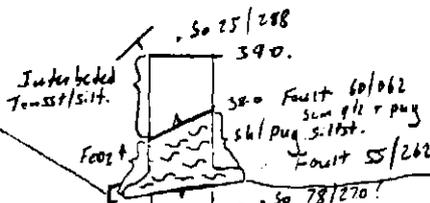
270'

URCO33 0.10 g/t Au
10cm qtz Vn

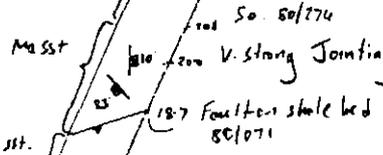
URCO32 0.08 g/t Au
10cm qtz Vn

URCO31 0.13 g/t Au
15cm qtz vein on fault

URCO30 0.13 g/t Au
1.1m of qtz stringers in Black Shale



Dominantly Shale. minor SST.

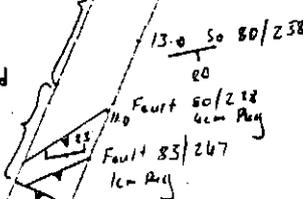


10/194 - Forms back (Major)
83/319 - Minor

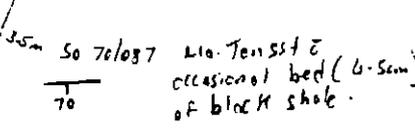
Min. Ten SST & occasional sheared (11 to 50) Black shale beds

Between NW trend Faults. Zone of strongly Cleared siltstone + black shale. S. 83/020

Ave. Width 16m
height 1.9m



Fault 87/295
2.0m qtz (minor sulphides) - URCO24 - 0.36 g/t.
+ 5cm Pug



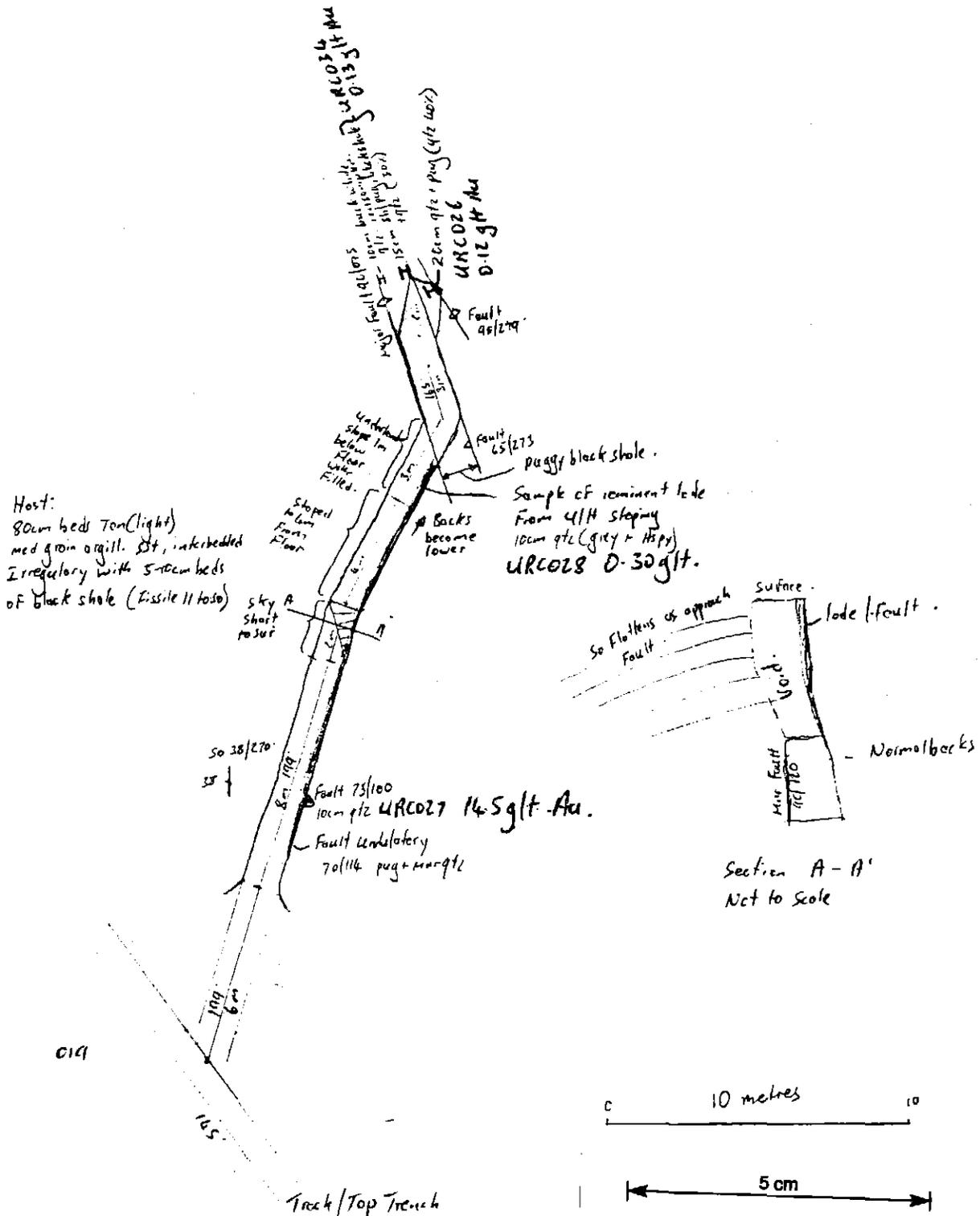
Partial Partially Blocked.

Steep slope \approx 1:6

Scotchmans Reef 12/6/95
 H² Point CHA on Top of + compass traverse

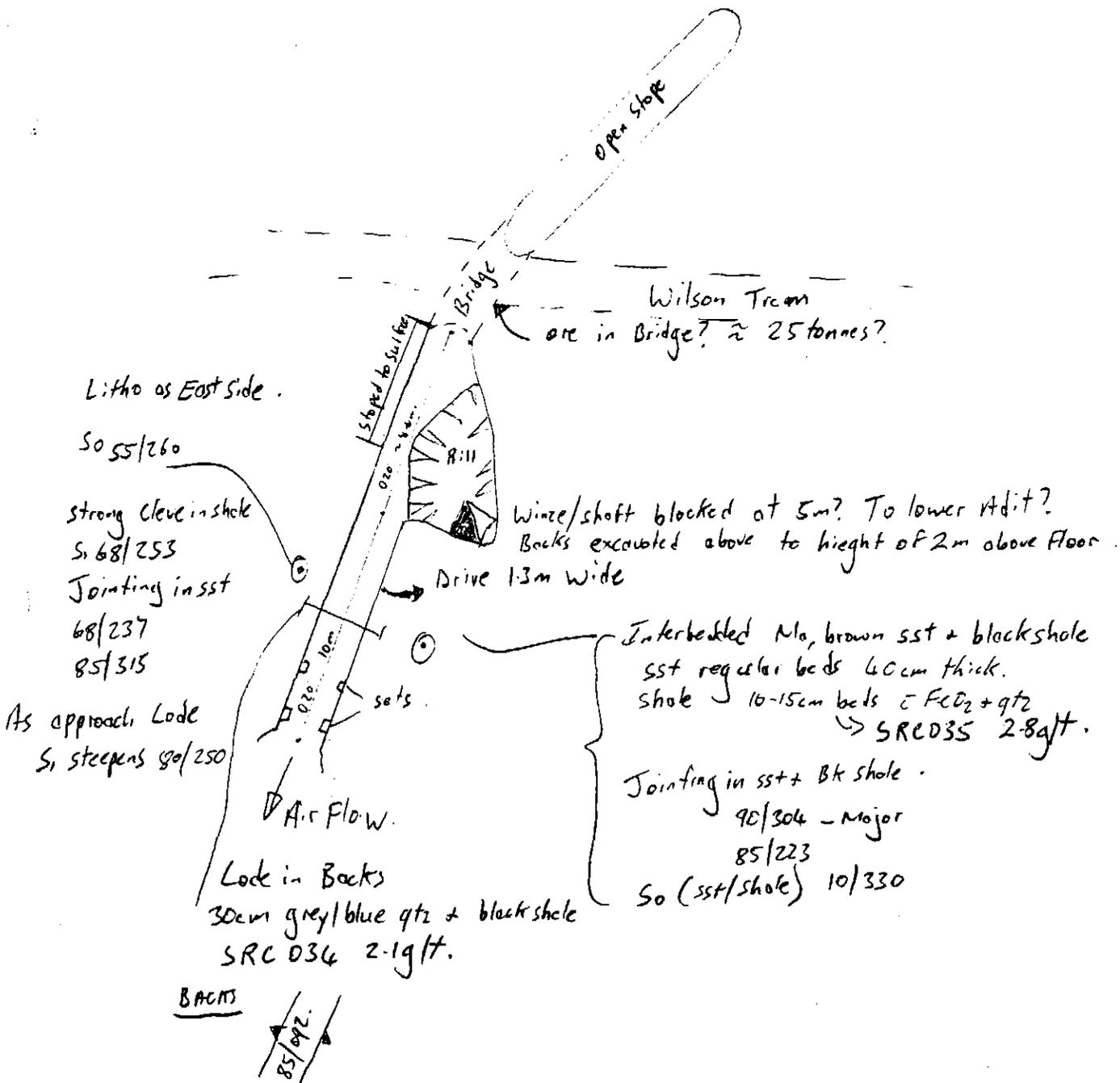
215095

A dit V recently entered, evidence from cut forms at portal.
 Timbers appearing in good condⁿ.



Ragged Youth Clipper Adit. 31/5/95

215006



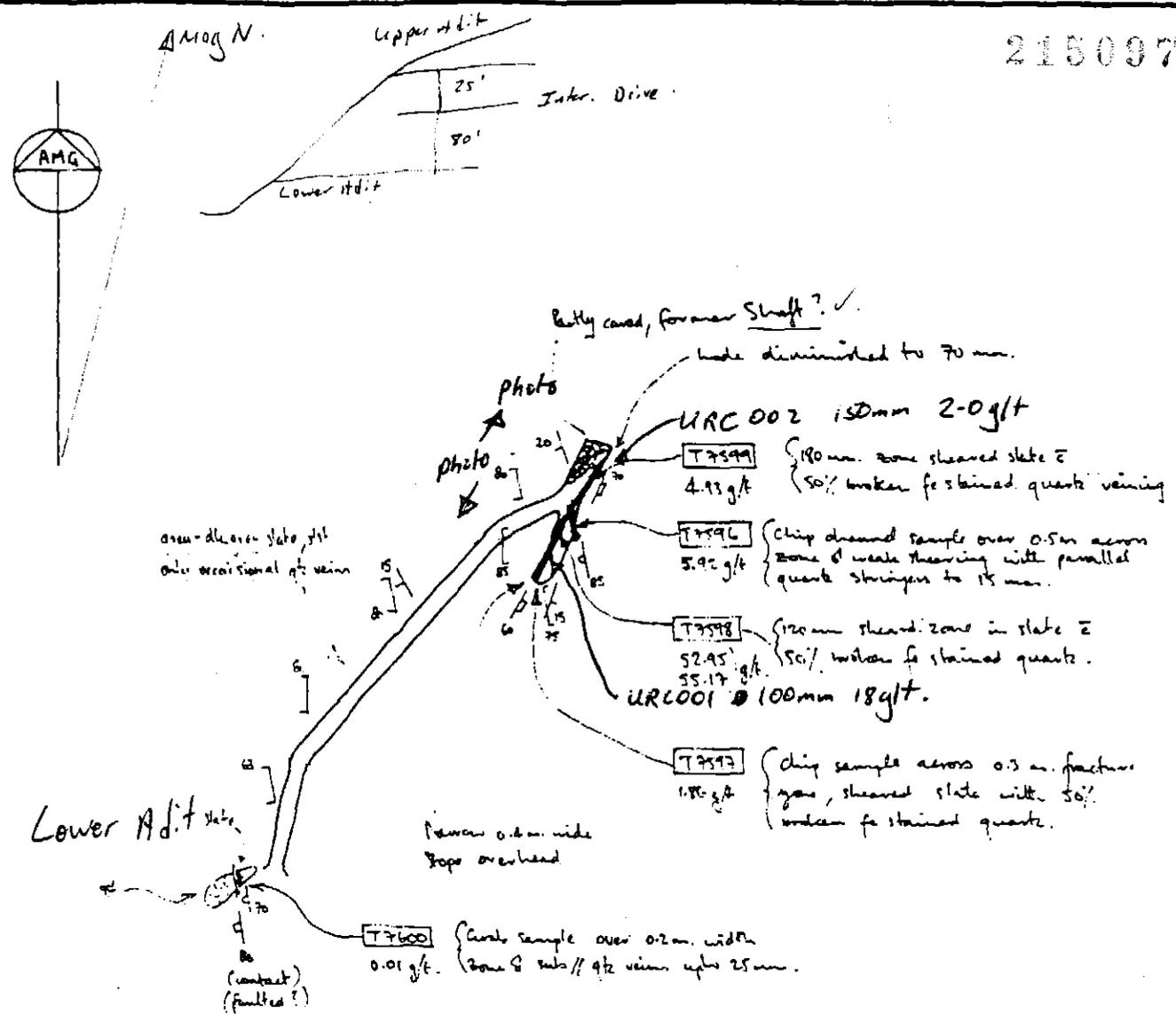
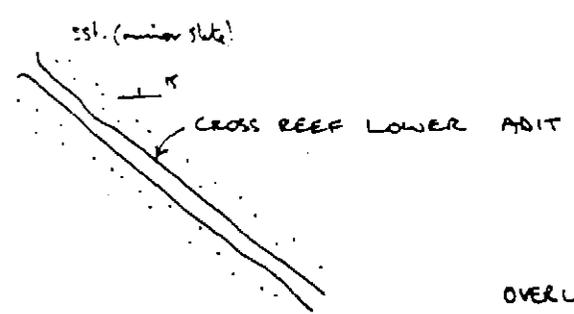
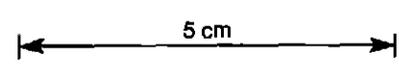


FIG:20, NW CORNER



OVERLAPS FIG:

From Herrmann (1987)



GOLD FIELDS EXPLORATION PTY. LIMITED	
E.L. 23/82	
ALBERTON GOLDFIELD	
RAGGED YOUTH ADIT	
PLAN	
SCALE 1:500	0 5 10 15 Metres
DRAWN BY: [Signature]	FILE NO
DRAFTSMAN:	FIG. 19
DATE 4.87	
REVISIONS:	

APPENDIX 3

Structural data.

ALBERTON STRUCTURAL DATA

Trench	Ref. Point	Bedding	Cleavage	Mjr. Fault	Mnr. Fault	Qtz. Vn.	Jointing
Mine		Dip	Dip	Dip	Dip	Dip	Dip
		Dipdir	Dipdir	Dipdir	Dipdir	Dipdir	Dipdir
6	1	58	297				
6	1	70	283				
6	1			64	295		
6	1	82	297				10
6	1	90	327				113
6	1					78	317
6	1	75	329				
6	1						40
6	1	70	315				155
6	1	88	318				18
6	1						146
6	1	75	339				8
6	1	82	331				119
6	1						
6	1	75	329				70
6	1	64	335				87
6	1	70	318				279
6	1						37
6	1	88	343				
6	1	71	332				
6	1	64	345				
6	1	60	349				
6	1	75	72				
HII	3					78	102
HII	3					85	159
HII	3					90	130
HII	3	75	115				
HII	3	75	123				
HII	3			82	283		
HII	3	80	115				
HII	3	60	110				
HII	3	48	110				
HII	3	68	115				
HII	3	82	90				
HII	3						80
HII	3						104
HII	3	76	120				90
HII	3	73	115				339
7	1						
7	1						90
7	1			68	77		330
7	1					55	188
7	1	75	85				84
7	1			52	129		317
7	1	40	219			90	
7	1			52	101		
7	1					75	221
7	1					65	228
7	1	50	235				
7	1	50	255				
7	1					90	245
HII	4			80	203		
HII	4	62	105				
HII	4			72	160		
HII	4						74
HII	4	22	170				360
HII	4	15	199				
HII	4					88	9
HII	4	50	201				
HII	4						82
HII	4						327
HII	4	50	193				72
HII	4	80	230				161
HII	4			76	185		
HII	5					80	269
HII	5						75
HII	5			80	30		155
HII	5						85
HII	5						37
HII	5						70
HII	5			73	100		170
HII	5			72	255		
HII	5						70
HII	5	70	236				151
HII	5	82	280				
HII	5	78	55				
HII	5			84	33		
HII	6	88	303				
HII	6			88	303		
HII	6						83
HII	6						226
HII	6	50	300				15
HII	6	68	110				47
HII	6					48	115
HII	6					76	275
HII	6					84	268
HII	7	70	267				85
HII	7						241
HII	7	55	270				56
HII	7						143
HII	7						88
HII	7						90
HII	7	60	265				66
HII	7	60	269				175
HII	7			88	75		
HII	7						68
HII	7						136

Trench Mine	Ref. Point	Bedding		Cleavage		Mjr. Fault		Mnr. Fault		Qtz. Vn.		Jointing	
		Dip	Dipdir	Dip	Dipdir	Dip	Dipdir	Dip	Dipdir	Dip	Dipdir	Dip	Dipdir
Long St H	450	65	58										
Long St H	450	55	56										
Long St H	450									60	57		
Long St H	450									80	270		
Long St H	450					80	230						
Long St H	450					45	288						
Claxton 1H	440	65	60										
Claxton 1H	440	55	58										
Claxton 1H	440			75	57								
Claxton 1H	440					70	1						
Claxton 1H	440					66	52						
Claxton 1H	440					70	58						
Claxton 1H	440					72	80						
Claxton 2H	470	50	58										
Claxton 2H	470	45	32										
Claxton 2H	470	45	75										
Claxton 2H	470					85	58						
Claxton 2H	470					70	238						
Claxton 2H	470					75	52						
Mt. Vic. H	410	80	262										
Mt. Vic. H	410	80	240										
Mt. Vic. H	410	70	58										
Mt. Vic. H	410	70	258										
Mt. Vic. H	410	75	268										
Mt. Vic. H	410	78	234										
Mt. Vic. H	410	70	243										
Mt. Vic. H	410	80	230										
Mt. Vic. H	410	80	238										
Mt. Vic. H	410			85	78								
Mt. Vic. H	410			70	81								
Mt. Vic. H	410			90	83								
Mt. Vic. H	410			90	78								
Mt. Vic. H	410			80	255								
Mt. Vic. H	410			80	280								
Mt. Vic. H	410					57	337						
Mt. Vic. H	410					80	320						
Mt. Vic. H	410									60	65		
Mt. Vic. H	410									30	170		
Mt. Vic. H	450	50	239										
Mt. Vic. H	450	53	224										
Mt. Vic. H	450	55	245										
Mt. Vic. H	450	55	266										
Mt. Vic. H	450	60	260										
Mt. Vic. H	450	60	276										
Mt. Vic. H	450	60	260										
Mt. Vic. H	450	58	262										
Mt. Vic. H	450					65	286						
Mt. Vic. H	450					85	335						
Mt. Vic. H	490	80	258										
Mt. Vic. H		85	265										
Mt. Vic. H		80	274										
Mt. Vic. H		75	268										
Mt. Vic. H						75	310						
Mt. Vic. H						70	334						
Mt. Vic. H				90	275								
Mt. Vic. H				85	270								
Mt. Vic. H				73	289								
Mt. Vic. H				83	88								
Mt. Vic. H				80	89								
Mt. Vic. H				80	254								
Mt. Vic. H				85	250								

NOTE: Long St TA refers to mapping of the Long Struggle 390 mRL adit by Tim Akerman
 Long St H refers to mapping of the upper Long Struggle adits by W. Herrmann
 Claxton 1H, Claxton 2H and Mt. Vic H refers to mapping of the Claxton No. 1 Lode, Claxton No. 2 Lode and
 the Mt. Victoria Mine by W. Herrmann.

APPENDIX 4

Drill logs and graphical logs 1994 drilling program.

DIAMOND DRILL RECORD

LSM1

OBJECTIVE : To test the intersection of the Mines Dept. hole DDH1 of 1937, as interpreted by David O'Connor, 1993, and southern extensions of Long Struggle and Carlton Reefs.
 RESULT : Located Long Struggle Reef at 156.15-156.35m: 12.8g/t Au (repeat 13.4g/t Au). Carlton Reef position indicated at 194m.

DEPTH : 250.7m
 HOLE SIZE : TT48
 COMMENCED: 2nd March 1994
 COMPLETED: 28th March 1994

Depth	Direction	Dip	Depth	Direction	Dip
0	088.5 AMG	0			
5	088.5 AMG	0			
60	088.5	.1			
195	088.5	-2			

COLLAR DIP : Hor.
 DIRECTION : 088.5
 NORTHING : 5,426,128mN
 EASTING : 567,282mE
 HOLE No. : LSM1
 LOCATION : Long Struggle Mine, Alberton
 LOGGED BY : Karen Mathews
 COLLAR RL : 302.5m

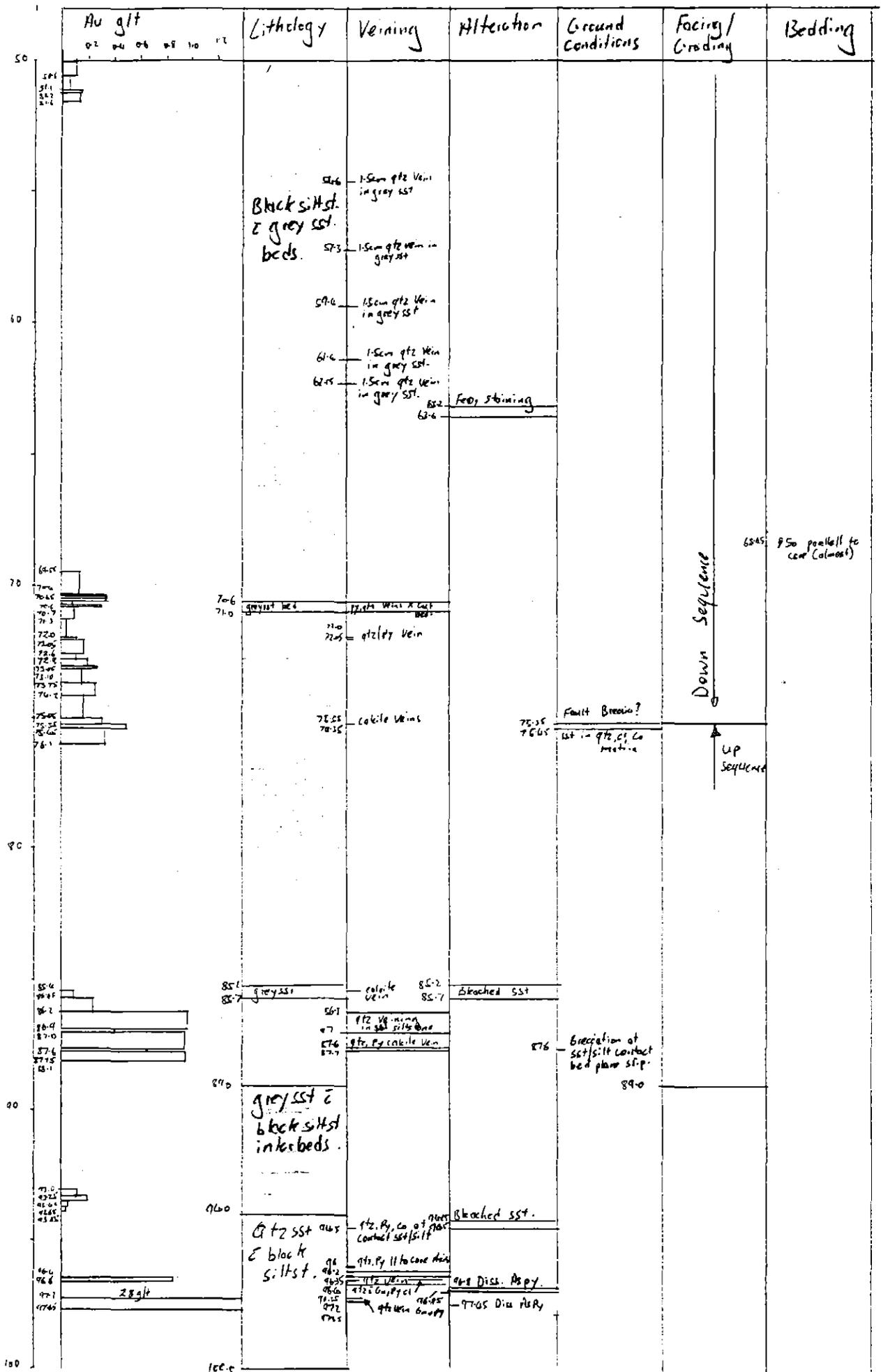
FROM	TO	DESCRIPTION	ALT	CD	ROCK TYPE	MINERALISATION	SAMPLE NO.	FROM	TO	Length	Au g/t	Pb %	Zn %	Cu %	Ag g/t	Fe %	S	To RCD
0.0	2.1	Quartzite sandstone with quartz veins parallel to and across the core grey in colour.			qtz sst		73104	1.2	1.8	0.40	0.08							
2.1	2.7	Grey quartz sandstone with black siltstone interbeds. Intensely cut by quartz veins, some minor bleaching.			qtz sst/siltst	Pyrite also present	73105	1.8	1.9	0.30	0.10							
2.7	5.0	Black siltstone with grey quartz sandstone interbeds. Quartz veining is cross cutting, parallel and right angles to the core. Some iron staining.			siltst/sst		73106	2.3	2.5	0.20	0.12							
5.0	5.3	Bleached, grey-green sandstone. Iron staining (oxidation) on the broken ends.		blechd	sst		73108	2.5	2.85	0.15	0.05							
5.3	5.6	Grey sandstone with quartz veining that has been folded. Some bleaching around the veins.			sst		73109	2.65	2.9	0.25	0.05							
5.6	10.5	Grey quartz sandstone with 40cm black siltstone bed at 5.6 - 6m. Sandstone inclusions within the siltstone. Grey sandstone contains quartz veins parallel to and right angles to the core. Bedding oblique to core.			qtz sst		73110	2.9	3.4	0.50	0.05							
10.5	14.5	Black siltstone with quartz veins parallel to, right angles and across the core. Some approx. 1cm wide. 3cm quartz vein at 13.5m plus a 4cm quartz vein at 14.4m. Sharp contact with quartz sandstone at 14.5m. Bedding parallel to core.			siltst		73111	12.6	13.0	0.40	0.05							
14.5	18.9	Grey quartz sandstone. Quartz and pyrite veining. At 17.15m there is a 10cm quartz vein. At 14.5 the contact is sharp, indicating a change in facing. Now going up sequence.			qtz sst		73112	13.0	13.1	0.10	0.05							
18.9	44.8	Grey quartz sandstone interbedding with black siltstone. Interbeds range from a few cm through to 1.5-2m in thickness. The siltstone/sandstone contacts all indicate drilling up sequence. Bedding is oblique to the core. Facing changes a number of times.			qtz sst/siltst		73113	13.1	13.5	0.40	0.05							
18.9	25.3	The drilling is up sequence.					73114	13.5	13.85	0.15	0.05							
25.3	44.8	Facing indicates drilling down sequence.					73115	13.85	13.8	0.15	0.05							
26.9	29.7	Quartz vein with a 3cm alteration zone.					73116	13.8	13.9	0.10	0.38							
34.2	34.4	2 Quartz veins (3 & 7cm wide) separated by an alteration zone.					73117	13.9	14.0	0.10	0.05							
36.55	36.70	Quartz vein (7cm wide) with iron staining and brecciation. Surrounded by additional quartz veins.					73118	21.7	22.1	0.40	0.05							
37.0	37.2	10cm quartz-pyrite vein. 7cm zone of siltstone with quartz-pyrite vein with siltstone inclusions.					73119	22.1	22.2	0.10	0.83							
37.2	37.6	Siltstone with iron oxidation.			siltst		73120	22.2	22.8	0.40	0.18							
37.7	40.3	Bedding parallel to core.					73121	28.4	28.7	0.30	0.05							
40.0	40.3	Oxidation of the core. Iron staining predominant in the grey sandstone unit.		oxidn			73122	28.7	28.8	0.10	0.46							
44.8	49.4	Grey sandstone with quartz veins parallel to the core.			sst		73123	28.8	29.1	0.30	1.50							
44.9	45.4	Iron staining in the sandstone (quartzite).					73124	33.6	34.1	0.30	0.12							
49.2	49.4	Whispy quartz-pyrite veins within sandstone-siltstone interbeds. Sandstone has been altered.					73125	34.1	34.15	0.05	0.05							
49.4	89.0	Black siltstone interbedded with a grey sandstone. Facing down sequence. Small quartz veins parallel & right angles to the core. Sandstone is uniform throughout.			siltst/sst		73126	34.15	34.2	0.05	0.08							
63.2	63.8	94.8m: 1.5cm quartz vein in grey sandstone.					73127	34.2	34.3	0.10	0.05							
66.45	66.65	57.3m: 1.5cm quartz vein in grey sandstone.					73128	34.3	34.4	0.10	0.14							
69.55	70.15	59.4m: 1.5cm quartz vein in grey sandstone.					73129	34.4	34.6	0.40	0.18							
70.6	71.0	61.4m: 1.5cm quartz vein in grey sandstone.					73130	34.6	35.1	0.30	0.05							
72.0	72.05	62.15m: 1.5cm quartz vein in grey sandstone.					73131	36.5	36.6	0.10	0.05							
75.35	75.45	Sandstone is brown. Bleached by iron staining. Bedding nearly parallel to the core.					73132	36.6	36.6	0.20	0.30							
At 76.8	85.7	Sandstone/siltstone breccia. Iron stained quartz vein within it.			sst/bx		73133	36.6	37.0	0.20	0.05							
85.2	85.7	Grey to brown sandstone with siltstone interbeds cross cut by quartz and pyrite veins.			sst	Small amount of galena.	73134	37.0	37.1	0.10	0.10							
89.2	87.0	Black siltstone interbedded cut by quartz-pyrite vein. Breccia 5cm wide. Grey sandstone on either side. Clasts of sandstone in a quartz-calcite-chlorite matrix. Small calcite veins also present. Breccia clasts are angular and vary from 3cm to a few mm. Facing changes. Now going up sequence.			bx		73135	37.1	37.2	0.10	0.05							
		Grey sandstone has been bleached. One calcite vein cutting core at 85.6m.					73136	37.2	37.9	0.70	0.05							
		Quartz veining in black siltstone, run parallel and right angles to the core.					73137	48.9	49.2	0.30	0.10							

215108

LSM 1 (Lunit)

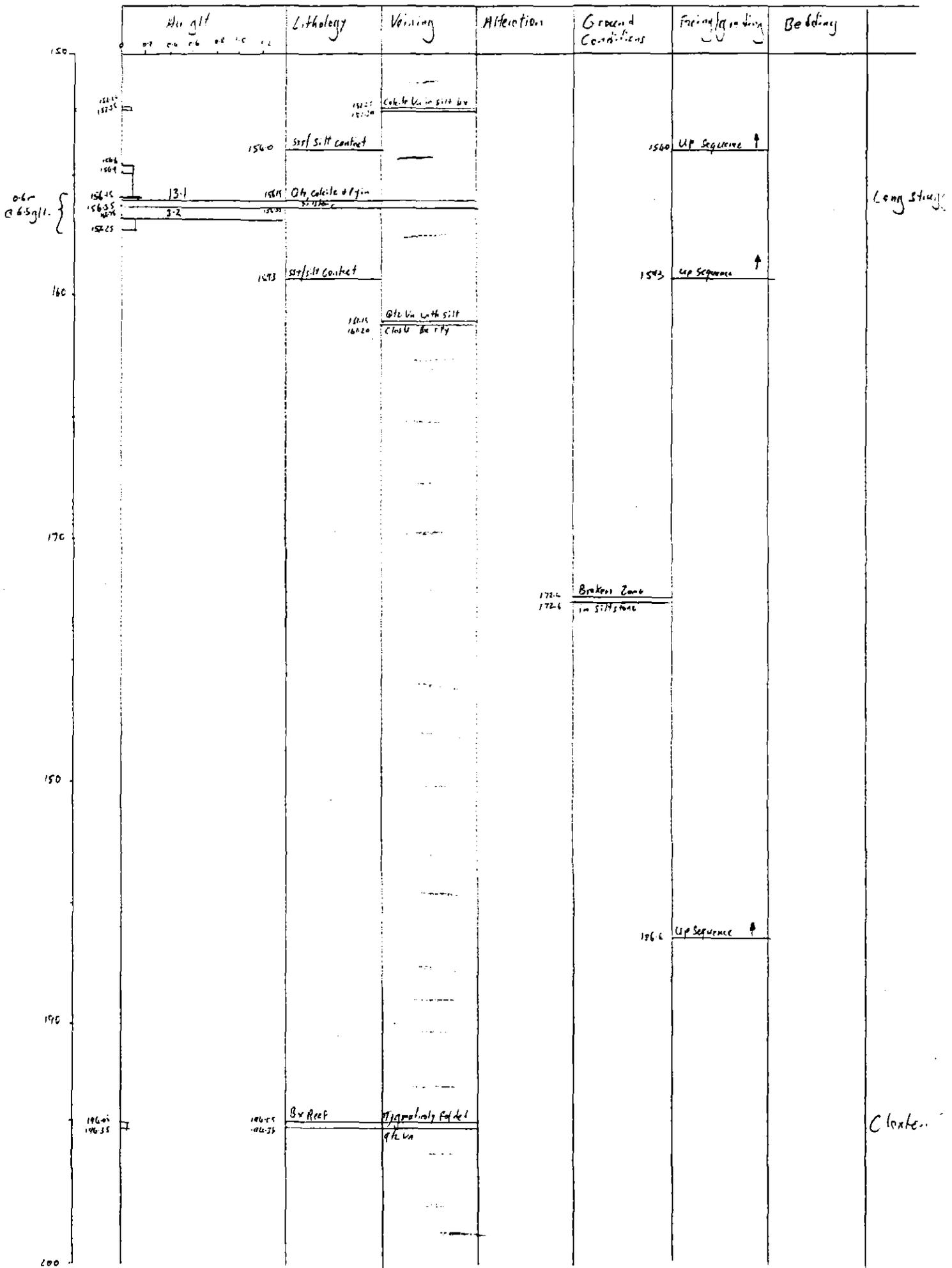
Interval	Description	Notes	73170	87.75	68.1	0.35	0.94
87.0 - 87.70	7cm quartz, pyrite calcite vein. Some minor brecciation. At contact between siltstone and sandstone.		73171	89.0	83.25	0.25	0.12
88.0 - 94.0	Grey sandstone with black siltstone interbeds. Quartz and pyrite veins parallel and right angles to core. A little bleached in some places around the veins.	est-silt	73172	89.25	83.45	0.20	0.20
94.0 - 109.5	Quartz sandstone (grey) with small interbeds of black siltstone. Quartz veining is present throughout. Several generations of quartz veining evident.	qtz est	73173	89.45	83.85	0.20	0.05
94.5 - 94.58	Quartz and pyrite with calcite associated. Appears to occur at contact of sandstone and siltstone.		73174	89.85	83.85	0.20	0.08
94.25 - 94.5	Bleached grey sandstone prior to the vein mentioned above. Calcite/chlorite may be associated.		73182	98.4	98.8	0.20	0.84
99.0 - 98.2	Quartz-pyrite veining parallel to the core.		73183	97.2	87.85	0.45	2.80
98.35 - 98.45	Quartz vein (1.5cm wide) with chlorite inclusions.		73184	100.5	101.2	0.70	3.00
98.55 - 98.85	Quartz veining within quartz sandstone. Contains galena, pyrite min. which chlorite appears to be associated with the veining.		73185	101.2	101.55	0.35	0.38
97.8 - 97.85	Grey sandstone with arsenopyrite within the host rock.		73186	101.95	102.35	0.60	0.05
97.2 - 97.35	Quartz vein with galena & pyrite associated. Arseno-pyrite in the surrounding host rock.		73187	102.35	102.75	0.40	0.05
97.45 - 97.8	Quartz vein with galena and pyrite. Arseno-pyrite associated with the sandstone.		73188	122.8	123.1	0.20	0.05
99.7 - 99.75	Quartz vein with galena and pyrite associated.		73189	123.8	123.8	0.20	3.80
100.5 - 101.5	Broken black siltstone with quartz vein parallel to the core. Calcite/sulphide/chlorite associated and present within the siltstone.	Pyrite and galena present in the vein.	73200	123.8	123.85	0.05	0.10
101.55 - 102.3	Quartz veining with pyrite, arseno-pyrite and chlorite in sandstone.		73201	123.85	124.0	0.15	0.05
103.7 - 103.8	Quartz veining with small stockwork veining within grey sandstone.		73202	130.8	130.8	0.10	0.05
104.3 - 104.45	Quartz veining with pyrite and chlorite.		73203	148.8	148.8	0.10	0.88
108.0 - 250.7	Quartz sandstone with interbedded black siltstone. Small quartz veins occur throughout.		73204	148.8	147.0	0.10	0.24
109.8 - 109.7	Broken zone within siltstone some quartz veining.	bx	73205	147.0	147.1	0.10	0.28
110.85 - 110.70	Quartz vein with pyrite.		73206	152.25	152.35	0.10	0.05
112.8 - 112.8	Broken zone within siltstone.		73207	156.15	156.35	0.20	12.80 (rept. 13.4)
118.2 - 118.3	Broken area in siltstone.		73208	184.85	184.35	0.30	0.05
122.9 - 123.1	Quartz vein with pyrite in quartz sandstone.		73209	248.85	249.0	0.05	0.05
123.6 - 123.85	Quartz vein with pyrite at contact.		73210	249.05	249.3	0.25	0.18
123.6 - 123.8	Broken quartz zone in sandstone.		73211	249.3	249.4	0.10	0.05
123.85 - 124.0	Siltstone with small veins beside vein above.		73212	249.4	250.0	0.80	0.48
129.7 - 130.8	Quartz veining in quartz sandstone with pyrite.		73213	104.3	104.45	0.15	0.06
130.8 - 130.9	Siltstone clasts in a shear type zone within quartz sandstone.		73214	229.0	229.2	0.20	0.20
138.15 - 138.2	Quartz vein within grey quartz sandstone.		73412	124.7	125.4	0.70	0.05
148.0 - 148.1	Broken zone within siltstone (minor brecciation).		73413	125.4	125.8	0.40	0.73
148.8 - 148.85	Quartz vein with pyrite within siltstone.		73414	125.8	126.8	0.80	0.13
148.85 -	Contact with sandstone interbed.		73415	126.8	126.8	0.20	0.08
147.0 - 147.1	Quartz vein with pyrite and carbonate within sandstone.		73416	154.8	154.8	0.30	0.05
152.25 - 152.3	Calcite veining within siltstone clasts as a breccia.		73417	154.8	158.0	1.10	0.05
154.0 - 154.1	Sharp contact between siltstone and sandstone indicate going up through the sequence.		73418	158.0	158.15	0.15	0.10
158.15 - 158.35	Quartz, calcite and pyrite veining in siltstone. Long Struggle Reef.	L.S Reef	73419	158.35	158.75	0.40	3.20
158.35 - 158.4	Broken siltstone.		73420	158.75	157.25	0.50	0.10
159.3 -	Sharp contact between siltstone and sandstone. Up sequence.		Average	158.15	158.75	0.65	6.40 (rept. 8.80)
161.15 - 161.2	Quartz vein with siltstone clasts. Breccia with pyrite.	bx reef					
172.4 - 172.8	Broken siltstone zone.						
178.7 -	May have been a change in facing.						
188.4 -	Facing up sequence.						
194.05 - 194.35	Breccia reef, pigmistic folded quartz vein lower end. Caxon Reef						
202.35 - 202.85	Siltstone clasts within grey quartz sandstone.						
204.8 -	Sharp contact of siltstone and sandstone. Indicates facing up sequence.						
229.0 - 229.2	Quartz breccia within sandstone. Galena and arseno-pyrite present.						
248.85 - 249.00	Quartz vein with minor pyrite, galena? in siltstone.						
249.05 - 250.0	Quartz stockwork type veining in quartz sandstone with galena, pyrite and arseno-pyrite.						
249.7 - 249.8	Broken zone in siltstone.						
249.8 - 249.85	Intense quartz veining in siltstone.						
249.85 - 249.85	Broken zone in siltstone.						
235.0 - 235.1	Quartz vein, and pyrite within siltstone bed.						
238.1 - 238.15	Quartz vein in siltstone.						

End of Log



Aug 31 ^t 0.1 0.2 0.4 0.8 1.6 3.2	Lithology	Veining	Alteration	Ground Conditions	Facing/Grading	Bedding
100.5 101.2 101.55 102.35 102.75	Broken Black Siltstone	qtz Va 116 Core Abs	celadite, chlorite & sericite	Broken Zone		
		qtz Va + P.A.H.M schlieren		101.5		
		Qtz streaks		102.5 103.8 104.3 104.45		
		Qtz Veining		104.6 104.7		Broken Zone in Siltstone
		Qtz + Py		106.5 107.0		
	Quartz sandst with Inkr. Bedded Black Siltstone			111.1 111.0		Broken Zone in Siltstone
				118.2 118.3		Broken Zone in Siltstone
		Qtz Va + Py		122.9 123.1		
122.0 123.1 123.4 123.55 124.4 125.4 126.7 128.4 129.4		Qtz Va + Py		123.4 123.5		Broken Zone in str.
				129.7 130.9		Shear Zone Siltstone Chlor.
		Qtz Va in ss ^d		136.5 137.7		
		Qtz Va + Py		146.2 146.5 147.4 147.7		Broken Zone in ss.
		Qtz Va + Py + Carb.				

215112



Long string

Clonks

0.6m
at 6.5g/l

172.4
172.6 Broken Zone
in siltstone

196.6 Up Sequence ↑

1560 Up Sequence ↑

1545 Up Sequence ↑

Height
0.2 0.4 0.6 0.8 1.0 1.2

Lithology

Veining

Alteration

Ground Conditions

Fracturing

Bedding

	Augt 02 04 06 08 10 12	Lithology	Veininess	Alteration	Ground Conditions	Fracture/ Grading	Bedding
200		200.5 201.5 Siltstone - Chalk in grey ss.				200.5 Facing up sequence	
210							
220							
230	229.5 230.5	229.5 230.5 D72 ss in sst					
240							
250	249.5 250.0 250.5 250.7	249.5 250.0 D72 ss in sst D72 siltstone veining pattern				250.7 Broken zone in sst	

ΓGH 250.7m

OBJECTIVE To test the intersection of Mines Dept hole, DDH1, 1837, as interpreted by D. O'Connor, Tas Tiger Mines, 1903

DEPTH : 84.4m

Depth	Direction	Dip	Depth	Direction	Dip
0	080.5	+1			
5	080.5	+1			

COLLAR DIP: +1

HOLE No.: LSM2

RESULT No significant mineralisation intersected.

COMMENCED 18th Feb 1994

DIRECTION 080.5 A43

LOCATION Long Struggles Mine Albarton

NORTHING 5 428 130mN

LOGGED BY: Karen Mathews/ Geoff Hill

COMPLETED: 2nd March 1994

EASTING 587 284mE

COLLAR RL: 382.8m

FROM	TO	DESCRIPTION	ALT	CD	ROCK TYPE	MINERALISATION	SAMPLE NO.	FROM	TO	Length	Au g/t	Pb %	Zn %	Cu %	Ag g/t	Fe %	\$	To RCD% <S=Shear>
0.0	5.25	Sandstone unit. First 4m, uniform sandstone unit with small quartz veins			ss1		73052	20.40	20.70	0.30	0.05							
5.25	8.3	Siltstone - mudstone unit with sandstone interbeds. Slumping features and small veinlets with iron staining. Pyrite associated with the veinlets.			slst-mst + ss1	Pyrite in veinlets	73053	20.70	20.85	0.15	0.24							
8.3	12.3	Sandstone unit that grades up into a siltstone unit. Large quartz-iron rich vein at 8.7m. Pyrite associated. Siltstone grades out into a fine sandstone at 8.3m. Fine laminations and small quartz veinlets in the sandstone.			ss1-siltst	Pyrite associated.	73054	20.85	20.90	0.05	0.67							
		15cm wide mudstone unit at 11.0m				Quartz and pyrite also present	73055	20.90	21.60	1.00	0.12							
12.3	13.2	Siltstone with sandstone slump features. Small quartz veinlets.			siltst-ss1		73056	21.80	22.70	0.80	0.12							
13.2	19.55	Sandstone unit with small veins of quartz & pyrite. 50cm zone of interbedded siltstone. Quartz and pyrite associated at 16.55m. Graded area at top.			ss1	Pyrite in quartz veins.	73057	28.00	27.00	1.00	0.05							
19.55	20.9	Graded siltstone - sandstone at the bottom. Grades into siltstone with quartz and pyrite veinlets.			slst-ss1		73058	27.00	28.00	1.00	0.20							
20.9	29.1	Sandstone unit with siltstone interbeds and quartz-pyrite veins. The larger veins are primarily quartz with pyrite selvages. At 24.7m the veins display a bleached alteration zone. This alteration continues for 1m.			ss1-siltst	Pyrite in quartz veins.	73059	28.00	28.00	1.00	0.12							
29.1	47.3m	Sandstone unit with oxidized zone starts at 28.1m and extends to 32.3m. Within this zone there are small veinlets and one large quartz-pyrite vein at 29.9m. The core is very broken from 27.3m through to 30.8m. From 29.0m through to 32.3m the oxidation is very pronounced resulting in a brown-red colour to the core. At 30.8 - 30.8m there is a 15cm zone of veining. The veins are quartz-pyrite and contain a lot of iron staining. At 30.8m the alteration around the small veinlets continues intermittently to 38.6m. Within this interval siltstone is also interbedded with the sandstone. The alteration around the veinlets, within the sandstone continues. Small oxidized areas are also present. At 42.2-42.4m light green (olive) the sandstone becomes totally bleached due to alteration. This bleached zone is 15cm wide. At 43.7-43.8m a quartz-pyrite rich vein is present and has been oxidized. At 42.8-43.3m another bleached zone occurs and is approx. 30cm wide. At 43.7m a 10cm quartz and pyrite rich zone is present. A lot of veining together. At 44.3m an oxide zone is present. This zone extends to 44.8m. At 44.8-45.8m the sandstone contains veins that have been altered. A broken (fault) zone occurs at 45.9-46.2m.	oxid		ss1		73060	29.00	29.80	0.80	0.30							
						28.8m Pyrite in quartz vein.	73061	29.80	30.30	0.70	0.08							
						30.8-30.8m Pyrite in quartz veins	73062	30.30	30.70	0.40	0.80							
							73063	30.70	31.20	0.50	0.02							
							73064	31.20	32.00	0.80	0.16							
							73065	32.00	32.80	0.80	0.08							
							73066	32.80	33.40	0.80	0.08							
							73067	38.50	39.50	1.00	0.05							
							73068	39.50	40.40	0.90	0.10							
							73069	40.40	41.30	0.90	0.05							
							73070	41.30	42.20	0.90	0.08							
							73071	42.20	43.00	0.80	0.18							
							73072	43.00	43.30	0.30	0.08							
							73073	43.30	43.70	0.40	0.05							
							73074	43.70	43.80	0.10	0.05							
							73075	43.80	44.30	0.50	0.05							
							73076	44.30	44.80	0.50	0.10							
							73077	44.80	45.80	1.00	0.05							
							73078	45.80	46.40	0.80	0.75							
							73079	46.40	47.20	0.80	0.05							
							73080	47.20	47.60	0.70	0.12							
							73081	47.60	48.10	0.20	0.05							
							73082	48.10	48.40	0.30	0.05							
							73083	48.40	48.90	0.50	0.05							
							73084	51.40	51.70	0.30	0.05							
							73085	55.60	55.90	0.30	0.05							
							73086	55.90	58.20	0.30	0.05							
							73087	58.20	58.90	0.70	0.05							
							73088	58.90	57.70	0.80	0.08							
							73089	57.70	58.40	0.70	0.05							
							73090	58.40	58.90	0.50	0.05							
							73091	60.50	61.50	1.00	0.05							
							73092	61.50	62.40	0.80	0.05							
							73093	62.40	63.20	0.80	0.42							
							73094	63.20	63.40	0.20	0.05							
							73095	63.40	64.30	0.90	0.08							
48.2	47.2	Siltstone unit with quartz and pyrite veining. Some minor oxidation of the pyrite.			F		73096	74.80	75.40	0.60	0.06							
47.2	47.9	Sandstone unit. First 70cm have been intensely altered. Bleaching around the veins is present throughout.			ss1		73097	75.40	75.90	0.20	0.08							
47.9	48.8	Sheared and annealed quartz veins - in a sandstone with loosely parallel quartz veining.			S + qtz vns		73098	75.80	76.80	1.20	0.05							
48.8	51.4	Grey sandstone with mottles of light grey.			ss1		73099	76.80	76.90	0.10	0.12							
51.4	58.2	Grey sandstone with small quartz veins both ~ 70° and parallel to core, with oxidized vugs presumably after pyrite. Iron staining on joint faces.			ss1	Pyrite lenticles.	73100	76.90	77.85	0.10	0.14							
58.2	58.1	2 bands khaki, bleached massive sandstone at ~40° with a grey sandstone band at 57.1-57.7m. Rim of brown oxide <5mm at start of each band. Oxide on joint faces.			ss1		73101	76.80	77.80	0.90	0.06							
58.1	83.2	Grey, fine grained massive sandstone/quartzite with occasional small quartz veins with oxidized pyrite vugs. Some fresh pyrite. At 62.3m predominance of quartz veining, massive white quartz with small vug some after pyrite.			ss1-qtz	61.4-62.3m Minor pyrite in quartz.	73102	77.80	78.80	0.80	0.05							
83.2	84.3	Mainly dark grey siltstone with minor sandy bands. Showing signs of shearing 70-80°.			siltst		73103	78.80	79.75	1.15	0.06							
		83.2-83.3m quartz filled shear 80 - 90°.			S													
		83.4m Irregular vein of brecciated sandstone and quartz.			reef													
84.3	82.5	Dominantly grey, fine grained sandstone/qtz in several beds, grading to dark grey siltstone/shale down hole. Shale bands <30cm thick, at 70-80°. Fine quartz veins <1% disseminated pyrite.			ss1-qtz	1% dis py.												
82.5	84.4	Dark grey fine grained sandstone/quartzite with lighter bands. Occasional fine quartz veins.			ss1 qtz													

End of log

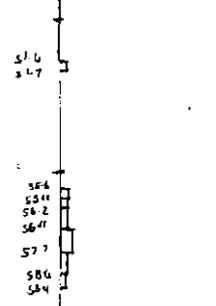
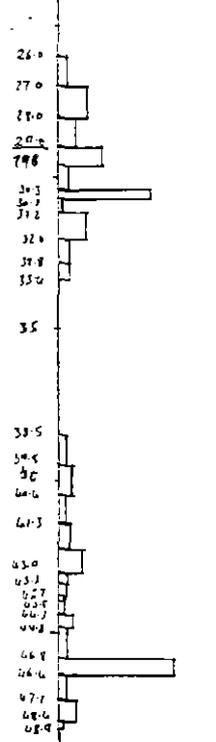
Graphical Log

LS 117

Depth (ft)	Lith	Veining	Alteration	Ground Conditions	Facing/Grading
0					
5					
10					
15					
20					
25					
30					
35					
40					
45					
50					
55					
60					

Au glt.

Det 250



UP?

Au g/t		Lithology	Veining	Alteration	Ground Conditions	Facing/Grading
60	0.25 0.5 0.75 1.0 1.25					
60.5		Crsp. fine m. sst.	mar. irregular qtz veining			
61.5			qtz veining			
62.4			qtz veining + py.			
63.2		63.2		63.2		
63.4			55.1 59.5 shear zone		Shearing 70-80 CA	
64.3		64.3	65.6 shear zone	64.3		
65						
70		grading	Fine qtz veins			going up sequence
			lit. py.			
75		70-80 to CA				
76.6						
75.5						
75.2						
76.8						
77.8						
78.1						
78.75						
78.85						
80						
		82.5				
		sst - quite				
85						

EGH 66

Graphical Log LSM 3 0-50m

P. 1 of 2
215118

Depth (m)	Au g/t					Lithology	Veining	Alteration	Ground Cond ²	Facing/ Grading	Bedding
	0.2	0.4	0.6	0.8	1.0						
0						Grey qtz sst. with Interbeds of dark siltst.					
5											
10											
15											
20						qtz sst & interbed siltst					
25							Small Vn lth siltst with siltst brs. 1/4 so				
27	22.7										
28	22.8										
29	23.4										
30	24.0					qtz sst	qtz + Py Vn				
31	24.5					qtz sst	Calcite + qtz Vn				
32	25.6										
33	26.3										
34	26.7										
35	26.9										
36	27.4										
37	28.0										
38	28.8										
39	29.7										
40											
45											
50											

Drilling ↑
Sequence

Drilling Up ↑
Sequence

Depth (m)	Aug 1/1	Lithology	Veining	Alteration	Ground Cond ²	Facing/ Grading	Bedding
	0.2 0.4 0.6 0.8 1.0 1.2						
0							
2.1			Qtz Va				
2.5							
2.5		Qtz SST. with calcifers black siltstone				Drilling Lep. Seq. Facing	
8.5							
9.5				Bleached SST	9.5		
9.7				Bleached SST	9.7		
10.6				Bleached	10.6 Broken		
10.7					10.7 Broken		
11.1						11.1	
11.5						11.5	
15.6							
16.0			Qtz Vn3 - Small		15.6 Broken		
16.0					16.0		
25.8							
25.8							
25.8			Qtz Va.	Chlorite	300		
30.7					30.7		
30.7		Qtz SST.	Qtz Va in	Chlorite	30.7		
30.7		E beds of	SST as silt.	Alite			
30.7		siltstone to		+ gn + sp.			
30.7		1m thick.	Mottled Qtz Va.				
34.4				34.6 ch + Pyln	34.4		
34.4							
38.5			Qtz Va.		38.5		
38.5			Mottled Qtz.	Py, Gn + Ch.	38.5		
38.5					38.5		
48.5			Qtz bx Vn3		48.5		
48.5			in SST.				

Elevation (m)	Au g/t							Lithology	Veining	Alteration	Ground Cond ²	Facing/ Grading	Bedding
	0.2	0.4	0.6	0.8	1.0	1.2							
50								S35	Qtz SST C Sem (max) qtz Veins No Visible mineralisation				
								S78					
60										Bleached SST	674 616		
	605	604											
	602	600						C32 634					
	6015	6015											
	674	673						678 680	Qtz Vn Qtz m.	Chlorite alt ² 685 686			
68.8													68.8

OBJECTIVE : To test the ground southeast of the Victoria Mine workings.

DEPTH : 52.2m

Depth	Direction	Dip
0	122.5	0
52.2	122.5	0

COLLAR DIP : Horizontal

HOLE No. : MVM2

HOLE SIZE: TT46

DIRECTION : 122.5' AMG

LOCATION : Mount Victoria Mine
Alberton

RESULT : No significant mineralisation intersected.

COMMENCED 29th April 1994

NORTHING : 5,425,833mN

LOGGED BY : Karen Mathews

COMPLETED 3rd May 1994

EASTING : 567,506mE

COLLAR RL : 384.4m

FROM	TO	DESCRIPTION	ALT	CD	ROCK TYPE	MINERALISATION	SAMPLE NO	FROM	TO	Length	Au g/t	Pb %	Zn %	Cu %	Ag g/t	Fe %	\$	To RQD <S=Shear>
0	30.55	Grey quartz sandstone with small quartz veins throughout.			ssl		73316	3.90	4.00	0.10	0.08							
		3.9-4.15m Stockwork veining.					73317	4.00	4.15	0.15	0.04							
		4.5-4.8m More intense quartz veining.					73318	4.50	4.80	0.30	0.12							
		5.45-5.5m Quartz vein with small sandstone inclusions; breccia.			bx		73319	5.40	5.60	0.20	0.03							
		5.5-5.6m Quartz veining associated with the above breccia.					73320	6.10	6.30	0.20	0.26							
		6.1-6.3m 2-5cm quartz veins at about 45°, some stockwork.					73321	10.90	11.10	0.20	0.08							
		11-11.1m Stockwork veining.					73322	12.35	12.45	0.10	0.06							
		16.25-16.45m Intense quartz veining.				Minor pyrite.	73323	16.25	16.45	0.20	0.30							
		18.9-19.2m Mottled grey quartz vein.				Minor pyrite.	73324	18.90	19.20	0.30	0.06							
		25.2-25.85m Mottled grey stockwork quartz veining; breccia-like.			bx		73325	25.20	25.30	0.10	0.06							
		28.9-30.55m Breccia-type quartz veining in dark grey sandstone/siltstone with shear textures.			bx + S		73328	26.30	26.65	0.25	0.02							
							73327	25.55	25.70	0.15	0.03							
							73328	25.70	25.85	0.15	0.04							
30.55	32.8	Largely broken dark grey sandstone/siltstone with some shearing. Quartz veining of both breccia and stockwork type.			ssl-silst S + bx		73329	29.00	29.15	0.15	0.10							
							73330	29.80	30.00	0.10	0.08							
							73331	30.25	30.55	0.30	0.08							
32.8	33.25	Vary broken fault gouge with some fragments of vein quartz; fault.			F		73332	30.55	30.80	0.25	0.03							
							73333	30.80	31.20	0.40	0.14							
33.25	40.42	Broken black siltstone/shale. Breccia fill and stockwork quartz veining. Shear textures.			silst		73334	31.60	31.75	0.15	0.08							
		40.4-40.42m White bleached siltstone contact zone.			bx + S		73335	31.75	32.40	0.65	0.16							
							73336	32.40	32.60	0.20	0.48							
							73337	32.60	32.70	0.10	0.10							
40.42	43.0	Olive green porphyritic intrusive with small crystals (<2mm) of calcite or quartz; disseminated pyrite; small calcite-pyrite veins sub parallel to the core. Some chlorite alteration.	chl	b	porph intrusive	Disseminated pyrite.	73338	32.70	32.80	0.10	0.03							
		40.42-40.55m Purple grading to olive green chilled margin, with pyrite veins and small calcite and pyrite phenocrysts.				Fine pyrite veins and crystals.	73339	32.80	33.25	0.45	0.08							
		42.88-43m Chilled margin similar to the other, except lack of pyrite.					73340	33.25	33.50	0.25	0.04							
		43m Contact of soft green and white chlorite and calcite.					73341	33.50	33.70	0.20	0.03							
							73342	33.70	34.15	0.45	0.02							
							73343	34.15	35.15	1.00	0.03							
							73344	35.15	35.25	0.10	0.10							
							73345	35.25	35.55	0.30	0.05							
							73346	35.55	36.00	0.45	0.04							
43.0	45.3	Black siltstone/shale			silst/shl S		73347	36.00	36.60	0.60	0.03							
		43-43.2m Intense quartz veining and strong shear texture. Some pligmatic folding of quartz veins and chlorite alteration.					73348	36.60	36.80	0.20	0.04							
		43.2-43.4m Breccia with quartz fill.					73349	36.80	37.35	0.55	0.14							
		43.4-44.45m Intervals of quartz veining and brecciation. Small folds in veins.					73350	37.35	37.50	0.15	0.08							
		44.45-44.65m Zone of broken black siltstone/shale with minor quartz veining.					73351	37.50	37.70	0.20	0.06							
		44.65-44.8m Very broken and altered siltstone and quartz with some folding and brecciation.			bx		73352	37.70	37.85	0.15	0.08							
		44.8-45.3m Zones of quartz veining, broken and altered black siltstone.					73353	37.85	38.05	0.20	0.08							
							73354	38.05	38.25	0.20	0.06							
							73355	38.25	38.75	0.50	0.16							
							73356	38.75	38.15	0.40	0.10							
							73357	39.15	39.90	0.76	0.16							
							73358	39.90	40.30	0.40	0.05							
45.3	52.2	Grey siltstone interbedded with black siltstone/shale. Facing indicates drilling down sequence. Quartz veining, both parallel and across with minor pyrite in some of the veins.			silst/shl	Minor pyrite in some quartz veins.	73359	40.30	40.45	0.15	0.03							
							73360	40.45	40.55	0.10	0.08							
							73361	41.60	41.60	0.20	0.04							
							73362	42.85	43.00	0.15	0.18							
							73363	43.00	43.20	0.20	0.05							
							73364	43.20	43.40	0.20	0.08							
							73365	43.40	43.70	0.30	0.04							
							73366	43.70	44.10	0.40	0.50							
							73367	44.10	44.35	0.25	0.08							
							73368	44.35	44.55	0.20	0.06							
							73369	44.55	44.65	0.10	0.04							
							73370	44.65	44.80	0.15	0.03							
							73371	44.80	45.00	0.20	0.02							
							73372	45.00	45.30	0.30	0.03							

OBJECTIVE : To test the ground south of Mt Victoria Mine workings, including a zone of ground magnetics 'noise'.

DEPTH : 120.8m

Depth	Direction	Dip
0.0	177.5	0.0
120.8	177.5	0.0

COLLAR DIP : Horizontal

HOLE No. : MVM4

RESULT : Interesting zone at 28.6-30.5m: average 1.3g/t Au.

HOLE SIZE : TT46

DIRECTION : 177.5 AMG

LOCATION : Mount Victoria Mine
Alberton

COMMENCED : 20th April 1994

NORTHING : 5,425,815mN

LOGGED BY : G. Hoff 29.4.94

COMPLETED : 28th April 1994

EASTING : 567,502mE

COLLAR RL : 348.2m

FROM	TO	DESCRIPTION	ALT	CD	ROCK TYPE	MINERALISATION	SAMPLE NO.	FROM	TO	Length	Au g/t	Pb %	Zn %	Cu %	Ag g/t	Fe %	\$	To	ROD#
																		<S=Shear>	
0	27.6	Grey, fine grained sandstone quartz greywacke with tracery of fine quartz veins <8mm, oriented mostly 60-90°. 0.9-1m Semi-breccia in quartz matrix. 2.6-3.1m Dark grey siltstone, contacts at 5-10°. 3.2-4m Broken ground. 3.2-3.5, 4-6.5m Dark grey siltstone/shale with signs of slumping. 16.8-17m Shear at 40° <15mm pug. Quartz on up-hole side <10mm. 17-18.2m Broken ground. 23.7-24.6m Semi-breccia with quartz filled cracks.	chl	b	qtz gwk semi-bx siltst/shl S	23.7-24.6m Minor disseminated and aggregates of pyrite and arsenopyrite.	73284 73285 73286 73287 73288 73289 73290 73291 73292 73293 73294	23.7 27.6 28.6 29.6 30.3 47.7 62.9 73.8 75.1 76.5 76.7	24.6 28.6 29.6 30.3 30.5 47.9 63.2 74.1 75.3 76.7 77.0	0.9 1.0 1.0 0.7 4.30 0.2 0.03 0.3 0.2 0.2 0.3	0.23 0.28 1.40 0.30 4.30 0.04 0.03 0.02 0.01 0.02 0.03								
27.6	30.5	Zone of semi-brecciated sandstone with quartz veins and brecciated quartz. 30.3-30.4m Quartz vein in sandstone at 45°, true width 5cm.	sil	a	semi-bx	27.6-30.5m Disseminated pyrite and arsenopyrite, fine vns py & aspy.	73295 73296 73297 73298	77.8 79.6 80.2 82.65	78.2 79.75 80.45 83.0	0.4 0.75 0.25 0.35	0.04 0.03 0.06 0.05								
30.5	73.9	Grey fine grained sandstone, quartz wacke with fine irregular quartz veins. 32.4-32.7m Dark grey siltstone/shale with rough contacts. 36-36.06m Breccia in grey quartz.	chl	b	qtz gwk	Dis & ags pyrite in the sst on contacts.	73299 73300 73301 73302 73303	90.55 96.9 97.3 103.8 105.6	99.6 97.1 97.8 103.9 105.7	0.05 0.2 0.3 0.1 0.1	1.00 0.30 0.18 0.08 0.06								
73.9	83.0	Grey and dark grey fine grained quartz wacke characterised by larger quartz veins and zones of semi-breccia as at sample intervals. 78.2-76.5m Sheared zone at 45°.	chl	b	qtz gwk S	Minor disseminated arsenopyrite in semi-breccia zones.	73304 73305 73306 73307	108.25 108.5 110.4 111.4	108.5 108.6 110.55 111.6	0.25 0.1 0.15 0.2	0.12 0.10 0.08 0.05								
83.0	120.8	Essentially as above, ie quartz wacke, with intervals of breccia or aggregates of light grey quartz. 112.5-113.8m Irregularly fractured along the core, with oxidised fractures, presumed source of water in the hole. 116.1-117.1m White quartz vein along the core. 118.6-119.4m White quartz veins about parallel to the core.	sil	b	qtz gwk + bx + qtz	Fine disseminated arsenopyrite in breccia zones. 118.1-117.1m Minor pyrite associated with quartz vein.	73308 73309 73310 73311 73312 73313 73314 73315	116.3 116.5 117.0 117.0 118.2 36.0 110.55 90.5	116.3 116.5 117.0 117.25 118.5 36.05 110.65 90.55	0.2 0.2 0.5 0.25 0.3 0.05 0.1 0.05	0.04 0.03 0.02 0.03 0.04 0.06 2.30 0.04								
End of Log							Av.	28.6	30.5	1.9	1.30								

015127

APPENDIX 5

Assay data from underground and surface ML 5M/95

ASSAY DATA FROM SURFACE ROCKCHIP SAMPLES COLLECTED ON ML 6M95

All sample numbers are prefixed by "SRC"

- Sample detection limit (AquaLab) Au = 0.05ppm. Values of >0.05 input as 0.03
 Sample detection limit (AquaLab) Ag = 0.008ppm. Values of > 0.008 input as 0.004
 Sample detection limit (AquaLab) As = 2ppm. Values of > 2 input as 1
 Sample detection limit (AquaLab) Pb = 5ppm. Values of > 5 input as 3
 Sample detection limit (AquaLab) Cu = 4ppm. Values of > 4 input as 2
 Sample detection limit (AquaLab) Zn = 4ppm. Values of > 4 input as 2
 Sample detection limit (AquaLab) As = 100ppm. Values of > 100 input as 50 in %
 Repeat samples are averaged (See Table 1)

NUMBER	SAMPLE DATE	ASSAY DATE	NORTH	EAST	RL	LITHO	WIDTH metres	LODE	LODE No	MINE	SG	Au ppm	As %	Ag ppm	Cu ppm	Pb ppm	Zn ppm	REMARKS
26	31-May-95	12-Jun-95				Fault Qtz	0.08					0.98						Fault @63/248. Fe stained Brecciated Qtz. 160m Wilson Creek Traverse
27	31-May-95	12-Jun-95				Fault/SO?	0.10					0.08						Fault/Bedding plane. Wilson Creek Junction
28	31-May-95	12-Jun-95				Shale/Qtz	0.10					0.27						Shale lens in east Cont. Qtz veins. Base of waterfall. RH Creek 10m
29	31-May-95	12-Jun-95				Qtz+sst.	0.40					0.33						Small working?, Stringer veins 50/113. RH Creek 40m
30	31-May-95	12-Jun-95				Qtz Veins	0.40					5.00						Escarpment below large waterfall (RH creek 83 m). Qtz veins 85/103
31	31-May-95	12-Jun-95				Reef Qtz	veins 0.4	Claxton	2	Claxton		1.00						Outcrop of lode between open slopes. Veins (85/047) in hornfels? sst
32	31-May-95	12-Jun-95				Sst. Gouge	0.50	Claxton	2	Claxton		0.18						Gangue to veins in SRC031. Lode 0.5 metres wide.
33	31-May-95	12-Jun-95				Reef Qtz?	Bags	Claxton	2	Claxton		1.20						Bagged ore in Claxton No. 2 Adit
34	31-May-95	12-Jun-95				Brec. Qtz.	0.30	RagYouth		RagYouth		2.10						Lode material in backs of upper adit (Just below Wilson tram)
35	31-May-95	12-Jun-95				Qtz Vein	0.10	RagYouth		RagYouth		2.80						FeO2 stained Qtz. veining in 10-15cm shale beds. Upper Adit
36	14-Jun-95	12-Jun-95				Bx Qtz+sst	0.50					0.19						4.0-4.5. Trench #1, Mt Vic. Sil sst with intense qtz. veining
37	14-Jun-95	12-Jun-95				Bx Qtz+sst	0.50					0.13						4.5-5.0. Trench #1, Mt Vic. Sil sst with intense qtz. veining
38	14-Jun-95	12-Jun-95				Bx Qtz+sst	0.50					0.12						5.0-5.5. Trench #1, Mt Vic. Sil sst with intense qtz. veining
39	14-Jun-95	12-Jun-95				Sst +Qtz Vn	0.50					0.03						5.5-8.0. Trench #1, Mt Vic. Sil sst with qtz. veining. 30% vol.
40	14-Jun-95	12-Jun-95				Qtz Vn	0.04					0.09						16.4. Trench #1, Mt Vic. Qtz vein (grey, cont. AsPy) Trend 85/050 mag
41	14-Jun-95	12-Jun-95				lode	0.30	Montana		ML Vic.		1.03	0.1419	1	13	138	40	In situ remnant of stoping to surface. Located above trench #2
42	19-Jun-95	12-Jun-95				ss/sh/Qtz	0.80	HAW ML Vic		ML Vic.		0.13						2.0-2.8. Trench #2, Mt Vic. Contorted ss/sh/Qtz cont. Fe Stained qtz.
43	19-Jun-95	12-Jun-95				ss/sh/Qtz	1.40	HAW ML Vic		ML Vic.		0.11						2.8-4.2. Trench #2, Mt Vic. Contorted ss/sh/Qtz cont. Fe Stained qtz.
44	19-Jun-95	12-Jun-95				sst + qtz vn	2.70	Int Mont/Vic		ML Vic.		0.47	0.0150					7.3-10.0. Trench #2, Mt Vic. Sil sst/Qtz veining between Mt. Vic & Mon.
45	19-Jun-95	12-Jun-95				sst + qtz vn	3.30	Int Mont/Vic		ML Vic.		0.21	0.0273					10.0-13.3. Trench #2, Mt Vic. Sil sst/Qtz veining between Mt. Vic & Mon.
46	19-Jun-95	12-Jun-95				Qtz vn	0.02					0.10						18.0. Trench #2, Mt. Vic. Qtz. vn. grey, laminated, He? stained.
47	19-Jun-95	12-Jun-95				Qtz vnsst	0.01					0.15						19.5. Trench #2, Mt. Vic. Qtz. vn. and Bx sst
48	19-Jun-95	30-Jul-95				Qtz/fault	0.10					0.08						24.4-24.8. Trench #2, Mt. Vic. Fault cont. 1cm Qtz vn and stringer Qtz vns
49	19-Jun-95	12-Jun-95				Qtz/fault	0.30					0.08						36.7-37.0. Trench #2, Mt Vic. True width 15cm fault +4cm Qtz vn
50	19-Jun-95	12-Jun-95				sst + qtz vn	0.60					0.14						37-37.8. Trench #2, Mt Vic. True width 25cm sst cont 3 1cm veins.
51	19-Jun-95	12-Jun-95				Qtz vn	0.20					0.15						62.5-62.7. Trench #2, Mt. Vic. True width 10cm. 3cm Qtz+7cm Bx sh.
52	20-Jun-95	12-Jun-95				string Qtz	0.20					0.22	0.0050					3.4-3.6. Top Trench, Ref. #2. Stringer veins (5mm) in tan sst 78/148
53	20-Jun-95	12-Jun-95				Qtz vn/fault	0.02					0.03						5.7. Top Trench, Ref. #2. Qtz vn in fault (58/162)
54	20-Jun-95	12-Jun-95				Qtz vn	0.02					0.08						8.0. Top Trench, Ref. #2. Laminated Qtz vn. isolated, He? stained.
55	20-Jun-95	12-Jun-95				Qtz vn/fault	0.05					0.02	0.0050					10.5. Top Trench, Ref. #2. Major fault (62/148). Grey Qtz cont. sulph.
56	20-Jun-95	12-Jun-95				Qtz vns	0.02					0.06						10.8. Top Trench, Ref. #2. Discontinuous Qtz vn in FAV of fault @ 10.5.
57	20-Jun-95	12-Jun-95				Qtz vns	0.02					0.03						11.1-12.6. Top Trench, Ref. #2. Vn swarm (2cm max) Vn only sampled.
58	22-Jun-95	30-Jul-95				Qtz vns	0.02					0.05						0.4-2.1. Top Trench, Ref. #2. Fe stained Qtz vn on joint plane.
59	22-Jun-95	30-Jul-95				Qtz vn	0.01					0.05						13.9. Top Trench, Ref. #3. Fe stain Qtz vn, joint? orient. 78/158
60	22-Jun-95	30-Jul-95				Qtz vn/fault	0.06					1.30						16.0. Top Trench, Ref. #3. Fault vn+AsPy, grey Fe stained.
61	22-Jun-95	30-Jul-95				Qtz vn+sst	0.06					0.13						17.0. Top Trench, Ref. #3. Stringer vns in sst. Joint? 75/123
62	22-Jun-95	30-Jul-95				Qtz vn	0.07					N/D						19.4. Top Trench, Ref. #3. Poddy, grey Qtz vn abutted against fault.
63	22-Jun-95	12-Jun-95				lode	0.30	Icelandic				0.88	1.88	1	8	40	8	12.9-13.3. Top Trench, Ref. #4. Grab of Icelandic lode
64	23-Jun-95	30-Jul-95				Qtz/shale	0.15					0.08						26.8-28.8. Top Trench, Ref. #4. Fault fill, 2m offset & // Scotchmans
65	23-Jun-95	12-Jun-95				lode	0.08	Icelandic				1.28	0.2860	1	10	80	28	12.8. Top Trench, Ref. #4. HAW Icelandic Lode
66	23-Jun-95	12-Jun-95				lode	0.24	Icelandic				0.24	0.4538	1	5	23	11	12.8. Top Trench, Ref. #4. FAV Icelandic Lode
67	23-Jun-95	30-Jul-95				Bx/sh/Qtz	0.18					0.25						17.2-17.4. Top Trench, Ref. #4. Sheared shale between fault. 72/121
68	23-Jun-95	30-Jul-95				Qtz string	0.50					0.40						17.4-18.0. Top Trench, Ref. #4. Stringer zone FAV to SRC067
69	23-Jun-95	30-Jul-95				Qtz vnsst	0.40					0.18						20.1-20.5. Top Trench, Ref. #4. Stringer zone to fault SRC070
70	23-Jun-95	30-Jul-95				fault Bx	0.10					0.03						20.5-20.8. Top Trench, Ref. #4. Fault bounded stringers. 73/329
71	23-Jun-95	30-Jul-95				Qtz string	0.20					0.18						22.3-22.8. Top Trench, Ref. #4. Fault bounded stringers. 86/184
72	28-Jun-95	30-Jul-95				lode	0.30	Icelandic				0.68						Repeat of SRC063

031516

APPENDI 5 (Cont.)

ASSAY DATA FROM SURFACE ROCKCHIP SAMPLES COLLECTED ON ML 08/95

NUMBER	SAMPLE DATE	ASSAY DATE	NORTH	EAST	RL	LITHO	WIDTH metres	LODE	LODE No	MINRE	SG	Au ppm	As %	Ag ppm	Cu ppm	Pb ppm	Zn ppm	REMARKS
73	26-Jun-95	30-Jul-95				shear silt	0.10					1.60						15.1-16.5, Top Trench, Ref #6. Sheared bed siltst, mnr qtz veins
74	26-Jun-95	30-Jul-95				qtz vein	0.04					0.10						19.2, Top Trench, Ref #6. Irregular bucky qtz vein.
75	26-Jun-95	30-Jul-95				qtz vein	0.04					0.23						20.1, Top Trench, Ref #6. Irregular bucky qtz vein.
76	26-Jun-95	30-Jul-95				qtz vein	0.04					0.50						21.0, Top Trench, Ref #6. Grey qtz vein (70/264), in shale.
77	26-Jun-95	30-Jul-95				qtz vein	0.08					0.15						28.5-28.6, Top Trench, Ref #6. Milky qtz vein @78/313
78	26-Jun-95	30-Jul-95				qtz vn/sst	0.15					0.08						28.8-29.0, Top Trench, Ref #6. Milky qtz vein + sandstone (qtz 40%)
79	26-Jun-95	30-Jul-95				qtz vn/sst	0.03					0.18						2.6, Top Trench, Ref #7. Qtz Vn. (90/125) mnr. sst. Qtz. (90%)
80	26-Jun-95	30-Jul-95				Bx shale	0.04					1.40						60-8.2, Top Trench, Ref #7. Brecciated shale bed @ 42/045
81	26-Jun-95	30-Jul-95				flt gouge	0.10					0.13						10.2, Trench #3, Ref #1. Sil. sst. fault gouge, with 30% qtz. (87/356)
82	26-Jun-95	30-Jul-95				flt gouge	0.04					2.70						13.4, Trench #3, Ref #1. Brecciated shale gouge, mnr qtz. (78/272)
83	26-Jun-95	30-Jul-95				qtz vein	0.04					0.48						15.5, Trench #3, Ref #1. Qtz. vein + mnr brecciated shale (qtz 80 %)
84	26-Jun-95	30-Jul-95				qtz vein	0.04					0.13						17.7, Trench #3, Ref #1. Irregular qtz vein.
85	26-Jun-95	30-Jul-95				flt gouge	0.02					0.48						9.0, Trench #3, Ref #1. Brecciated shale gouge + qtz veining (70%)
86	26-Jun-95	30-Jul-95				qtz vein	0.02					0.15						10.5, Hill Trench, Ref #1. Two milky qtz veins, (08/236).
87	26-Jun-95	30-Jul-95				qtz vein	0.04					0.10						17.6, Hill Trench, Ref #1. Milky qtz vein (85/136)
88	26-Jun-95	30-Jul-95				qtz vein	0.00					0.23						18.4, Hill Trench, Ref #1. Milky qtz vein in shear zone. 65/079
89	26-Jun-95	30-Jul-95				lode	0.20	12 Trees				1.75						28.3-28.5, Trench #4, Ref #1. Mottled white/grey qtz. lode.
90	26-Jun-95	30-Jul-95				lode	0.20	12 Trees				1.70						28.3-28.5, Trench #4, Ref #1. Mottled white/grey qtz. lode.
91	26-Jun-95	30-Jul-95				lode	0.20	12 Trees				0.88						28.3-28.5, Trench #4, Ref #1. Composite of floaters' from lode.
92	26-Jun-95	30-Jul-95				flt gouge	0.04					0.22						17.7, Trench #4, Ref #1. Pink/brown qtz fault gouge, 84/285.
93	26-Jun-95	30-Jul-95				flt gouge	0.07					0.08						3.5, Trench #4, Ref #1. Brown qtz fault gouge. 75/063.
94	02-Jul-95	30-Jul-95				cleve. argill	4.00					0.10						35.6-39.6, Trench #5, Ref #1. Cleaved/silicified grey/green argillite
95	02-Jul-95	30-Jul-95				qtz vein	0.02					0.56						7.4, Hill Trench, Ref #2. Laminated grey qtz vein, 80/217 // to So.
96	05-Jul-95	30-Jul-95				qtz vein	0.02					0.58						20.5, Trench #6, Ref #1. Laminated, grey (AsPy?) qtz. vn, 78/317.
97	05-Jul-95	30-Jul-95				shale bed	0.06					0.55						28.0, Trench #6, Ref #1. Irregular, laminated qtz. vn. in shale bed.
98	05-Jul-95	30-Jul-95				qtz vein	0.03					0.24						32.6, Trench #6, Ref #1. Bucky qtz vein in joint. 82/331.
99	05-Jul-95	30-Jul-95				shale bed	0.03					0.14						36.0, Trench #6, Ref #1. Black shale bed with qtz veining (5%).
100	05-Jul-95	30-Jul-95				qtz vein	0.02					0.18						37.5, Trench #6, Ref #1. Bucky qtz vein, mnr. AsPy, in joint, 54/048.
101	05-Jul-95	30-Jul-95				qtz vein	0.03					1.07						42.5, Trench #6, Ref #1. Bucky qtz vein, mnr. AsPy, in joint, 32/181.
102	07-Jul-95	30-Jul-95				sst bed	0.10					0.23						2.5-2.6, Hill Trench, Ref #3. Sil. sst bed, with 5% AsPy qtz veins.
103	07-Jul-95	30-Jul-95				bx shale	0.20					0.27						2.6-2.8, Hill Trench, Ref #3. Brecciated shale bed, mnr qtz veins.
104	07-Jul-95	30-Jul-95				sst+qtz vns	0.30					1.20						2.8-3.1, Hill Trench, Ref #3. Sil. sst+irregular (30%) bucky qtz vns.
105	07-Jul-95	30-Jul-95				qtz vein	0.10					0.09						3.1-3.2, Hill Trench, Ref #3. Bucky qtz vein, 78/102.
106	07-Jul-95	30-Jul-95				qtz vein	0.02					0.09						5.0, Hill Trench, Ref #3. Laminated qtz. vein, strong Fe stain.
107	07-Jul-95	30-Jul-95				silt/shale	0.06					0.15						9.8, Hill Trench, Ref #3. Siltst. graded to shale, abundant qtz blebs.
108	10-Jul-95	30-Jul-95				qtz vein	0.04					0.17						4.0, Trench #7, Ref #1. Bucky (mnr. AsPy) qtz vein, 55/173.
109	10-Jul-95	30-Jul-95				qtz vein	0.10					0.08						9.6, Trench #7, Ref #1. Bucky (mnr. AsPy) qtz vein, 90/245.
110	10-Jul-95	30-Jul-95				qtz vein	0.12					0.08						20.6, Trench #7, Ref #1. Bucky (mnr. AsPy) qtz vein, 90/245.
111	10-Jul-95	30-Jul-95				qtz gouge	0.03					0.07						0.5, Hill Trench, Ref #4. Red/brown qtz vein es fault fil, 80/203.
112	10-Jul-95	30-Jul-95				lode	0.05	Martins X				10.9						2.4, Hill Trench, Ref #4. Qtz vein+AsPy lode on fault, 72/160.
113	10-Jul-95	30-Jul-95				qtz gouge	0.10					0.20						15.8, Hill Trench, Ref #4. Qtz (30%), + shale fault fil, 78/185.
114	11-Jul-95	30-Jul-95				qtz gouge	0.03					0.42						18.4, Hill Trench, Ref #5. Bucky qtz fault fill+mnr sst, 84/233.
115	11-Jul-95	30-Jul-95				qtz gouge	0.30					0.08						18.4-19.1, Hill Trench, Ref #5. Bucky qtz fault fill, 84/233.
116	11-Jul-95	30-Jul-95				qtz vein	0.08					0.08						9.4, Hill Trench, Ref #6. Intersection w/o bucky qtz veins.
117	12-Jul-95	30-Jul-95				qtz vein	0.03					0.05						16.5, Hill Trench, Ref #7. Grey qtz vein +AsPy blebs, // to So.
118	12-Jul-95	30-Jul-95				sat bed	0.15					0.08						17.0-17.2, Hill Trench, Ref #7. Sil. sst with 30% bucky qtz veins.
119	12-Jul-95	30-Jul-95				qtz vein	0.02	Walley's?				4.45						18.7, Hill Trench, Ref #7. Approx. 40% AsPy in qtz vein. 84/289.
120	12-Jul-95	30-Jul-95				qtz vein	0.02					0.08						20.7, Hill Trench, Ref #8. Grey qtz vein on So?, 84/247.
121	12-Jul-95	30-Jul-95				qtz gouge	0.02					1.01						0.5, Hill Trench, Ref #8. Qtz/rubble fault fil, // to So, 70/264.
122	12-Jul-95	30-Jul-95				sl' sst	2.00					0.03						18.0-18.0, Hill Trench, Ref #8. Ma. fine, silicified sst. bed, 85/282.
123	13-Jul-95	30-Jul-95				qtz vein	0.03					0.03						9.5, Hill Trench, Ref #10. 3.1cm bucky qtz veins over 0.7m.
124	18-Jul-95	21-Aug-95				shear sst	3.30					0.030	0.0366					5.6-9.1, Mt. Vic. Escarp. Cleaved/sheared sst/silt/argillite, 85/253.
125	18-Jul-95	21-Aug-95				silt sst	3.10					0.232	0.2745					28.2-31.3, Mt. Vic. Escarp. Silicified sst with 10% qtz stringers.
126	18-Jul-95	21-Aug-95				qtz string	0.60					0.370	0.0982					31.8-32.4, Mt. Vic. Escarp. HAW Montana? sst+qtz stringers (80%).
127	18-Jul-95	21-Aug-95				sst/argill	0.60					0.418	0.2390					32.4-33.0, Mt. Vic. Escarp. Sat/argillite beds +30% qtz stringers.
128	18-Jul-95	21-Aug-95				qtz string	1.00					0.299	0.2568					35.1-36.1, Mt. Vic. Escarp. Stringer qtz veins around fault, 88/005.
129	18-Jul-95	21-Aug-95				qtz string	0.20					2.770	0.1559	2	2	17	7	39.5-39.7, Mt. Vic. Escarp. FAW stringers to lode, mnr AsPy.
130	18-Jul-95	21-Aug-95				lode	0.10	?				0.642	0.7184	1	16	24	9	39.7-39.8, Mt. Vic. Escarp. FAW lode, mottled, massive grey/blue qtz.
131	18-Jul-95	21-Aug-95				lode	0.10	?				0.347	0.4798	1	2	25	5	39.8-39.9, Mt. Vic. Escarp. HAW lode, mottled, massive grey/blue qtz.
132	18-Jul-95	21-Aug-95				lode?	0.20	?				0.110	0.0882					28.0-28.2, Mt. Vic. Escarp. Brecciated shale, fault fill 80/266.
133	20-Jul-95	21-Aug-95				lode	0.15	Icelandic				0.301	0.3945	1	2	33	4	Trench 11, Icelandic Lode. Massive, blue/grey qtz. 80/130.
134	20-Jul-95	21-Aug-95				lode		Icelandic				0.064	0.4722	1	2	159	6	Trench 11, Icelandic Lode. Composite of largest floaters'.
135	20-Jul-95	21-Aug-95				lode		Icelandic				0.453	0.3775	1	2	32	16	Trench 11, Icelandic Lode. Composite of all floaters'.

APPENDIX 5 (Cont.)

ASSAY DATA FROM UNDERGROUND ROCKCHIP SAMPLES COLLECTED ON ML 6W95

All sample numbers are prefixed by "URC"

Sample detection limit (Aqueatic Lab) Au = 0.05ppm. Values of >0.05 input as 0.03
 Sample detection limit (Analabs) Au= 0.008ppm. Values of > 0.008 input as 0.004
 Sample detection limit (Analabs) Ag= 2ppm. Values of > 2 input as 1
 Sample detection limit (Analabs) Pb= 5ppm. Values of > 5 input as 3
 Sample detection limit (Analabs) Cu= 4ppm. Values of > 4 input as 2
 Sample detection limit (Analabs) Zn= 4ppm. Values of > 4 input as 2
 Sample detection limit (Analabs) As= 100ppm. Values of > 100 input as 50 in %
 Repeat samples are averaged (See Table 1)

NUMBER	SAMPLE DATE	ASSAY DATE	NORTH	EAST	RL	LITHO	WIDTH metres	LODE	LODE No	MINE	SG	Au ppm	As %	Ag ppm	Cu ppm	Pb ppm	Zn ppm	REMARKS
1	16-May-95					Lode Bx	0.10	R. Youth		R. Youth		18.00						Lower Adit, North End lode. Repeat of Hemmans sample
2	16-May-95					Lode Bx	0.15	R. Youth		R. Youth		2.00						Lower Adit, South End lode. Repeat of Hemmans sample
7	16-May-95					Fault/Vh	0.15			Long Strug		0.20						Flooded winze, 5m NE of Cross Ree. Winze followed vein.
8	16-May-95					Lode/Qtz	0.50	Rostind		Ring Untd		0.75						Collapse near ballroom.
9	08-Jun-95					Lode/Qtz	0.10	Cross		Long Strug		0.28						Long Struggle 390m edit mapping. Cross reef extension
10	08-Jun-95					Lode/Qtz	0.10	Cross		Long Strug		0.09						Long Struggle 390m edit mapping. Cross reef extension
11	08-Jun-95					Fault/Vh	0.15			Long Strug		1.00	1.63					Long Struggle 390m edit mapping. Fault Fill. 70 metres from X cut
12	08-Jun-95					Lode/Qtz	0.60	Cross		Long Strug		0.08						Long Struggle 390m edit mapping. Cross reef extension.
13	08-Jun-95					Fault/Bx	0.10			Long Strug		1.30						Long Struggle 390m edit mapping. Backs of North X cut.
14	08-Jun-95					Qtz/sh/bx	0.40			Long Strug		0.08						Long Struggle 390m edit mapping. 8 metres from x cut. Lode in backs
15	08-Jun-95					Qtz/sh/bx	0.10			Long Strug		0.10						Long Struggle 390m edit mapping. 20 metres from x cut. Lode in backs
16	08-Jun-95					Qtz/sh/bx	0.35			Long Strug		0.90						Long Struggle 390m edit mapping. 38 metres from x cut. Lode in backs
17	08-Jun-95					Qtz string	0.50			Long Strug		0.08						Long Struggle 390m edit mapping. Fault Fill. 68 metres from X cut
18	08-Jun-95					Qtz gash	0.30			Long Strug		0.36						Long Struggle 390m edit mapping. Gash vein 25metres from North X cut
19	08-Jun-95					Qtz lode/bx	0.15	Cleaton	1	Long Strug		0.84						Long Struggle 390m edit mapping. Northern most exposure
20	08-Jun-95					Qtz lode/bx	0.15	Cleaton	1	Long Strug		2.20						Long Struggle 390m edit mapping. At intersection of main drv
21	08-Jun-95					Qtz lode/bx	0.40	Cleaton	1	Long Strug		7.50	0.6747					Long Struggle 390m edit mapping. 4 metres south of main drv.
22	08-Jun-95					Lamin qtz	0.15	Cleaton	1	Long Strug		0.14						Long Struggle 390m edit mapping. F/W selevage of lode.
23	08-Jun-95					Lamin qtz	0.20	Cleaton	1	Long Strug		0.13						Long Struggle 390m edit mapping. F/W selevage of lode.
24	08-Jun-95					Lode/Qtz	0.60	Cross		Long Strug		0.05						Long Struggle 390m edit mapping. Cross reef extension.
25	08-Jun-95					Qtz Vns	0.10	Point		Point Upper		4.40						Point Workings, Upper Adit. Qtz veining at end of 330 Mag development.
26	12-Jun-95					Qtz/fault	0.20	Scotch		Scotchmans		0.12						Ref. mapping, fault fill. 40% qtz 60% pug.
27	12-Jun-95					Qtz/fault	0.10	Scotch		Scotchmans		14.50	0.1903	1	2	59	16	Ref. Mapping. Fault fill near sky shaft.
28	12-Jun-95					Qtz/fault	0.10	Scotch		Scotchmans		0.30						Ref. Mapping. Fault fill near floor stripping.
29	12-Jun-95					Qtz/Bx	0.10	Mems		Mems		0.34						8.1 metres from portal. Bx qtz v/fault, minor sulphides
30	12-Jun-95					Qtz String	1.10	Mems		Mems		0.13						29 metres from portal. Fault filling qtz vein
31	12-Jun-95					Qtz/fault	0.15	Mems		Mems		0.13						31 metres from portal. Fault filling qtz vein
32	12-Jun-95					Qtz vein	0.10	Mems		Mems		0.08						34 metres from portal. Fault filling qtz vein
33	12-Jun-95					Qtz vein	0.10	Scotch		Mems		0.10						36 metres from portal. Fault filling qtz vein
34	12-Jun-95					Qtz/pug	0.15	Scotch		Scotchmans		0.13						Ref. mapping, Fault fill, qtz 30%.

SUMMARY OF EXPENDITURE ALBERTON MINING LEASES
44M/88 45M/88 46M/88
FINANCIAL YEAR 94/95

Summary of professional services supplied by F.W.Lannen and Associates

Days worked on project per month

Month/year	G.D.I	S.L.G	F.W.L	M.K	D.J.B	T.A	Total
July 94	17	0.5	1	1			19.5
Aug 94	4	1	1	1			7
Sep 94	6	1.5	1	1			9.5
Oct 94	10	2	3	3	1	1	20
Nov 94	9.5	3.5	4.5	0.5			18
Dec 94	2	2		1			5
Jan 95	1	0.5					1.5
Feb 95	0.5						0.5
March 95	2.5	0.5	0.5	0.5			4
April 95	4.1		0.5	0.5	1		6.1
May 95	2.5		1	2	2.5	12	20
June 95	2.5		1	1	3.3	16.9	24.7
TOTAL DAYS							135.8

Charge out rate per person per day	\$650
Total amount	\$88,270

Field Labour Employed at Alberton Leases

Hours employed per month

Month/year	R.K	M.L	D.R	total
July 94				0
Aug 94				0
Sep 94				0
Oct 94				0
Nov 94				0
Dec 94				0
Jan 95				0
Feb 95				0
March 95				0
April 95				0
May 95				0
June 95	55	22	11	88
Total Hours				88

Charge out cost per person per hour	\$20
Total cost	\$1,760

Vehicle hire. 4 WD

Days hire per month

Month/year	G.D.I	S.L.G	F.W.L	M.K	D.J.B	T.A	Labour	Total
July 94	2							2
Aug 94								0
Sep 94	1							1
Oct 94			1	1	1	1		4
Nov 94		2						2
Dec 94	2							2
Jan 95								0
Feb 95								0
March 95								0
April 95	3							3
May 95	1					4		5
June 95	1				2	13		16
TOTAL DAYS								35

Invoice cost per person per day	\$100
Total invoiced amount	\$3,500

Vehicle running costs.

Total Km	4500
Running cost per Km	\$0.32
Total running costs	\$1,440

INVOICED ITEMS

Date	Item	Amount
28-Jun-95	Council rates	\$310.65
13-Jun-95	Excavator Hire. (Gerke)	\$2,695.00
30-Jun-95	Environmental bond	\$5,000.00
07-Jun-95	Websters (tools)	\$21.96
01-Jul-94	Tas. Development and Resources (NetGold)	\$50.00
25-Jul-94	Tas. Development and Resources (NetGold)	\$155.00
15-Sep-94	Tas. Development and Resources (NetGold)	\$900.00
15-Sep-94	Tas. Development and Resources (NetGold)	\$22.50
31-Jan-95	Tas. Development and Resources (NetGold)	\$225.00
01-Apr-95	Tas. Development and Resources (Credit)	(\$110.00)
04-Jul-94	Assay prior to trenching	\$143.00
19-Mar-95	Stationary	\$50.00
17-Oct-94	Stamp duty	\$20.00
07-Nov-94	Drafting	\$745.00
12-Jun-95	Assays "Aquatic labs" inv No. 140	\$510.00
14-Jun-95	Misc. Tools UMT Legerwood	\$68.10
30-May-95	Allgoods, field pack and lights	\$208.15
14-May-95	Aerial photos	\$100.00
18-May-95	Printed A3 drafting sheets	\$250.00
27-Jun-95	Cap Lamp Batteries	\$89.00
16-May-95	Sample bags	\$260.00
01-Jul-95	Websters, tools	\$14.68
94/95	Office Administration	\$2,368.00
94/95	Accom and rent	\$4,150.00
94/95	HEC (Rental Houses)	\$561.00
94/95	Telecom	\$483.00
94/95	Licences and leases (TDR)	\$4,965.00

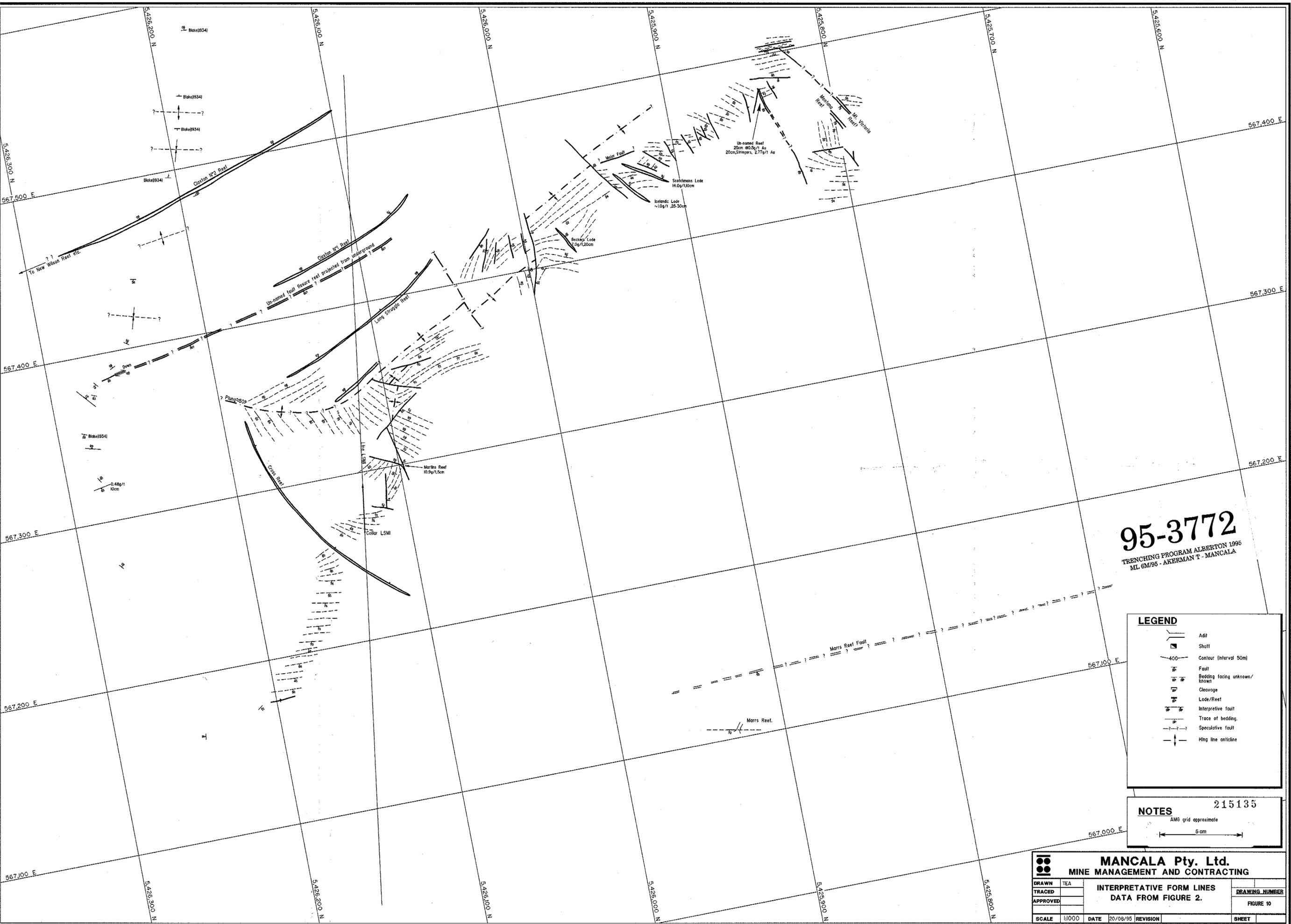
Total \$24,255

Overhead and administration cost applied to invoice figure 10.00%

Total cost of invoiced items. \$26,681

TOTAL EXPENDITURE: Alberton mining leases 94/95

Summary of professional services supplied by F.W.Lannen	\$88,270
Field Labour Employed at Alberton Leases	\$1,760
Vehicle hire. 4 WD	\$3,500
Vehicle running costs.	\$1,440
Invoiced Items	\$26,681
TOTAL	\$121,651



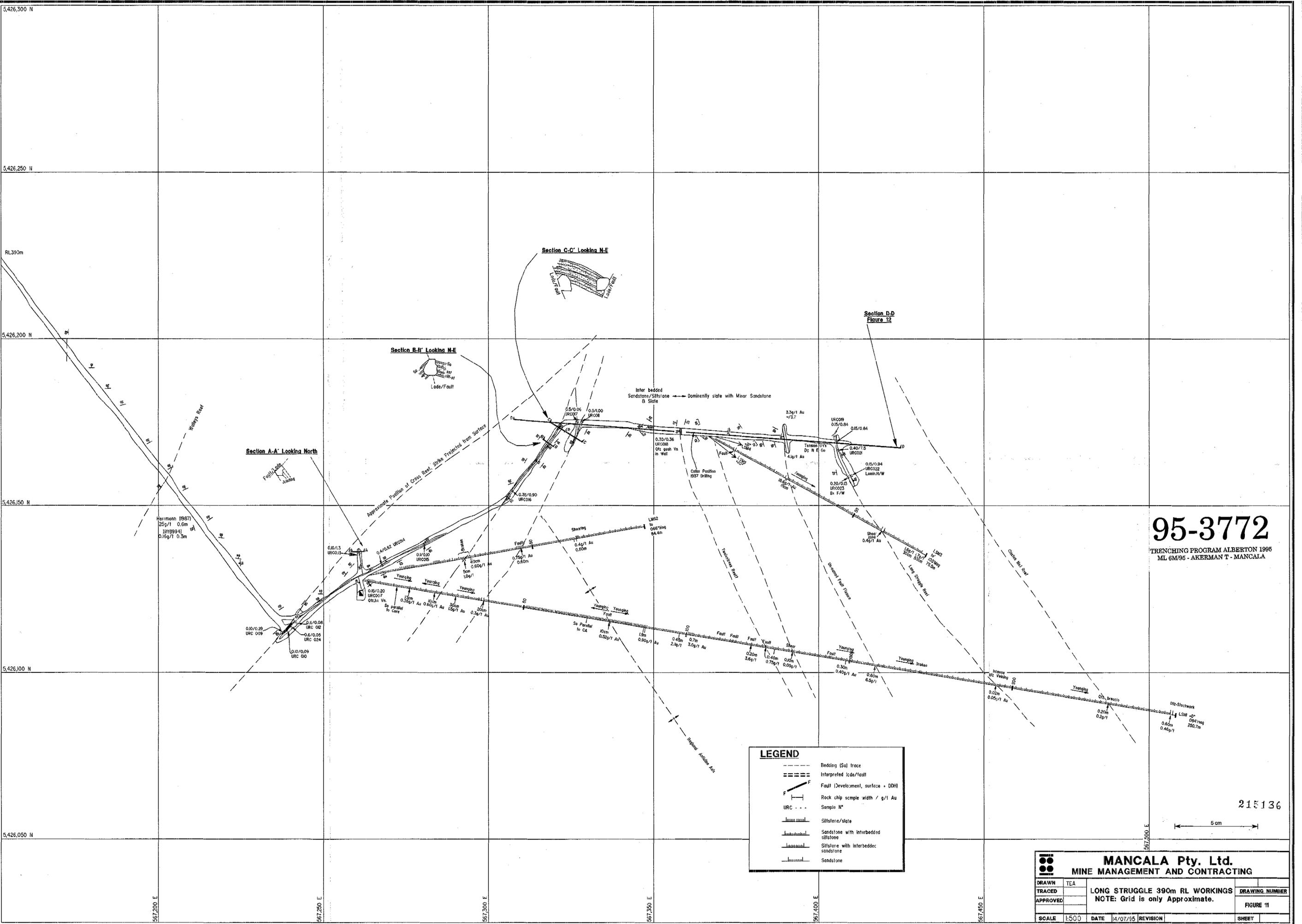
95-3772
 TRENCHING PROGRAM ALBERTON 1995
 ML 6M/95 - AKERMAN T - MANCALA

LEGEND

	Adit
	Shaft
	Contour (Interval 50m)
	Fault
	Bedding facing unknown/ known
	Cleavage
	Lode/Reef
	Interpretive fault
	Trace of bedding
	Speculative fault
	Hing line anticline

NOTES 215135
 AMG grid approximate

MANCALA Pty. Ltd.			
MINE MANAGEMENT AND CONTRACTING			
DRAWN TEA	INTERPRETATIVE FORM LINES		DRAWING NUMBER
TRACED	DATA FROM FIGURE 2.		FIGURE 10
APPROVED	SCALE 1:1000	DATE 20/09/95	REVISION
			SHEET



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 TRENCHING PROGRAM ALBERTON 1995
 ML 6M/95 - AKERMAN T - MANCALA

215136

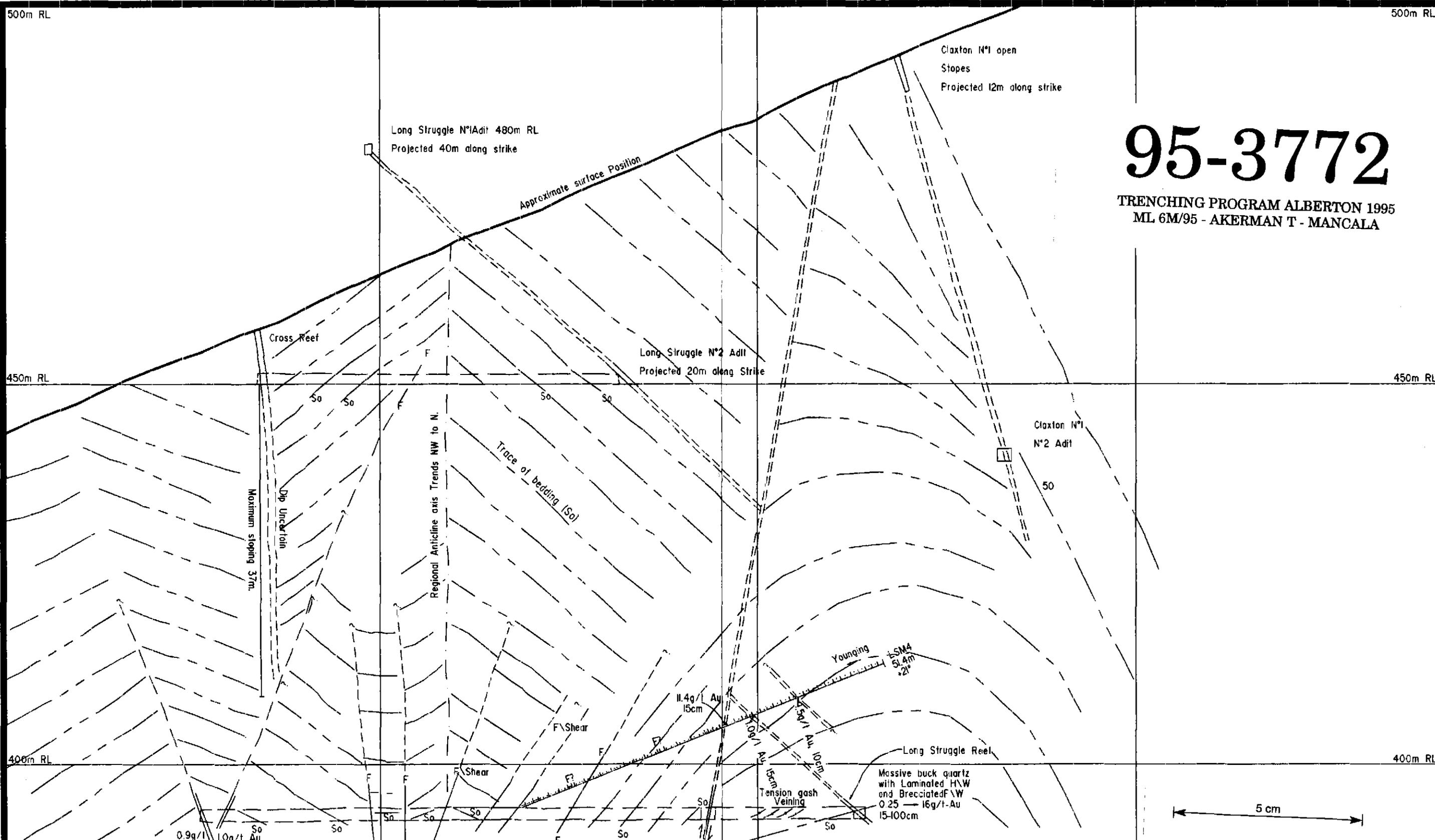
LEGEND

	Bedding (So) trace
	Interpreted lode/fault
	Fault (Development, surface + DDH)
	Rock chip sample width / g/1 Au
	Sample N°
	Siltstone/slate
	Sandstone with interbedded siltstone
	Siltstone with interbedded sandstone
	Sandstone

		MANCALA Pty. Ltd.	
MINE MANAGEMENT AND CONTRACTING			
DRAWN	TEA	LONG STRUGGLE 390m RL WORKINGS	DRAWING NUMBER
TRACED			FIGURE 11
APPROVED		NOTE: Grid is only Approximate.	
SCALE	1:500	DATE	14/07/95
		REVISION	
		SHEET	

95-3772

TRENCHING PROGRAM ALBERTON 1995
ML 6M/95 - AKERMAN T - MANCALA



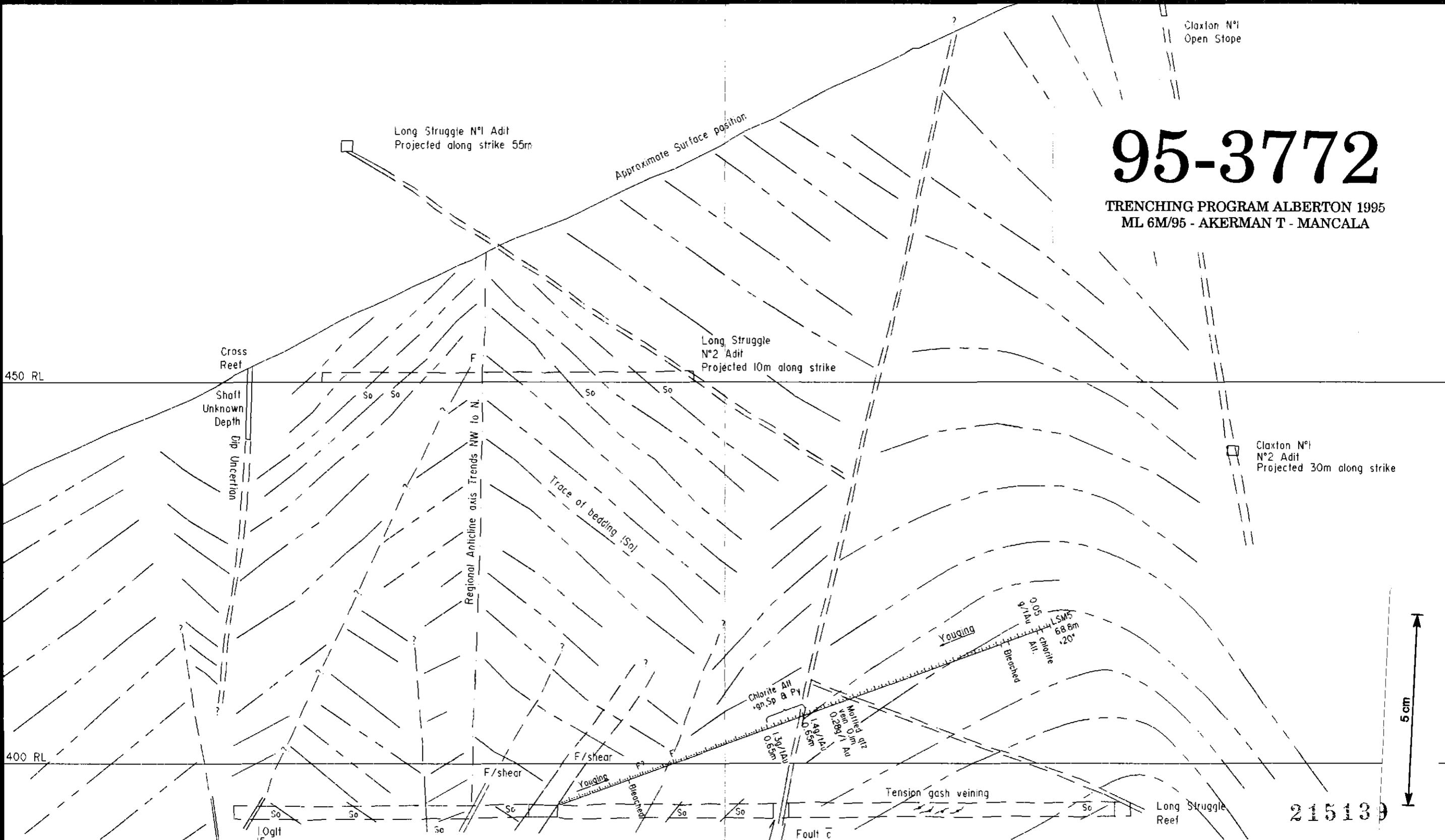
LEGEND	
	Bedding (So) trace
	Interpreted lode/fault
	Fault (Development, surface + DDH)

		MANCALA Pty. Ltd.	
DRAWN	TEA	DRILL SECTION LMS4 (107.5 AMG) & SPECULATIVE GEOLOGICAL INTERPRETATION See Figure 11 for Location.	
TRACED			
APPROVED			
SCALE	1:500	DATE	29/8/95
		REVISION	
		DRAWING NUMBER	
		Figure 13	
		SHEET	

Claxton N°1
Open Stope

95-3772

TRENCHING PROGRAM ALBERTON 1995
ML 6M/95 - AKERMAN T - MANCALA



450 RL

400 RL

5 cm

215139

LEGEND	
	Bedding (So) trace
	Interpreted lode/fault
	Fault (Development, surface + DDH)

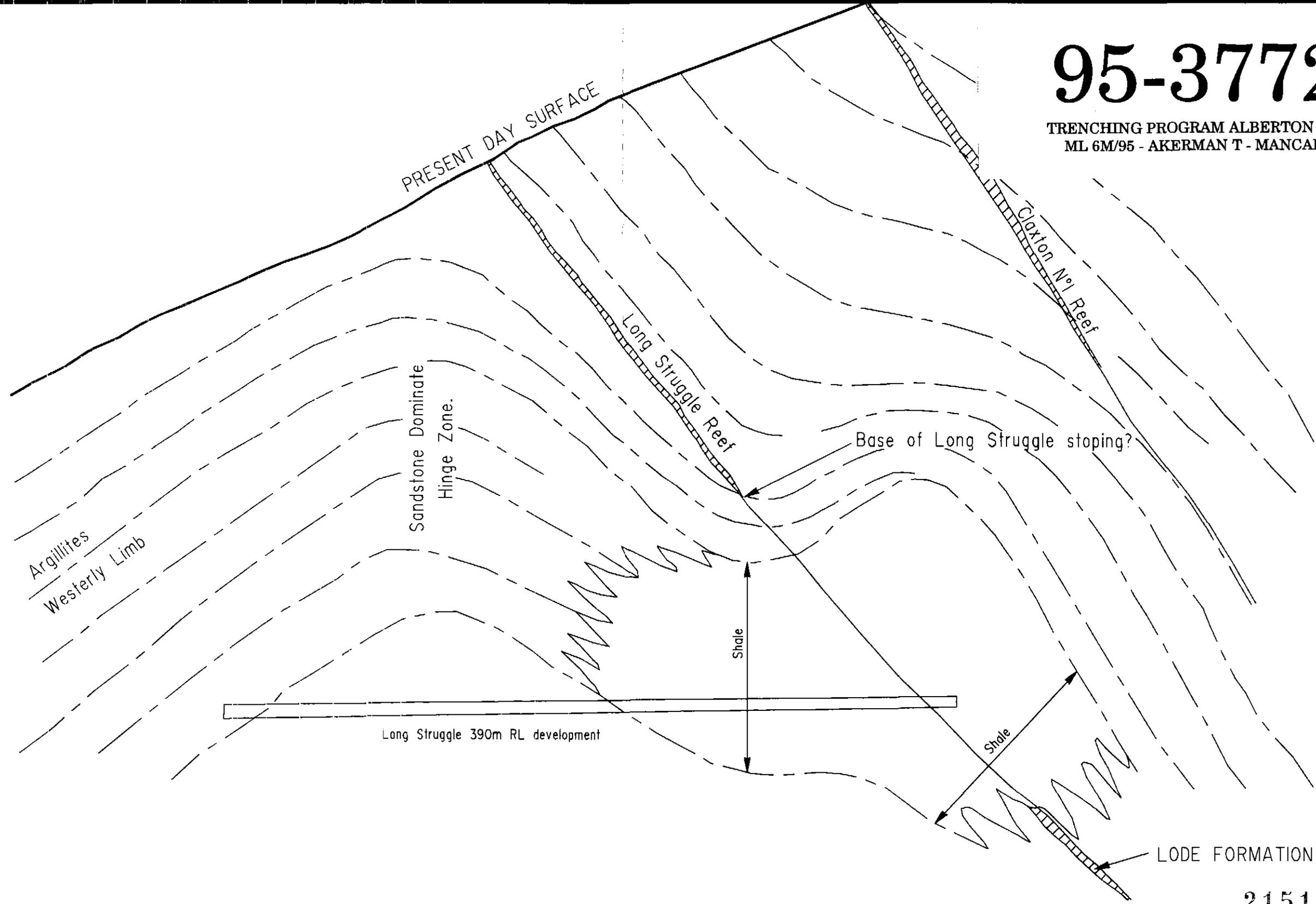
		MANCALA Pty. Ltd.		DRILL SECTION LMS5 (125.5 AMG) AND SPECULATIVE GEOLOGICAL INTERPRETATION See figure 11 for Location.		DRAWING NUMBER	
						Figure 14	
DRAWN	TEA	SCALE	1:500	DATE	04/05/95	REVISION	SHEET

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TRENCHING PROGRAM ALBERTON 1995
ML 6M/95 - AKERMAN T - MANCALA

WEST

EAST

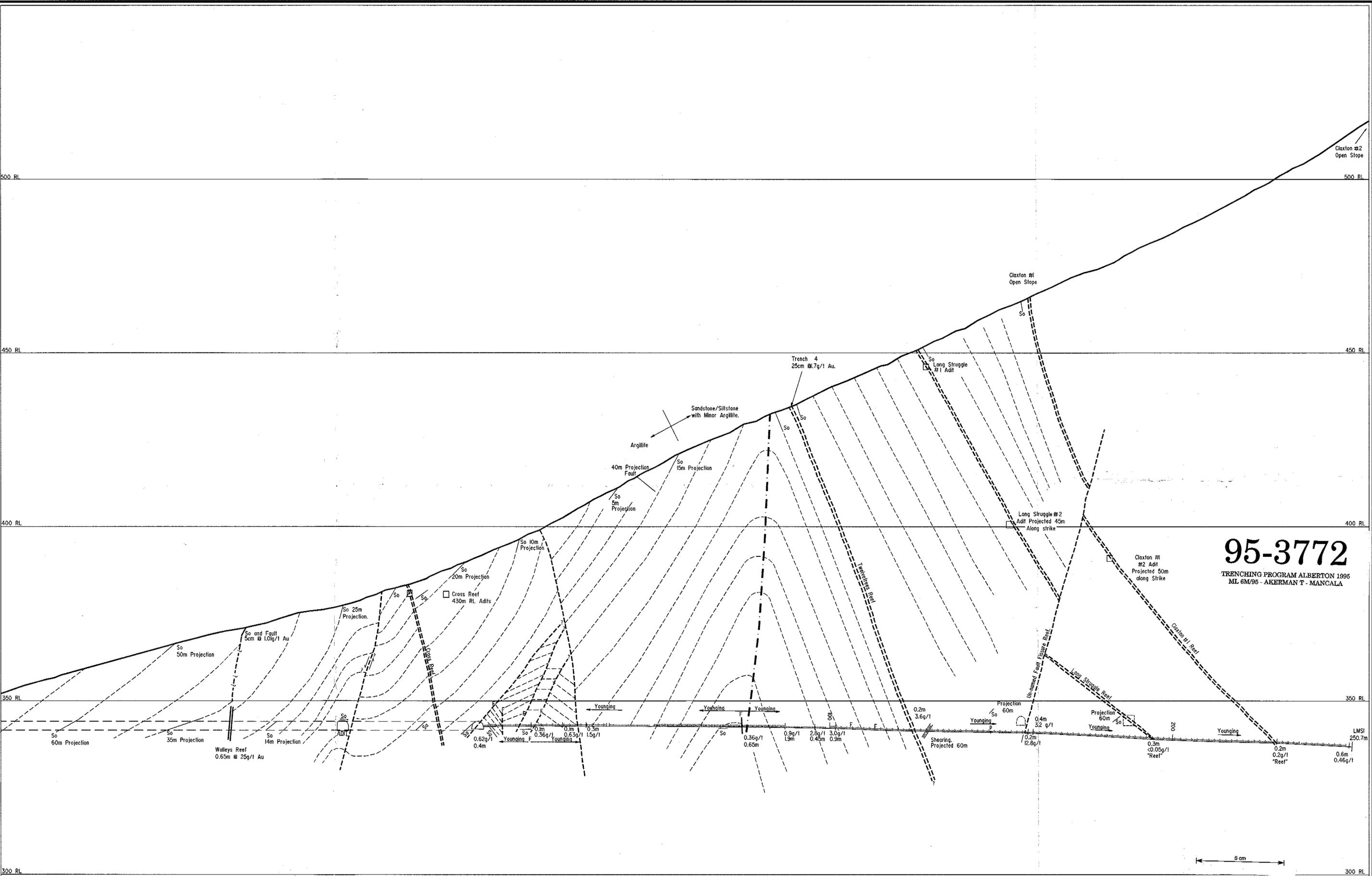


215140



MANCALA Pty Ltd.

DRAWN	TEA	SPECULATIVE PRE-FAULTING RECONSTRUCTION OF LONG STRUGGLE AREA	DRAWING NUMBER		
TRACED			Figure 15		
APPROVED					
SCALE	N/A	DATE	18/08/95	REVISION	
			SHEET		

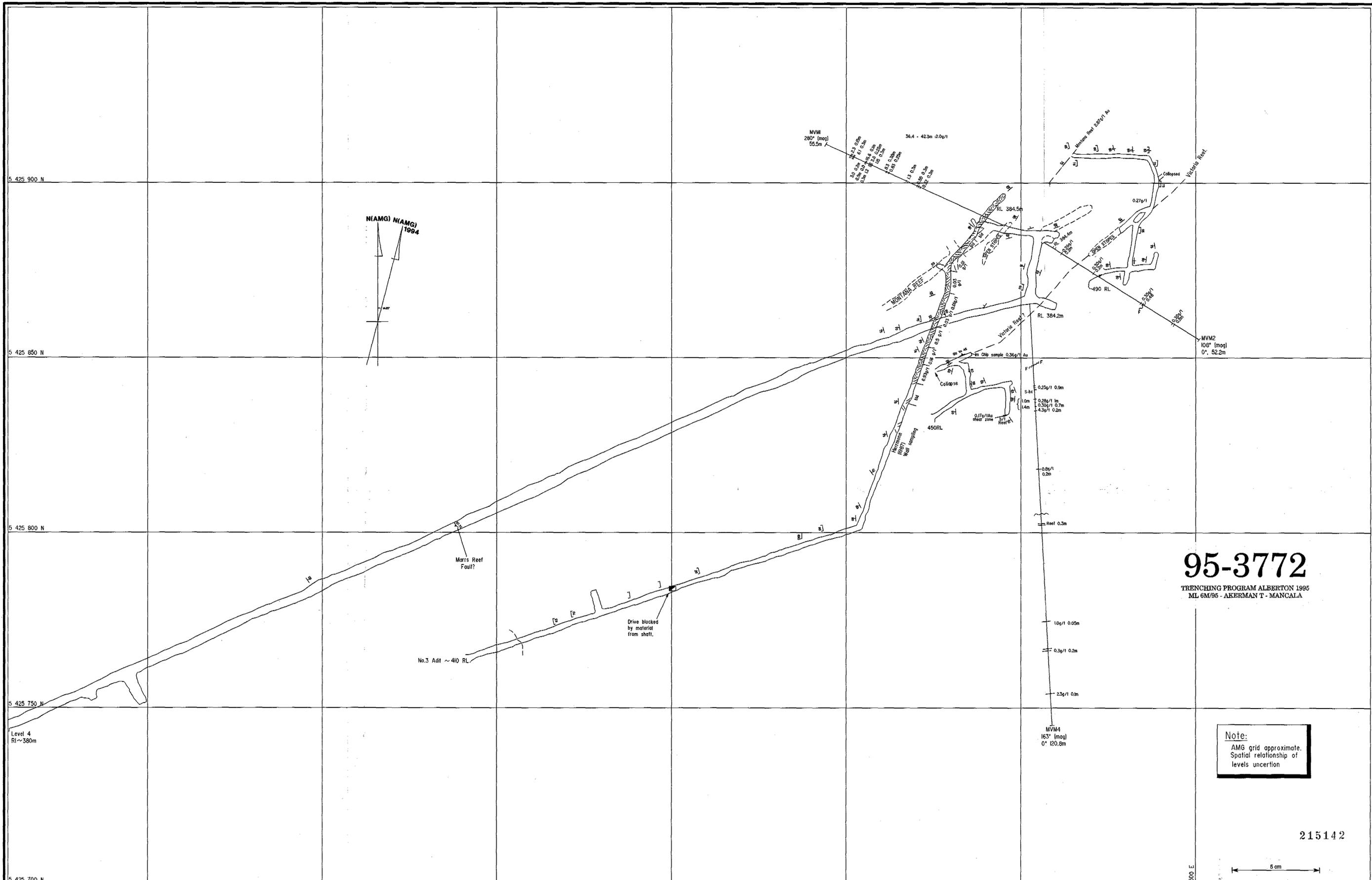


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 TRENCHING PROGRAM ALBERTON 1995
 ML 6M/95 - AKERMAN T - MANCALA

LEGEND

- Bedding (So) trace
- - - - - Interpreted lode/fault
- F Fault (Development, surface + DDH)

		MANCALA Pty. Ltd. MINE MANAGEMENT AND CONTRACTING		LMS1 DRILL SECTION ORIENTATED 98.5° AMG SHOWING LODE RELATIONSHIP BETWEEN SURFACE, DDH AND UNDERGROUND.		DRAWING NUMBER	
						FIGURE 16	
DRAWN TRACED APPROVED	TEA/GDI	SCALE 1:500	DATE 24/08/95	REVISION	SHEET	215141	



95-3772

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Note:
AMG grid approximate.
Spatial relationship of
levels uncertain

215142

5 cm

MANCALA Pty. Ltd. MINE MANAGEMENT AND CONTRACTING			
DRAWN	SFM	COMPOSITE OF MT. VICTORIA MINE WORKINGS FROM MAPPING OF HERRMANN (1987) & O'CONNOR (1994) (PERS.COMM.)	DRAWING NUMBER
TRACED			FIGURE-17
APPROVED			
SCALE	1:500	DATE	3/08/95
		REVISION	
		SHEET	