MineQuest Report #303
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VOWELL CREEK CLAIMS

DRILLING 2000

Golden Mining Division

N.T.S. 82K/15W

Latitude 50 ° 57' N
Longitude 116 ° 58.5' E

UTM Zone 11: 500500E; 5644000N

by
R. V. Longe, P.Eng. of
MineQuest Exploration Associates Ltd.
and
R.T. Walker, P.Geo, of Dynamic Exploration

for
Mountain Star Resources Ltd and
Bright Star Metals Inc.

Vancouver, B.C. December 2000

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1.0 INTRODUCTION

1.1 Location & Access

The Vowell Creek property of Bright Star Metals is located on the southeast flank of Azurite Mountain, approximately 45 kilometres south of Golden, British Columbia.

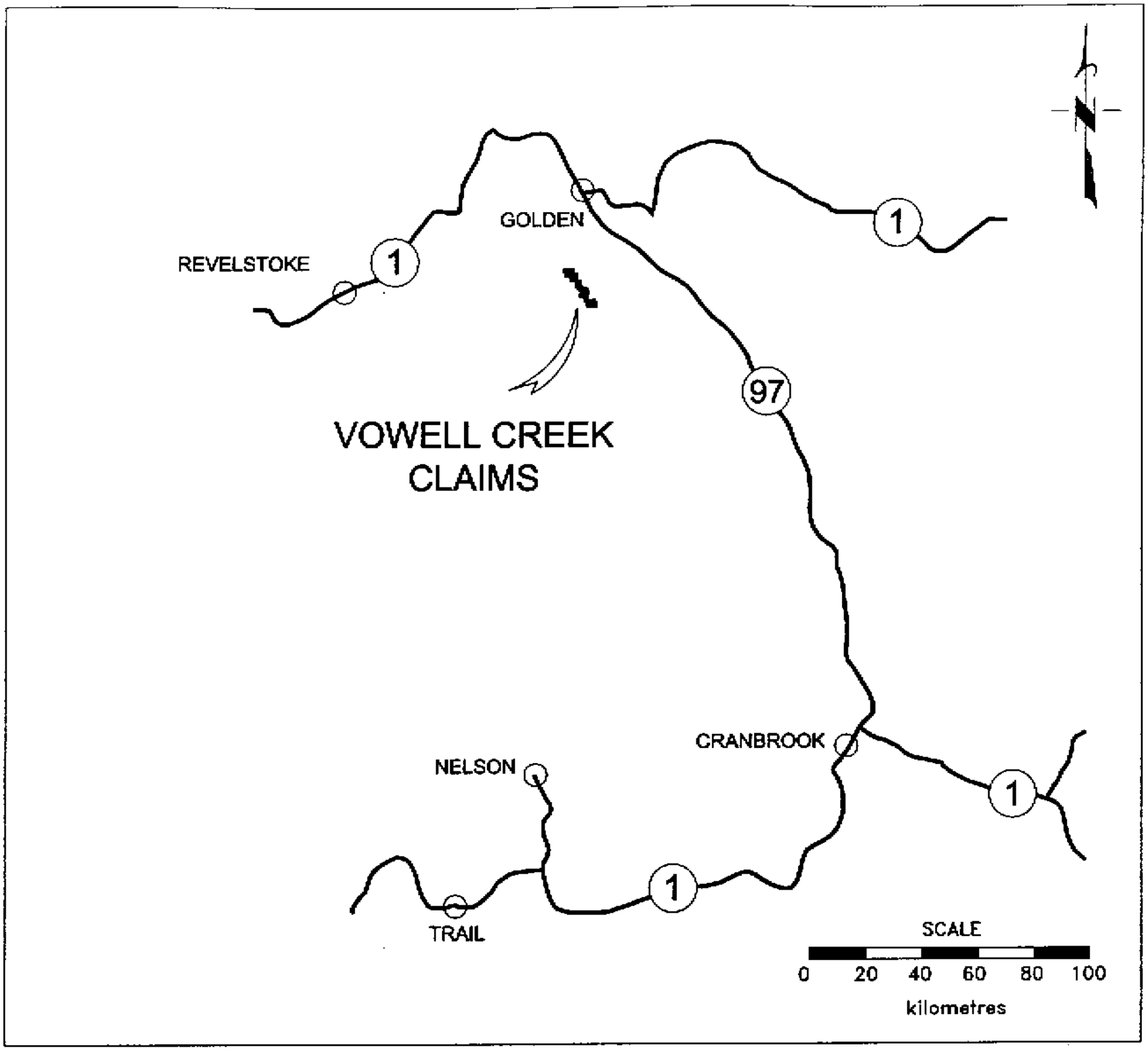
Access to the property is from the village of Parson on Highway 99, via the Spillimacheen and Vowell Creek logging roads ("South Fork"). At Kilometre 49 an old mining road, recently upgraded by Crestbrook Forest Industries, leads to the Ruth-Vermont Mine road. At Kilometre 53 a portion of the Renn Camp mining road leads to the LCP zone via a combination of mining and logging roads, some of them partially reclaimed.

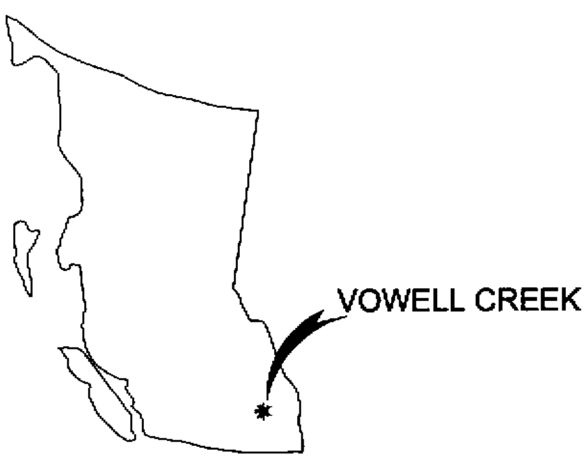
1.2 Topography & Vegetation

The property extends north of Vermont Creek for seven kilometres to beyond Malachite Creek and south for a similar distance to straddle both Crystal and Crystalline creeks. Elevations range from 5000 to 8550 feet a.s.l. (1500 to 2600 m). Vegetation is absent in much of the high ground. Natural vegetation of the lower ground consists of coniferous forest except in slide zones where alder predominates. Extensive areas of the southern claims have been logged and logging is now active over much of the watershed of both Vermont and Crystalline Creeks.

1.3 Nature of Property and Purpose of Drilling

The claim block covers a belt of Precambrian sediments. In addition to being prospective for sedex type lead-zinc-silver deposits, these cover the Ruth Vermont former mine where some 300,000 tons of lead-zinc-silver resources have already been established. While the latter are not of sedex type, this deposit is believed to be closely related to such deposits and to be indicative of





R. V. LONGE

ENGINEER

BRIGHT STAR METALS INC.	
VOWELL CREEK PROJECT	
RUTH VERMONT	
LOCATION MAP	
N.T.S. 82 K / 15W	Figure 1
MineQuest Exploration Associates Ltd.	

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the potential of the area. Drilling in 2000 was directed at both the Ruth Vermont and at the LCP zone, three kilometres to the south, where promising indications of lead-zinc-silver sulphides were first intersected in 1973.

The Ruth Vermont The drill program near the former mine was directed principally at finding a stratiform, sedimentary exhalative lead-zinc-silver deposit lying at stratigraphic levels below the existing sulphide body. A drill hole with the same purpose was drilled from underground in 1996 but had served only to establish that the first 330 metres beneath the orebody consisted mostly of an unprospective grit unit. This year's drill holes in Vermont Creek were collared at an elevation 120 metres below the sulphide body in an attempt to test beneath the grits intersected in 1996. The stratigraphic position of the new drilling will be known only when geological mapping of the area around the mine has been completed.

LCP zone The purpose of drilling the LCP zone was to follow up promising intersections drilled between 1977 and 1981 using a revised understanding of the stratigraphy and structure of the sedimentary units. Contrary to the interpretation used to guide previous drilling, it is now understood that, despite local complexity, the sediments are mostly flat lying.

1.4 Personnel

Rick Walker, P. Geo. supervised the drilling, prepared detailed logs of the core, selected portions of the core for assay. Damir Cukor, P.Geo managed the field program including the scheduling and integration of work by the various subcontractors. Gerry James was responsible for most of the plans and sections. Robert Longe directed the program.

2.0 HISTORY

The history of the Ruth Vermont property begins with a discovery in 1893 which led to a 150 ton shipment of sorted ore in 1896. Over a dozen short adits were driven before the 1930's in search of additional veins.

The latest phase of underground development was started in 1965 by Columbia River Mines Ltd. whose work included extending the 6000 Level, and driving the 5750 Level, which became the main haulage tunnel. A shipment of sorted ore (63 oz/ton (2161 g/t) silver, 31% lead and 19% zinc) was made in 1965. In 1969 the property was optioned to Copperline Mines Ltd., who completed the mine development and brought the mine into full production. During the period of September 1970 to June 1971, a total of 94,469 short tons (85,725 tonnes) were milled, averaging 5.37 oz/ton (184 g/t) silver, 3.88% lead and 5.04% zinc.

The mine was shut down from 1971 to 1973, a time when metal prices were low. Consolidated Columbia River Mines Ltd. took over the operation in 1973, and shipped 26,975 tons (24,478 tonnes) of concentrate to the smelter at Trail. In 1974 snowslides caused extensive damage to the mine facilities. Two subsequent attempts to rehabilitate the mine were unsuccessful. The attempt in 1981 by Ruth Vermont Mines Ltd., briefly reached production at a rate of 300 tons (272 tonnes) per day.

The mine, which has seen no development since 1981, lay derelict until 1994 when all buildings and machinery were removed from the property under direction of the Ministry of the Environment. The first modern exploration was by Bright Star in 1996 when three holes were drilled from underground.

The first recorded exploration of the ground now covered by the VMT claims was in 1966, - prompted by activity on the neighbouring Ruth Vermont property. It appears from incomplete records that seven or eight holes were drilled between 1966 and 1974. Between 1974 and 1977 Medesto Exploration of Calgary carried out soil geochemistry, geological mapping, trenching and drilling in search of lead, zinc, and silver in both quartz veins and sediments. In 1977 Medesto obtained two significant intersections, one in a drill hole (DDH77-3), the other in a trench in a part of the claims now referred to as the LCP zone.

In 1979 and 1980 Norcen Energy Resources carried out a substantial exploration program covering a belt some 25 km long stretching from Vermont Creek in the northwest to Warren Creek in the southeast. Part of that program consisted of geochemistry, geological mapping, trenching and drilling over ground now covered by the VMT claims.

In 1991 Bluesky Oil & Gas, drilled four holes, one of which, DDH 81-3, was within the LCP zone and obtained a further intersection. Cochrane Oil and Gas, working with Bluesky Oil & Gas, continued with geophysics, geochemistry, mapping and drilling in 1982 and 1983. One other hole (83-2) was drilled close to the LCP zone. The assessment credits applied by Norcen, Bluesky, and Cochrane were sufficient to put the VMT claims into good standing until 1980 and 1990. No exploration is reported for the period 1984 to 1990.

As Norcen's claims lapsed, the ground was staked by MineQuest on behalf of the Spillimacheen Joint Venture in 1989 and 1990. During the period 1992 to 1995, MineQuest carried out sufficient geological mapping to determine the principal features of the stratigraphy and structure and to arrive at a possible explanation for the failure of previous drill programs.

In 1995 VMT claims were acquired by Mountain Star Resources, a private company which had already acquired the Ruth Vermont Mine. Mountain Star was in turn absorbed by Bright Star Resources (now Bright Star Metals) which has assembled the key ground between and beyond the Ruth Vermont mine and the LCP intersections.

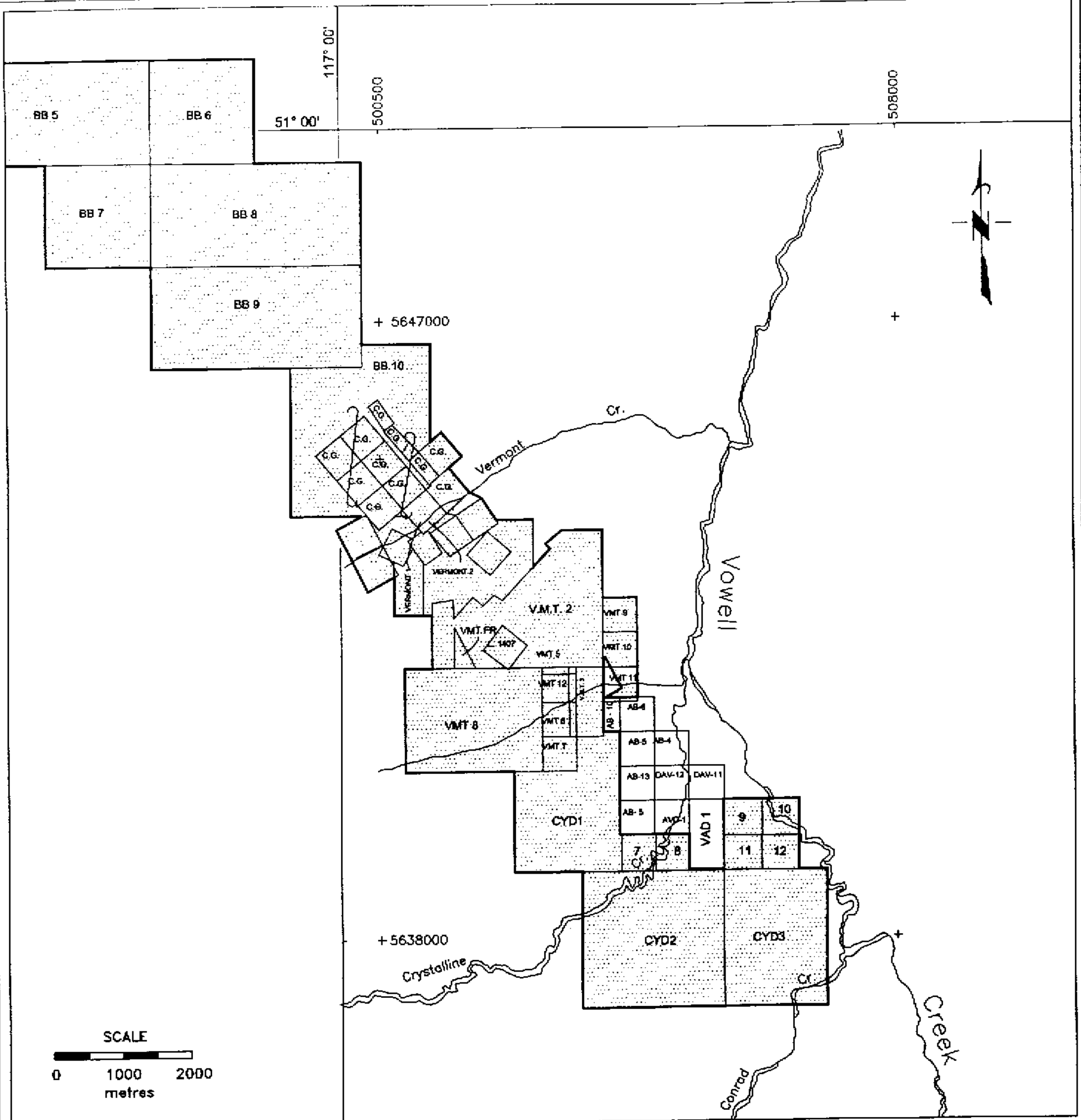
3.0 CLAIMS

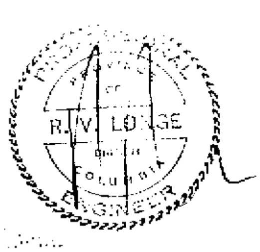
Ruth-Vermont Mine

The registered owners of the claims and mining leases, but excluding the crown grants, comprising the Vowell Creek property are listed in Table 1 below and shown in Figure 2.

TABLE 1
Claims and Crown Grants

Claim Name	Units	Tenure No.	Registered Owner
BB 5	18	340409	Mountain Star Resources Ltd
BB 6	9	340410	Mountain Star Resources Ltd
BB 7	9	340411	Mountain Star Resources Ltd
BB 8	18	340412	Mountain Star Resources Ltd
BB 9	18	340413	Mountain Star Resources Ltd
BB 10	20	340414	Mountain Star Resources Ltd
VMT 2	20	213576	Mountain Star Resources Ltd
VMT 3	2	213579	Mountain Star Resources Ltd
VMT 5	1	213770	Mountain Star Resources Ltd
VMT 6	1	213769	Mountain Star Resources Ltd
VMT 7	1	213768	Mountain Star Resources Ltd
VMT 8	12	213766	Mountain Star Resources Ltd
VMT 9	1	213771	Mountain Star Resources Ltd
VMT 10	1	213772	Mountain Star Resources Ltd
VMT 11	1	213773	Mountain Star Resources Ltd
VMT 12	1	213767	Mountain Star Resources Ltd
VMT Fr	1	213774	Mountain Star Resources Ltd
Excelsior	1	213268	Mountain Star Resources Ltd
Vermont 1	3	213300	Mountain Star Resources Ltd
Vermont 2	12	313301	Mountain Star Resources Ltd
Cleopatra M.C.	1	L8122	Mountain Star Resources Ltd
Vermont M.C.	1	L8123	Mountain Star Resources Ltd
Sheba M.C.	1	L8124	Mountain Star Resources Ltd
Ruth Fr	1	L8125	Mountain Star Resources Ltd
Ruth M.C.	1	L418	Mountain Star Resources Ltd
Minnie M.C.	1	L419	Mountain Star Resources Ltd
C.M.R.M.C.	Fr.	L10476	Mountain Star Resources Ltd
Charlotte M.C.	1	L405	Mountain Star Resources Ltd





BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

RUTH VERMONT

CLAIM MAP

N.T.S. 82 K / 15W

Figure 2

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MineQuest Exploration Associates Ltd.

4.0 GEOLOGY & MINERALIZATION

4.1 Regional Geology

The area covered by the Claims is underlain by Late Precambrian rocks of the Horsethief Creek Group exposed in the core of an asymmetric anticlinorium. The Horsethief Creek Group, a sub-division of the Windermere Supergroup, is divided into four (Evans, 1933; Young et al, 1973) from a "Grit Division" at the base through Slate and Carbonate divisions to an Upper Clastic Division at the top.

The shale units within the 25 km belt of Horsethief Creek sediments (shales, grits and limestones) extending NNW of the Ruth-Vermont Mine to McMurdo Creek are generally no thicker than 75 metres (Dickie and Longe 1982). In contrast, the shales mapped on the adjoining VMT claims to the south appear to be considerably thicker. This feature, together with the comparative paucity of grits and limestone, suggests that the stratigraphy south of the Ruth-Vermont Mine as far as Crystal Creek represents a deeper water environment than the northern part of the belt.

The lithology and stratigraphy of the belt of Grit Division rocks covered by the claims, a distance of some 14 kilometres, have many of the attributes of an environment prospective for sedex deposits: thick shale basins at a rifting continental margin, microturbidites, well-sorted grits emplaced as turbidites, conformable sulphides containing significant lead and zinc, and bedded manganese.

4.2 Local Geology and mineralization

Although the stratigraphic sequence exposed in Vermont Creek and the Ruth Vermont mine is almost certain to be closely related to the sequence at the LCP zone, the connection has yet to be established. Geologic mapping is only partially complete on the LCP zone and none has been carried out in Vermont Creek. For present purposes, therefore, the two areas have to be described separately.

Ruth Vermont The underground workings at Ruth-Vermont are within a series of argillites, limestones and grits dipping gently to the east and cut by at least three major quartz vein systems. The argillites and limestones exhibit many transitional lithologies and show well-developed turbidite features, most of them at intervals of between one and five centimetres. The grits range from coarse sandstones to coarse grits, some of which approach pebble conglomerates in grain size.

Within the mine the stratigraphy has been well defined by the underground drilling used to develop the existing resources (Manning, 1972) of 291,000 short tons grading 4.76% Pb, 5.65% Zn and 6.62 opt Ag (227 g/t). The stratigraphy within the mine is summarized in Longe (1985) and Cukor and Longe (1996).

Mineralization of the Ruth-Vermont Mine is of two distinct types: quartz veins with galena, sphalerite, pyrite and scheelite, and replacement sulphides which consist of pyrite, sphalerite, galena, and, locally, arsenopyrite. Chalcopyrite, boulangerite, and argentiferous tetrahedrite have also been reported. The replacement sulphides (now referred to as the "manto" deposit) have a bedded appearance and are best developed over a stratigraphic interval of approximately 15 metres near the base of a limestone referred to as Unit N and at the top of an underlying shale (Unit MV).

LCP Zone Mapping in 1993 and 1994 established that the LCP zone consisted of two mappable sedimentary units ("A", overlain by "M"), both microturbidites consisting predominantly of argillite and siltstone. Elsewhere on the property these two units are underlain by the Cedar Grit and are overlain by the Whitebark Grit. Lead-zinc mineralization appears to be most abundant near the gradational contact between units A and M. The same stratigraphic level appears to host a bedded manganese occurrence some two kilometres to the south.

In drilling the LCP zone Bright Star has become the fifth company to investigate the lead-zinc-silver mineralization first drilled by Medesto in 1977.

5.0 WORK PERFORMED

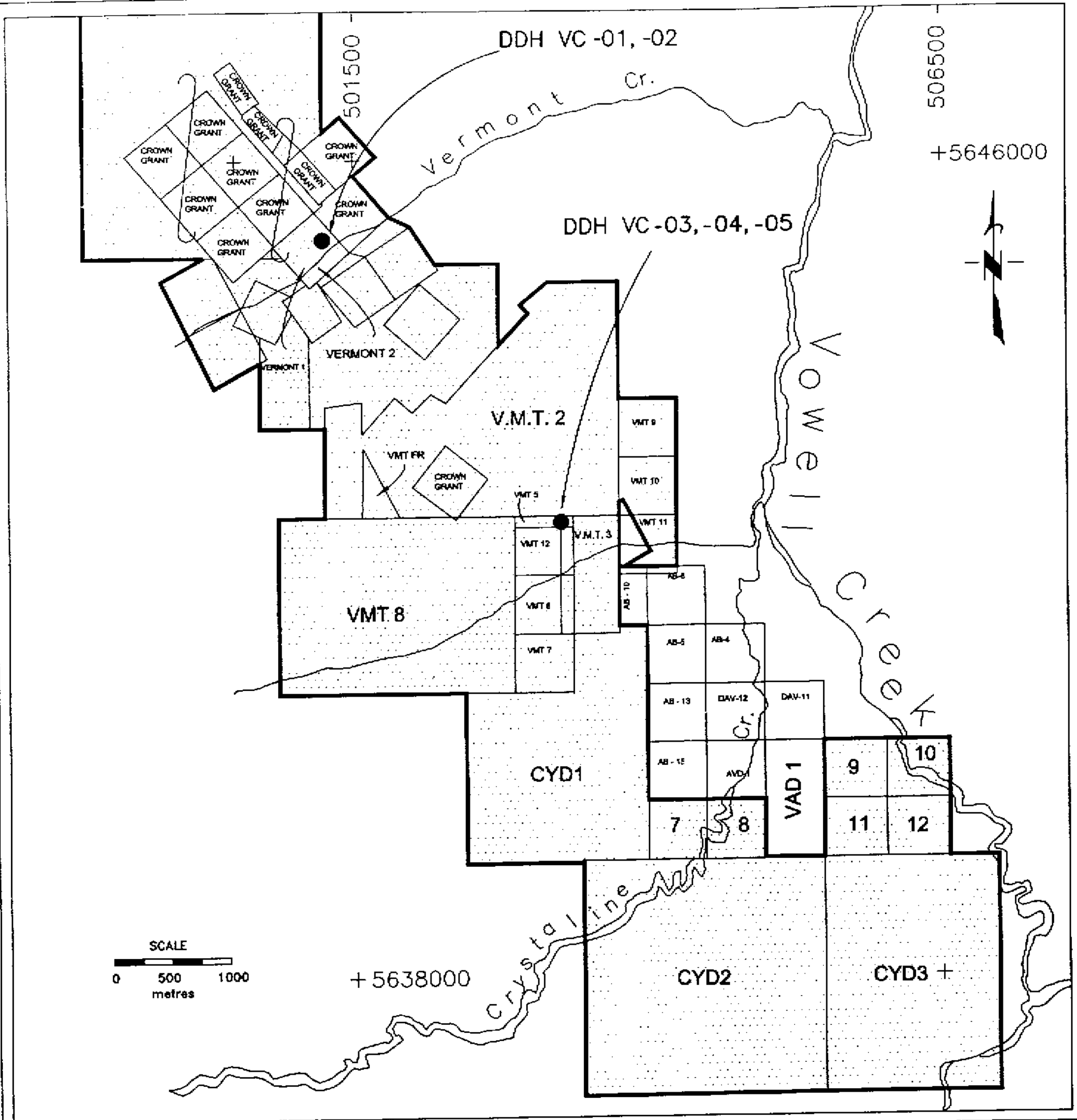
Drilling A total of 1,050 metres of NQ core and casing were drilled in five holes by Britton Bros. Diamond Drilling. All other work: geophysics, core logging, geochemical analyses, assays, and reclamation was directly related to the drilling.

The first two holes totalling 641 metres were on the north side of Vermont Creek opposite the Ruth Vermont former mine (Figure 3). Access for the drill was obtained by making minor repairs to the old mine road. The third, fourth and fifth drill holes totalling 399 metres were from a single site on the LCP zone. Although the site was accessible by a combination of old mine road and partially reclaimed logging road, a road permit could not be obtained without exposing Bright Star to liability associated with the already-unstable logging road. Accordingly the drill was lifted to and removed from the site by helicopter.

Sampling and analysis Selected sections of the core were cut longitudinally by diamond saw. From these cut sections, 83 samples were sent to Bondar Clegg laboratories for ICP analyses. Twenty eight of these samples exceeded ICP limits and were therefore submitted for assays.

Geophysics Downhole geophysics was performed on two of the holes: VC-02 and VC-05. Frontier Geoscience of North Vancouver used a Protem Borehole EM #57 made by Geonics Ltd, to test for conductivity with the longest of each of the holes at the two sites.

Access and reclamation Access to the Ruth Vermont site required repairs to the old mine road, some of which had already been upgraded by Crestbrook Forest Industries. The portion of the road not being used by Crestbrook was bermed and seeded at the end of the program. Access to the LCP zone was by sections of the old mine road and sections of the logging road built by Crestbrook Forest Industries in 1994 and 1995. At the end of the drill program portions of the old mine road and the logging road were seeded. At the same time Crestbrook were about to reclaim portions of their logging road which they deemed to be unstable.



BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

RUTH VERMONT

DRILL HOLE LOCATION MAP

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6.0 RESULTS OF THE 2000 PROGRAM

6.1 Drilling adjacent to the Ruth Vermont mine site

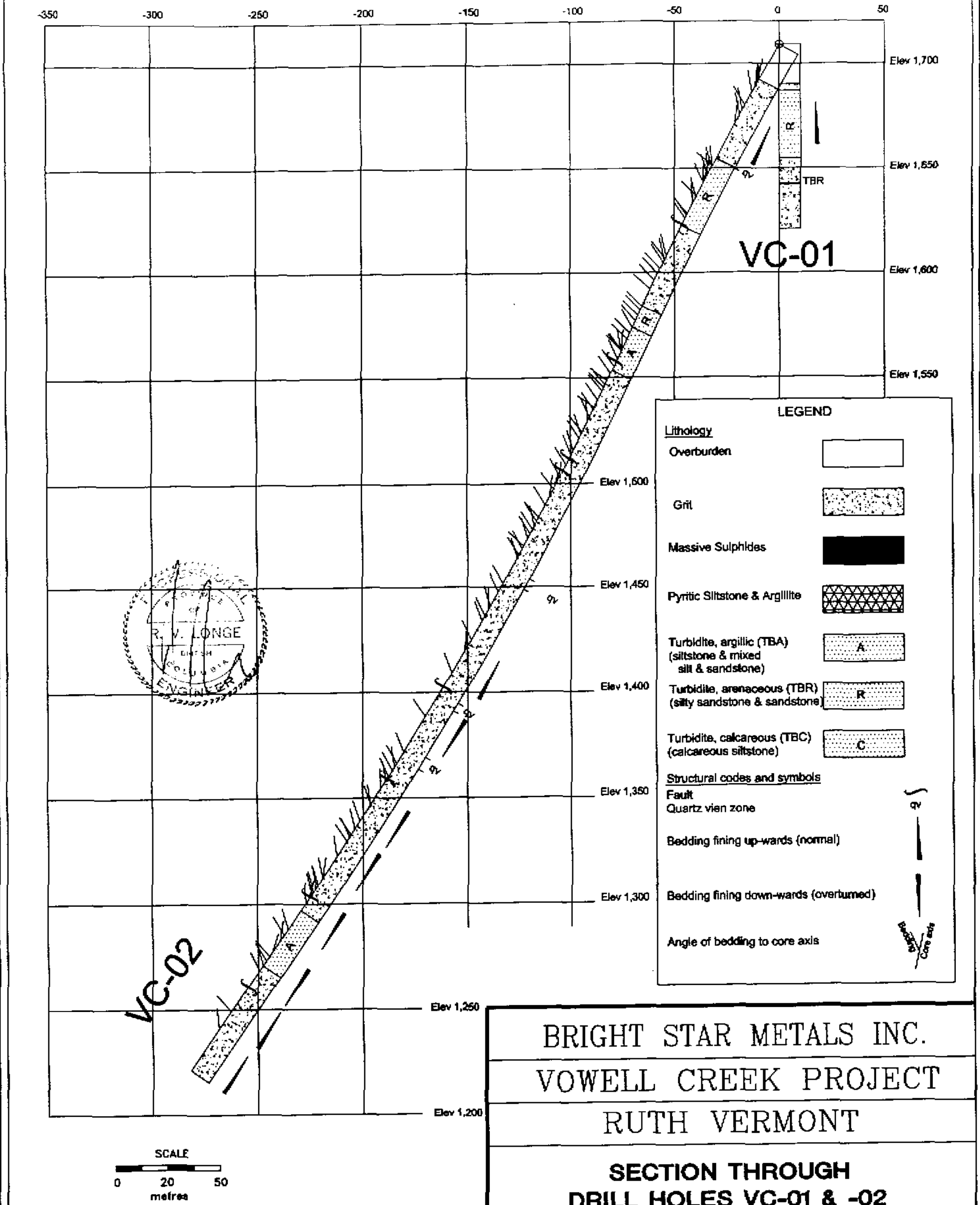
The purpose of drilling at Ruth Vermont was to test stratigraphic levels below the grit intersected in a vertical hole drilled from underground in 1996. For that purpose the valley floor, the lowest point topographically, was preferred and a site close to Vermont Creek was selected . Without bridging the creek or building a road, for neither of which was time available, the possible sites were limited to a cleared area on the north side of the creek. The site selected was as close as possible to valley side and therefore to outcrop.

The first hole, VC-01, penetrated overburden for 18 metres and then a series of interbedded siltstone, sandstones and grits. The hole was terminated at 71 metres because the core axis was too close to bedding.

The second hole, VC-02, was drilled at minus 60 degrees on a bearing of 240 degrees. This dip was selected as the most likely to be normal to the bedding direction revealed by the first hole. Its orientation was designed to be parallel to the axis of the valley in case a fault should have controlled the position and direction of the valley. It was also directed towards the strike extension of the Pinetree vein on the mine itself on the south side of the valley.

The hole reached 563 metres which was the limit of the drill. Casing was left in the hole in case it needs to be re-entered. A plastic liner was inserted for the geophysical probe. Most of the rock intersected was either a grit (ranging from pebble conglomerate to interbedded sandstone and siltstone) or a turbidite, variously described as siltstone or argillite. Fining sequences within each Bouma cycle allowed top determinations to be made.

The drill hole intersected one argillitic turbidite unit but did not demonstrate a thick sequence of turbidites beneath the grit. Minor quartz veins and a trace of sulphides were also intersected. Fining sequences which changed from one direction to the other suggested that the hole penetrated first one limb and then the other of an anticline or syncline. One initial interpretation of the drill hole is that the north side of the valley is displaced to the east relative to the south side. The true value of information derived from the drill hole will become apparent only after the surface has been geologically mapped.



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VOWELL CREEK PROJECT

RUTH VERMONT

SECTION THROUGH DRILL HOLES VC-01 & -02

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6.2 The LCP zone

Prompted by the very significant intersection in Medesto's drill hole 77-3 (Table 2), Norcen Energy Resources undertook major exploration programs in 1978 (geochemistry, geophysics, and geological mapping) followed in 1979 by trenching and drilling. Despite results which were generally disappointing, some of the intersections were sufficiently suggestive of bedded-type lead-zinc mineralization to justify continued exploration, including drilling by Bluesky Oil and Gas in 1980, and Cochrane Oil & Gas in 1981 to 1983. But continuity of the sulphides intersected in the LCP zone could not be demonstrated.

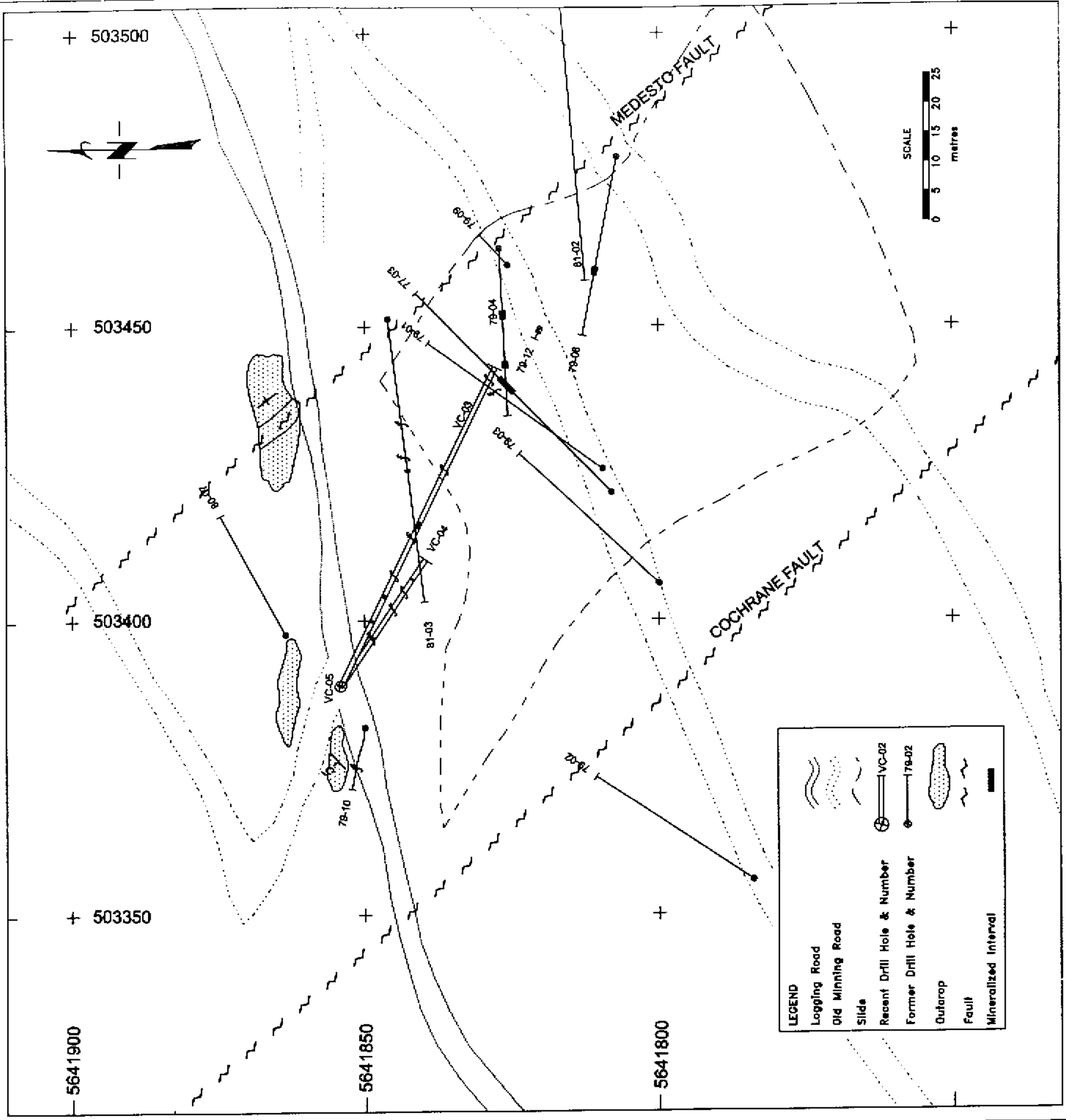
The recent drill program was designed on the basis of a reinterpretation of the geology: that the stratigraphy, despite local complexity, including isoclinal folding, is mostly shallow-dipping. The zone in which the sulphide were intersected was interpreted in 1994 as a fault-bounded panel of flat-lying sediments which are tightly folded and steep-dipping near the principal structure, - the Medesto fault. This interpretation called for drilling of near vertical holes to a greater depth than most of those already drilled.

The site selected for the recent drill program was designed to intersect the down dip (into the mountain) extension of the earlier intersections and to avoid the steep folding near the Medesto fault. A subordinate purpose of the Bright Star drilling was to obtain representative samples of the mineralization that had prompted so much work but for which there are, to the writers' knowledge, no existing samples. A partially reclaimed main haulage logging road provided a convenient site. Access to most of the previously drilled sites had, in any case, been destroyed or made expensive by logging and road building.

The LCP zone, drill holes, recent and previous intersections, faults, outcrops and roads are shown in Figure 5. Figure 6 is a longitudinal section in the plane of two of the holes. Figure 7 shows the mineralized intervals.

All three holes intersected the sediments seen at surface, - microturbidites which can be described as "argillite", "siltstone", or "interbedded siltstone and sandstone", together with variants of the above. For the economic objective which drives this program the key feature of these sediments, whatever their grain size, is that they are distal turbidites. As such they represent a starved basin in which sulphide minerals could have had the opportunity to accumulate in reasonable concentrations.

The first hole was drilled at -60 degrees towards the known mineralization. It



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VOWELL CREEK PROJECT

RUTH VERMONT

LOCATION OF DRILL HOLES & PRINCIPAL FEATURES

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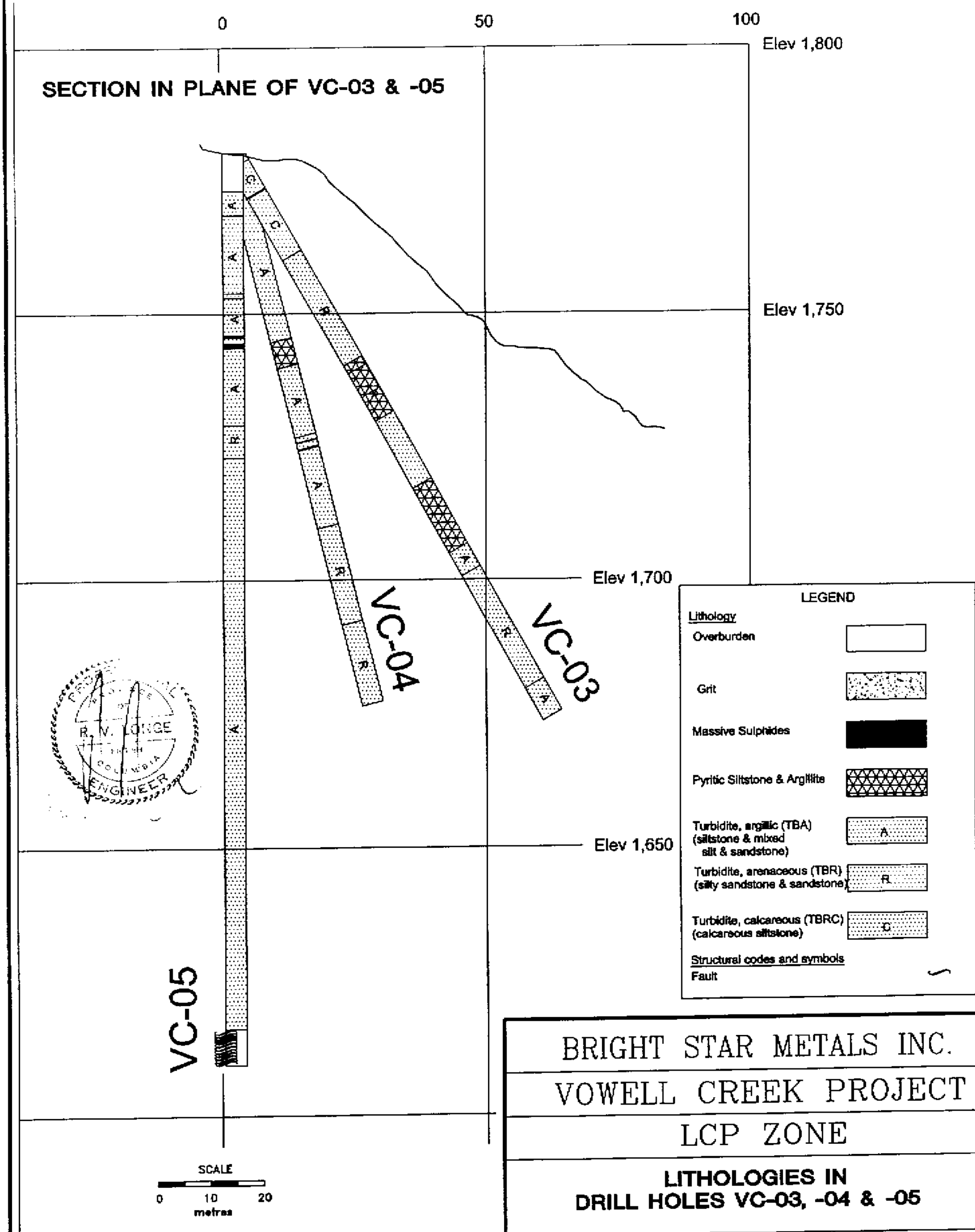
intersected sulphides with lead, zinc and silver values in five places as shown in Table 2. Some of the sulphides suggest primary sulphide deposition, others a replacement origin. Numerous fault zones were observed in the core. The second and third holes VC-03 and VC-04 produced similar results though with fewer intersections.

At the time of writing an attempt is being made to determine the structural and stratigraphic relationships between the mineralized intervals recently intersected and the several intersected by Norcen and others. This work is at a stage where the projection to horizontal of the earlier intersections can be shown as in Figure 5, but the relationships of the mineralized intervals has not yet been established.

Table 2

List of significant intersections in Drill Holes VC-00-3, 4, & 5

Drill hole	From m	To m	Width m	Pb %	Zn %	Ag g/t
VC-03	47.61	48.70	1.09	2.81	5.47	134
VC-03	50.88	51.26	0.38	2.40	7.36	133
VC-03	53.00	53.42	0.42	2.89	0.71	329
VC-03	58.10	59.60	1.50	0.83	3.69	30
VC-03	88.00	90.59	2.59	3.19	2.70	51
VC-04	38.95	41.55	2.60	0.52	1.14	35
VC-04	80.46	80.6	0.14	4.32	14.43	96
VC-04	89.15	90.9	1.75	0.92	2.30	31
VC-05	33.86	35.75	1.89	0.35	1.45	19
VC-05	125.27	125.52	0.25	0.02	7.58	7



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VOWELL CREEK PROJECT

LCP ZONE

LITHOLOGIES IN DRILL HOLES VC-03, -04 & -05

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N.T.S. 82 K / 15W

Figure 6

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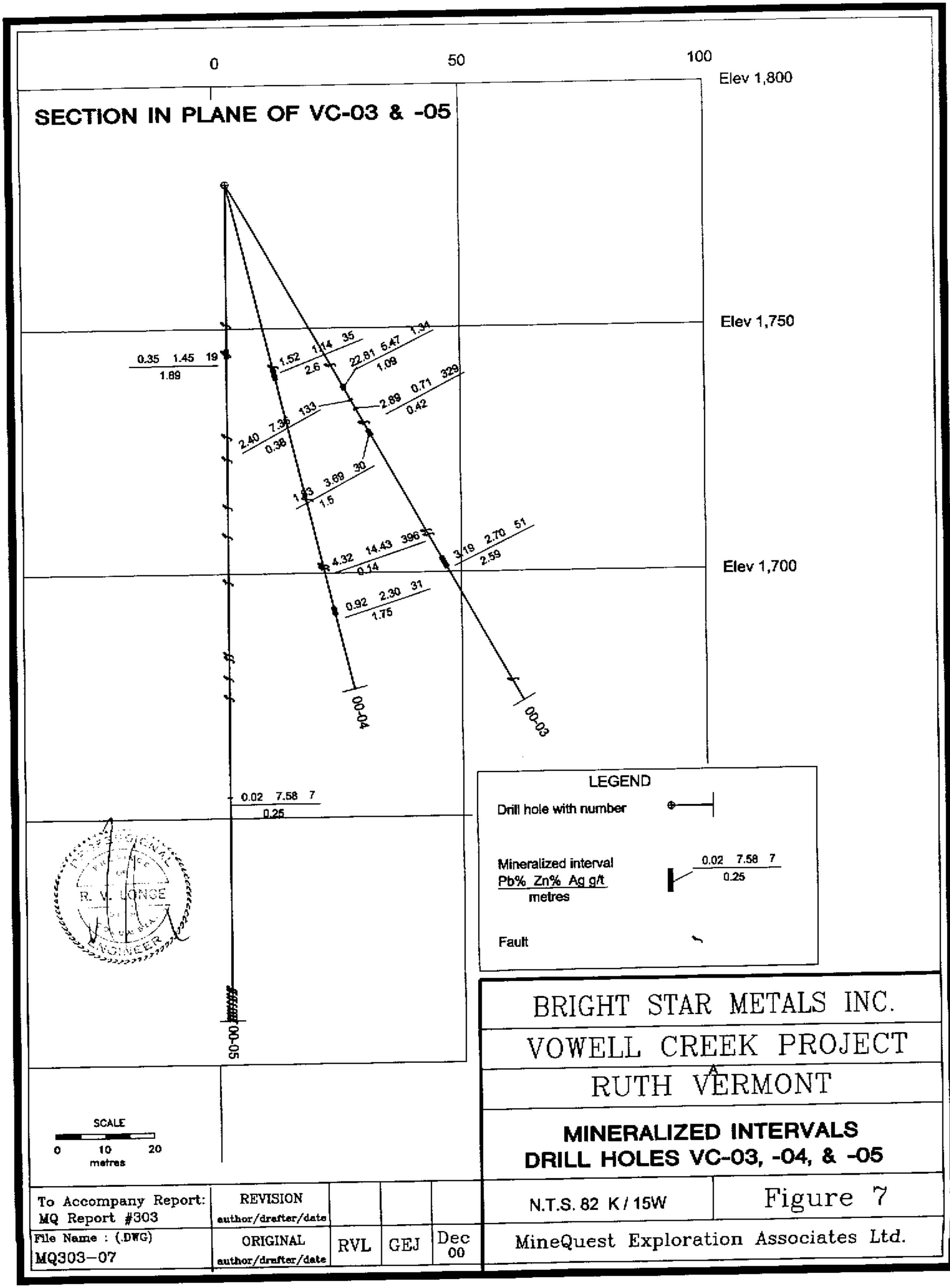

SECTION IN PLANE OF VC-03 & -05
0
50
100
Elev 1,800
Elev 1,750
Elev 1,700
0.35 1.45 19
1.89
1.52 1.14 35
2.6
22.81 5.47 1.34
1.09
2.89 0.71 329
0.42
2.40 7.36 133
0.38
1.83 3.69 30
1.5
4.32 14.43 396
0.14
3.19 2.70 51
2.59
0.92 2.30 31
1.75
00-04
00-03
0.02 7.58 7
0.25
00-05
LEGEND
Drill hole with number
Mineralized interval
Pb% Zn% Ag g/t
metres
0.02 7.58 7
0.25
Fault
SCALE
0 10 20
metres
BRIGHT STAR METALS INC.
VOWELL CREEK PROJECT
RUTH VERMONT
MINERALIZED INTERVALS
DRILL HOLES VC-03, -04, & -05
To Accompany Report:
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author/drafter/date
File Name : (.DWG)
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ORIGINAL
author/drafter/date
RVL
GEJ
Dec 00
N.T.S. 82 K/15W
Figure 7
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7.0 DISCUSSION

Ruth Vermont mine area

Neither of the two drill holes close to the Ruth Vermont mine site intersected a significant thickness of the micro turbidites which are the most likely host for sedex mineralization, if that exists below the mine. Drill hole VC-02 did, however, provide considerable structural information. The reversal of the "fining upward" sedimentation characteristic of the Bouma cycles is most readily interpreted as evidence of faulting or tight folding. As no comparable structure has been observed in the vicinity of the mine, this information suggests that the north side of Vermont Creek may have been laterally displaced relative to the south. The information contained in Drill Hole VC-02 will become valuable when integrated with the much-needed geological mapping likely to take place next year. Until then, attempts at correllation would be no more than conjecture.

LCP zone

The three holes from the same site were successful in intersecting significant values of lead, zinc, and silver in sulphides, most of which appear to be bedded. Whether the sulphides were introduced by deposition at the interface between sediment and seawater, or whether by replacement during diagenesis or after lithification is not yet known. Their status, therefore, as to whether they are of "sedex" or some other type of mineralization is also unknown.

The first objective of the drill holes was to test the hypothesis that continuity of the sulphide intersections is controlled by bedding, that such beds are relatively flat-lying, and could be followed to the north. At first appearance there does indeed appear to be a degree of continuity along approximately horizontal lines. But the geometry is evidently not simple and appears to have been much influenced by faults.

At the time of writing the task of compiling all the previous intersections, their lithology, fault intersections, along with the latest results is not yet complete. Until then judgement on the continuity and nature of the mineralization is best witheld.

8.0 CONCLUSIONS & RECOMMENDATIONS

The LCP zone

- The LCP zone contains significant intersections of lead, zinc, and silver in sulphide concentrations which have the appearance of control by bedding.
- Continuity between sulphide intersections in separate holes suggests (but does not confirm) control by bedding which has been subject to considerable faulting.
- Some of the sulphide textures observed in the drill core suggest replacement features, others appear similar to primary deposition.
- The nature of the mineralization in the LCP zone is not yet understood.
- The LCP zone appears to be not only bounded by major faults but to be cut and fragmented by numerous lesser faults.
- All data from previous drilling needs to be compiled with the data from recent drilling so that sections and level plans can be used to interpret both structure and stratigraphy.
- The sulphide intersections should be subjected to petrographic, geochemical, and isotopic study in order to determine the nature of mineralization.
- Further search for the extensions of the LCP sulphide zones should be outside the structurally complex LCP zone.

Ruth Vermont

- The vicinity of the former mine on both sides of Vermont Creek should be geologically mapped and the resulting information integrated with underground data from drilling and mine plans.

Signed:

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December ... , 2000

R. V. LONGE

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December 7, 2000

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APPENDIX 1

DRILL LOGS

MINEQUEST EXPLORATION ASSOCIATES LTD.
DRILL LOG: DIAMOND DRILL CORE

Property:	Vowell Creek Claims, Ruth Vermont				Hole No.	VC-00-01
Claim Block Code:	VMV				Drilling Company	Britton Bros.
NTS:	82K/15	UTM:	501264E 5644379N		Started	September 1, 2000
Claim Name:	RuthVermont	SURVEY			Completed	September 2, 2000
Location - Grid Name	None	Depth	Dip	Azim		
Grid N:	Grid E:				Purpose:	To test stratigraphy
Section:	Elevation 1709				Core Recovery:	Almost 100%
Azim	Length: 88.39 m				Logged by:	R. Walker
Dip -90°	Casing Left: No				Date Logged:	September 1 - 3, 2000
Core Size:	NQ				Assayed by:	Bondar Clegg
Core Storage:	G. Mason, Mason's Backhoe, Parson, B.C.				Lab Report No.:	V00-01864.0

Note:

The fifth column in the drill log, labelled "Lith. Code", is used to place each major lithologic unit in the core description into one of the six categories listed below.

Category	Lith. Code
Overburden	O/B
Grit, conglomerate	GRT
Massive sulphide	MSX
Pyritic sediment	PYS
Turbidite, argillic (siltstone & mixed siltstone & sandstone)	TBA
Turbidite, arenaceous (silty sandstone & sandstone)	TBR
Turbidite, calcareous (calcareous siltstone)	TBC

Other annotations in the column include

Fault	*f*
Quartz vein	qv
Angle of bedding to core axis	/
Bedding fining upwards (normal)	⇧
Bedding fining downwards (overturned)	⇩

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
0.00	18.77			O/B	Overburden						
		21.5 22.0	5 0 5	TBR	Lithology: Light grey siltstone with thin laminated to thin bedded intervals of sandy siltstone 21.40-22.0 Core takes on speckled appearance with appearance of dirty yellow coloured porphyroblasts up to 0.5 mm in diameter very abundant. Appear to be homogenously distributed throughout siltstone and sandy siltstone laminae. *Structure:* 18.77-19.17 Bedding disrupted by coarse foliation, siltstone sheets up to 3mm thick and 9cm long emplaced into sandy siltstone by movement along foliation planes. Gouge present on one surface of broken core. 20.50-21.33 0.5 cm thick gouge zone parallel to core axis. Upper contact, gouge zone warps into core. Base lost in broken core. Upper contact of vein offset by small normal fault (displacement of 3.0 cm). Fault at 75° to vein and 30° to bedding (results in pseudo flame structure of siltstone into sandy siltstone). Small warp in bedding evident @ 19.46m. Both limbs open, axial plane at moderate angle to foliation 40° (∴ not same generation of deformation) Veins: 19.85-20.00 Glassy quartz vein with minor pyrite (cubic). Vein contacts irregular, lower at 20-25°, upper @ approx. 30°. *Sulphides in Veins:* Minor Pyrite Sulphides in Sediments: Rare rectangular to diamond (deformed cubic) pyrite crystals/ aggregates up to 1 cm in long dimension.						
22.0	22.56			TBA	Lithology: Contact between interbedded sandy siltstone and siltstone laminae and siltstone with highly subordinate sandy siltstone laminae @ 5-10° to c.a. Appears to have load casts at base of sandy siltstone interval, modified by foliation, ∴ steeply dipping right-way-up. Structure: none observed Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
22.56	32.90	23 25 30 30.5 32.9	10° 15-20 0 15 20	TBR	Lithology: Fining upward sequence from dirty green to greenish grey fine sandstone upward to medium to dark grey siltstone. 0.5m base comprises ≈20 cm thick basal sandy siltstone in transition to progressively more silty composition by increased silt content in sandy siltstone and increasing number of thin siltstone laminae. Predominantly siltstone from 30.48 to 22.56m. Variable specked appearance as described in previous interval. Porphyroblasts preferentially developed in silty sandstone with less abundant development in siltstone. Apparently not developed in fine sandstone. Coarsest in siltstone between 27.43-28.95 (up to 3 mm). Structure: 30.40-31.80 Thin to thick silty sandstone and siltstone laminae disrupted by foliation with partial to complete dislocation and offset along foliation. Rare, coarse (up to 1.5 cm long dimension) pyrite cubes, aggregate masses and twinned multiple crystals throughout interval. Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						
32.90	40.57	33.5 35 36 36.6 37 38.2	0-5 5-10 50 25 30 15	TBA	Lithology: Another fining upward sequence similar to previous interval, however base is a silty sandstone with abundant small porphyroblasts (as previously described). Basal coarse silty sandstone extends from 40.57-39.62 m with interlaminated siltstone and sandy siltstone layers (thin to thick laminated). Influx of thin layered (36.9-37.0 and 37.9-38.30) coarser material (fine silty sandstone) into sequence up to ≈35.0 m. Overall composition fining upward with greater proportion of silt, more frequent and thicker siltstone intervals. Minor sandy siltstone component from 35.0 to 32.9 (siltstone) Structure: Siltstone mobilized into foliation variably throughout interval as above. 39.48 Foliation plane with 0.5 cm of fault gouge @ 30° c.a 45° to S_0 Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: Minor pyrite as in previous intervals.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
40.57	45.25	40.6 42 43 45	35 45 50 45	TBR	Lithology: Sandy Siltstone composition overall. Fining upward sequence. Coarser than previous intervals in that the sequence has a lower proportion of siltstone. Finer intervals (siltstone) have speckled appearance (ankerite porphyroblasts?). Uppermost 25-30 cm has 4 distinct fining upward intervals (thin beds) from sandy siltstone to thin cap (≤ 0.5 cm) of siltstone. Speckled appearance as previously described. Structure: Laminae throughout interval variably disrupted by foliation. Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: Minor pyrite as previously described						
45.25	52.84	46 48 50 51.5 52	45 25 40 65 75	TBA	Lithology: Siltstone. Predominantly med-dark grey siltstone with subordinate sandy siltstone to silty sandstone laminae. Poorly defined fining upward sequence from ≤10 cm thick sandy siltstone base to predominantly siltstone sequence. Two thin beds (3 and 6 cm thick) of sandy siltstone from 52.05-52.15, single thin bed 2 cm thick 48.74-48.76 and another 8 cm thick between 47.65-47.73 (micro-turbidites?). Speckled appearance as above, preferentially developed in sandy siltstone intervals and, to a lesser degree, in siltstone intervals. Structure: none observed Veins: 48.83-48.93 1 cm thick vein @25-30° to ca. Dirty yellow colour, hardness approx 4 (-5?), does not react with acid when powdered (not calcite or dolomite) - ankerite? Sulphides in Veins: none observed Sulphides in Sediments: Minor pyrite as previously described, slightly smaller crystals/ masses, locally prefentially developed along sandy siltstone intervals.						
52.84	54.12	52.8 53 53.2 53.3 53.6 53.6	30 20 15 70 0 70	TBA	Lithology: Siltstone, similar to previously described intervals. Sandy siltstone from 54.12 (base) to 53.90 m. Med to dark grey siltstone with highly subordinate sandy siltstone laminae to top of unit. Structure: Appear to have cored half of parasitic fold closure from 52.84-53.80. Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
54.12	54.30		40	TBR	Lithology: Siltstone/ Sandy Siltstone Speckled appearance in basal 6 cm sandy siltstone overlain by 12 cm of siltstone with minor porphyroblast content. Structure: none observed Veins: none observed Sulphides in Veins: Sulphides in Sediments:						
54.30	59.67	56.7 58.7	35 40	GRT	Lithology: Pebble conglomerate. Quartz with subordinate lithic fragments in a quartz-rich matrix. Med. grey in colour with glassy appearance when wet. Angular to sub-rounded pebbles up to 1 cm in long dimension include opaque while to bluish quartz, grey translucent quartz with inclusions, with subordinate (20%) lithic clasts (siltstone to silty sandstone) Minor muscovite along partings (S_0 -S_1?) (Minor blue quartz eyes) Structure: none observed Veins: 56.9-57.09m 2 cm thick quartz (minor calcite) vein @ 10° to ca Sulphides in Veins: none observed Sulphides in Sediments: Small pyrite cubes ≤ 1.5 mm in diameter sparsely disseminated throughout interval.						
59.67	66.27	60.1 61.5 64.3	30 35 45	GRT	Lithology: Fining upward sequence from grit (to pebble sized clasts) in the basal 2.40m gradually to grit size in middle of unit and sand size at top of unit. Structure: Muscovite-bearing micaceous partings poorly developed. Veins: Thin quartz veins with sharp to slightly diffuse margins present throughout interval, generally at same orientation. Sulphides in Veins: none observed Sulphides in Sediments: Minor cubic to anhedral (usc met c ter m) pyrite sparsely disseminated throughout interval. Relative enrichment of pyrite at base of unit (from trace throughout interval to 2% at base) with greater abundance in small pebble over 9 cm.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
66.27	66.42			TBR	Lithology: Pillow and/or Flame Structure. Possibly a load structure related to cobbles at base of overlying unit foundered down into underlying siltstone with siltstone injected upward · right-way-up. Structure: none observed Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						
66.42	66.90		25	TBA	Lithology: Speckled siltstone. Siltstone as described above Structure: none observed Veins: Quartz veins @ 66.50 (irregular and discontinuous, ptygmatic) 66.62-66.66 with siltstone inclusions and minor chlorite along margins. Upper contact @ 70°, lower @ 40°. Three more quartz veins from 66.76-66.90m, similarly with chlorite, oriented at 35° to c.a. Sulphides in Veins: Slightly enriched in pyrite Sulphides in Sediments: none observed						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
66.90	88.39	68 83 84.6 88.2	50 25 20 15	GRT	Lithology: Grit Unit. Variably sized intervals ranging from small pebbles to fine quartzitic sandstone (quartzitic wacke to lithic quartzite). Thin siltstone intervals may be rip-up clasts or thin bedded intervals. Coarse Intervals 66.9-72.93, 78.13-83.05 Medium Interval 83.05 Fine Interval 72.93-78.13 Structure: Argillaceous Rip-ups 69.13 78.66-78.75 81.62-82.41 82.5-82.6 Veins: Two generations of quartz veins are present; first are medium translucent white with diffuse margins whereas later veins are milky white with slightly sharper (though still slightly diffuse margins). One bone white, opaque vein has open space filling texture (intergrown milky white quartz crystals) may represent a third generation but no cross-cutting relationships to allow differentiation. 68.19-68.25 m @ 80°. Sulphides in Veins: Trace galena in vein of unknown generation at 69.65, oriented at 80° Sulphides in Sediments: none observed						
	88.39				End of Hole						

MINEQUEST EXPLORATION ASSOCIATES LTD.
DRILL LOG: DIAMOND DRILL CORE

Property:	Vowell Creek Claims, Ruth Vermont				Hole No.	VC-00-02
Claim Block Code:	VMV				Drilling Company	Britton Bros.
NTS:	82K/15	UTM:	501264E	5644379N	Started	September 2, 2000
Claim Name:	Ruth Vermont	SURVEY			Completed	September 10, 2000
Location - Grid Name	None	Depth	Dip	Azim		
Grid N:	Grid E:	149	-65°		Purpose:	to test stratigraphy
Section:	Elevation 1709	299	-60°		Core Recovery:	Almost 100%
Azim 240°	Length: 562.63 m	500	-55°		Logged by:	R. Walker
Dip -60°	Casing Left?: No				Date Logged:	September 1 - 11, 2000
Core Size:	NQ				Assayed by:	Bondar Clegg
Core Storage:	G. Mason, Mason's Backhoe, Parson, B.C.				Lab Report No.:	V00-01864.0

Note:

The fifth column in the drill log, labelled "Lith. Code", is used to place each major lithologic unit in the core description into one of the six categories listed below.

Category	Lith. Code
Overburden	O/B
Grit, conglomerate	GRT
Massive sulphide	MSX
Pyritic sediment	PYS
Turbidite, argillic (siltstone & mixed siltstone & sandstone)	TBA
Turbidite, arenaceous (silty sandstone & sandstone)	TBR
Turbidite, calcareous (calcareous siltstone)	TBC

Other annotations in the column include

Fault	*f*
Quartz vein	qv
Angle of bedding to core axis	/
Bedding fining upwards (normal)	⇧
Bedding fining downwards (overturned)	⇩

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
0.00	19.10				Overburden						
19.10	24.21	19.5 21.7 22 22.8 23.6 24.2	20 15 25 20 20 15	GRT	Lithology: Interbedded siltstone and grit beds up to 1.74 m thick with sharp contacts. Quartz sweats along bedding. Siltstone 19.10 - 20.98 m Alternating siltstone + pebble grit with quartz veins and variable pyrite content. Siltstone: 19.10 - 19.50, 20.30 - 20.73, 21.01 - 22.82, 23.64 - 24.21 Grit: 19.50 - 20.30, 20.73 - 20.98, 22.82 - 23.64 Structure: none observed Veins: 20.61 - 20.86 Milky white, irregular contacts 20.30 - 20.36 Quartz with ankerite?. irregular broken contact 20.69 - 20.71 Quartz with iron staining @ 70° 20.98 - 21.01 Quartz @ 80 - 90° 21.17 - 21.22 @ ≈80° 21.37 - 21.39 70 - 90°, pyritic margins 21.55 - 21.57 70° 21.78 - 21.88 Irregular contacts 21.91 - 21.92 55° 21.98 - 21.99 55 Sulphides in Veins: none observed Sulphides in Sediments: Pyrite slightly more abundant than hole 00 - 01, still less than 1% throughout interval. Local zones have greater pyrite content. 20.73 - 20.98 ≤ 2% pyrite in grits. Minor chalcopyrite @ 21.28m						
24.21	30.51	25.9	40	GRT	Lithology: Pebble conglomerate. Clasts up to 2 cm comprised of quartz with subordinate lithic clasts, all angular to sub - rounded. Pebbles appear matrix supported to 26.1 they may be clast supported to 30.50 24.38 - 25.0 Speckled siltstone with thin laminated sandy siltstone laminae. Structure: none observed Veins: 25.46 70° 25.57 70° 25.79 70° 27.91 - 27.95 50° 27.99 70° Other Quartz veins present Sulphides in Veins: none observed Sulphides in Sediments: none observed						

<table>
<tr><th rowspan="2">From</th><th rowspan="2">To</th><th colspan="2">Core Angle</th><th rowspan="2">Lith. Code</th><th rowspan="2">Description</th><th rowspan="2">Sample Number</th><th rowspan="2">From m</th><th rowspan="2">To m</th><th rowspan="2">Lead ppm</th><th rowspan="2">Zinc ppm</th><th rowspan="2">Silver gms/T</th></tr>
<tr><th>m</th><th>deg</th></tr>
<tr><td>30.51</td><td>40.60</td><td>33.1
35.5
38.1
40.0</td><td>60
50
40
40</td><td>GRT</td><td>Lithology: Pebble - bearing grit. Interval contains small pebble to large grit size, matrix supported clasts. Clasts comprise up to 20% of the unit, locally up to 60% (35.6 - 36.36). The interval is generally medium grey in colour with subordinate intervals having a dark (calcitic) matrix. 32.6 - 33.1, 35.33 - 35.47, 36.39 - 36.46, 37.9 - 38.12, 38.69 - 38.83, 39.76 - 40.02.
30.51 m - Contact between pebble conglomerate above and quartz wacke with 20% matrix supported cobble size clasts.

Structure: Argillite rip - up clast @ 33.06 m

Veins: none observed

Sulphides in Veins: none observed

Sulphides in Sediments: none observed</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>40.60</td><td>58.65</td><td>42.5
42.8
52</td><td>20
45
20</td><td>GRT</td><td>Lithology: Pebble Conglomerate. Transition into overlying unit over 10 cm. Relatively homogeneous pebble conglomerate unit comprised predominantly of different varieties of quartz (milky white opaque, translucent grey, subordinate blue quartz eyes) with subordinate lithic clasts. Quartz grains range from sub-angular to rounded, lithic fragments from very angular to sub-rounded. Lithic fragments include siltstone, black clast (tourmaline? @ 49.08 m) and sandy siltstone.
Finer grained coarse sandstone to grit intervals between 51.97 - 52.46 and 53.37 - 53.52 indicate individual coarse clastic pulses within grit interval. 42.46 - 42.77 Darker, calcitic matrix

Structure: 3.5 cm long, 0.5 cm thick argillaceous rip - up clast @ 56.88 m
Micaceous partings (S_1?) S_1 (?)
45.72 65°
55 60°
58 60°

Veins: Abundant quartz veins throughout interval ranging from several mm to 10 cm, most 02 - 1.0 cm. Thin quartz veins tend to have diffuse margins and have translucent grey to pale white colour. Larger veins are milky white with sharper contacts, may have argillaceous margins, rarely have space filling textures (i.e. well developed crystals in cavities) ⇒ at least two generations

Sulphides in Veins: none observed

Sulphides in Sediments: Cubic pyrite up to 3 mm in diameter disseminated throughout interval, up to 2% locally</td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
</table>

Drill Hole VC 002

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
58.65	62.17			GRT	Lithology: Grit Unit. Contact @ = 50°. Similar colour as dark (calcitic) bands described in unit above to 59.20 m. Remainder of unit to base is med. grey in colour, similar to the matrix in the majority of the pebble conglomerate unit. Quartz veins cross-cut the interval, however, are fewer in number than in an equivalent thickness of pebble conglomerate. Light/Dark(calcitic) band transition at 59.20 m 75° 61.85 - 62.17 unit coarsens up to coarse grit with clasts up to 4 mm in diameter. Unit above coarse basal interval is coarse sand to fine grit sized (1 - 3 mm diameter) Structure: none observed Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: Trace to 1% disseminated cubic pyrite.						
62.17	62.43			qv	Lithology: Quartz Vein Structure: Quartz vein. 14 cm thick with 5 cm argillite above and below vein. Milky white, apparently barren quartz vein Veins: Pyrite as 4mm diameter cubes to 1.5 cm long, 4 mm thick aggregate masses in argillite at contact of vein. Sulphides in Veins: none observed Sulphides in Sediments: none observed						
62.43	66.60	66 66.6	80 35	TBR	Lithology: Siltstone. Fining upward sequence: basal 7 cm sandy siltstone. Undergoing transition to approx. 65 m. Progressively more silty fewer sandy siltstone. Another fining upward sequence @ 66.01 m to approx. 65.00 m. Siltstone with fine sandy silstone intervals up to 1 cm thick to 64.6 m. Siltstone to top of interval. Porphyroblasts previously described present throughout interval; coarsest from 63.7 to 64.33; very fine over basal 60 cm; most abundant in sandy siltstone. Structure: none observed Veins: Interval has thin quartz veins predominantly in upper third of unit ranging from 1 mm to 4 mm in thickness at approx 70° to C.A. Sulphides in Veins: none observed Sulphides in Sediments: Minor pyrite present as coarse masses up to 1 cm in diameter. Some pyrite present with quartz veinlets for first metre. Below this, pyrite present as elongate blebs with ragged edges in siltstone unit.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
66.60	81.05	67 70.7 70.8 72 74 74.7 74.8 75 75.2 76.3 77.9	45 30 50 50 35 20 15 0 30 70 55	TBR	*Lithology: Sandy siltstone with silty sandstone intervals Medium to dark grey interval with* abundant small porphyroblasts; subordinate silty sandstone laminae from 1 mm to 1 cm thick. Structure: S_1 75.1 50° 75.2 60° 76.35 70° 77.9 30° Veins: Two milky white quartz veins with argillaceous pyrite-rich margins Sulphides in Veins: Pyrite content from 1% to 3% - cubic morphology up to ½ cm in diameter (69.42 - 69.75 quartz vein 4 cm and 75.12 - 75.75 quartz vein 18 cm - Note: vein at centre of each interval). Quartz veins 80 - 90° to c.a.. Pyrite vein 3mm thick present at 70.13 at 60° c.a. Sulphides in Sediments: Pyrite cubes and multiple twins up to 1.5 cm in long dimension throughout interval 0 trace to 1%.						
81.05	82.06		30	TBA	Lithology: Argillite with Quartz Veins Dark grey to black, well foliated argillite with irregular quartz veins + ankerite (no fizz). Fine porphyroblasts throughout siltstone intervals (81.05 - 81.32, 81.49, 81.68, 81.95 - 82.06). Structure: S_1 50° Veins: Quartz veining predominantly between 81.18 - 81.34, 81.70 - 81.99 Sulphides in Veins: none observed Sulphides in Sediments: none observed						
82.06	82.87	82.4	75	TBR	Lithology: Sandy Siltstone - Fining upward sequence from contact with underlying argillite. Basal sandy siltstone sequence 4 cm thick. Fining upward sequence defined by increase in silt content and thicker sequences of siltstone. Argillite cap from 82.06 - 82.25 with well defined foliation. At least six fining upward sequences evident in interval, each between 5 - 20 cm thick, from sandy siltstone base to argillite cap. Porphyroblasts evident throughout interval, very fine (< 1 mm) Structure: S_1 82.4 55° Veins: 82.54 thin quartz vein (2 mm thick) with pyrite at 55° Sulphides in Veins: none observed Cont'd...						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
82.06	82.87	82.4	75	TBR	Lithology: Sandy Siltstone (Cont.d) Sulphides in Sediments: Pyrite present as scattered cubes throughout interval in trace amounts. Slightly more abundant at top of interval (82.06 - 82.20 m) up to 1% pyrite cubes (possibly associated with overlying quartz vein).						
82.87	83.62	83	45	TBR	Lithology: Sandy Siltstone. Another fining upward sequence, however, no single basal coarser unit, rather 13 cm of alternating thin laminated sandy siltstone and siltstone, with progressively more silt upward, as in previous interval. Abundant fine porphynoblasts as in previous interval, however slightly coarser (up to 2 mm in diameter) S_0 may have been modified by S_1. Structure: S_1 83 50° Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: Trace coarse pyrite throughout, ≤ 1 cm diameter.						
83.62	88.09	87	30	TBR	Lithology: Sandy Siltstone Fining upward sequence overall. Porphyroblasts (xenoblastic) 83.62 - 86 m, deformed into plane of foliation with ragged edges, up to 4 mm in long dimension (defines weak preferred orientation. Subidioblastic over remainder of interval. *Sandy siltstone at base in sharp contact with underlying unit. Series of alternating sandy siltstone* and siltstone laminae to thin beds, with proportion of siltstone increasing up section at the expense of sandy silstone. Structure: 83.82 Boudinaged silty sandstone layer up to 1 cm offset across foliation. Bedding disrupted throughout interval 84.60 - 85.40 Interval has a sheared appearance in that bedding has been reoriented into the place of foliation by movement along foliation planes S_1 85.34 25° 87 25° 87.59 50° Veins: none observed Cont'd...						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
83.62	88.09			TBR	Lithology: Sandy Siltstone Fining upward sequence overall. (Cont'd) Sulphides in Veins: none observed Sulphides in Sediments: Medium to coarse pyrite cubes scattered throughout interval. Locally enriched above quartz vein between 87.59 - 87.63 at 80° to c.a. Approx. 1 - 2% pyrite as medium size cubic crystals from 87.45 - 87.59						
88.09	90.23			TBR	Lithology: Siltstone. Predominantly silstone with a basal sandy siltstone up to 5 cm thick. Subordinate thick laminae upward in section, comprising up to 30% of interval. Fine to med size (1 - 3 mm) porphyroblasts moderately abundant throughout section. Structure: Foliation has offset bedding so no S_0 measurements taken. *Gouge along foliation plane at 88.32 m @ 55°* S_1 89 50° Veins: Quartz vein with argullaceous margins present between 90.04 - 90.19 m (quartz vein 90.09 - 90.12 with irregular margins offset by foliation) Sulphides in Veins: none observed Sulphides in Sediments: none observed						
90.23	91.76			TBR	Lithology: Siltstone similar to unit above. Structure: Foliation refracting through various layers with range from 70° to 30° to ca over 10 *cm core length. S_0 disrupted and offset by foliation. Parasitic folds evident in core with* foliation along axial plane ∴ foliation associated with folding event S_1 90.70 ^{70} Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
91.76	98.57	92.1 92.9 94.5 97.7 98.3	65 60 60 65 60	TBR	Lithology: Faulted Sandy Siltstone. Interlaminated sandy siltstone and silty sandstone from 98.0 to base of interval. Structure: Four zones of fault gouge and chips (93.20 - 94.0 ≈ 50% recovery; 95.20 - 96.8 (2 faults) ≈ 70% recovery; 97.85 - 98.0 = 30% recovery). Unit more competent (coarser material) than previous interval and so has failed by faulting along four fault planes rather than accommodating movement along foliation planes. S_1 92 45° Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						
98.57	107.00			GRT qv	Lithology: Mixed Interval. Relatively short intervals of grit to pebble conglomerate 98.57. Sharp contact with overlying unit. 99.28 - 99.30 siltstone S_0 70° c.a. 99.40 - 99.42 deformed sandy siltstone. 98.57 - 101.13 pebble conglomerate; clast to matrix supported fines upward to coarse grits. 101.13 - 101.52 siltstone. Sheared fining upwards sequence. Alternating argillite and sandy siltstone at base ratio 50 - 50. Increasing silt content upward. 101.3 - 101.72 alternating sandy siltstone and siltstone as thick laminae. Upper 17 cm of unit argillite with well developed foliation. Bedding at approx. 60° c.a. 101.52 - 102.66 coarse grit to pebble conglomerate 102.66 - 103.84 argillite. 103.84 - 104.5 fining upward pebble conglomerate to grit. 104.5 - 107 interlaminated argillite and sandy siltstone. Structure: 92.74 foliation surface with gouge @ 70° c.a. S_1 101.5 50° 103.4 40° 102.66 - 103.84 Well foliated; bedding laminae disrupted into foliation. 104.5 - 107 Laminae disrupted by foliation. Veins: 101.15 - 101.17 *quartz + ankerite vein.* 101.22 - 101.27 quartz and ankerite + pyrite vein 101.52 - 101.56 quartz vein-quartz + ankerite + pyrite with argillite margins 101.57 - 102 milky white quartz veins with irregular contacts; trace pyrite as *disseminated cubes; Lower contact approx 20°.* 103.66 - 103.84 milky white quartz vein with ankeritic margins at 20° c.a. Cont'd...	112701 Irregular milky white quartz vein (≤ 2 cm) at approx. 70° and offsets pale grey quartz and yellow to white ankerite vein (0.3 cm thick). Thicker vein contains 5 - 10% pyrite (as one coarse aggregate mass ≤ 1 cm diameter) and 5 - 10% chalcopyrite (as irregular aggregates up to 1 cm in length) 112702 Irregular milky white quartz + ankerite vein with coarse pyrite (5%) and ≤20 - 25% galena (Ga) having a mesh-like texture 112703 As above, irregular vein up to 2 cm thick, 40%.	104.69 104.95 105.35	104.74 105.04 105.39	19 19.29% 13.14%	149 1198 46	61.9 497.3 264.1

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
98.57	107.00			GRT	Lithology: Mixed Interval (Cont'd) 104.7 - 104.75 two generations of quartz veining; first generation light grey with ankeritic margin at approx 20° to c.a.; second milky white quartz vein with coarse pyrite @ 80° to c.a 104.81 - 104.85 two light grey quartz veins 0.5 cm thick with well developed cubic pyrite along margins @ 70° to c.a. 105.25 - 105.29 milky white quartz vein with irregular contact at approx 90° to c.a. Sulphides in Veins: 104.97 - 105.1 galena bearing quartz vein. Galena present with mesh-like texture in vein 3 cm thick consisting of milky white quartz and ankerite (?) Galena comprises 30% of vein 105.31 - 105.35 milky white quartz vein with ankerite and galena. Upper contact has fault gouge. Galena texture similar to previous vein, oriented at approx 50° to c.a. 106.89 - 106.95 pale grey quartz vein with pyrite and galena; galena as disciete crystals comprising approx 20% of vein. Sulphides in Sediments: 102.66 - 103.84 Moderate pyrite approx 1% as coarse cubes up to 1 cm diameter over upper 40 cm; smaller cubes over remainder of unit. 103.84 - 104.5 Slight enrichment in pyrite approx 1% overall. 104.5 - 107 Slight enrichment in pyrite, ranging from 1 to 4 mm in diameter, from 106.4 - 107 preferentially developed in siltstone intervals. 136.02 - 141.22 Basal 15 cm enriched in pyrite (up to 3% as disseminated cubes up to 3 mm in diameter).						
107.00	141.22	114.5 116 116.5 118 121.4 123.9 127.4 132	40 65 40 60 70 70 70 75	GRT	Lithology: Pebble Conglomerate. Interval contains several weakly defined fining upward sequences, ranging from pebble conglomerate (0.4 - 1 cm) through grit (2 - 4 mm) to sand size clasts. There are several argillaceous intervals which may represent argillite horizons or rip-up clasts. 10 In addition, there are a number of sulphide-bearing (pyrite) quartz veins. The lithologies are similar to those described previously. Fining upward sequences: 107.0 - 114.14 Gradual coarsening (to apparently clast supported pebble conglomerate from matrix supported pebble-bearing grit) from contact with argillite horizon at 114.14 to 113.70 then gradual fining upward to pebble-bearing, coarse grit at top. Interval may actually extend to 116.46 if argillite horizons @ 114.14 - 114.20, 114.24 - 114.26 and 114.47 - 114.51 are rip-up clasts. 116.46 - 117.72 Fine pebble conglomerate to coarse grit at base (clasts 3 mm - 1.0 cm in diameter) to fine grit (1 mm - 3 mm) at top. Fining occurs over 18 cm from 116.46 - 116.64, apparently homogeneous pebble conglomerate below 116.64 to base. Cont'd...	112704 Upper contact of vein in host grit. Vein oriented at approx. ^{70} to c.a. Vein extends 2/3 along length of sample, comprising 1/3 of sample by volume. 1% pyrite to 3 mm in host along contact and up to 3 cm into host grit. Pyrite in vein (1%) coarser (up to 0.5 cm) and less abundant. Arsenopyrite (Aspy) as *aggregates in discontinuous band along contact with host grit and up to 2 cm* into vein. 2 - 5% orange brown and charcoal coloured sphalerite (Sph) as coarse aggregates up to 2 cm diameter (Note: most Sph in sample for analysis)	112.77	112.98	601	6847	6.9

From	To	Core Angle m	Core Angle deg	Lith. Code	Description
107.00	141.22			GRT	<u>Fining upward sequences:</u> (Cont'd) 117.72 - 118.0 Perhaps two small fining upward sequences 117.72 - 117.96, 117.96 - 118.0 or perhaps the lower interval represents the basal scouring grit slurry with the overlying unit representing the material that settled out of the water column. 1 - 3 mm diameter clasts at base to med.-coarse sand at 117.96, fining upward to fine sand at top. 118.0 - 121.41 Med. pebble conglomerate (clast supported pebbles up to 2 cm in long dimension at base to coarse sand-fine grit at top (1 - 4 mm diameter clasts). Upper 1 cm consists of wisps of argillaceous material at base of next interval (Note: seems to argillaceous horizon as it extends across core, and no similar material either above or below, however, grit above and below appear identifical so may be rip-up clast) 121.41 - 121.78 Light to med gray coarse sand at base to fine sand at top. 110.16 - 110.17 Argillaceous rip up clast. Fining Upward Sequences 121.78 - 123.93 Pebble Conglomerate fining slightly to 121.91 to coarse sand/grit to 121.78 (Again 121.41 - 121.78 may be the fine cap to this sequence with 121.78 marking the boundary between the basal turbidity flow and the material that subsequently settled out of the water column). 123.93 - 127.23 Coarse grit to fine pebble conglomerate at base (0.2 - 0.5 cm clast size). 123.93 - 124.24 Gradational transition from coarse grit/pebble conglomerate to med sand at upper contact 2% coarse pyrite at base (3 cm) of unit immediately above argillite cap of underlying sequence. 127.23 - 129.04 Coarse grit with minor pebble size clasts at base and 5 argillaceous rip-up clasts 128.42 - 128.74, fines upward to sand between 127.40 - 127.80 and capped by 17 cm of argillite. 129.04 - 131.96 Fine pebble conglomerate to coarse grit (< 1 cm) over basal 10 cm fines upward through coarse grit to 129.2 then med-coarse sand to top. 136.02 - 141.22 Pebble conglomerate base to predominantly grit size clasts by 140.20 to top of interval. Abundant argillite rip-up clasts between 136.90 - 138.91 comprising approximately 15 - 20% of the interval, ranging from 2 mm to 7 cm thick, irregular boundaries (particularly ends) and angular to very angular. <u>Structure:</u> Fault with gouge @ 15 - 20° to c.a. 133.9 Pebble conglom on pebble conglomerate <u>Veins:</u> Quartz veins measurement taken at centre of core (vein contacts extend beyond interval limits) 107.75 - 107.76 milky white, no sulphides @ 30° 107.89 - 107.90 Cavity filling quartz vein with fine quartz crystals. 109.76 - 109.96 milky white @ 15° Cont'd...
				f	

Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
112705	112.98	113.09	0.85%	2.75%	21.6
Aspy and Sph band contact extends length of sample and comprises ½ of sample. Remainder is apparently barren cavity/void filling quartz vein.					
112706	113.09	113.44	112	2603	0.7
Barren(?), void - filling quartz vein.					
112707	113.44	113.65	268	2902	2.3
Lower contact of quartz vein. Coarse aggregates of pyrite (to 2 cm long dimension) within Aspy band. Discontinuous band of Aspy parallel to contact with host grit, 2 - 2.5 cm from vein margin. Aspy forms irregular, discontinuous band up to 4 cm thick. Aspy up to 10% over 4 cm thick.					
112708	113.65	113.88	358	486	1.4
≤2 cm of apparently barren quartz vein (underlying Aspy band) at lower contact extends ½ length of sample, comprises approx. 1/4 of sample. Trace Aspy needles in host grit.					
112709	116.42	116.64	26	29	<0.2
Coarse grit to pebble conglomerate with Aspy-bearing vein. Grit overlying quartz vein					
112710	116.64	116.71	1.28%	299	52.6
Quartz vein into Aspy-bearing grit					
112711	116.71	116.86	49	24	0.4
Trace Aspy in underlying grit.					

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
107.00	141.22				Pebble Conglomerate. (Cont'd) Veins (Cont'd) 110.18 - 110.19 Light grey to white quartz vein with ankerite along margins @ 40°. 115.72 - 115.82 Light grey quartz vein, no sulphides-does not extend across width of core *117.45 - 117.55 Milky white quartz vein, no sulphides @ 25°* 116.64 - 116.71 Grey to milky white quartz vein with pyite banding along upper margin, discrete cubes along lower contact. 5 - 7% Arsenopyrite (same as upper vein) in core of vein with subordinate pyrite. Pyrite ≈ 10% @25° to c.a. 117.55 - 117.72 Light grey to white quartz vein, no sulphides @ 10° 122.52 - 122.58 Milky white, no sulphides 10° 123.60 - 123.64 Milky white, no sulphides, 3% ankerite 20° 124.46 - 124.49 Light grey to white, no sulphides, diffuse margins 1cm thick 10° 124.70 0.4mm thick, carity filling quartz vein 30° 125.56 - 126.03 Milky white quartz vein, no sulphides at 30° *129.04 - 129.14 Light grey quartz vein with ankerite, no sulphides 25°129.38 - 129.45* Light grey quartz vein, minor ankerite, no sulphides 35° 130.88 - 131.14 Light grey to white quartz vein, no sulphides 30 - 35° 131.44 - 131.52 Light gray quartz withminor ankerite 30° 132.0 - 133.25 Milky white quartz vein, no sulphides, inclusions of muscovite-bearing sandy grit host lithology 50° 133.28 - 133.61 As above, minor inclusion's irregular contacts. 133.87 - 134.34 Milky white, cavity filling quartz vein, no sulphides sub-parallel to c.a. min 3cm thick. 134.65 - 134.83 Milky white, no sulphides 20° 131.96 - 136.02 Thick, milky white quartz vein with inclusions of fine-med, muscovite-bearing sand, no sulphides. Basal contact @ 40° to c.a. Sulphides in Veins: 112.89 - 113.65 Milky white cavity filling quartz vein with 1% course sphalerite crystals, course intergrown quartz crystals in the core of the vein and med. grained idioblastic pyrite (up to 8 mm) crystals (≤3%) at top and coarse masses up to 3 cm near base. Trace galena along margin near top and arsenopyrite (silvery grey, cubic to rectangular lath shaped crystals in irregular, discontinuous band between sphalerite (core) and pyrite (margin + into host) and between trace galena and margin. Core sphalerite-(galena-) aspy-py (margin) py (host) 116.64-116.71 Grey to milky white quartz vein with pyite banding along upper margin, discrete cubes along lower contact. 5-7% Arsenopyrite (same as upper vein) in core of vein with subordinate pyrite. Pyrite ≈ 10% @25° to c.a. Sulphides in Sediments: none observed						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
141.22	152.17	141.4 143.2 146 149 151	70 70 70 - 75 70 65 - 70	TBR *f*	Lithology: Siltstone and sandy siltstone laminae to thin beds. Series of thin interbedded siltstone and sandy siltstone (to silty sandstone) laminae variably disrupted by foliation. Intervals range from 6 cm thick in bottom third of interval to 1 - 5 mm average near top. Overall unit fines upward as silt content increases and proportion of siltstone to sandy siltstone laminae increases from approx. 40:60 to 50:50 at top. Porphyroblasts variably developed throughout interval, finer and more abundant from 141.22 - 146, coarser (≤5 mm) and less abundant 146.0 - 152.17m. Porphyroblasts have development of pressure shadows extending along the foliation. Structure: 152.34 - 152.37 Fault gouge @ 80° to c.a. 151.10 If assume foliation is almost vertical, then parasitic "S" fold looking NW with axial planar foliation S_1 146 60° 149 55° 151.10 40° Argillite 55° Sandstone Veins: Thin quartz veins (± ankerite) comprises ≤ 5% of interval, sharp margins and generally parallel to sub-parallel to foliation. No sulphides. 147.05 - 147.08 *Quartz vein with pyrite* at 70° *to c.a. Argillite margin. Ankerite up to* 40% of vein, pyrite 5%. 148.81 - 148.90 Milky white cavity filling quartz with argillite inclusions and pyrite just inside margin with host rock. Argillitic contacts with host siltstone ≈2 cm thick. Pyrite ≤ 1% Sulphides in Veins: none observed Sulphides in Sediments: Pyrite present throughout interval as coarse idioblastic cubic porphyroblasts up to 1 cm diameter. Proportion increases from trace at top to ≤3% between 146.0 - 149.0 then decreases again.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
152.17	174.96	152.5 155.4 158.5 164.3 164.5 164.7 164.8 164.8 164.8 164.9 165 169 173	55 70 70 65 - 70 70 60 20 0 20 20 35 50 60	TBA *f* *f* *f*	Lithology: Argillite. Interlaminated argillite, siltstone and sandy siltstone. Porphyroblasts present as well in variable amounts, moderately abundant from 161.5 to 164.0 and 155.0 to 155.44 (up to 20% by volume). Porphyroblasts have well developed pressure shadows in well foliated argillite interval Structure: Sheared/Faulted intervals. Faulted (fault chips and gouge) 166.26 - 166.28 @ 60° Sheared (incipient fault chips) 168.56 - 168.59 @ 50° Faulted (fault chips) 172.36 (0.4 - 1 cm thick) @ 50° Faulted (fault chips and gouge) 174.24 - 174.26 @ 55° Faulted (chips, gouge and drag fold) 174.90 - 174.96 S_1 152.5 55° 155.4 30° Argillite 10° Sandy Silt 158.5 30° 164.3 40° Sandy Silt 165 50° Veins: 158.89 - 159.20 Milky white core with yellowish to bone white ankerite crystals along the margin @ 60°. Note: given the presence of scheelite in the Ruth Vermont across the valley, many of these "quartz + ankerite" veins should be tested with a UV lamp for the presence of scheelite. 166.72 - 166.75 Similar to above @ 50° 173.08 - 173.10 Yellow to bone white ankerite crystals with subordinate quartz and minor pyrite. Very fine grained disseminated pyrite (< 2% over 10 cm above and below vein) The above are the larger and/or distinct quartz veins. The interval has a number of quartz veins from discontinuous veinlets 1 - 3 mm thick to quartz veins ± pyrite up to 10 cm thick. No other sulphides. 5% veins from 152.39 - 155.44, 10% from 159.40 - 161.0, 5% 164.7 - 165.50, 15% from 166.5 - 168.50. Sulphides in Veins: none observed Sulphides in Sediments: Pyrite content similar to previous intervals, present in trace quantities overall as idioblastic cubes up to 0.5 cm in diameter.						

Drill Hole VC 002

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
174.76	175.31			GRT	Lithology: Faulted Grit Structure: *Fault gouge in siltstone @ 174.95 0.5 cm thick @ 60°* Veins: none observed Sulphides in Veins: none observed Sulphides in Sediments: none observed						
175.31	470.90	176.8 180.3 182.6 184 185.9 190.8 194.6 195.6 195.2 199.9 201.9 207.6 208.8 210.8 217.1 219.5 225 231.6 234.5 237.8 238.2 241.6 246.3 253.1 255.3 257.7 259.6 261.9 264.4 268.4 270.1 273.3 275 288.4 293 301 302 306.1 308.9 319.4 326.1 338.2	60 80 65 70 65 60 80 60 50 50 30 65 45 60 45 50 60 55 15 - 20 65 10 20 60 70 60 40 60 60 45 75 55 - 60 60 45 - 50 60 55 45 30 55 50 55 25-30 50-55	GRT	Lithology: Grit Package. Several poorly defined fining upward sequences within interval. 175.31 - 180.21 Coarse grit at base fining upward to fine grit/coarse sand with fault top. 180.21 - 180.84 short fining upward interval from reasonably distinct basal scour to rather indistinct cap contact with overlying interval gradational over 10 cm, possibly two almost concurrent turbidity flows. Coarse grit at the base to med-coarse sand at top. 180.84 - 182.60 Interval consists of coarse grit to 182.30, then a coarse grit/fine pebble conglomerate across a scour upward to 8 - 10 cm of light grey, coarse sand at the top. 182.60 - 183.98 Coarse sand with grit sized clasts shows weak fining upward sequence to 2 cm of fine -med sand at top. Good, distinct basal contact. 183.98 - 185.46 3 cm of coarse grit to fine pebble conglomerate at base shows poor fining upward sequence to 1.5 cm of fine-med sand at top. *185.46 - 186.15 Short interval. Grit from 185.88 - 186.15, overlain by coarse sand with grit sized clasts.* 186.15 - 188.41 Coarse grit with subordinate pebble sized clasts at base fines upward into med.-coarse grit interval from approx. 186.22 - 188.40. Med sand at top. Poorly defined, gradational contact at base. 188.41 - 190.81 Similar to previous interval. Overall the grit is finer grained than the previous "grit" unit described in that the proportion of pebble sized clasts is significantly lower. Fining upward sequence 190.81 - 192.15 Matrix supported grit at base to fine sand at top (uppermost 20 cm) 192.15 - 194.6 Abundant matrix-supported, medium to coarse grit clasts in med to coarse sand matrix. Proportion of clasts diminish upward over 60 cm, then matrix fines slightly to med sand at top. Gradational contact into overlying unit. 194.6 - 195.56 Matrix (to possibly clast supported) grit clasts at base with proportion of grit clasts diminishing over basal 30 cm. Highly subordinate grit component in med sand to top of interval. Capped by 1 cm fine sand. 195.56 - 197.06 Several small fining upward pulses. 196.06 - 197.06 Clast supported coarse grit in basal 20 cm to matrix supported grit to 196.15, fining *upward into med. sand. Coarse grit pulse from 195.91 - 196.06,* overlain by med. sand with highly subordinate grit clasts to 195.94. Matrix (to clast supported) grit from 195.94 upward to 195.80, med. sand to top of interval. Capped by 1 cm fine brown sand.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90				Grit Package. (Cont'd) 197.06 199.77 Coarse clast supported grit over basal 20 cm, gradationally fining upward to matrix supported grit with 60% clasts to 197.65. Grit clast content rapidly diminishes to med. grey to brownish med. sand, coarsens slightly between 197.11 - 197.15. 5 cm of med. brown fine-med sand at top. Sharp contact with overlying interval. 199.77 - 208.80 clast supported coarse grit to fine pebble conglomerate at base to 208.26. Matrix supported coarse grit 204.21, matrix supported med. grit to 201.97. Light to med grey med sand fining upward to fine sand at 200.03 through to dark grey to black silt at top. Silicified zone 198.37 - 198.57. Matrix in coarse grit takes on light grey to dirty white colour. 2 08.80 - 219.50 Matrix supported, coarse grit at base to approx 212.0, overlain by med. coarse sand with subordinate grit clasts (slightly deformed argillite rip-up clasts between 210.74 - 210.90 - 4 between 0.4 - 1.5 cm thick with elevated pyrite content (2 - 5%). Minor clasts from 210.30 upward to 209.3. Influx of coarse grit material to 209.23. Med sand with highly subordinate clasts to 208.90. Fine-med. brown sand cap. Moderately sharp contact with overlying interval. 219.50 - 221.31 Grit at base to fine sand at top. 222.15 - 228.34 Faulted grit interval. Both lower and upper contacts faulted. From 227.63 - 228.34 70% argillaceous rip-up clasts or faulted top of argillaceous unit. Unit grades from coarse grit with probable rip-up clasts up to 6 cm thick at base to med. grit at top (in contact with vein below fault ∴ top probably not top of unit. Argillaceous rip-up clast 225 - 225.02 228.73 - 229.70 FUS from coarse matrix supported grit at base to be sheared coarse grit at top. 229.70 - 231.41 Fining upward sequence from coarse, matrix supported grit at base to fine-med sand at top. Argillaceous rip-ups 230.42 - 230.54 231.41 - 233.44 Fining upward sequence from med., matrix supported grit at base to fine sand at top. Argillaceous from 231.62 - 231.67, probably fine grained argillaceous cap to underlying grit with small, subsequent pulse of sand from 231.62 - 231.41. Soft sediment deformation evident as pillow of coarse grit foundered down into underlying material (to 233.49) Two small argillaceous rip-up clasts between 231.80 - 231.90, 0.4 and 0.6 cm thick and < width of core (discontinuous). 233.44 - 237.75 Fining upward sequence, from coarse sand to fine grit upward to fine - med sand. Shale rip-ups from 234.74 - 234.78. Darker (calcitic) from 234.53 - 234.84. 237.75 - 238.16 Coarse grit to fine pebble conglomerate, matrix supported with 4 cm thick fine sandstone cap. This and above unit may be a composite sequence. 238.21 - 241.55 Medium, matrix supported grit fining upward to fine, matrix supported grit. Rip-up of interlaminated argillite, siltstone and sandy siltstone between 240.21 - 240.33. 241.55 - 241.89 Coarse grit to fine pebble conglomerate in sharp transition to fine-med brown sandstone cap at 241.62. Again, may be composite sequence with overlying unit. 242.81 - 246.33 Med grit to med. sand. Argillaceous rip-up clast 245.52 - 245.62.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90				Grit Package (Cont'd) 246.33 - 250.01 Interlaminated siltstone and sandy siltstone rip-up clast. Strongly deformed interval of interlaminated siltstone and sandy siltstone in laminae ranging from 0.2 - 2.0 cm thick. Foliation and minor parasitic folds are slightly inconsistent suggesting the foliation and folding are almost coincidentally aligned and that the folding is due to soft sediment deformation and not a result of tectonics. Furthermore, the grit sequence shows no apparent effects of folding equivalent to that in the interlaminated siltstone. The lower 19 cm (249.82 - 250.01 m) consists of irregular quartz veins in an argillite. 250.01 - 253.14 Fining upward sequence (FUS) from matrix supported, pebble-bearing grit to coarse sandstone top. Poorly defined lower contact. 253.14 - 254.83 FUS Coarse grit-bearing sandstone with sharp basal contact fines only slightly to med. grit-bearing sandstone with gradational contact into overlying unit. 254.83 - 256.70 FUS Coarse grit at base to med., grit-bearing sandstone near top. Upper 1.5 cm is a fine-med brown sand. Argillaceous rip-up clasts 255.31 - 355.40 m 256.70 - 259.59. Coarse matrix-supported grit fining upward to med.-coarse sandstone. Numerous small argillaceous rip-up clasts from 257.09 - 257.25 m. 257.09 - 257.13 Irregular white quartz vein with ankerite (up to 20% of vein) associated with argillaceous rip up. 257.87 - 257.94 Possible top of fining upward sequence consisting of med. sand overlain by coarse grit to 257.33 then med. grit-bearing sandstone. 259.59 - 261.86 FUS Grit-bearing coarse sand to medium sandstone by 261.30 to 1.5 cm fine-medium brown sand at top. Argillaceous rip-up clasts 260.31 - 260.50. 261.86 - 264.44 FUS. Coarse grit-bearing sandstone. Grit clasts include argillaceous fragments, fining upward to medium sandstone. Argillaceous to sandy siltstone rip-ups 264.20 - 264.40, up to 4 cm thick, continuous to discontinuous, platey to wedge shaped. 264.44 - 265.38 FUS. Basal 10 cm is coarse grit with argillaceous rip-up, remainder is medium sand. 265.38 - 268.44 FUS Coarse grit to 266.20, slight decrease in proportion of grit clasts relative to medium-coarse sandstone matrix, fine to medium sandstone to top. 268.44 - 270.09 FUS Coarse grit-bearing medium sandstone fining upward to 6 cm of fine-med brown sandstone. 270.09 - 272.67 FUS. Coarse grit-bearing medium sandstone fining upward to fine grit. Argillaceous rip-up evident along edge of core 270.20 - 270.40. 272.67 - 283.4 Fining upward sequence. Argillaceous siltstone at top of unit to 273.20 Deformed interlaminated siltstone and sandy siltstone laminae 0.1 - 3.0 cm thick to 274.7. Fine silty sand to 275.30. Load cast of coarse grit foundered down into argillite 272.67 - 272.76. Base of interval is medium grit.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90				Grit package (Cont'd) 281.38 - 281.47 Sheared grit @ 50° 283.4 - 288.43 FUS. Fine to medium grit at base to 287.9, less quartz-rich and more angular lithic fragments than previous intervals, fines slowly upward to coarse grit-bearing sand at top. Gradational contact into upper unit. 283.4 - 288.43 FUS. Fine to medium grit at base to 287.9, less quartz-rich and more angular lithic fragments than previous intervals, fines slowly upward to coarse grit-bearing sand at top. Gradational contact into upper unit. 288.43 - 292.91 FUS Fine pebble conglomerate to very coarse grit at base of interval with predominantly quartz clast as previously described. Abundant coarse speckled argillite rip-up clasts between 289.50 - 292.19, ranging from ragged discontinuous clasts up to 1.5 cm in long dimension to clasts 6 cm thick with a greater proportion of angular lithic grit clasts. Rip-up clasts comprise up to 20% of the interval. <u>Minor</u> small rip-up clasts and lithic fragments from 288.92 into a fine-medium brown sand to 289.13.. Darker (calcitic) interval of coarse sand to med grit with abundant lithic clasts to 288.80, then greenish-grey coarse sand to top of interval. 292.91 - 298.74 FUS Medium grit coarsens up to coarse grit by 298.3 to 295.81, fines to medium-coarse grit to 293.50, medium grit-bearing sand to top. 298.74 - 299.86 FUS *from sheared base. Medium to coarse grit at base to medium to coarse grit-*bearing sandstone at top. Contact sheared with shearing extending up to 20 cm up into interval @ 40 - 45°. 299.86 - 301.68 Coarse grit-bearing sandstone. Argillaceous rip-up clasts 300.72 - 300.74. 301.68 - 306.13 FUS Coarse grit at base to approx 305.0. Abundant argillaceous rip-up clasts from approx. 302.0 - 305.28, from discontinuous wedge shaped clasts up to 0.5 cm thick to continuous, platey clasts cross-cutting core up to 4 cm thick. Sequence ends in 23 cm of black, speckled (porphyroblast-bearing) argillite overlying coarse grit. Interval has parallel upper and lower contacts, both of which are intact, therefore interpreted to be laminar bedded upper Bouma sequence unit but <u>**may**</u> be an unusually intact rip-up clast in which case this interval continues to fine upward into the overlying unit. 306.13 - 307.43 FUS from coarse sandstone to fine grit at base into interlaminated siltstone and sandy siltstone at top. Argillaceous rip-up clasts from 306.70 - 306.77. Transition from med sand to interlaminated sequence from 306.50 to 306.13 m. Sharp upper contact. 307.43 - 308.94 FUS from fine pebble conglomerate to fine-medium brown sand at top. Overlying unit has load casts into top of this interval.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90			⇩	Grit Package (Cont'd) 308.94 - 314.75 FUS Fine pebble conglomerate to coarse grit at base. Argillaceous rip-up clasts 311.03 - 311.15. Medium grained, medium grey sandstone at top. 314.75 - 319.45 FUS Coarse grit at base. Darker band (319.08 - 319.40) more lithic component to matrix. Fines upward to medium grained, medium grey sandstone at top. <u>Lithology:</u> 319.45 - 326.12 FUS Coarse grit to fine pebble conglomerate to 319.60. Fine to med grit-bearing sandstone to top. Dark (calcitic) bands 319.72 - 320.27 and 324.23 - 324.40. 326.12 - 332.22 Coarse grit to fine-medium sandstone. 332.22 - 335.26 Coarse sand to fine grit to coarse sandstone. Dark (calcitic) band between 334.77 and 334.86 335.26 - 341.33 Coarse grit to fine pebble conglomerate to grit-bearing, medium to coarse sandstone. Two dark (calcitic) bands at 340.55 - 340.65 and 340.81 - 340.92 Note: Dark bands noted in the core descriptions may be due to chemical rather than compositional differences as the bounding contacts between 340.55 - 340.65 have similar dips but are oriented approx. 20° to one another. 341.33 - 342.47 3 cm of brown silty sandstone at upper contact with increasing coarse grit component to approx 334.0 Coarse grit to fine pebble conglomerate. 341.03 - 345.0 Dirty yellow mineral filling interstices between clasts, matrix component. *FINING DOWNWARD SEQUENCE* 348.47 - 352.73 Fining downward sequence (FDS) from upper coarse grit/fine pebble conglomerate downward into medium grit to grit-bearing medium sandstone. 352.73 - 361.86 FDS Pebble-bearing coarse grit at top, above sharp contact fining downward to medium sand. Darker blue grey bands between 354.74 - 354.86, 355.0 - 355.63 and 359.11 - 359.17. Last interval has irregular contact from 355.57 - 355.63 m. Again irregular boundaries suggest the darker intervals are not due to differences in primary depositional environment but may be rip-up clasts of one grit turbidite into another. The relatively sharp contacts are probably good evidence against these intervals being due to secondary chemical (alteration) effects. 361.86 - 362.60 Fine pebble conglomerate to medium sand. Argillaceous rip-up at base.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90	361.9 381.8	65 50-55		Grit Package (Cont'd) 362.60 - 371.27 FDS. Fine pebble conglomerate at base to approx. 363.88, coarse grit to 368.61, medium to coarse grit to 371.70, medium to fine sand to top. Variable calcite in matrix interstices throughout interval, particularly in mid-interval grit dominated sequence. Argillaceous rip-up clasts 367.22 - 368.61, comprising 40% of interval, platey, angular, up to 0.6 cm thick. (Another 367.71 - 367.72, 368.77 - 368.78 m). Dark bands (appear to be slightly more calcitic than lighter bands 362.82 - 362.86, 363.01 - 363.38, 363.54 - 363.88, 363.92 - 363.98, 364.04 - 364.21, 364.48 - 364.62, 364.71 - 364.77, 367.55 - 367.66 371.27 - 371.36 Gradual coarsening downward into underlying unit. Fine-med sand with downward increasing proportion of coarse grit to fine pebble sized clasts. 371.36 - 378.38 FDS. Coarse-grit to fine pebble-bearing, medium grey, medium sand to 372.70 m. Discontinuous, platey argillaceous rip-up clasts with ragged edges 372 - 372.22. Coarse grit-bearing dark blue-grey sand with calcitic interstices to approx. 373.23 m. Coarse sand to medium-coarse sand at faulted base. 378.38 - 384.83 FDS. Fine pebble conglomerate to coarse grit at top to 381.34, fining downward to coarse grit to 381.65. Darker blue-grey band 379.47 - 379.82 m, calcitic matrix. Highly subordinate pebble size argillite clasts. Short coarse grit interval 381.65 - 381.75, fining to fine to medium sand to 384.83. Dark, blue-grey bands with calcitic matrix 381.75 - 382.20 and 384.10 - 384.58. 384.83 - 390.34 FDS. Coarse to med grit at top fining downward to medium grit at 387.48. 10 cm section of fine pebbles (387.48 - 387.58), fines downward through silty argillite 389.40 to faulted argillite at base of interval. Several pulses of grit between 388.05 - 388.20. 390.34 - 392.0 FDS. Sharp upper scour at stratigraphic top of previous interval. Coarse grit fining downward to fine-medium sandstone at base of interval. Argillaceous rip-up clasts 391.56 - 391.90, platey to wedge-shaped with ragged edges, imbricated along 55° to c.a.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
175.31	470.90	388.1 390.3 401.4 392 392.6 402.5 395.6 398.2 411.5 420.3 424.8 428.2 429.6 431.9 432.1	60 40 50 60 57 35 55-60 50 40 40 50 45 65 55 65		Grit Package (Cont'd)						
				⇩	392.0 - 392.86 FDS. Sharp upper contact, as above, Fines downward through several 3 - 10 cm fining downward sequences 392.38 - 392.57 to interlaminated sandy siltstone to siltstone at base (stratigraphic top). Sandy siltstone to siltstone laminae oriented parallel to stratigraphically lower fining downward sequences so primary laminae not rip-ups						
					392.86 - 395.57 FDS. Fine pebble to coarse grit at base, fining downward, med calcitic sand at lower interval. Darker blue grey calcitic band 395.20 - 395.50.						
				⇩	395.57 0 - 396.67. FDS Coarse grit at top to medium grit at base.						
					396.67 - 398.24 FDS. Argillaceous rip-up clasts (396.67 - 396.84) platey to wedge-shaped with ragged edges in coarse grit-bearing sandstone to 397.0 m, medium grit fining downward to fine-med sandstone. Dark blue-grey calcitic band 397.75 - 398.04 m.						
				⇩	398.24 - 400.65 FDS Coarse grit-bearing medium sandstone fining downward to medium sandstone by 398.50. Thin laminated, greyish green medium sandstone and argillite (399.16 - 399.27), laminae thinning downward to 399.49 m. Argillite from 399.49 - 400.65.						
				⇩	400.65 - 401.65 FDS Medium grit with milky white quartz vein (400.7 - 400.11) at 70°. Grit fines downward to fine grit-bearing sand at base of interval. Argillaceous rip-up 401.04 - 401.06, 401.21 - 401.25. Interval consists of 4 fining downward cycles, each 15 - 20 cm thick and each successively lower sequence is finer than the previous one.						
					401.65 - 411.37 Pebble-bearing coarse grit fines downward into fine sand with 4 cm sandy siltstone to argillite at base (stratigraphic top). Argillaceous rip-ups 404.22 - 404.28 and 404.36 - 404.41. Dark blue-grey calcitic intervals 407.28 - 407.60, 407.97 - 408.26, 408.41 - 408.51.						
					Coarse pebble-bearing grit between 405.70 - 405.90 with gradational margins.						
					411.37 - 418.43 FDS. 1 cm coarse grit at upper contact, stratigraphically overlain by 13 cm of greenish grey medium sand. FDS. 411.51 - 418.43 Medium to coarse grit at base fining downward to fine-med sand. Argillaceous rip-up clasts 413.37 - 413.66, 414.90 - 415.10 and 417.15 - 417.29. Darker blue-grey calcitic band from 413.75 - 414.15, 415.10 - 416.16 and 417 - 417.31.						
					418.43 - 420.30 FDS Lithology coarsens gradually from stratigraphic top of previous interval from fine-med sand through grit-bearing sandstone to med-coarse grit over 20 cm. Fines to medium grit-bearing sand at 419.47 Coarsens again to medium-coarse grit over 10 cm then fines to med sand at 420.30.						
				⇩	420.30 - 426.82 FDS. Basal dark blue-grey pebble-bearing coarse grit fines downward to greenish medium sand. Fining downward pulses at 420.60 - 420.80, 420.80 - 420.87, 420.87 - 424.83, 424.83 - 424.88. Argillaceous rip-up clasts 424.17 - 424.27 at edge of core, ragged edges. Dark blue-grey calcitic band 420.30 - 420.50.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90	441.1 447	40 50	⇩	Grit Package (Cont'd) 426.82 - 432.07 FDS. Three fining down sequences 426.82 - 428.22. Fine grit to coarse sand fines down to fine sand. Argillite rip-up clasts 427.97 - 428.03; 428.22 - 429.60. Medium grit-bearing sandstone fines through thin to thick laminated fine sandstone to silty sandstone, 429.60 - 432.07. Coarse grit-bearing sandstone fines through thin to thick laminated fine sand and sandy siltstone to well foliated argillite. 432.07 - 435.81 FDS. Grit-bearing medium sand coarsens downward to medium grit @ 432.40. Fines downward to fine-med sand @ 434.30. Subordinate fine pebbles present in sand fining downward to grit-bearing coarse sand to medium sand at base of interval. 435.81 - 440.83 FDS Fine pebble conglomerate fines downward to pebble to coarse grit-bearing sand from approx 436.0 - 437.50 then medium grit to medium sand at base of interval. 440.83 - 442.90 FDS Several fining downward pulses; 440.83 - 441.05 Coarse-grit with 1 cm fine brown sand at top. 441.05 - 441.65 Med-coarse grit with argillaceous rip-ups from 441.21 - 441.34. Platey, wedge-shaped and needle-like rip-ups from 0.3 - 4 cm thick, very angular. Fines to fine-medium sandstone at base of interval. 441.65 - 442.90 Coarse grit to 441.94, fining to fine to medium sand with highly subordinate grit to 442.4 Fine-med sand to base of interval. 442.90 - 446.83 FDS. Load cast (pillow) from stratigraphically overlying coarse grit-bearing medium sand 442.90 - 442.98. Coarse grit-bearing sandstone to 443.54. Coarse grit to 444.80, medium grit to coarse sandstone. to 446.83. Dark blue-grey (purplish) calcitic band 445.23 - 445.51. Argillaceous rip-up clast 442.98 - 443.01 and from 445.42 - 445.43. 446.83 - 452.74 FDS Small FDS pulse from 446.83 - 447.08. Coarse grit to 447.0 with 8 cm fine sand at top of pulse. 447.08 Coarse grit approx. 450, medium grit to base of interval.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
175.31	470.90	452.7 452.8 452.9 456.7 458.1 460.3 461.5 464 467 470.4	45 25 20 50 45 50 50 20 35 50		Grit Package (Cont'd)						
					452.74 - 454.80 FDS. Small FDS 452.74 - 452.89. Coarse grit to 452.84 overlain by 4 cm thick medium grit-bearing fine sand.						
					452.89 - 454.80 Coarse grit- (to fine-pebble) bearing greenish, medium to coarse sandstone at top.						
					454.80 - 456.72 FDS from coarse grit to medium-coarse sand (2% glassy grey quartz + calcite veinlets (0.1 - 0.4 cm) thick).						
					456.72 - 461.46 FDS. Coarse grit at top of interval with arg rip-ups 456.80 - 457.12 m, large, randomly oriented wedge-shaped clasts up to 6 cm in long dimension. Fines downward to medium sand at 460.22. Interlaminated fine sand and sandy siltstone to 460.88, another fining upward sequence from interlaminated thick laminated greenish fine sand + sandy siltstone argillite to argillite @ 461.40. Interlaminated sandy siltstone and thin argillite laminae to base of interval.						
				⇩	461.46 - 465.10 FDS. Sharp upper contact with overlying argillite. Fines downward from coarse grit-bearing coarse sandstone downward over 50 cm to medium grey, med sandstone with minor coarse sand to fine grit size clasts. 463.85 - First appearance of thin laminated to very thin bedded fine sandstone with silty sandstones. Silt content increases downward to 464.58. Argillite to base of sequence.						
					465.10 - 465.73 FDS. Fine sandstone to argillite top.						
				⇩	465.73 - 467.53 FDS. Coarse-medium sandstone grading downward through relatively abundant variably porphyroblast speckled sandy siltstone to argillite at 467.21. Lower 6 cm coarsens downward into medium greenish fine sandstone.						
					467.53 - 470.23 FDS. Coarse grit at upper contact fining downward to interlaminated silty sandstone and sandy siltstone by 468.10 m. Contorted, thin to thick laminated sandy siltstone and argillite disrupted by foliation to 469.37. Argillite to base of interval.						
					470.23 - 470.90 FDS. Last coarse grained lithology above argillite dominated sequence. Grades from dirty green, medium sandstone to silty argillite with fine speckled porphyroblasts.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
175.31	470.90			f f ⇧ f f f f f	Grit Package (Cont'd) Structure: Faults - 3 intervals between 220.90 and 221.95 of broken grit with fault chips and minor gouge. 48 cm of core missing so assumed each interval approximately 16 cm missing in fault 220.90 - 221.06 @ 40° 221.52 - 221.68 221.79 - 221.95 @ 55° Fault gouge 228.10 - 228.14 @ 30° Fault 228.34 - 228.59 Faulted argillite at top of interval (base of upper unit). Sheared course grit over interval. Up to 10 cm of core missing (fault gouge?). 228.59 - 228.73 Intensely sheared coarse grit @ 50°, top of next unit. 342.50 - 347.0 Probable locus of fold hinge zone as unit seem to fine downward below this interval. Unit coarsens downward to approx. 343.0 to a coarse grit/fine pebble conglomerate then fines upward from 348.4 - 348.47 to a grit-bearing medium sand. 378.38 - Faulted contact @ 35°, gouge. Fault 390.09 - 390.24 Clayey fault gouge at margins of missing interval (8 cm) @ 60° parallel to well developed foliation in argillite Fault with gouge @ 55° 395.19 - 395.20 m 399.49 - 400.65 Well foliated @ 70°, 20° to bedding. Fault gouge + chips in argillite 432.02 - 432.05 m. Fault gouge 460.35 @ 50° in sandy siltstone interval. 461.46 - 465.10 Upper contact faulted with gouge @ 40° Argillite faulted @ 465.60 - 465.65, fault gouge/chips @ 55°. S_1 464 45° 467 25° 470.4 60° Fault gouge @ 275.30 @ 40°						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90				Grit Package (Cont'd)						
					Veins Quartz veining comprises 1 - 2% of the interval, comprised of milky quartz veins with highly subordinate ankerite. Up to 3 cm thick.						
					Thin milky white quartz veins averaging 50° - 60° to c.a. comprise 2 - 3% of interval in boxes 31 - 34.						
					Quartz vein 221.95 - 222.15 @ 30° - 35° Milky white quartz vein with 1 - 2 cm pyrite band 2 cm above lower contact withhost rock. Upper contact sheared grit (possibly an argillic horizon or silty grit).						
				qv	242.45 - 242.81 Glassy white quartz vein with minor dolomite (slight reaction to HC1) along margins, 10 cm thick @ 15° to c.a.						
				qv	Quartz vein 276.65 - 276.68 with ankerite along margins @ 55°						
					Quartz veins-relatively abundant milky white quartz veinlets from 280.40 - 286.0 at a variety of angles. Cross-cutting and locally forming a weak network of veinlets ≤ 0.5cm.						
					2 cm thick milky white quartz vein at 281.55 @ 50° (however, opposite to overlying shear).						
					Quartz veins (glassy white to translucent grey) comprise 5 - 10% of the interval at 50 - 70° to c.a. Series of en echelon veins 297.90 - 298.0 and 296.44 - 296.49						
					Quartz veins up to 299.1 of two generations, grey translucent veins up to 0.5 cm sub-parallel to shear plane (≡foliation?)						
					Second set cross-cuts 1st set at 70° to c.a. and ≈ 30° to 1st set. Consists of glassy white to translucent grey quartz with white to yellowish dolomitic margins (weak reaction to HC1)						
					White glassy quartz vein (328.81 - 326.88) at 70°,. 3 cm upper and 2 cm lower quartz and calcite margins.						
					Minor translucent grey quartz veins 332.50 - 341.33 comprise approx 1% of section.						
					338.66 - 338.69 Medium glassy translucent quartz vein with subordinate dolomite along margins.						
					342.02 - 342.09 White, semi-opaque quartz + calcite vein. Vein has calcite + quartz margins and a 0.5 cm band of calcite in the core 60° to c.a.						
				qv	342.50 - 347.0 white, semi-translucent to milky white quartz veins comprise up to 2% by volume of interval, ranging from cross-cutting veins (cavity filling) up to 2 cm thick to irregular masses up to 4 cm thick. Veins may have associated pyrite (≤ 1%).						
					Veinlet 345.01 - 345.11 at approx. 25 - 30°. Weak reaction to acid → dolomite.						
				qv	348.47 - 352.73 2 - 3% thin glassy grey quartz veins by volume, 50° 70° to c.a. and averaging 3 - 4 mm thick, up to 2 cm thick.						
					Cavity filling milky white quartz between 355.33 - 355.37, 355.99 - 356.02 and 356.26 - 356.27. Glassy white quartz vein 358.06 - 358.12 at 70°- 80°.						
					Translucent grey quartz veins comprise up to 10% of the interval from 361.86-362.60.						
					Quartz veins comprise 2-5% of interval, oriented at a variety of opposing angles from 30° to 80° to c.a. Dark, calcitic band between 372.90-373.23m.						
				qv	378.38-384.83 Quartz ± clacite veins comprise 2-3% of section.						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
175.31	470.90			qv	Veins: (Cont'd.) 384.83 - 390.34 Glassy grey quartz + ankerite + pyrite (5%) veins with argillitic inclusions and margins. Upper contact sheared over 1cm (389.40 - 389.41) with development of fault chips and minor gouge. Four quartz + ankerite ± pyrite veins in argillite 399.49 - 400.06m @ 40 - 50° and 398.92 - 398.94 @ 80 - 90° 401.65 - 411.37 Interval has up to 10% thin (0.2 - 0.4 cm) quartz + dolomitic veinlets to en echelon tension gashes, some of which have weathered out leaving vuggy planes cross-cutting core. 411.37 - 418.43 Glassy grey quartz ± calcite veins 0.2 - 1.0 cm thick comprise 2 - 3% of interval. White quartz vein with minor calcite along margins 419.13 - 419.24 at 45°. Contorted argillite with deformed calcite + quartz veins and minor pyrite (426.70 - 426.82). Quartz veins (quartz + calcite) comprise ≤ 5% of interval from 432.07 - 435.81, 2% from 435.81 - 438.89, 1% from 438.89 - 441.94, 2% from 441.94 - 442.9, 1% from 442.9 - 450, ranging from 0.1 - 4 cm (447.36 - 447.42) at approx. 50 - 60° to c.a. Glassy white quartz (+ calcite vein) 454.27 - 454.36 @ 30 to c.a. 464.58 - 465.10 5% Quartz + ankerite veins parallel to foliation modified bedding. 461.46 - 465.10 2% quartz + calcite veins over interval to argillite. 468.47 - to base of interval 10 - 15% quartz ± ankerite ± calcite as irregular veins from 0.4 - 7.0 cm thick. Sulphides in Veins: none observed Sulphides in Sediments: 199.77 - 208.80 Elongate pyrite masses along preferred bedding plane at top (≈ 2% over upper 3 cm) 208.80 - 219.50 Pyrite becoming evident for first time in this grit package as trace idioblastic crystals from 0.2 - 1.3 cm in diameter. Elevated pyrite in dark (calcitic) band from 216.69 - 217.14, up to 2%. Note: Pyrite present in fine to med sandstone intervals averaging 0.2 - 0.4 cm in diameter, may occur as aggregate masses up to 1.5 cm in diameter, comprising trace to < 1%. Dark blue-grey (purplish) calcitic band 454.08 - 454.27 with slightly enriched pyrite content (to 1%) 465.10 - 465.73 Local enrichment in pyrite between sandy siltstone/siltstone and argillite (3% over 6 cm as cubes up to 0.5 cm in long dimension).						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
470.90	528.57	481.7 485.2 488.7 496 497.5 500.2 503 506 510 512.3 517.9 521.8 524	50 50 65 30 25 20 15-20 75 65 65 55 50 55-60	TBA ⇩ f f f	Lithology: **ARGILLITE DOMINATED SEQUENCE** 470.90 - 480.73 Argillite. Well foliated sequence of contorted and disrupted argillite with subordinate porphyroblast speckled argillite, thin to medium laminated silty sandstone and argillite. 480.73 - 490.4 Contorted Argillite. Interval consists predominantly of argillite, with highly subordinate sandy siltstone to siltstone. Well developed penetrative foliation disrupts bedding into the foliation to varying degrees. Several poorly defined fining down ward sequences developed from interlaminated sandy siltstone + siltstone downward into argillite; 483.55 - 484.0, 485.20 - 486.0, 486.86 - 488.08, 488.08 - 488.70, 488.70 - 489.86, 489.86 - 489.40 Marly sediments (calcite in matrix) from 484.63 - 485.20, 485.90 - 486.86, 488.08 - 488.70, 489.86 - 490.40. 490.40 - 502.89 Argillite. Compositionally very similar to overlying unit but not as disrupted by foliation, moderately well developed penetrative foliation. Poorly developed fining downward sequences; 490.40 - 491.30, 491.30 - 492.70, 492.70 - 493.75, 493.75 - 494.08, 494.08 - 500.18. Marly sediments. 502.89 - 515.09 Siltstone. Interval consists predominantly of siltstone with varying proportions of sandy siltstone interlaminations throughout interval. Bedding/laminae disrupted by foliation. Variable proportion of calcite present in matrix, most abundant in coarser intervals. Several fining downward pulses in interval, up to 1.5 m thick. 515.30 - 528.29 Siltstone. Poorly defined fining upward sequence below faults. Interlaminated silty sandstone and siltstone, disrupted by foliation throughout sequence. Marly sediments 515.75 - 517.18, fine to medium grained (recrystallized?) calcite grains in a silty matrix. Strong reaction to 10% HCl. Structure: Faults: S_1 372.8 50° 481.7 60° 484.61 50° 485.2 60 - 70° 488.7 60 - 65° 496 55 - 60° 490.40 - 490.48 Fault with development of gouge + chips @ 30° 513.07 - 513.15, @ 60° gouge and chips 514.04 - 514.07 @ 35° gouge Fault $\wedge S_1$ 40° 515.09 - 515.30 gouge/ mud 515.09 - 515.30 Fault gouge and mud, cannot determine orientation. Fault-mainly fault chips @ 65° to c.a. 519.48 - 519.51.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
470.90	528.57			TBA ⇩	Lithology: **ARGILLITE DOMINATED SEQUENCE** (Cont'd) Structure: Faults (Cont'd) S_1 512.3 55° 516.5 55° 517.9 60° 521.8 45 - 50° 524 50° Veins: 470.9 - 480.73 Section consists of up to 20% glassy white quartz ± coarse ankerite? (up to 2 cm long dimension) ± calcite with irregular contacts from 0.2 - 10 cm thick. 502.89 - 515.09 Minor quartz + ankerite veins (<1%) in interval, up to 1.5 cm thick. Milky white quartz + ankerite veins at 518.76-518.77 (1cm thick at 65° to ca) and 520.52-520.73 (three veins 1-2 cm thick with irregular margins @ approx 70-80°. 528.29-528.57 Large quartz + ankerite vein. Translucent white quartz with white to light dirty yellow ankerite (?) and argillaceous inclusions. Proportion of ankerite increases downward, from 5% at top to 80-90% over lower 4cm. Sulphides in Veins: none observed Sulphides in Sediments: rectangular crystals up to 0.5cm in diameter. 470.9 - 480.73 Variable pyrite throughout interval, from trace to 2% over 3 cm, aggregate masses and minor cubes up to 1.0 cm diameter with pressure shadows. 480.73 - 490.4 Cubic, rectangular to diamond-shaped pyrite cubes up to 0.5 cm diameter, comprising up to 1% over interval. 494.17 - 495.18. Pyrite content markedly less than interval above fault, trace pyrite as elongate blebs 1mm x 3mm along foliation and as cubic and rectangular crystals up to 0.5cm in diameter. 502.89 - 515.09 Trace pyrite over interval as rare elongate bleb 1mm thick x 3mm long and as coarser cubes and aggregate masses up to 0.5 cm diameter. Some laminae appear to be a slightly preferred location for pyrite growth, several crystals noted along some bedding intervals.						
528.57	562.63	529 539.1 540.8 543.1	75 60 40 70	GRT ⇧	Lithology: **GRIT SEQUENCE** 528.57 - 528.98 Medium to coarse grit. Thin needle-like argillaceous rip-up clast 528.67 - 68. 528.98 - 537.29 Fining upward grit. 3 cm of weakly speckled black argillite at top, coarsening downward through interlaminated siltstone and silty sandstone (30 cm) to green coloured silty sand with minor thin siltstone laminae (40 cm) to medium to coarse grit at 532.0 to fine pebble/coarse grit at 537.0. Med to coarse grit to base of interval. Argillaceous rip-up clasts from 535.0 - 535.66, comprising 40% of interval, continuous to discontinuous across core and up to 5 cm thick.						

Drill Hole VC 002

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
528.57	562.63				Lithology: **GRIT SEQUENCE** (Cont'd) 537.29 - 562.63 FUS. Series of fining upward grit sequences: 537.29 - 537.89 Coarsens upward into overlying interval 538.12 - 539.09 Medium grit to fine-med sand 539.09 - 539.76 Medium grit to fine-med sand 539.76 - 540.11 Medium grit to fine-med sand 540.11 - 540.77 Coarse grit to fine-med sand 541.01 - 541.83 Coarse grit to fine-med sand 541.83 - 543.16 Coarse grit to fine-med sand 543.16 - 545.41 Coarse grit to med sand 545.41 - 548.38 Coarse grit to fine sand 548.38 - 550.58 Med to coarse grit to medium grit @ 548.7 then coarsens into next interval. 554.66 - 557.76 Coarse grit to fine-med grit. 559.29 - 559.84 Med sand to fine sand. 559.84 - 562.63 Coarse grit to siltstone. Structure: S_1 528.98 65°						
				qv	Veins: Quartz vein 530.84 - 530.88 milky white @ 20° 531.0 - 531.61 Milky white with minor with ankerite and argillaceous inclusions, 70 - 80° 531.96 - 532.07 Milky white with minor with ankerite @ 25° 535.40 - 537.29 15 - 20% quartz veins, milky to translucent white with minor ankerite at variety of angles to core 30 - 60°						

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
528.57	562.63				**GRIT SEQUENCE** (Cont'd)						
				qv	Quartz vein 537.89 - 538.12 Irregular with argillaceous inclusions. Cavity filling quartz veins 2.5 - 4.0 cm thick comprise 2 - 3% of interval from 540.50 - 543.40. Quartz veins 549.73 - 550.0 Milky translucent white @ 70°, 4 veins from 2.0 - 7.0 cm thick. 550.12 - 550.20 Milky translucent white with minor ankerite (1 - 2%) along margin@ 60 - 70° 550.32 - 550.35 Milky translucent white @ 60° 550.58 - 551.60 3 Large milky translucent white quartz veins. Upper vein @ 30° to c.a. Middle vein has 5 - 10% ankerite margins with pyrite up to 0.5 cm in host between veins. Lower vein has coarse pyrite ragged linear aggregate in upper third of vein and 1 cm thick medium grained ankeritic lower margin.. Lower contact 30°, Upper contact 70° 552.75 - 553.34 Milky translucent quartz with fine sand inclusions. Ankerite (5%) associated with host rock inclusions. Possible 1.5 cm aggregate of fluorite. 553.61 - 554.50 Quartz with minor ankerite (2%) 558.22 - 559.29 70% Milky translucent white quartz veins with 5% ankerite along margins and associated with host rock inclusions. <u>Sulphides in Veins:</u> none observed *<u>Sulphides in Sediments:</u>* none observed						
	562.63				End of Hole						

MINEQUEST EXPLORATION ASSOCIATES LTD.
DRILL LOG: DIAMOND DRILL CORE

Property:	Vowell Creek Claims					Hole No.	VC-00-03
Claim Block Code:						Drilling Company	Britton Bros.
NTS:	82K/15			UTM:	503385E 5641857N	Started	September 11, 2000
Claim Name:	VMT			SURVEY		Completed	September 12, 2000
Location - Grid Name				Depth	Dip	Azim	
Grid N:		Grid E:				Purpose:	To test mineralization
Section:		Elevation	1809			Core Recovery:	Almost 100%
Azim	116°	Length:	122.0 m			Logged by:	R. Walker
Dip	-60°	Casing Left:	Yes			Date Logged:	Sept. 12 - 16, 2000
Core Size:	NQ					Assayed by:	Bondar Clegg
Core Storage:	G. Mason, Mason's Backhoe, Parson, B.C.					Lab Report No.:	V00-01864.0

Note:

The fifth column in the drill log, labelled "Lith. Code", is used to place each major lithologic unit in the core description into one of the six categories listed below.

Category	Lith. Code
Overburden	O/B
Grit, conglomerate	GRT
Massive sulphide	MSX
Pyritic sediment	PYS
Turbidite, argillic (siltstone & mixed siltstone & sandstone)	TBA
Turbidite, arenaceous (silty sandstone & sandstone)	TBR
Turbidite, calcareous (calcareous siltstone)	TBC

Other annotations in the column include	
Fault	*f*
Quartz vein	qv
Angle of bedding to core axis	/
Bedding fining upwards (normal)	⇧
Bedding fining downwards (overturned)	⇩

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
0.00	3.05			O/B	Overburden						
3.05	22.62	8.9 10 13 16 18	40 35 50 40 10	TBC	<u>Lithology</u> Calcareous Siltstone. Interval predominantly siltstone but includes thin laminated to thin bedded silty sandstone, sandy siltstone and argillite. Variably oxidized to approx. 10m. Core also variably broken to 10m, areas of strongest oxidation, generally most broken. At least 60% of the core (to the end of interval) has a variably calcitic matrix (strong response to 10% HCl), even apparent argillitic intervals. Weak development of small ankerite(?) porphyroblasts in argillitic intervals Medium blue-grey silty sandstone dominated interval thicker (≤ 1.5m) and more abundant toward base interval, alternating with thicker, better defined argillite interval. <u>Structure</u> Weak development of foliation (penetrative, moderately developed in argillite). S_1 8.9 0° 10 0° 13 30° <u>Veins</u> Quartz veins (5% by volume) throughout interval <u>Sulphides in Veins</u> <u>Sulphides in Sediments</u> Pyrite variably developed, from small disseminated cubes, elongate rectangles and minor blebs to coarse aggregate masses up to 2.0 in long dimensions. Appears to be a <u>weak</u> tendency to concentrate along preferred planes (sandy siltstone intervals). Proportion of pyrite diminishes to trace amounts from approx. 18.0 to base of interval. 9.14-9.40 Possible rotten sulphide zone (may match zone in VC-00-05 at 11 m).						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
22.62	45.46	22.6 25.5 27.5 29.5 30.7 32.3 36.5 37.7	30 0 0 25 20 40 20 10	TBR	Lithology Silty Sandstone. Slightly calcareous in upper 0.5-1.0, calcite free below silty sandstones with subordinate sandy siltstone to minor siltstone intervals, as thin laminated to thin bedded intervals. From ≈ 29.0 downward there is limonite on some foliation surfaces and along veins. Iron staining has pervaded the host rock up to 1.5 cm on either side of the surface which served as a fluid conduit. The number of iron-stained surfaces increases downward as well as the extent to which iron-staining infiltrates the host rock. Deep orange core to med orange margin with relatively sharp yellow-orange edges, up to 2 cm each side into host rock. Host rock generally broken in association with staining. Structure Bedding regularly offset up to 0.5 cm by coarse spaced foliation Core loses cohesion from approximately 40.00 down – fault? to 43.0. Broken into fine chips at ≈42.0m. S_1 22.6 25-30° 25.5 25-30° 27.5 30° 29.5 30° 37.7 30° Veins 3-5% quartz ± ankerite veins (0.1-3 cm) ± pyrite at 30-60° Sulphides in Veins None Observed Sulphides in Sediments Trace to 1% cubic to elongate rectangular pyrite predominantly in sandy siltstone intervals. Pyrite enrichments occur along small proportion of bedding contacts.Size ranges from 1mm fine porphyroblasts to 1cm long porphyroblasts and/or aggregates.						
45.46	47.20			PYS	Lithology Pyrite-bearing Argillite. Unit coarsens downward from interlaminated silty sandstone with sandy siltstone laminae to siltstone-argillite with minor thin sandy siltstone laminae. Structure Veins Sulphides in Veins Sulphides in Sediments Coarse pyrite porphyroblasts up to 1.5 cm and porphyroblastic aggregates up to 3.0 cm in length, comprise up to 5% by volume of the interval. Most of the pyrite, from 1mm disseminated crystals to 3.0 cm aggregates localized along preferred bedding planes.						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
47.20	49.10	47.61 48.7 48.8	50 70 0	PYS	Lithology Sulphide-bearing sandstone with grit. Silicified, calcareous-bearing sandstone with angular argillaceous coarse grit size clasts. Turbidite with rip-ups to 1.0 cm. Structure: Veins: Sulphides in Veins Sulphides in Sediments Sulphides include ≤3% sphalerite (Sph) (47.61-48.1), ≤10% very fine galena (Ga) (47.61-47.65), ≤ 3% coarse Ga (47.65-47.70) and 15-20% fine-grained pyrite (47.8-48.1, 48.60-48.80 and 49.0-49.1). 2-5% pyrite over remainder of interval from 47.61-48.80 (silicified zone) 47.20-47.61 ≤ 3% Ga in silty sandstone above silicified zone. Pyrite present as coarse disseminated cubes up to 0.5 cm and as fine-grained margin along quartz + ankerite vein (0.5 cm thick). Note: Ga may be more abundant in this section due to the possibility some of the finer grained silt is actually Ga (± Sph).	112738	47.61	47.65	16.66%	14.00%	546.9
						Sulphide- and grit-bearing sandstone. Sulphides include ≤3% Sph, <10% very fine Ga, ≤3% coarse Ga and 15-20% fine-grained pyrite					
						112739	47.65	48.10	5.76%	9.43%	281.8
						20% coarse Ga over upper 5 cm, 5% medium grained Ga to end of sample interval. 5% medium grained, dark brown Sph over lower 7 cm. Medium-coarse Ga + Sph associated with quartz + ankerite. 15-20% disseminated to locally semi-massive, fine-grained pyrite over sample intervals. 5-10% fine-grained Sph over intervals.					
						112740	48.10	48.70	699	2.41%	10.9
						Proportion of medium-coarse Ga decreases to 0%, Sph decreases to 3%, pyrite ≈15-20%. Fine-grained Sph ± Ga suspected in matrix.					
						112741	48.70	48.95	923	1161	6.6
						Contact between upper sandstone and underlying coarse pyrite-bearing argillite. Contact at shallow angle to core axis.					
						112742	48.95	49.10	151	662	4.0
						Pyritic base to FUS in sandstone. Approx. 7% fine-grained pyrite.					

From	To	Core Angle m	Core Angle deg	Lith. Code	Description
49.10	57.58	49.3 51 52.1 52.5 53 55	0 30 15 40 25 20	PYS	Lithology Pyritic Siltstone. Thick laminated to thin bedded alternating silty sandstone and sandy siltstone (to argillite). Structure Coarse pyrite porphyroblasts up to 3.0 cm in long dimension comprise up to 7% of interval. Some foliation surfaces graphitic. Interval from approx. 56.0m down to base of interval consists of broken rock with the finest chips occurring at approx 56.5 (possible fault suspected) Veins Quartz + ankerite veins (0.1-2 cm thick) comprise 2-3% of the interval. Most veins have at lease some galena. Sulphides in Veins Quartz + galena (up to 40%) ± Sphalerite (0-5%) + fine grained pyrite (5%) veins are present: 51.03-51.04 @ 50°, 51.09-51.10 @ 35°, 52.06 (0.5 cm @ 30-40°), 52.38-52.40 @ 45°, 53.18-53.27 (1.5 cm thick @ 20°), 55.16-55.18 (broken). Sulphides in Sediments Matrix apparently barren of sulphides except pyrite. Fine-grained Ga suspected in matrix of unit (ie. 55.76-55.86)

Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
112731	50.88	51.00	7706	8.13%	42.6
Fine sandstone with medium grained pyrite porphyroblasts to 0.4 cm and up to 7% fine grained pyrite in matrix					
112730	51.00	51.13	5.54%	11.03%	300.2
2 small (1.0-1.5 cm) quartz + ankerite veins with 40% Sph and 20% Ga in fine sandstone as described above.					
112732	51.13	51.26	7597	2.97	50.5
Same as Sample 112731					
112736	52.32	52.46	2.02%	496	102.4
Branching quartz + ankerite veins up to 1.0 cm thick with or without 20% Ga + 5% pyrite in laminated siltstone-argillite. Ga ≈1% over sample interval					
112734	53.00	53.19	440	258	14.2
Upper 10 cm alternating siltstone and sandy siltstone laminae, lower 9 cm argillite with bedding at moderate angle to core.					
112733	53.19	53.27	31.13%	2194	1704.6
2 cm thick quartz + ankerite vein with ≤40% Ga + 20% pyrite in core					
112735	53.27	53.42	827	1.88%	11.0
Fine to medium sandstone with ≤5% fine-grained pyrite and up to 1% fine-grained Sph (?)					
112737	55.16	55.23	22.60%	1547	797.6
2 cm thick quartz + ankerite vein with core of 7-10% Ga ± 1% pyrite					

From	To	Core Angle		Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
57.58	60.18	60	5-10	TBR	Lithology Fining Upward Sequence (FUS). Fines from fine, light to medium grey massive sandstone upward to silty sandstone with thin sandy siltstone laminae. Basal contact with underlying argillite sharp and extends through core at shallow angle from 60.0-60.18m. Structure Veins Quartz veins up to 1.0 cm comprise up to 3% of interval and up to 3 generations present: 1) cavity filling milky white quartz veins (no mineralization), 2) translucent white to pale grey quartz veins (no mineralization) and 3) yellow-white quartz (+ankerite) veins ± Sph ± Ga Sulphides in Veins Sulphides in Sediments Trace coarse pyrite cubes (to 0.5 cm) in upper silty portion. Dark brown Sph (2%) ± Ga occurs as weak disseminations to weak banding, crystals up to 2 mm, in diffuse bands up to 1.0 cm thick. 5 diffuse bands noted. Interval from 59.60-59.90 coarse pyrite-bearing argillite	112743	58.10	58.40	1.79%	1.26%	60.6
						Broken interval at top of sandstone bed with coarse disseminated Sph (to 3 mm diameter) and quartz + ankerite veins up to 1.0 cm. Sph ≈2%, Ga ≈0.5%.					
						112744	58.40	59.00	1.15%	5.66%	38.2
						Diffuse bands of disseminated Sph (as above), perhaps controlled by bedding. Sph 3-5%, Ga 0.5-1.0 % (suspected)					
						112745	59.00	59.60	470	2.93%	8.4
						Sph decreases to 1-2%, Ga ??					

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
60.18	72.0	61 62.6 64.3 66.5 67.5 70.1 70.1	0 0-5 20-25 10 20 0 0	TBR	Lithology Interbedded silty sandstone and siltstone. Two fining upward sequences present 63.90-60.18. Bedding at shallow angle to ca for much of upper FUS. Lower FUS from 72.0-70.70. Both have basal sandstone grading up through alternating thin laminated siltstone and silty sandstones to siltstone (to argillite) Structure Two possible faults @ 69.8 and 65.0 (not possible to determine orientations) with up to 0.3-1.0 m broken intervals above and below. Veins Quartz veining (as above). Coarse ankerite and quartz vein (up to 4.0 cm) (67.09-67.19 and 71.52-71.56). Pyrite cubes coarsen adjacent to quartz and ankerite veins (up to 2.0 cm long dimensions). Sulphides in Veins Sulphides in Sediments Interval has coarse pyrite cubes up to 1.0 cm in long dimension, from trace to 3% (over 4.0 cm). Fine grained pyrite apparent from 71.25-72.0m, up to 5% in coarse laminae (sandstone to silty sandstone).	112749 Fine-grained pyrite (≤5%) in coarse laminae (sandstone to sandy siltstone), comprising 20% of interval. Coarse py to 1.0 cm diameter comprises ≤1% of interval.	71.25	72.00	150	264	3.0
72.00	83.73	79	20	PYS	*Lithology Pyritic sandstone with subordinate siltstone. Fining upward sequences from silty* sandstone upward to siltstone. Intervals approx. 0.7-2.5m thick (78.82-77.80, 77.80-75.16). Siltstone and silty sandstone layers consist of laminae 0.2-4 cm thick. 75.16-75.55 Siltstone-argillite, minor fine-grained pyrite. 75.55-78.82 Pyritic sandstone dominated interval, massive between 75.85-76.0. 78.82-81.80 Dominantly siltstone interval with pyrite banded sandstone layers and med-coarse pyrite to 81.80. Structure Rock broken from 79.94-83.6 with 4 cm fault gouge 81.80-81.84 m and 82.80-82.84 *Veins Interval also has 20-30% milky white quartz veining, with both sharp and diffuse,* wispy margins Sulphides in Veins Coarse pyrite (0.2 to 1 cm thick) up to 5% in silty sandstone to siltstone intervals. Coarser intervals (silty sandstone to sandstone) have variable development (5-80%) fine-grained pyrite along bedding. Interval from approx 73.5-75.16 has massive fine-grained pyrite + minor coarse galena ± fine grained galena comprising 70-80% of interval.	112748 Broken interval with greater proportion of pyritic sst laminae (≤60%) associated with increased qtz (± ankerite?) in interstices. Minor coarse aggregates of sph (≤1%, up to 1.0 cm diameter) + ga (<2%, up to 0.5 cm diameter) evident.	72.00	73.50	1636	1087	9.1
						112746 Massive fine-grained pyrite + minor coarse Ga ± fine-grained Ga	73.50	74.25	381	1002	4.9
						112747 Massive fine-grained pyrite + minor coarse Ga ± fine-grained Ga	74.25	75.16	634	456	4.8
						112750 Siltstone-argillite, minor fine-grained pyrite.	75.16	75.80	592	1306	4.7
						112751 Massive pyritic, sandstone dominated interval	75.80	75.98	813	5078	5.1

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
72.00	83.73			PYS	Pyritic sandstone with subordinate siltstone (Cont'd) Sulphides in Sediments: see sample descriptions	112752	75.98	76.62	144	330	3.4
						3 pyritic sst (30% py) bands between 1.0-1.5 cm thick between 76.20-76.47, warp gently into then back out of core. Thin qtz±ankerite veinlets and 1 4 cm thick qtz vein present in interval. Coarse pyrite cubes to 1 cm diameter present in siltstone.					
						112753	76.62	77.80	319	620	5.3
						Pyritic sst dominated interval. Pyritic sst (semi-massive - 30-40% py) bands between 3 cm to 10 +cm dominate interval (70%), with minor parasitic folds evident. Qtz + ankerite veinlets and elongate lenses present, comprising approx 3% of interval.					
						112754	77.80	78.40	286	2003	4.5
						Broken interval. Appears to be similar to preceding interval.					
						112755	78.40	78.82	700	1474	7.0
						Similar to 112753, however, semi-massive to massive interval between 78.40-78.52.					
						112756	78.82	79.84	1420	3128	9.7
						Dominantly siltstone interval with pyrite banded sandstone layers and medium-coarse pyrite					
						112757	79.84	80.80	2813	7825	9.3
						Dominantly siltstone interval with pyrite banded sandstone layers and medium-coarse pyrite					
						112758	80.80	81.80	2334	8112	12.1
						Dominantly siltstone interval with pyrite banded sandstone layers and medium-coarse pyrite					

From	To	Core Angle m	Core Angle deg	Lith. Code	Description
83.73	90.84	84.5 88 89.4	15 15 40	PYS	Lithology Siltstone. Interval consists predominantly of interlaminated siltstone with slightly subordinate argillite and silty sandstone. Structure Veins Quartz veins up 4 cm comprise up to 2-3% of the interval, of two possible generations, one free of mineralization cross-cut by a later set with up to 60-70% Ga and 5-10% Sph. Veins contain coarser pyrite, Ga + Sph grains and masses to 0.5 cm. Basal 25 cm has "zebra" texture consisting of regularly spaced dilational quartz veins between 0.3-0.8 cm thick, oriented highly oblique to contact with underlying siltstone. Sulphides in Veins 60-70% Ga and 5-10% Sph. (85.96-86.00, 89.27, 89.35, 89.54) Sulphides in Sediments Coarse pyrite, average 0.5 cm and up to 1.5 cm in long dimension in upper 2.2 m. Fine grained pyrite (≤ 2% over same interval, increasing to abundant disseminated, fine grained pyrite (up to 20% along coarser laminae (ie. sandstone (89.62-89.70 m)). Ga also occurs as coarse aggregates up to 3 cm across ± Sph halo (i.e. 88.20). Fine grained Ga present in matrix between 90.12-90.21 (up to 7%). Matrix contains Sph grains up to 2mm diameter with Ga.

Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
112759	84.10	85.34	87	1490	1.3
Very coarse pyrite cubes (up to 2.0 cm diameter) comprise 5% of sample. Coarse disseminated pyrite (to 0.2 cm diameter) comprises up to 2-3% of interval (locally up to 7% over 10 cm).					
112760	85.34	85.72	2691	9677	11.9
10% irregular quartz + ankerite with 1.0 cm pyritic band at 20° to c.a. Qtz + ankerite veins and irregular lenses comprise up to 20% of interval, cross-cut 1.0 cm thick pyritic band at 20% to ca. Comprises 60% of sample, remaining 40% consists of material similar to 112759.					
112761	85.72	86.63	2.01%	730	113.3
Ga-rich (≤60%) vein 4.0 cm thick between 86.0-86.04. Fine ga on margins (≤0.2 cm thick) coarsens to 0.5 cm thick in core of vein at 70-80° to ca. 2 py bands (85.89-86.0 and 86.4-86.63) up to 3 cm thick consist of abundant disseminated tp locally massive (over 3 cm) pyrite to 0.2 cm diameter.					
112762	86.63	87.54	59	405	1.1
Py-bearing sst up to 2.0 cm thick slightly oblique to sub-parallel to ca. Moderate to abundant py up to 0.1 cm diameter. Disseminated py in siltstone up to 15% in lower ½ of sample.					
112763	87.54	88.00	195	181	3.8
Abundant disseminated py (up to 20%) in slightly coarser base of fining upward sequence. Possibly two generations of py. Approx 2-3% coarse py (up to 0.4 cm diameter) with up to 20% fine pyrite (up to 0.1 cm diameter) - apparently bimodal size populations.					
112764	88.00	88.90	6606	1.84%	15.8

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
						Similar to above with presence of minor, local patches/lenses of ga (to 1.5 cm diameter) and sph (to 0.4 cm diameter). Interstices of sst appear to have elevated qtz (± ankerite?) content, associated with increased ga + sph content (as coarse disseminations to0.4 cm diameter) and minor, thin discontinuous veinlets. Ga ≈4.0%, sph ≈2.0%					
83.73	90.84			PYS	Siltstone. (Cont'd)	112769	88.90	89.11	3.71%	9.05%	93.1
						Ga + sph masses (up to 2.0 cm diameter) and veinlets up to 0.5 cm) locally abundant over interval. Ga ≈ 4.0%, sph ≈4.0%. Ga and/or sph masses and veinlets have qtz ± ankerite rinds up to 0.3 cm thick.					
						112765	89.11	89.83	1.06%	2.07%	32.3
						1-2% disseminated py to 0.3 cm diameter. Qtz (± ankerite?) Veinlets to 0.2 cm with very fine grained orange coloured sph (40%) ± py comprise0.5% of interval. Minor coarse Ga + black sph aggregates (to 1.0 cm diameter). Disseminated orange-brown sph (0-2%) ± ga (≤0.5%) throughout interval. Disseminated py increases in size toward base of interval ≤0.5 cm diameter. Two py-enriched bands between 89.66-89.76, abundant disseminated to semi-massive, fine-grained py in sst laminae up to 1.0 cm thick.					
						112766	89.83	90.59	1.73%	2.55%	99.7
						Similar to above, however, fewer small mineralized (sph + ga) veinlets and slightly more galena (1-2%) and sph ≤(0.5%) in aggregate masses with qtz and/or ankerite margins					
						112767	90.59	90.84	326	1868	38.7
						"Zebra" texture. Dilational (?) fracture fill at high angle to lower contact with argillite. Quartz + ankerite fracture fill with 0.5% Sph (+ Ga) with pyrite (0.5%)					

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From m	To m	Lead ppm	Zinc ppm	Silver gms/T
90.84	115.13	92.8 95 100.7 105.1 109 111 115.1	80-90 70 50-60 40 70 65 70	TBR	Lithology Sandstone. Interval consists of a number of fining upward sequences, from basal fine (to med) grained sandstone to siltstone (to argillite) tops: 93.60-95.03, 95.03-95.73, 95.73-96.63, 96.63-96.74, 96.74-100.70, 100.70-104.26, 104.26-104.84, 104.84-105.10, 105.10-106.97, 106.97-107.13, 107.13-107.74, 107.74-107.95, 107.95-108.82, 108.82-109.48, 109.48-110.93, 110.93-111.04, 111.04-112.89, 112.89-113.43, 113.43-115.13. Argillaceous rip-ups (discontinuous, wedge to block, shaped, angular with ragged edges to 2.5 cm thick by 3 cm long: 107.31-107.32, 109.58-109.63, 111.42-114.46, 112.12-112.18. Structure Veins Sulphides in Veins Sulphides in Sediments	112768 10% silty sandstone laminae up to 1 cm highly folded (disharmonic folds) within argillite. Pyrite (0.5%) with possible Sph + Ga (0.5-1% over interval).	90.84	91.24	254	467	10.6
115.3	122.0	117.5 121.9	15 10	TBA	Lithology Siltstone. Finely laminated to very thin bedded alternating siltstone and sandy siltstone laminae from 0.1-0.4 cm thick from 115.13-117.34. Laminae coarsen to 0.1-4.0 cm to bottom of interval, averaging 0.3 1.0 cm thick. Structure Fault 117.34 broken rock 1m above, 30 cm below Veins Sulphides in Veins Sulphides in Sediments						
122.0					End of Hole						

MINEQUEST EXPLORATION ASSOCIATES LTD.
DRILL LOG: DIAMOND DRILL CORE

Property:	Vowell Creek Claims, LCP Zone					Hole No.	VC-00-04
Claim Block Code:	VMV					Drilling Company	Britton Bros.
NTS:	82K/15		UTM: 503385E 5641857N			Started	September 11, 2000
Claim Name:			SURVEY			Completed	September 12, 2000
Location - Grid Name			Depth	Dip	Azim		
Grid N:		Grid E:				Purpose:	To test mineralization
Section:		Elevation 1809				Core Recovery:	Almost 100%
Azim	124°	Length: 106.67 m				Logged by:	R. Walker
Dip	-75°	Casing Left: Yes				Date Logged:	Sept. 12 - 16, 2000
Core Size:	NQ					Assayed by:	Bondar Clegg
Core Storage:	G. Mason, Mason's Backhoe, Parson, B.C.					Lab Report No.:	V00-01864.0

Note:

The fifth column in the drill log, labelled "Lith. Code", is used to place each major lithologic unit in the core description into one of the six categories listed below.

Category	Lith. Code
Overburden	O/B
Grit, conglomerate	GRT
Massive sulphide	MSX
Pyritic sediment	PYS
Turbidite, argillic (siltstone & mixed siltstone & sandstone)	TBA
Turbidite, arenaceous (silty sandstone & sandstone)	TBR
Turbidite, calcareous (calcareous siltstone)	TBC

Other annotations in the column include

Fault	*f*
Quartz vein	qv
Angle of bedding to core axis	/
Bedding fining upwards (normal)	⇧
Bedding fining downwards (overturned)	⇩

From	To	Core Angle		Lith. Unit	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
0.00	2.13			O/B	Overburden						
2.13	9.00	8	40	TBA	Lithology: Variably oxidized pyrite-bearing siltstones. Rock is variably broken, which coincides with strongest oxidation (fluid conduits). Interlaminated (to interbedded) siltstone (to argillite) and sandy siltstone (to silty sandstone). Oxidation manifests as spotting (weathered pyrite) and pale to med orange colour to the weathered siltstones. Structure: None Observed Veins: Veins have an abundant deep orange brown colour due to oxidized ankerite? Sulphides in Veins: None Observed Sulphides in Sediments: None Observed						
9.00	36.42	14 20 22.5 26.5 29 32 35.3 36.42	20 50 70 40 50 20 15 40	TBR	Lithology: Interbedded siltstones and sandstones. Interval consists predominantly of thick laminated to thin bedded, alternating calcareous sandstone and siltstones. The matrix in a high proportion of the interval reacts strongly to dilute HCl indicating the presence of interstitial calcite; i.e. 9.14-19.80. In general, the coarse-grained bases to the fining upward microtubidites have calcite-rich matrices which decrease upward to calcite-poor to calcite-free siltstone to argillite tops. Fracture surfaces limonitic to iron-stained 20m, to base of interval. Structure: None Observed Veins: Quartz ± ankerite veins comprises up to 1% of the interval, usually from 0.1-0.4 cm thick and at 40-60 to ca. Quartz ± ankerite vein has been partially oxidized. The ankerite has oxidized to a dark orange colour across an oxidation front at a high angle to the vein. Aside from ankerite and pyrite, the veins appear to be metal-free 28.06 Sulphides in Veins: 34.59-34.65 cavity filling quartz + ankerite vein w/ host sandstone inclusions and 0.5% galena. Sulphides in Sediments: Pyrite is present in trace amounts throughout the interval, particularly in silty sandstone to sandy siltstone intervals. Local pyrite concentrations (to 30% over over 1-3 cm (i.e. 23.00 m)) occur within and/or adjacent to quartz ± ankerite veins and along some bedding planes.. First occurrence of fine disseminated pyrite along bedding, up to 10% over 1.5 cm.	112712 Cavity filling quartz + ankerite vein with host sandstone inclusions and 0.5% Ga. 112772	34.59 35.91	34.65 36.10	2453 54	1171 173	12.3 0.6

From	To	Core Angle		Lith. Unit	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
36.42	41.55	41.55	10	TBR	Lithology: Sulphide-bearing graded bed. Interval consists of fine sandstone at base fining upward through broken interval to sandy siltstone top. Structure: Probable fault at approx 38.70 m with approx. 50 cm of broken rock below and 30 cm above interval Veins Ga and/or Sph-bearing veins comprise up to 7% of interval, ranging from fine veinlets (0.1-0.2 mm) with no apparent mineralization through thin Sph-bearing (10%) veins (0.3-0.5cm) thick to thicker (0.5-3.0 cm) veins w/coarse honey-coloured to black Sph (up to 1.0 cm diameter ragged edged elongate aggregate masses comprising up to 40-60% of a given vein (3-5% over a short interval (i.e. approx 40.65-40.8)) and subordinate Ga (≤ 1%). Sulphides in Veins: None Observed Sulphides in Sediments: Contains up to 1% coarse pyrite porphyroblasts to 0.5 cm over interval. In addition, fine pyrite is present as disseminated crystals (<<1%) in argillite and up to 3% along coarser sandstone intervals, particularly at the base of the interval.	112713	38.95	40.33	2431	7159	8.2
						38.95-41.55 Badly broken core from approx. 37.0-38.95, so start of interval approximate. Fine-grained pyrite along coarser bedding planes. Minor quartz + ankerite veins with minor Sph + (<< 0.5%).					
						112714	40.33	40.60	8955	4262	26.4
						Thicker quartz + ankerite veins (≤3 cm) with (up to 10%) and Sph (0-3%) in veins (diluted over sample interval).					
						112715	40.60	40.85	2.02%	6.23%	200.4
						Orange coloured Sph (≤10%) + (≤3%). Galnea in quartz (core) + ankerite (margins) veins, comprising up to 40% of veins (up to 0.5 cm thick). Sph associated with quartz sweats (?) or quartz + ankerite-rich portions of the host and in quartz + ankerite veins (±) comprising up to 10% of veins.					
						112716	40.85	41.00	1.58%	8149	109.5
						Broken interval. Fine-grained pyrite (≈5%) ± fine-grained ± Sph. Coarse-grained (1%) and Sph (2%) present throughout interval, generally within quartz ± ankerite veins and veinlets.					
						112717	41.00	41.55	934	3521	12.6
						Similar to above but unbroken, more quantitative analysis possible.					
41.55	58.00	46 48.1 55	20 20 20	TBA	Lithology: Siltstone. Predominantly siltstone with subordinate fine sandstone laminae. Graphitic at upper contact. Thick siltstone (to argillite) intervals with subordinate silty sandstone to sandy siltstone laminae. Sharp basol contacts indicate right-way-up. Fracture surfaces limonitic to iron-stained throughout interval. Structure: None Observed Veins: Thicker quartz veins (4-10 cm) comprise 2% of the interval w/ minor smaller veins. Sulphides in Veins: Quartz + ankerite vein between 56.40 and 56.49 contains 1% galena + 3% sphalerite. Upper contact 56.35-56.40 contains fine needles of arsenopyrite (<1%) in addition to fine-grained Sph ± sphalerite + galena (0.5% combined). Interval from 57.63-57.83 also contains fine needles to laths of arsenopyrite (0.2 mm thick x 0.4 mm in length) Sulphides in Sediments: None Observed	112723	56.23	56.40	331	802	1.7
						Quartz + ankerite vein with Aspy and skeletal/runic coarse crystals. Aspy needles (trace) in host sandstone above and possible below vein. Aspy in vein (≤1%), Ga (<1%). Aspy-bearing sandstone above vein					
						112724	56.40	56.55	1.51%	3254	10.0
						Vein					
						112725	56.55	56.62	207	337	1.2
						Sandstone below vein					
						112726	57.63	57.91	89	135	1.1
						Fine needles to laths of Aspy (0.2 mm thick x 0.4 mm length)					

From	To	Core Angle m	Core Angle deg	Lith. Unit	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
58.00	72.50	60.5 64 70.1	20 10 20	TBR	Lithology: Interbedded siltstone and sandstone. Thin laminated to thin-bedded alternating fine med grey sandstone w/ subordinate charcoal grey to black siltstone (to argillite) Intervals appear to be right-way-up based on fining upward layers (sandstone to siltstone). Structure: Probable fault at 66.60-66.70 @ approx. 20, sub parallel to bedding. Veins: Quartz ± ankerite veins comprise up to 5% of the interval, ranging from 0.2-6 cm thick, generally with irregular margins and locally cross-cutting thin, irregular quartz veins. Sulphides in Veins: None Observed Sulphides in Sediments: Trace to 1% pyrite as fine disseminations to rare coarse crystals to 0.5 cm diameter.						
72.50	91.10	74 78 85 87.6 88.5	20 15 25 70-80 15-20	TBR	Lithology: Sandstones. Fining upward sequences from fine sandstone base through interlaminated sandstone and siltstone to siltstone (to argillite) tops; 72.5-73.80, 73.80-77.39, 78.80-80.20, 80.20-80.44, 80.44-81.92, 81.92-84.49, 84.49-85.96, 85.96-86.20, 86.20-86.94, 86.94-87.56, 87.56-87.87, 87.87-88.70, 88.70-89.15, 89.15-91.10. 89.15-91.10 Coarse grit to pebble sized rip-up clasts in a pyritic matrix. Structure: Faults 80.50-80.55 @ 25 Massive sphalerite (40%), galena (20%) and pyrite over 2 cm along upper contact of fault, between 80.73-80.90 @ 30 and 10-15% galena along lower fault. Veins: None Observed Sulphides in Veins: None Observed Sulphides in Sediments: Coarse pyrite porphyroblasts (up to 1.5 cm diameter) first apparent at approx. 82.84, comprising up to 1% of silty sandstone to siltstone intervals, some of which are preferred bedding planes from 87.56-89.15.Fine grained disseminated, semi-massive to massive pyrite (over 4 cm) comprise between 10% to 80% of matrix over interval. Partial and selected replacement of rip-ups by pyrite noted. Coarse-grained pyrite comprises up to 1% over several cm but fine-to very fine-grained galena noted and may run up to 5% (or more) over interval,	112722	80.56	80.71	4.32%	14.43%	96.5
						Fault 80.63-80.71. Two faults oriented at a high angle to one another results in a sample from 80.46-80.60.					
						112718	88.81	89.15	120	95	1.5
						Pyritic Fining Upward Sequence. 4 cm of sandstone at base fining upward to argillite. Coarse argillite to 1.5 cm (2%) throughout argillite, weak tendency to aggregate at contacts with sandstone. Fine-grained pyrite also present (<1%).					
						112719	89.15	89.97	2257	1100	16.7
						Semi-massive to locally massive pyritic Fining Upward Sequence (FUS). Coarser grained base has semi-massive to massive fine-grained pyrite whereas argillitic tops have coarse disseminated to semi-massive pyrite. Minor moderately coarse grained Ga + Sph noted (≈1%). Abundant (20-30%) dark grey specks (to 2 mm) in matrix may be argillitic (lithic) clasts but may also be ± Sph.					
						112720	89.97	90.58	2106	2336	9.2
						Lithic rip-up bearing, coarse-grained base to FUS. Disseminated to semi-massive pyrite. Possible Ga + Sph. Partial to complete replacement of individual layers (laminae) in rip-up clasts by fine-grained pyrite.					
						112721	90.58	90.90	4.09%	11.88%	111.7
						Coarse Ga (≤1 cm aggregates) and Sph (<0.5 cm elliptical masses) enriched base to FUS. 3-5% Ga, Sph ≈ 5-7% over interval.					

From	To	Core Angle		Lith. Unit	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
91.10	106.67	96 100 104.3	15 20 30	TBA	Lithology: Siltstone. Med grey to charcoal grey to black, interlaminated sandy siltstone to argillite. Structure: None Observed Veins: Minor cavity filling quartz veins from 100.0m down to base of interval, comprise ≤ 1% and range from 0.3-4 cm thick Sulphides in Veins: None Observed Sulphides in Sediments: Coarse, cubic pyrite to aggregate masses up to 1.0 cm diameter, decreasing slightly in abundance and size (to 0.5 cm or less) from 91.10-94.40m.						
	106.67				End of Hole						

MINEQUEST EXPLORATION ASSOCIATES LTD.
DRILL LOG: DIAMOND DRILL CORE

Property:	Vowell Creek Claims, LCP Zone				Hole No.	VC-00-05
Claim Block Code:	VMV				Drilling Company	Britton Bros.
NTS:	82K/15	UTM:	503385E 5641857N		Started	September 13, 2000
Claim Name:	VMT	SURVEY			Completed	September 14, 2000
Location - Grid Name		Depth	Dip	Azim		
Grid N:	Grid E:				Purpose:	To test mineralization
Section:	Elevation 1809				Core Recovery:	Almost 100%
Azim	Length: 163.97 m				Logged by:	R. Walker
Dip -90°	Casing Left?: Yes				Date Logged:	Sept. 12 - 16, 2000
Core Size:	NQ				Assayed by:	Bondar Clegg
Core Storage:	G. Mason, Mason's Backhoe, Parson, B.C.				Lab Report No.:	V00-01864.0

Note:

The fifth column in the drill log, labelled "Lith. Code", is used to place each major lithologic unit in the core description into one of the six categories listed below.

Category	Lith. Code
Overburden	O/B
Grit, conglomerate	GRT
Massive sulphide	MSX
Pyritic sediment	PYS
Turbidite, argillic (siltstone & mixed siltstone & sandstone)	TBA
Turbidite, arenaceous (silty sandstone & sandstone)	TBR
Turbidite, calcareous (calcareous siltstone)	TBC

Other annotations in the column include

Fault	*f*
Quartz vein	qv
Angle of bedding to core axis	/
Bedding fining upwards (normal)	⇧
Bedding fining downwards (overturned)	⇩

From	To	Core Angle		Lith. Code	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
		m	deg								
0.00	1.52			O/B	Overburden						
1.52	7.20			TBA	Lithology: Variably oxidized siltstone. Thin to thick laminated, alternating siltstone and silty sandstone. Similar to first unit in 03 and 04. Structure: None Observed Veins: None Observed Sulphides in Veins: None Observed Sulphides in Sediments: Minor pyrite to 0.3 mm diameter.						
7.20	26.30	9.8 13 17.7 22.6 24.4	60 50 40 55 20	TBR	Lithology: Interbedded siltstone and sandstone. Same as interval in 04. Interlaminated (to interbedded) thin *laminae to thin beds of light to medium grey sandstone and medium to dark grey siltstone (to argillite).* Several fining upward intervals noted: 8.40-9.82, 15.90-17.41, 17.41-17.66, 17.66-18.06, 18.06-18.40, 18.40-19.35, 19.35-20.16, 20.16-21.64, 21.64-25.10, 25.10-26.30. As with 04, a high proportion of the interval is calcareous, producing a very strong reaction to dilute HCl. Structure: Fault at approx 21.60 Broken rock from 21.33 to fault (chips with minor gouge-washed away?). Veins: Quartz ± ankerite veins comprise approx 1% of interval, from 0.2-1 cm thick at 60-90° to ca. Sulphides in Veins: None Observed Sulphides in Sediments: Trace Pyrite to 0.5 cm. 11.65-11.73 Rotten, heavily oxidized sulphide zone. Interval is very limonitic with both relict and fine-grained pyrite remaining, probably sheared semi-massive to massive pyrite (20-60%) over 4 cm. Overlies a broken 3 cm thick quartz vein with possible trace galena.	112729 Rotten, massive pyritic interval 112771 Sandstone, no apparent mineralization 112770 Siltstone, 0.5% Sph + Ga in thin veinlets	11.65 12.19 12.30	11.73 12.30 12.47	442 303 358	994 406 949	3.2 8.1 7.3

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
26.30	51.30	26.5 28.7 30.7 38.4 42.6 44.5 49.5	80 40 30 50 30 35 40	TBA	Lithology: Siltstone. Predominantly dark grey siltstone to argillite with subordinate light-medium grey fining upward sandstone, thick laminae to minor thin beds. Minor development of porphyroblasts (ankerite?) to 0.2 cm in argillitic intervals. Graphitic fracture surfaces. Sulphide Zone underlain by predominantly thick laminated to thin bedded siltstone with subordinate interlaminated (to interbedded) argillite beds and sandstone laminae. Ankerite porphyroblasts (to 0.1 cm) developed in argillite. 40.50-43.70 Fractures limonite and/or iron-stained. Argillite rip-up, very angular, 1 cm thick by 3.0 cm long in a series of fine sandstone fining upward intervals. Structure: Fault at approx 29.3, abundant broken rock, rock chips and gouge at site of possible fault. Interval underlying fault is calcareous, possible fault repeat of 1st interval (with rotten sulphides?) Variably broken rock all the way down to 33.58m. Veins: None Observed Sulphides in Veins: Irregular quartz ± ankerite veins from 0.2-1.0 cm contains from 0-20% fine-grained pyrite as aggregates within the vein and along the margins. 34.60-34.73 Cavity filling qtz + ankerite veins (to 5%) Sulphides in Sediments: Increased pyrite content, locally to 1% over 1-3 cm, up to 1.0 cm in length with minor development of calcitic pressure shadow. The pyrite tends to be developed along preferred bedding planes. 27.06-27.16 Semi-massive pyrite zone in base of sandstone interval. Fine-grained pyrite comprises up 50% of the short interval.	112727 Semi-massive pyrite zone	27.01	27.16	339	142	4.8
						112774 Broken interval. Silstone from 33.86-34.06 with ≤0..5% disseminated galena and ≤1% disseminated pyrite. Remainder of interval consists of pyritic sst. Abundant disseminated to semi-massive (locally massive), fine-grained py associated with sst laminae to thin beds.	33.86	34.73	4359	1.36%	22.6
						112775 Broken interval, slightly more intact than previous interval. Disseminated py (bimodal ≤0.2 cm and≤ 0.5 cm), ≤1% One qtz + ankerite vein with sph (3%) and ga (1%), 2.0 cm thick. Fragments of abundant disseminated to semi-massive, fine-grained py above next interval <(10 cm thick).	34.73	35.75	2831	1.52%	16.7

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
26.30	51.30			TBA	Lithology: Siltstone (Cont'd) Sulphides in Sediments: Sph (to 1%) is present in the 3 cm underlying the pyritic interval and above the underlying argillite. Underlying argillite has development of significantly larger pyrite porphyroblasts, up to 1.0 cm, decreasing slightly in size down hole. 10-20% disseminated pyrite from approx 34.20-34.70 in association with quartz in a sandstone. Irregular quartz ± anterita veins from 0.2-1.0 cm contains from 0-20% fine-grained pyrite as aggregates within the vein and along the margins. The mineralization is hosted at the base of a sandstone interval and the underlying argillite hosts coarse pyrite porphyroblasts to 0.3 cm diameter. Fault @ 35.22m (fault chips and gouge) has 3 cm quartz vein with 5-7% honey Sph, 2-3% Ga and 1% pyrite above fault. Below fault is a pyritic sandstone interval with massive fine-grained pyrite from approx 35.75-35.90 (broken rock both above and below with minor visible galena. From approx 36.0 to 36.72 is a banded, disseminated pyrite-bearing (to 20%) sandstone with possible sphalerite (to ≈10%). Very fine-grained, may actually be entirely sphalerite (to 20%) in sandstone. Mineralization diminishes from 36.57-36.72. Below fault is a pyritic sandstone interval with massive fine-grained pyrite from approx 35.75-35.90 (broken rock both above and below with minor visible galena. From approx 36.0 to 36.72 is a banded,disseminated pyrite-bearing (to 20%) sandstone with possible sphalerite (to ≈ 10%). Very fine-grained, may actually be entirely sphalerite (to 20%) in sandstone. Mineralization diminishes from 36.57-36.72. Coarse pyrite developed under sulphide zone up to 1.5 cm in long dimension to 40.50m.	112776 Massive, fine-grained pyritic interval	35.75	35.90	1500	630	12.7
						112777 Broken interval comprised of fragments of semi-massive to massive, fine-grained py in some sst bands. Minor ga (≤0.5%) and sph (≤0.5%)	35.90	36.25	227	397	4.1
						112778 Abundant disseminated (to locally massive), fine-grained py in sst. Pyrite content (15-20%) decreases markedly from 36.57-36.76.	36.25	36.76	50	100	2.1
51.30	57.37	57	40	TBR	Lithology: Sandstone. Predominantly sandstone (thin laminated to thin bedded) with interlaminated thin to thick laminated siltstone to argillite. Thick light grey sandstone with minor siltstone laminae comprises basal 1.5m of interval. Structure: Broken rock from upper interval to fault at 51.75 m, irregular surface at shallow angle to core (≈10-20°). Variably broken to 51.81m, then again from approx 53.70-54.86 and again from 55.17-56.40. Fault with gouge and chips at 30° to c.a. Veins: None Observed Sulphides in Veins: None Observed Sulphides in Sediments: None Observed						

From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
57.37	163.97	61 66.5 73 77.6 82.4 85.3 82.3 97 102 104 107.3 116.8 125.9 127.4	40 35 25 45 30 45 45 50 40 60 50 45 15 5	TBR	Lithology: Interbedded siltstone and sandstone. Interval comprises predominantly thick laminated to thin bedded siltstone to argillite with slightly subordinate light to medium grey, fine (to locally medium) sandstone laminae. Argillite intervals have poor to moderate development of ankerite porphyroblasts 77.72-78.53 Medium sand with argillic rip-ups to coarse pebble size, blocky to platey very angular. Bracketed above and below by interlaminated argillite and sandy siltstone. Sandy siltstone to silty sandstone laminae in argillite between 126.38-127.25. Laminae between 0.2-2.0 cm. Bedding angles shallow at 127.25 then parallel to sub parallel to ca to approx 127.37. Structure: Fault with gouge at 66.30m, cannot measure orientation. Broken rock from 69.80-72.80, fault at 72.00 @ approx 15°. Broken rock from 80.76-82.29m. Fault at approx 81.50, shallow angle to core. Broken rock 96.30-97.40, fault @ 96.50-96.65m @ 20°; fault @ 97.16 @ 30° 4 cm thick gouge Broken rock 99.60-101.20, fault @101.10 @ 20° chips + gouge; fault @ ≈ 105.10 @ 20° gouge Interbedded siltstone/ sandstone variably disrupted and broken from approx 94.48 downward with a number of identified faults within intervals of broken rock and suspected faults as well. Fault @ 136.85 @ 5-10°	112773	75.80	75.98	20	83	0.8
						Geochem. blank					
						112728	77.82	78.50	49	216	1.6
						Graphitic, pyritic sandstone. Pyrite to 10%. Lithic rip-ups at base of interval.					
						112779	125.27	125.52	63	7.58%	7.6
						Bimodal py population. Fine-grained disseminated py(1-2%), slightly enriched along bedding and within sst laminae with fine-grained arsenopyrite (1%). Coarser py cubes up to 0.5 cm diameter.					

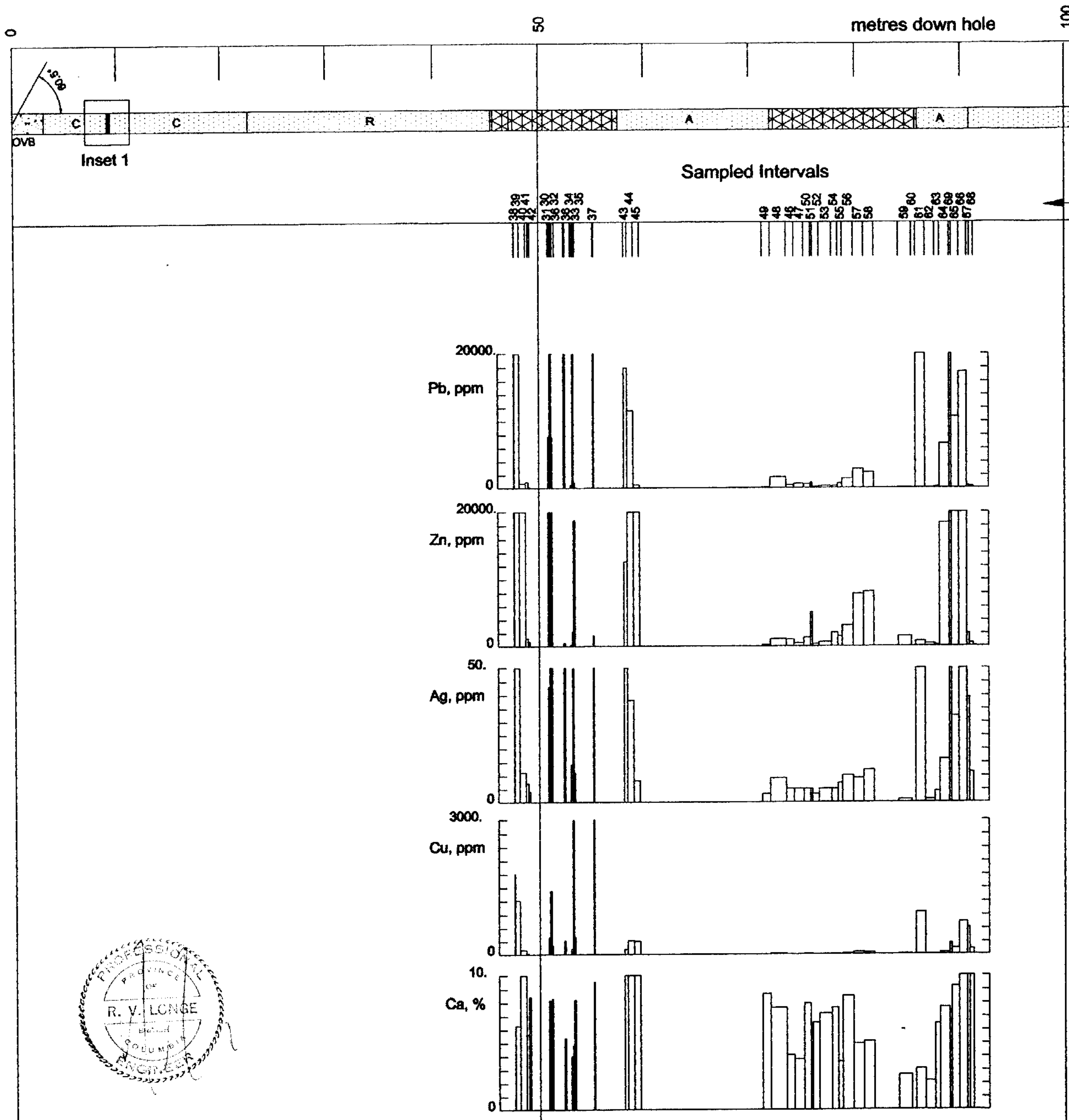
From	To	Core Angle m	Core Angle deg	Lith. Code	Description	Sample Number	From	To	Lead ppm	Zinc ppm	Silver gms/T
57.37	163.97	127.7 to140.2 140.5 144.2 149.3 152.4	0-5 10-15 60-80 70 80	TBR	Lithology: Interbedded siltstone and sandstone. (Cont'd) Structure: (Cont'd) Foliation cross-cuts S_0 at moderately steep angle between 138.68-139.13 with reorientation of sheet silicates (argillite) into plane of foliation. Veins: 9 relatively thick quartz + ankerite veins from 82.50-92.00, up to 10 cm thick with argillitic inclusions, comprising 5% of interval. 1% quartz and/or ankerite veins up to 1 cm thick from 92.00 to 115..3. Proportion of quartz ± ankerite veins increases downward to 5% from 115.34-122.0, ranging from 0.3 cm irregular to slightly networking over 0.5 cm. Quartz + ankerite vein with 10% coarse sphalerite crystals up to 1.5 cm diameter from 125.46-125.55 @ 30°. Quartz ± anterite ± pyrite veining increases down hole from 5% at 122.83 to 20% around 161.54. Sulphides in Veins: None Observed Sulphides in Sediments: Argillite intervals have trace pyrite to 3 mm local development of coarse porphyroblasts to 1.0 cm. Coarse pyrite to 1.5 cm, developed along preferred bedding planes from 75.0 to 77.72. 77.72-78.53 Interval has up to 5% fine-grained pyrite as disseminations and faint wispy bands. Coarse pyrite (to 1.0 cm) developed along several silty sandstone to sandy siltstone beds to 80.0m. 10-15% fine grained disseminated pyrite along sandy siltstone to silty sandstone laminae in argillite between 126.38-127.25.	112780 1-2 cm thick qtz (+ ankerite) vein with coarse intermixed, black and brown sph crystals up to 1.5 cm and aggregate masses up to 3+ cm. Very fine-grained arsenopyrite along vein margin, forms a thin (0.1-0.2 cm) rind within vein at contact with host siltstone.	125.52	125.55	10	376	1.2
						112781 Very fine-grained py (< 1%) with possible arsenopyrite (fine needles) <<1%. Coarser disseminated py (up to 0.4 cm) ≤ 1% also present.	125.55	126.23	11	146	1.8
						112782 Coarse (≤ 1 cm) disseminated py (1-2 %), slight enrichment along bedding.	126.23	126.59	17	40	1.1
						112783 Similar to 112781. Decrease in coarse py population (≤ 1%), increase in fine-grained (< 0.3 cm) pyrite population (2-3%), both disseminated and slightly concentrated along sst laminae.	126.59	127.30	15	25	0.7
163.97	170.68			qv	Lithology: Milky white quartz veining Structure: None Observed Veins: Milky white quartz veining with subordinate pyrite (up to 20%) at or along margins with sheared/faulted host rock. Some quartz veining preceded faulting as faulted vein segment present within fault zone ≈ 169.19-170.07 @ 35° to ca Sulphides in Veins: None Observed Sulphides in Sediments: Pyrite aggregates up to 2.0 cm diameter or aggregate bands up to 4 cm long.						
170.68					End of Hole						

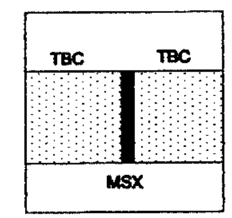
APPENDIX 2

GRAPHIC LOGS OF DRILL HOLES WITH GEOCHEMICAL BAR CHARTS

Drill holes:
- VC-03
- VC-04
- VC-05

No geochemical bar charts were constructed for holes VC-01 and VC-02





Inset 1

LEGEND

Lithology

- Overburden
- Grit
- Massive Sulphides
- Pyritic Siltstone & Argillite
- Turbidite, agillic (TBA) (siltstone & mixed silt & sandstone) — A
- Turbidite, arenaceous (TBR) (silty sandstone & sandstone) — R
- Turbidite, calcareous (TBC) (calcareous siltstone) — C

SCALE: 0 10 20 30 metres

R. V. LONGE

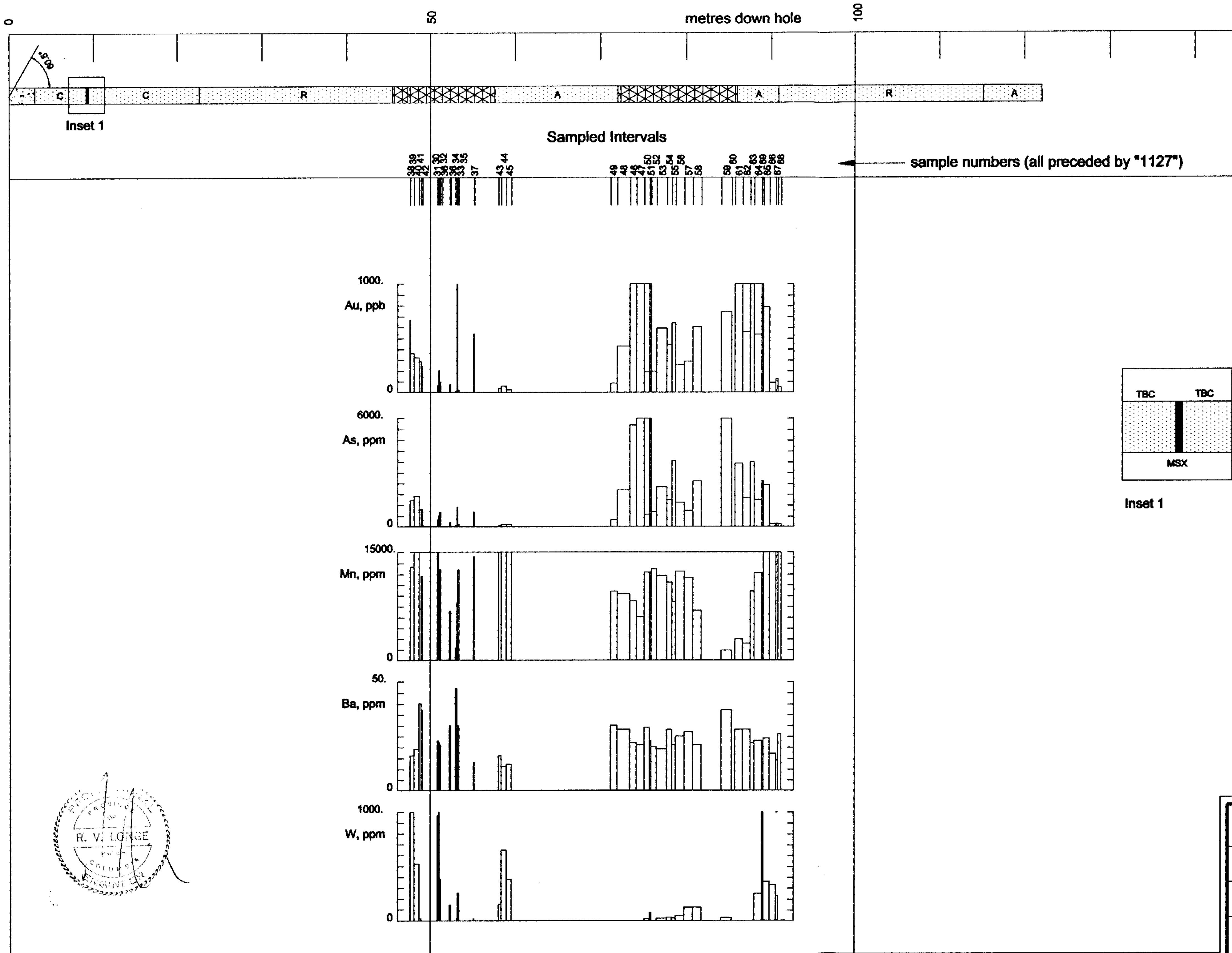
To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-12	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00

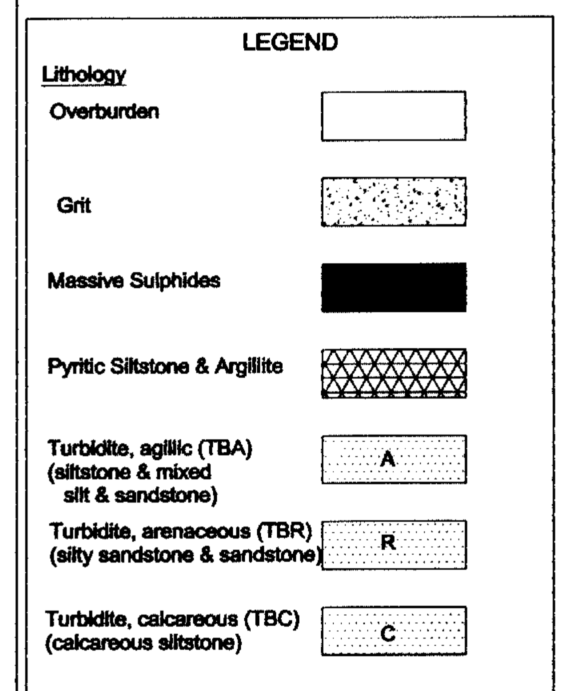
BRIGHT STAR METALS INC.
VOWELL CREEK PROJECT
RUTH VERMONT

DRILL HOLE VC-03
GRAPHIC LOG, BAR CHARTS
Pb, Zn, Ag, Cu & Cd

N.T.S. 82 K / 15W — Figure A2.1a

MineQuest Exploration Associates Ltd.





SCALE

0 10 20 30

metres

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-13	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00

BRIGHT STAR METALS INC.

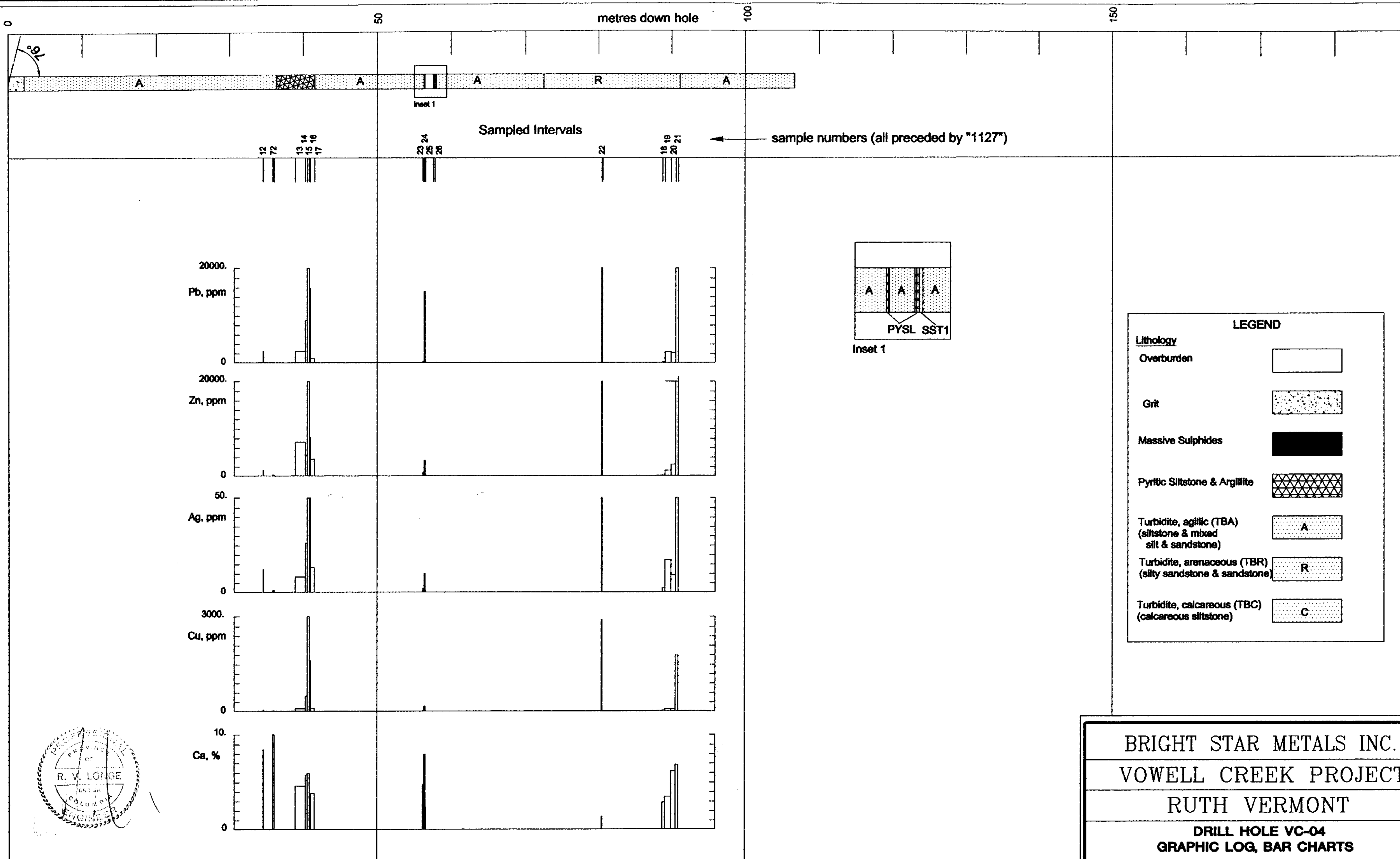
VOWELL CREEK PROJECT

RUTH VERMONT

DRILL HOLE VC-03
GRAPHIC LOG, BAR CHARTS
Au, As, Mn, Ba and W

N.T.S. 82 K/15W — Figure A2.1b

MineQuest Exploration Associates Ltd.



SCALE

0 10 20 30

metres

BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

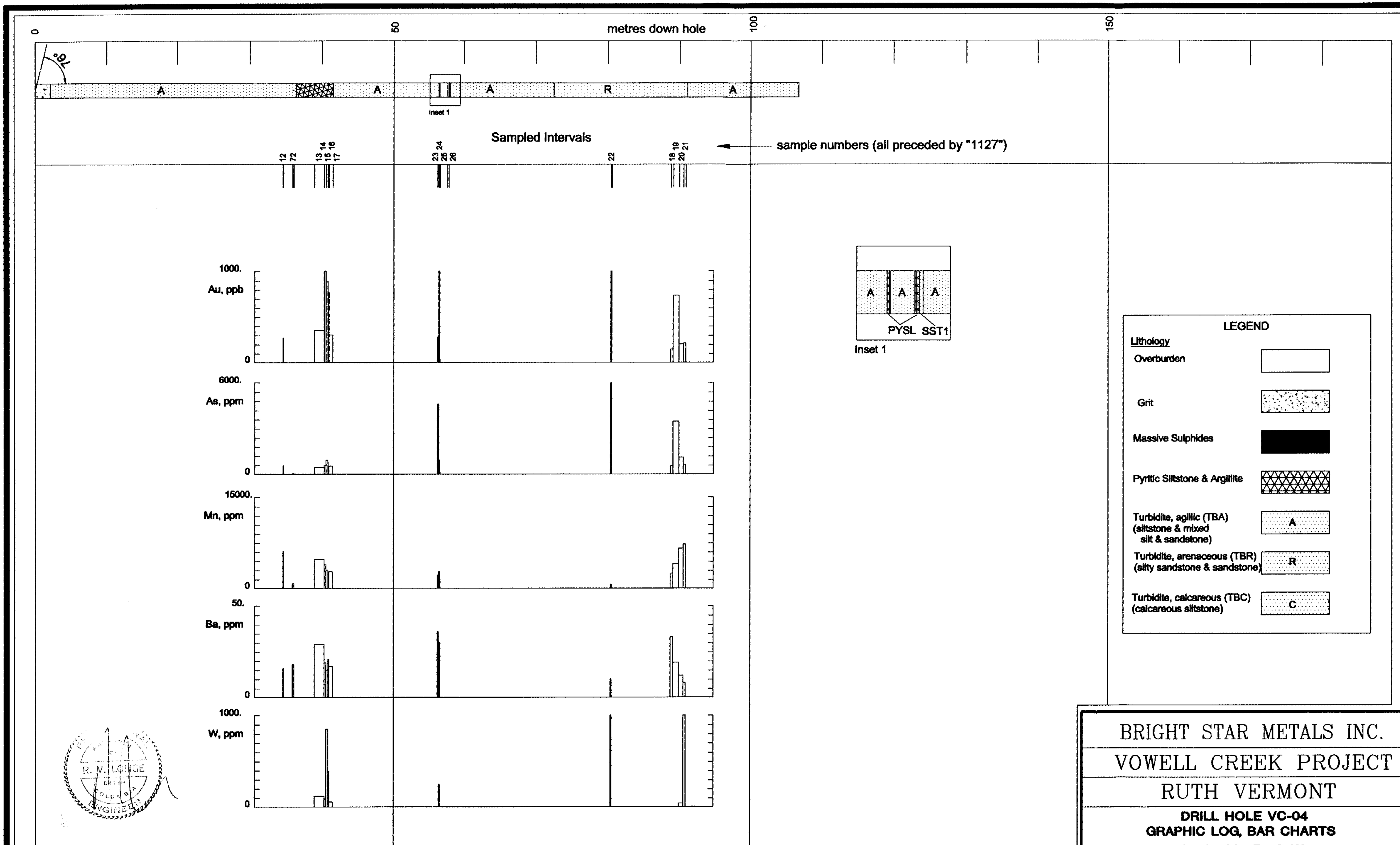
RUTH VERMONT

DRILL HOLE VC-04
GRAPHIC LOG, BAR CHARTS
Pb, Zn, Ag, Cu & Cd

N.T.S. 82 K / 15W	Figure A2.2a

MineQuest Exploration Associates Ltd.

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-14	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00



SCALE

0 10 20 30

metres

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-15	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00

BRIGHT STAR METALS INC.

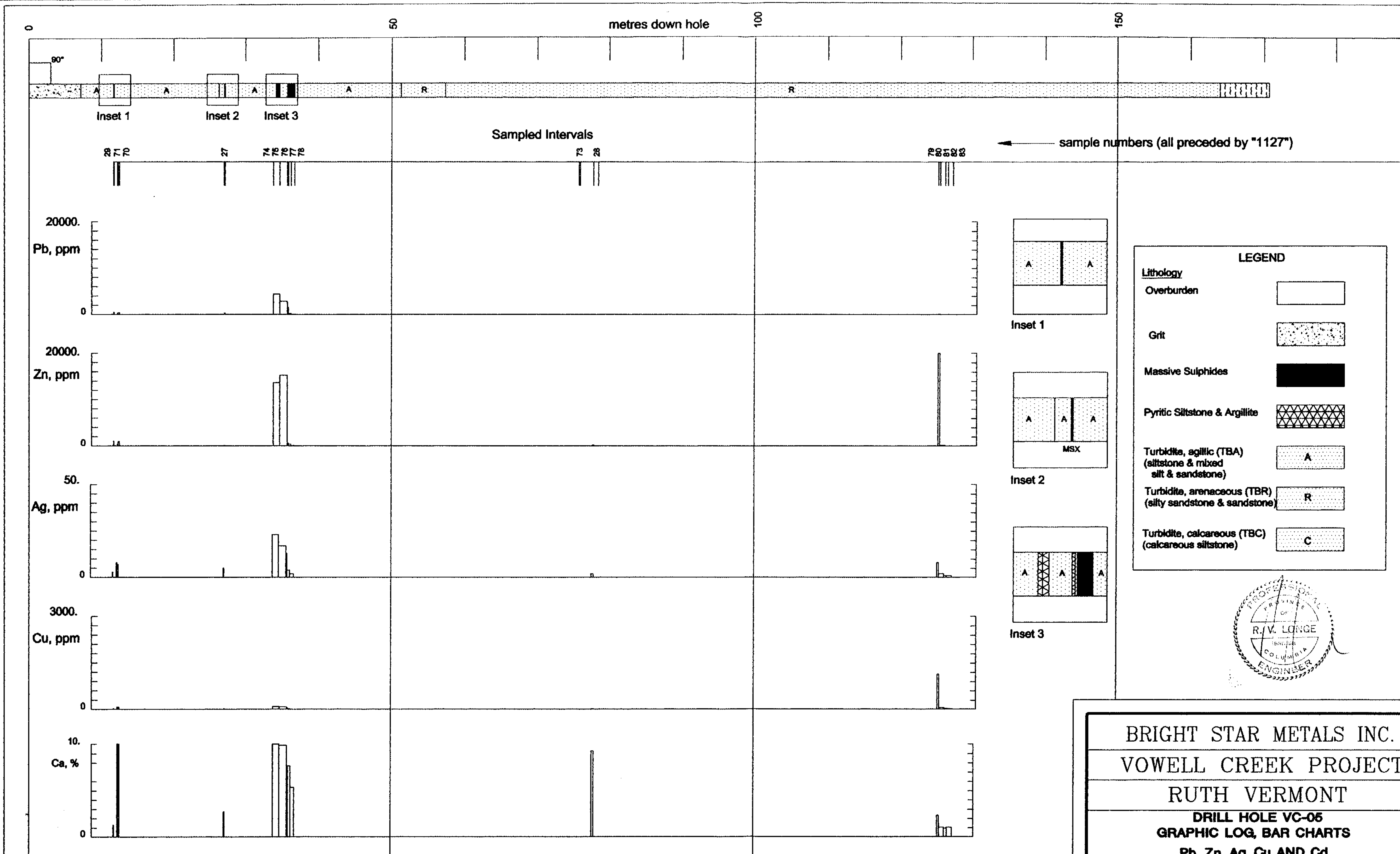
VOWELL CREEK PROJECT

RUTH VERMONT

DRILL HOLE VC-04
GRAPHIC LOG, BAR CHARTS
Au, As, Mn, Ba & W

N.T.S. 82 K / 15W — Figure A2.2b

MineQuest Exploration Associates Ltd.



To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-16	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00

SCALE

0 10 20 30

metres

BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

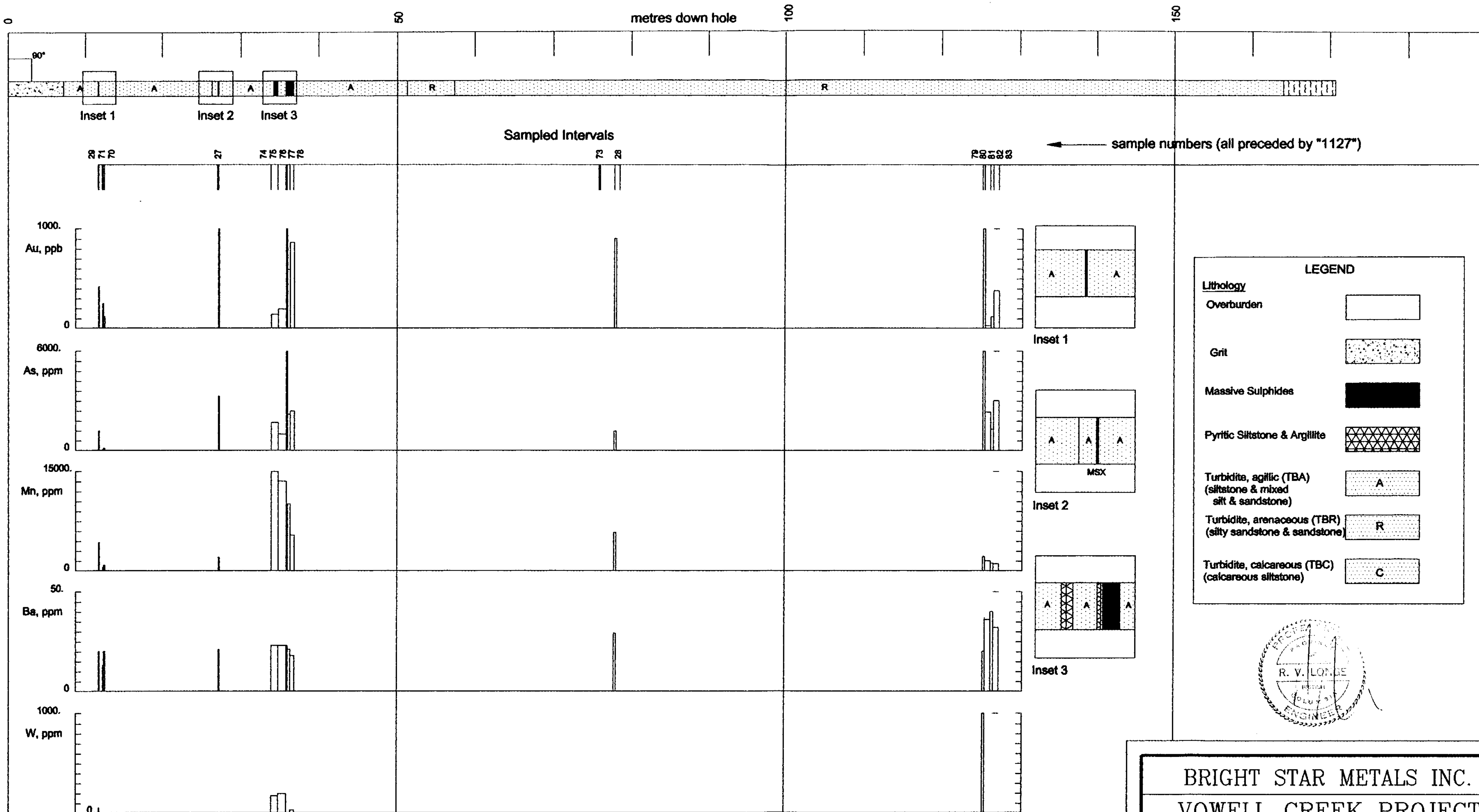
RUTH VERMONT

DRILL HOLE VC-05
GRAPHIC LOG, BAR CHARTS
Pb, Zn, Ag, Cu AND Cd

N.T.S. 82 K / 15W

Figure A2.3a

MineQuest Exploration Associates Ltd.



SCALE

0 10 20 30

metres

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-17	ORIGINAL author/drafter/date	RVL	GEJ	Dec 00

BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

RUTH VERMONT

DRILL HOLE VC-05
GRAPHIC LOG, BAR CHARTS
Au, As, Mn, Ba & W

N.T.S. 82 K / 15W

Figure A2.3b

MineQuest Exploration Associates Ltd.

APPENDIX 3

LABORATORY REPORTS

Laboratory Report # V00-01864.0

by

Bondar Clegg Canada Limited

BONDAR CLEGG

Geochemical Lab Report

REPORT: V00-01864.0 (COMPLETE)

REFERENCE: P.O. #26430

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.

PROJECT: VOWELL CREEK

SUBMITTED BY: R. WALKER

DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00

DATE APPROVED	ELEMENT		NUMBER OF ANALYSES	LOWER DETECTION	EXTRACTION	METHOD
001005	1 Au30	Gold	83	5 PPB	Fire Assay of 30g	30g Fire Assay - AA
001005	2 Au Wt1	Test Weight	83	0.01 GM	FIRE ASSAY	FIRE ASSAY-AA
001005	3 Ag	Ag - IC01	83	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	4 AgGrav	Silver (Grav.)	8	0.7 PPM	FIRE ASSAY	FIRE ASSAY-GRAV
001005	5 Cu	Cu - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	6 Cu	Copper	1	0.01 PCT	HF-HNO3-HCLO4-HCL	ATOMIC ABSORPTION
001005	7 Pb	Pb - IC01	83	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	8 Pb	Lead	21	0.01 PCT	HF-HNO3-HCLO4-HCL	ATOMIC ABSORPTION
001005	9 Pb	Lead	4	0.01 PCT		TITRIMETRIC
001005	10 Zn	Zn - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	11 Zn	Zinc	21	0.01 PCT	HF-HNO3-HCLO4-HCL	ATOMIC ABSORPTION
001005	12 Mo	Mo - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	13 Ni	Ni - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	14 Co	Co - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	15 Cd	Cd - IC01	83	0.2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	16 Bi	Bi - IC01	83	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	17 As	As - IC01	83	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	18 Sb	Sb - IC01	83	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	19 Fe	Fe - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	20 Mn	Mn - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	21 TE	Te - IC01	83	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	22 Ba	Ba - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	23 Cr	Cr - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	24 V	V - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	25 Sn	Sn - IC01	83	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	26 W	W - IC01	83	20 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	27 La	La - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	28 Al	Al - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	29 Mg	Mg - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	30 Ca	Ca - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	31 Na	Na - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	32 K	K - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	33 Sr	Sr - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	34 Y	Y - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	35 Ga	Ga - IC01	83	2 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	36 Li	Li - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASMA
001005	37 Nb	Nb - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASM
001005	38 Sc	Sc - IC01	83	5 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASM
001005	39 Ta	Ta - IC01	83	10 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASM
001005	40 Ti	Ti - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASM
001005	41 Zr	Zr - IC01	83	1 PPM	HCL:HNO3 (3:1)	INDUC. COUP. PLASM
001005	42 S	S - IC01	83	0.01 PCT	HCL:HNO3 (3:1)	INDUC. COUP. PLASM

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
D DRILL CORE	83	2 -150	83	CRUSH/SPLIT & PULV.	83

REMARKS: Zinc and Arsenic concentration >1% will enhance Tungsten and Cadmium results respectively. Therefore, Tungsten and Cadmium results would be greater than true values. There is carryover to the blanks due to the high levels of lead and zinc in the samples. RRD 10/03/00

REPORT COPIES TO: #400 - 789 WEST PENDER ST

INVOICE TO: #400 - 789 WEST PENDER ST

BC BONDAR CLEGG

Geochemical Lab Report

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

PROJECT: VOWELL CREEK
DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00 PAGE 1A(1/ 6)

SAMPLE NUMBER	ELEMENT UNITS Au30 PPB	Au Wt1 GM	Ag PPM	AgGrav PPM	Cu PPM	Cu PCT	Pb PPM	Pb PCT	Pb PCT	Zn PPM	Zn PCT	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	TE PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT
112701	13	30.20	61.9		>10000	1.13	19			149		2	32	10	1.9	<5	118	<5	4.40	1490	<10	55	123	8	45	<20	4	.72	1.06	2.38
112702	117	15.46	>200.0	497.3	538		>10000	>15.00	19.29	1198		2	38	9	29.3	<5	552	406	3.09	800	<10	26	150	7	<20	22	<1	.36	0.42	0.83
112703	59	15.27	>200.0	264.1	181		>10000	13.14		46		3	25	7	13.6	<5	234	174	2.75	1646	<10	34	185	8	<20	<20	<1	.51	0.81	1.77
112704	277	31.83	6.9		119		601			6847		3	13	1	102.7	<5	>10000	23	3.22	355	<10	16	136	4	27	124	2	.20	0.16	0.44
112705	669	30.99	21.6		285		>10000	0.85		>10000	2.75	<1	13	1	314.1	6	>10000	46	4.56	66	<10	6	205	4	44	596	<1	.04	0.02	0.07
112706	11	33.74	0.7		25		112			2603		5	7	<1	19.5	<5	95	<5	0.68	25	<10	1	192	4	<20	46	<1	.01	<.01	0.02
112707	588	31.59	2.3		148		268			2902		<1	12	2	98.7	<5	>10000	16	6.61	201	<10	8	143	2	83	49	<1	.05	0.07	0.18
112708	11	32.33	1.4		5		358			486		6	13	3	4.2	<5	128	<5	1.55	841	<10	17	174	5	<20	<20	3	.23	0.35	0.98
112709	17	31.02	<0.2		4		26			29		4	14	4	4.0	<5	1334	<5	1.52	500	<10	14	127	4	<20	<20	4	.21	0.32	0.86
112710	1290	15.34	52.6		301		>10000	1.28		299		3	25	3	140.1	<5	>10000	202	6.04	175	<10	22	305	7	<20	<20	2	.28	0.09	0.23
112711	12	32.53	0.4		6		49			24		3	13	3	2.6	<5	855	<5	1.16	412	<10	18	122	4	<20	<20	6	.26	0.23	0.65
112712	268	31.59	12.3		41		2453			1171		3	24	6	9.0	<5	569	47	4.26	6194	<10	16	86	3	<20	<20	<1	.17	2.78	8.43
112713	351	31.41	8.2		76		2431			7159		1	22	7	47.3	<5	445	82	3.41	4791	<10	29	44	3	<20	115	<1	.36	2.19	4.57
112714	1146	31.02	26.4		484		8955			4262		2	18	5	21.7	<5	563	922	3.60	3923	<10	19	62	3	<20	86	<1	.21	2.94	5.74
112715	893	31.54	>200.0	200.4	6013		>10000	2.02		>10000	6.23	<1	17	3	221.2	<5	924	>2000	3.62	3054	<10	15	99	3	<20	850	<1	.15	2.96	5.90
112716	767	31.56	109.5		1616		>10000	1.58		8149		2	18	5	49.9	<5	373	>2000	2.78	2165	<10	21	126	5	<20	387	<1	.25	1.88	3.71
112717	302	31.61	12.6		96		934			3521		3	13	4	26.9	<5	536	114	2.82	2778	<10	17	78	3	<20	55	<1	.20	1.89	3.80
112718	144	31.16	1.5		15		120			95		3	58	18	2.2	<5	544	17	6.74	2484	<10	33	72	4	<20	<20	<1	.40	1.44	2.82
112719	731	31.02	16.7		65		2257			1100		<1	13	6	19.2	9	3464	105	>10.00	4006	<10	19	68	<1	<20	<20	<1	.04	1.86	3.42
112720	202	31.10	9.2		58		2106			2336		<1	19	5	19.1	<5	1109	67	>10.00	6574	<10	12	82	1	<20	37	<1	.06	2.92	6.11
112721	214	31.45	111.7		1769		>10000	4.09		>10000	11.88	<1	18	4	756.4	14	630	843	5.55	7268	<10	8	58	<1	88	1674	<1	.06	3.10	6.81
112722	3353	31.12	96.5		2903		>10000	4.32		>10000	14.43	<1	60	12	1273.3	17	7707	1618	6.99	672	<10	10	63	3	328	>2000	1	.35	0.53	1.32
112723	279	31.02	1.7		21		331			802		2	52	15	19.8	<5	4607	21	5.75	2212	<10	36	76	8	<20	<20	2	.64	2.21	4.74
112724	1570	31.04	10.0		157		>10000	1.51		3254		2	14	4	18.4	<5	932	>2000	4.51	2769	<10	9	136	4	<20	245	<1	.09	3.45	7.93
112725	29	31.64	1.2		19		207			337		<1	50	15	2.1	<5	113	63	5.96	1534	<10	30	60	8	<20	<20	3	.53	2.12	2.46
112726	2597	31.04	1.1		29		89			135		<1	87	34	33.8	<5	>10000	19	6.92	643	<10	33	56	9	<20	<20	1	.52	1.55	0.92
112727	1051	31.26	4.8		13		339			142		<1	41	13	11.5	6	3271	43	>10.00	2030	<10	21	71	4	<20	<20	<1	.45	0.74	2.69
112728	903	31.11	1.6		9		49			216		1	32	12	4.4	<5	1160	8	6.63	5784	<10	29	70	4	<20	<20	<1	.39	3.98	9.29
112729	416	31.33	3.2		10		442			994		<1	32	9	11.6	<5	1157	25	6.07	4232	<10	20	153	4	<20	52	<1	.23	0.08	1.29
112730	199	31.34	>200.0	300.2	1414		>10000	5.54		>10000	11.03	<1	29	7	655.3	14	616	504	7.37	12040	<10	22	37	<1	244	1517	<1	.25	2.61	6.50

Geochemical Lab Report

BONDAR CLEGG

PROJECT: VOWELL CREEK

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00

SAMPLE NUMBER	ELEMENT UNITS	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
112701		0.03	0.35	132	5	<2	1	2	<5	<10	<.01	1	2.94
112702		0.02	0.17	48	2	<2	1	2	<5	<10	<.01	<1	5.79
112703		0.03	0.23	94	3	<2	2	2	<5	<10	<.01	<1	3.87
112704		0.01	0.11	13	<1	<2	<1	2	<5	<10	<.01	<1	2.81
112705		<.01	0.02	3	<1	5	<1	2	<5	<10	<.01	<1	5.59
112706		<.01	<.01	1	<1	<2	<1	<1	<5	<10	<.01	<1	0.61
112707		<.01	0.02	7	<1	7	<1	3	<5	<10	<.01	<1	5.93
112708		0.01	0.12	27	<1	<2	<1	1	<5	<10	<.01	<1	0.73
112709		0.01	0.12	26	1	<2	<1	1	<5	<10	<.01	<1	0.67
112710		0.01	0.14	9	<1	7	<1	3	<5	<10	<.01	1	4.74
112711		0.02	0.14	19	<1	<2	<1	<1	<5	<10	<.01	<1	0.52
112712		<.01	0.08	145	10	<2	2	<1	<5	<10	<.01	1	2.09
112713		0.01	0.19	68	3	<2	<1	1	<5	<10	<.01	2	2.56
112714		0.01	0.11	97	4	<2	<1	1	<5	<10	<.01	1	2.27
112715		0.01	0.07	119	5	<2	<1	<1	<5	<10	<.01	<1	5.42
112716		0.01	0.13	74	4	<2	<1	1	<5	<10	<.01	2	1.77
112717		0.01	0.11	56	3	<2	<1	1	<5	<10	<.01	<1	1.83
112718		0.02	0.20	39	2	<2	<1	4	<5	<10	<.01	4	5.93
112719		<.01	<.01	41	4	21	<1	<1	<5	19	<.01	7	>10.00
112720		<.01	0.02	68	5	4	<1	2	<5	11	<.01	4	9.67
112721		<.01	0.02	67	5	<2	<1	<1	<5	<10	<.01	1	9.84
112722		0.02	0.19	30	1	9	<1	<1	<5	<10	<.01	3	>10.00
112723		0.03	0.29	86	5	<2	<1	3	<5	<10	<.01	1	1.53
112724		<.01	0.04	150	6	<2	<1	2	<5	<10	<.01	<1	0.88
112725		0.03	0.24	47	4	<2	<1	3	<5	<10	<.01	2	0.42
112726		0.03	0.26	27	2	2	<1	4	<5	<10	<.01	2	2.30
112727		0.01	0.19	45	8	16	<1	4	<5	13	<.01	9	>10.00
112728		0.02	0.16	176	12	<2	<1	2	<5	<10	<.01	3	4.44
112729		0.01	0.12	32	3	7	<1	4	<5	<10	<.01	2	1.04
112730		0.01	0.13	74	6	<2	<1	1	<5	<10	<.01	3	>10.00

BONDAR CLEGG

Geochemical Lab Report

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

PROJECT: VOWELL CREEK
DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00 PAGE 2A(3/ 6)

SAMPLE NUMBER	ELEMENT UNITS Au30 PPB	Au Wt1 GM	Ag PPM	AgGrav PPM	Cu PPM	Cu PCT	Pb PPM	Pb PCT	Pb PCT	Zn PPM	Zn PCT	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	TE PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT
112731	61	31.78	42.6		383		7706			>10000	8.13	<1	27	8	436.6	9	400	63	6.29	16029	<10	23	42	<1	132	969	<1	.22	3.22	8.16
112732	96	31.02	50.5		201		7597			>10000	2.97	<1	34	11	176.5	7	808	98	9.93	12630	<10	21	69	1	23	385	<1	.17	3.71	8.27
112733	1507	15.95	>200.0	1704.6	9111		>10000	>15.00	31.13	2194		<1	18	4	49.5	<5	1067	>2000	4.75	8022	<10	13	178	3	107	25	<1	.14	2.06	4.79
112734	10	31.23	14.2		129		440			258		2	45	12	1.9	<5	81	62	3.78	1684	<10	47	46	5	<20	<20	2	.55	1.44	3.98
112735	22	31.83	11.0		394		827			>10000	1.88	1	33	12	116.0	<5	134	23	5.35	12549	<10	30	46	2	209	257	<1	.36	3.35	8.19
112736	70	31.22	102.4		306		>10000	2.02		496		<1	30	6	5.3	<5	229	222	4.12	6872	<10	30	49	3	<20	147	<1	.31	2.23	5.34
112737	537	31.21	>200.0	797.6	4815		>10000	>15.00	22.60	1547		<1	17	5	29.6	48	807	1716	4.28	14410	<10	13	58	<1	51	20	<1	.12	4.28	9.54
112738	668	31.95	>200.0	546.9	1795		>10000	>15.00	16.66	>10000	14.00	<1	62	17	1074.4	20	1277	710	9.52	588	<10	12	93	4	470	>2000	<1	.33	0.26	1.05
112739	359	31.14	>200.0	281.8	1206		>10000	5.76		>10000	9.43	<1	23	7	661.2	17	1432	522	>10.00	12939	<10	16	22	<1	139	1359	<1	.12	3.08	6.24
112740	319	31.76	10.9		97		699			>10000	2.41	<1	18	7	166.6	7	1692	18	>10.00	17018	<10	19	38	<1	<20	524	<1	.16	4.77	>10.00
112741	284	31.75	6.6		17		923			1161		<1	67	20	10.4	<5	937	12	7.62	7194	<10	40	43	4	<20	21	<1	.51	2.32	5.59
112742	240	31.22	4.0		<1		151			662		<1	70	21	6.8	<5	949	7	8.07	11702	<10	37	50	3	<20	<20	<1	.43	3.50	8.40
112743	37	31.90	60.6		117		>10000	1.79		>10000	1.26	<1	15	4	75.8	<5	63	54	3.55	18738	<10	16	45	<1	41	155	<1	.17	5.64	>10.00
112744	57	31.17	38.2		319		>10000	1.15		>10000	5.66	1	25	4	307.9	8	119	24	3.85	18729	<10	11	36	<1	144	651	<1	.10	5.69	>10.00
112745	24	30.39	8.4		292		470			>10000	2.93	2	28	5	172.6	<5	132	7	4.01	18538	<10	12	48	<1	135	380	<1	.10	5.40	>10.00
112746	1552	30.61	4.9		<1		381			1002		<1	22	7	25.3	8	5627	15	>10.00	8244	<10	22	43	<1	<20	<20	<1	.19	2.60	4.05
112747	1810	31.73	4.8		<1		634			456		<1	25	8	24.1	7	6332	10	>10.00	6082	<10	21	59	<1	<20	<20	<1	.23	1.82	3.77
112748	425	30.05	9.1		22		1636			1087		<1	26	7	12.3	<5	2023	47	>10.00	9230	<10	28	42	2	<20	<20	<1	.27	3.74	7.60
112749	81	30.64	3.0		1		150			264		2	26	8	2.7	<5	378	13	4.63	9601	<10	30	28	2	<20	<20	<1	.32	4.19	8.61
112750	187	30.64	4.7		7		592			1306		1	19	8	10.7	<5	670	7	5.04	12250	<10	29	52	2	<20	20	<1	.28	3.65	7.92
112751	2527	30.67	5.1		8		813			5078		<1	25	7	64.9	9	7954	13	>10.00	3863	<10	23	57	<1	<20	74	<1	.16	1.27	2.91
112752	191	31.05	3.4		<1		144			330		1	20	7	4.3	<5	820	12	6.39	12681	<10	20	57	<1	<20	<20	<1	.18	4.41	6.49
112753	589	30.86	5.3		4		319			620		<1	17	5	8.9	<5	2207	38	>10.00	11756	<10	19	56	<1	<20	21	<1	.14	4.22	7.14
112754	440	30.70	4.5		6		286			2003		<1	45	11	18.5	<5	1484	27	9.89	10824	<10	28	66	2	<20	32	<1	.25	3.72	7.59
112755	639	31.63	7.0		2		700			1474		<1	23	8	22.8	8	3665	43	>10.00	8136	<10	21	71	<1	<20	24	<1	.14	2.45	3.56
112756	250	30.87	9.7		28		1420			3128		<1	29	10	26.1	<5	1345	31	>10.00	12356	<10	25	39	<1	<20	46	<1	.21	4.14	8.45
112757	285	30.30	9.3		50		2813			7825		<1	32	10	61.9	<5	882	43	6.63	11483	<10	27	36	1	<20	123	<1	.29	3.61	4.92
112758	605	30.91	12.1		45		2334			8112		<1	41	12	66.8	<5	2529	58	>10.00	6953	<10	21	82	1	<20	124	<1	.23	2.42	5.08
112759	741	32.24	1.3		17		87			1490		<1	79	32	33.5	<5	7060	10	6.55	1383	<10	37	44	5	<20	26	<1	.51	1.31	2.61
112760	2668	30.55	11.9		107		2691			9677		<1	55	21	91.0	5	6139	64	>10.00	2476	<10	29	68	3	<20	153	<1	.37	1.47	3.29

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

PROJECT: VOWELL CREEK
DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00 PAGE 2B(4/ 6)

SAMPLE NUMBER	ELEMENT UNITS	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
112731		0.01	0.13	80	6	<2	<1	2	<5	<10	<.01	2	6.99
112732		<.01	0.10	124	7	3	<1	2	<5	10	<.01	3	8.51
112733		<.01	0.07	65	7	<2	<1	<1	<5	<10	<.01	1	7.87
112734		0.03	0.30	60	3	<2	1	2	<5	<10	<.01	2	1.14
112735		0.02	0.19	107	8	<2	<1	3	<5	<10	<.01	2	3.08
112736		0.02	0.18	76	6	<2	<1	2	<5	<10	<.01	3	2.53
112737		<.01	0.07	137	11	<2	<1	1	<5	<10	<.01	<1	5.14
112738		0.01	0.15	27	4	13	<1	<1	<5	<10	<.01	7	>10.00
112739		<.01	0.06	55	9	4	<1	<1	<5	<10	<.01	4	>10.00
112740		<.01	0.07	95	16	2	1	2	<5	16	<.01	4	8.39
112741		0.02	0.27	65	5	<2	1	3	<5	<10	<.01	4	5.91
112742		0.02	0.23	83	8	<2	1	2	<5	<10	<.01	4	5.93
112743		0.01	0.08	168	13	<2	<1	<1	<5	<10	<.01	<1	1.45
112744		<.01	0.05	168	12	<2	<1	<1	<5	<10	<.01	<1	3.54
112745		<.01	0.05	170	12	<2	<1	<1	<5	<10	<.01	<1	2.55
112746		<.01	0.09	56	3	16	<1	<1	<5	19	<.01	7	>10.00
112747		<.01	0.11	45	2	19	<1	2	<5	19	<.01	8	>10.00
112748		0.01	0.14	94	6	2	<1	3	<5	11	<.01	4	9.10
112749		0.01	0.18	111	8	<2	<1	2	<5	<10	<.01	2	2.74
112750		0.01	0.16	90	5	<2	<1	2	5	<10	<.01	3	3.83
112751		<.01	0.07	38	2	25	<1	<1	<5	22	<.01	8	>10.00
112752		<.01	0.10	96	7	<2	<1	2	<5	<10	<.01	2	3.56
112753		<.01	0.07	85	5	3	<1	2	<5	11	<.01	4	9.17
112754		0.01	0.13	86	5	2	<1	3	<5	10	<.01	4	8.86
112755		<.01	0.06	40	3	17	<1	<1	<5	20	<.01	8	>10.00
112756		0.01	0.12	90	7	3	<1	2	<5	13	<.01	5	9.74
112757		0.01	0.17	73	6	<2	<1	2	<5	<10	<.01	3	3.59
112758		0.01	0.12	61	4	9	<1	4	<5	14	<.01	6	>10.00
112759		0.02	0.27	62	3	3	<1	4	<5	<10	<.01	2	5.55
112760		0.02	0.20	57	3	6	<1	3	<5	11	<.01	5	9.26

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

PROJECT: VOWELL CREEK
DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00 PAGE 3A(5/ 6)

SAMPLE NUMBER	ELEMENT UNITS Au30 PPB	Au Wt1 GM	Ag PPM	AgGrav PPM	Cu PPM	Cu PCT	Pb PPM	Pb PCT	Pb PCT	Zn PPM	Zn PCT	Mo PPM	Ni PPM	Co PPM	Cd PPM	Bi PPM	As PPM	Sb PPM	Fe PCT	Mn PPM	TE PPM	Ba PPM	Cr PPM	V PPM	Sn PPM	W PPM	La PPM	Al PCT	Mg PCT	Ca PCT
112761	1548	32.83	113.3		939		>10000	2.01		730		<1	30	11	17.9	<5	3502	543	7.15	2964	<10	28	64	3	<20	<20	<1	.35	1.45	3.03
112762	560	30.57	1.1		<1		59			405		1	21	8	7.8	<5	1584	7	6.59	2350	<10	28	89	4	<20	<20	<1	.35	0.99	2.14
112763	1061	30.18	3.8		<1		195			181		<1	18	6	12.9	6	3588	13	>10.00	9604	<10	22	77	<1	<20	<20	<1	.19	3.08	6.40
112764	534	30.14	15.8		44		6606			>10000	1.84	<1	20	6	117.9	<5	1493	514	5.15	12096	<10	23	75	1	<20	247	<1	.24	3.59	7.63
112765	789	30.03	32.3		130		>10000	1.06		>10000	2.07	<1	28	8	133.2	<5	2308	757	4.59	16246	<10	24	42	<1	26	358	<1	.25	4.19	9.19
112766	86	30.50	99.7		732		>10000	1.73		>10000	2.55	<1	16	5	167.9	<5	137	406	2.97	>20000	<10	17	39	<1	88	329	<1	.18	6.12	>10.00
112767	123	30.59	38.7		597		326			1868		2	11	4	12.3	<5	156	360	3.07	>20000	<10	14	59	<1	<20	227	2	.13	6.03	>10.00
112768	47	31.03	10.6		121		254			467		2	31	10	3.0	<5	143	67	3.84	16190	<10	26	45	<1	<20	<20	<1	.27	4.82	>10.00
112769	1850	30.23	93.1		253		>10000	3.71		>10000	9.05	<1	26	4	612.1	11	2551	>2000	3.63	5965	<10	18	148	2	62	1533	<1	.17	1.32	3.04
112770	116	30.01	7.3		60		358			949		2	24	8	6.3	<5	107	62	2.12	813	<10	20	21	2	<20	<20	<1	.24	0.70	>10.00
112771	248	30.57	8.1		70		303			406		3	14	4	2.9	<5	55	109	1.47	544	<10	13	40	2	<20	<20	<1	.15	0.51	>10.00
112772	<5	30.82	0.6		12		54			173		3	26	7	1.1	<5	49	15	2.17	817	<10	18	39	2	<20	<20	<1	.18	0.68	>10.00
112773	<5	30.76	0.8		26		20			83		<1	55	13	0.5	<5	39	12	4.49	1053	<10	32	55	5	<20	<20	4	.34	1.62	1.98
112774	138	30.62	22.6		76		4359			>10000	1.36	<1	27	8	105.8	<5	1682	66	9.83	14966	<10	23	32	<1	<20	171	<1	.20	4.53	>10.00
112775	190	30.57	16.7		70		2831			>10000	1.52	<1	23	8	104.6	<5	982	63	6.61	13480	<10	23	31	<1	<20	193	<1	.21	4.45	9.86
112776	3621	15.20	12.7		35		1500			630		<1	17	7	32.5	8	8740	89	>10.00	2223	<10	23	47	<1	<20	<20	<1	.11	0.69	1.63
112777	590	30.49	4.1		2		227			397		<1	26	7	6.3	<5	2181	39	8.51	10077	<10	21	57	1	<20	<20	<1	.19	3.54	7.65
112778	860	30.75	2.1		<1		50			100		<1	20	6	7.2	<5	2358	11	9.14	5348	<10	18	98	2	<20	30	<1	.16	2.58	5.30
112779	4153	15.57	7.6		1127		63			>10000	7.58	<1	62	15	742.3	15	>10000	26	8.05	2130	<10	20	79	5	535	1248	<1	.50	1.02	2.31
112780	209	31.17	1.2		38		10			376		<1	89	47	34.8	<5	9507	14	7.56	1650	<10	37	50	8	<20	<20	2	.51	1.44	1.46
112781	25	30.41	1.8		50		11			146		<1	90	50	8.3	<5	2310	18	6.91	1507	<10	36	48	8	<20	<20	2	.49	1.61	1.02
112782	115	30.78	1.1		33		17			40		<1	96	59	4.1	<5	1273	11	6.82	1172	<10	40	57	7	<20	<20	3	.56	1.01	0.91
112783	376	30.82	0.7		13		15			25		<1	62	19	9.4	<5	3015	5	5.55	1049	<10	32	44	5	<20	<20	3	.40	0.91	1.04

CLIENT: MINEQUEST EXPLORATION ASSOCIATES LTD.
REPORT: V00-01864.0 (COMPLETE)

PROJECT: VOWELL CREEK
DATE RECEIVED: 29-SEP-00 DATE PRINTED: 16-OCT-00

SAMPLE NUMBER	ELEMENT UNITS	Na PCT	K PCT	Sr PPM	Y PPM	Ga PPM	Li PPM	Nb PPM	Sc PPM	Ta PPM	Ti PCT	Zr PPM	S PCT
112761		0.02	0.18	52	3	3	<1	3	<5	<10	<.01	3	6.81
112762		0.02	0.18	37	2	3	<1	4	<5	<10	<.01	3	6.27
112763		0.01	0.09	71	4	6	<1	2	<5	14	<.01	5	>10.00
112764		0.01	0.13	90	5	<2	<1	2	<5	<10	<.01	2	4.90
112765		0.01	0.14	110	6	<2	<1	2	<5	<10	<.01	3	3.74
112766		0.01	0.10	148	7	<2	<1	<1	<5	<10	<.01	2	2.90
112767		<.01	0.06	162	9	<2	<1	<1	<5	<10	<.01	<1	1.40
112768		0.02	0.15	134	10	<2	<1	1	<5	<10	<.01	3	1.68
112769		<.01	0.09	38	3	<2	<1	1	<5	<10	<.01	1	7.93
112770		0.01	0.13	466	6	<2	<1	<1	<5	<10	<.01	<1	1.06
112771		0.01	0.08	522	6	<2	<1	<1	<5	<10	<.01	<1	0.57
112772		<.01	0.09	396	13	<2	<1	<1	<5	<10	<.01	2	0.78
112773		0.02	0.19	39	2	<2	<1	3	<5	<10	<.01	2	0.74
112774		0.01	0.11	117	7	<2	1	1	<5	12	<.01	4	7.91
112775		0.01	0.12	118	7	<2	<1	2	<5	<10	<.01	2	5.04
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112778		0.01	0.08	82	5	3	<1	4	<5	<10	<.01	3	7.69
112779		0.03	0.25	42	2	8	<1	2	<5	<10	<.01	3	8.81
112780		0.03	0.29	30	2	5	<1	3	<5	<10	<.01	5	3.63
112781		0.03	0.27	19	2	3	<1	3	<5	<10	<.01	4	2.38
112782		0.03	0.29	21	3	5	<1	2	<5	<10	<.01	5	4.64
112783		0.03	0.22	23	2	4	<1	2	<5	<10	<.01	5	4.08

<u>APPENDIX 4</u>

Report on

BOREHOLE TEM SURVEY PROGRAM
VOWELL CREEK PROJECT
GOLDEN, B.C.

by

Cliff Candy, P.Geo

MINEQUEST EXPLORATION ASSOCIATES LTD.

REPORT ON

BOREHOLE TEM SURVEY PROGRAM

VOWELL CREEK PROJECT

GOLDEN, B.C.

by

Cliff Candy, P.Geo.

September, 2000 **PROJECT FGI-551**

Frontier Geosciences Inc. 237 St. Georges Avenue, North Vancouver, B.C., Canada V7L 4T4
Tel: (604) 987-3037 Fax: (604) 984-3074

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ILLUSTRATIONS

		Location
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1. INTRODUCTION

During September of 2000, an program of transient electromagnetometer (TEM) borehole surveying undertaken for Minequest Exploration Associates Ltd. on the Vowell Creek Project near Golden, in southeastern B.C. The objective of this survey was to explore for massive sulphide mineralization, comprised of pyrite, galena and sphalerite. The survey was carried out in borehole VC-00-02 at the Ruth Vermont site, and VC-00-05 at the LCP site.

2. THE DOWNHOLE TEM METHOD

2.1 Instrumentation and Field Procedure

The downhole TEM survey employed the Geonic's Ltd., Protem TEM-57 transmitter and receiver system, together with the BH-43 axial downhole probe and winch. The Geonics Protem equipment is a flexible time domain electromagnetic system that may be used in fixed source surface, horizontal loop, sounding or borehole modes. In the borehole mode, a downhole receiver coil and surface transmitter loops are used to determine attitude and position of intersected or offhole conductive mineralisation. The field procedure entails setting out a transmitter loop on the ground surface around the drillhole collar. The drillhole is then logged from this transmitter loop. Should a response be obtained the hole may be logged using additional transmitter loops to provide a variety of primary field coupling angles at the depth of interest. A comparison of the responses from each of the transmitter loops indicates whether a conductor is entirely offhole, intersected near an edge or continuous in all directions from the drillhole. Shape and amplitude information allow inferences of conductor type, attitude and position.

In operation, the transmit loop is energised with an electrical current which is rapidly terminated. The rapid reduction of the primary magnetic field causes eddy currents to flow in any nearby conductors, with a characteristic decay which is a function of the conductivity, size, and shape of the conductor. The decaying currents generate a secondary magnetic field, the time rate-of-change of which is sampled by the borehole receiver probe across 20 channel windows. The windows are logarithmically spaced in time during the decay of the field, sampling from as early as 0.087 ms to as late as 70.4 ms after the turn-off time of the transmitter.

At fixed intervals in the borehole, the Hz, or axial component of the field was recorded. The data for each drillhole loop was then downloaded to the notebook computer for plotting and interpretation.

The interpretation involves the inspection of the data to determine conductor position, type and quality. As well, observation of the decay behavior of the responses, and the responses are correlated from different transmitter loop positions. The anomalies may then be compared with simple models to assist in the determination of attitude and depth.

3. GEOPHYSICAL RESULTS

3.1 General

Borehole 00-02, at the Ruth Vermont site, was logged from two 150 by 150 metre transmitter loop setups. This borehole is inclined at 60 degrees, with an azimuth of 224 degrees. Transmitter loop A was situated with the northeast side centred on the borehole collar. The borehole was also logged from a transmitter loop B located 150 metres southwest of loop A, in the dip direction of the borehole. This loop is more centrally located over the downdip segment of the borehole. The vertical borehole 00-05 at the LCP zone was logged from a transmitter loop centred on the borehole collar. The survey logs are plotted in profile form, with each group of 5 channels scaled to compensate for the reduction in amplitude with increasing decay time. The target body for the expected class of mineralisation would be a relatively poor conductor, and would be expected to arise in the early channels.

3.2 Discussion

An anomaly is present in the early time channels in borehole 00-02 at a depth of approximately 100 metres. The character and high spatial frequency of this feature indicate a poor quality intersected response, such as a shear zone. The survey log of transmitter loop A, as compared to that of transmitter loop B, shows a slightly stronger and varied response due to the closer proximity of the loop to the zone. At a depth of 450 metres, particularly in the loop A data, a subtle rolloff with depth is present in channels 1 to 3. This is likely due to the change in resistivity in the host rocks at the argillite contact at this depth.

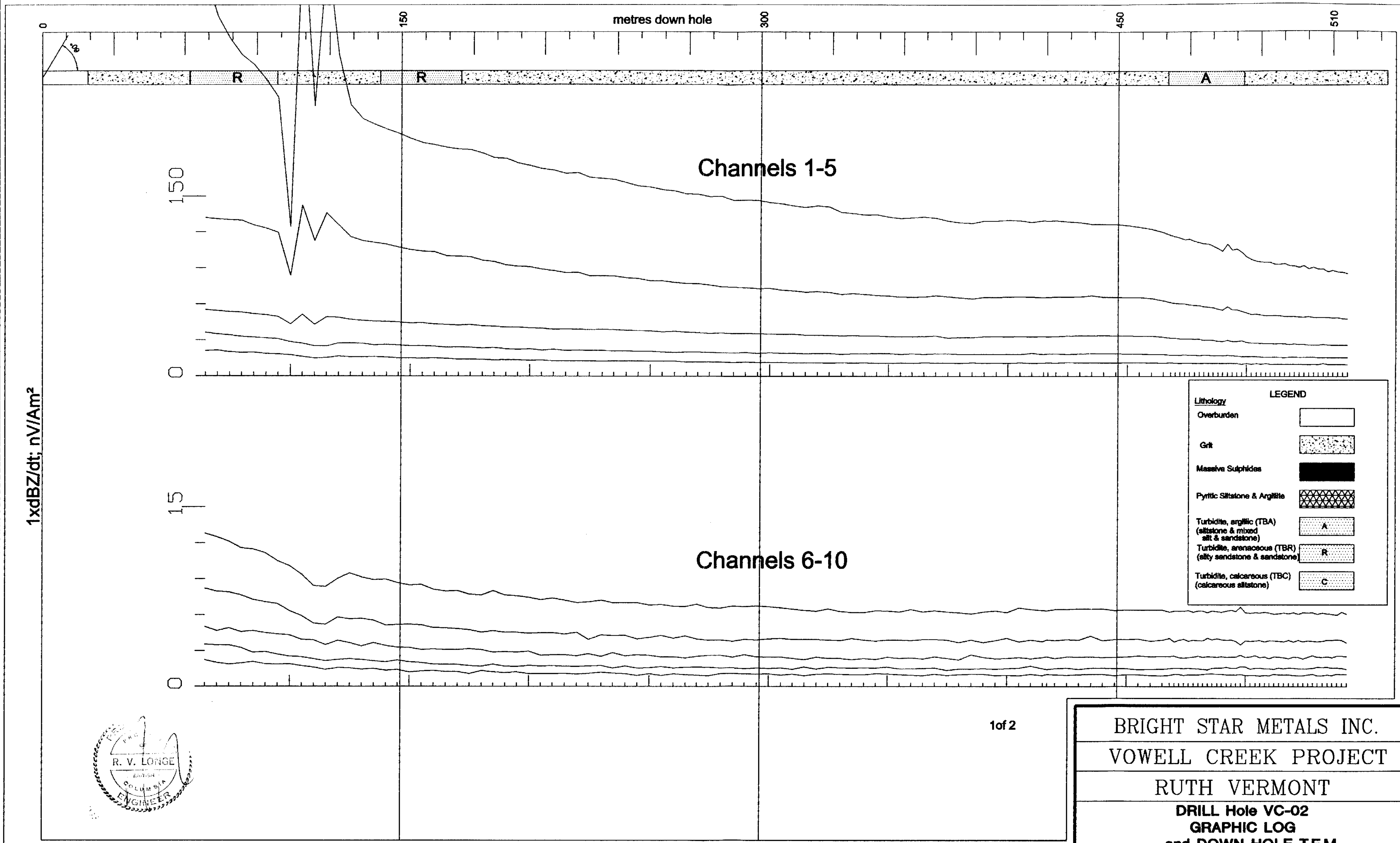
The data obtained in borehole 00-05 at the LCP zone shows a shallow intersected conductive zone at approximately 28 metres depth. This is similar in character to the zone in the 00-02 data but shows a somewhat longer decay constant.

Apart from the small scale shallow conductors in the data of boreholes 00-02 and 00-05, the logs show generally resistive half space character, with no evidence of off-hole or intersected responses present.

for Frontier Geosciences Inc.,

Cliff Candy

Cliff Candy, P.Geo.



BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

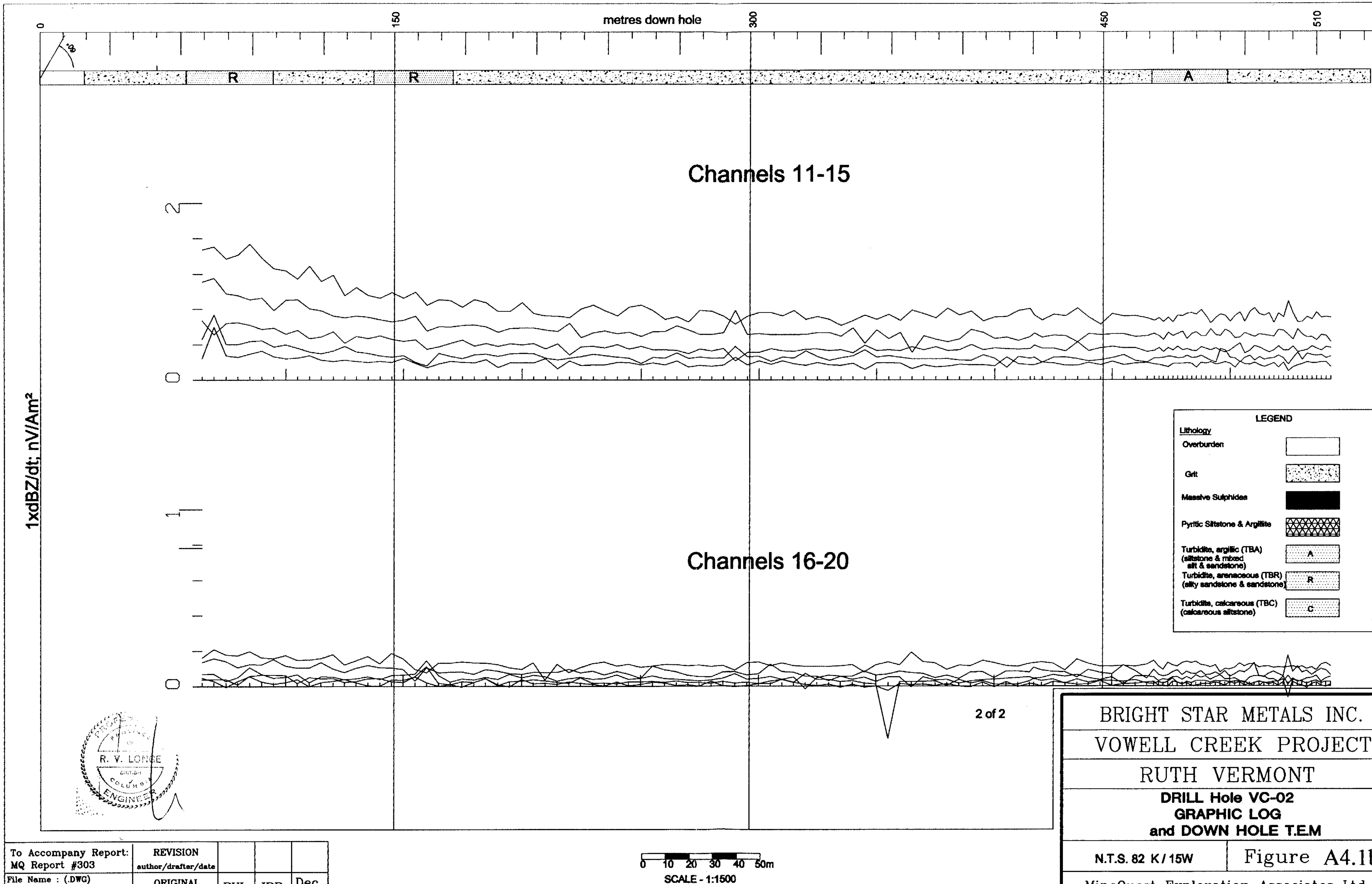
RUTH VERMONT

DRILL Hole VC-02
GRAPHIC LOG
and DOWN HOLE T.E.M

N.T.S. 82 K / 15W	Figure A4.1a

MineQuest Exploration Associates Ltd.

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-10&11	ORIGINAL author/drafter/date	RVL	JBR	Dec 00



BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

RUTH VERMONT

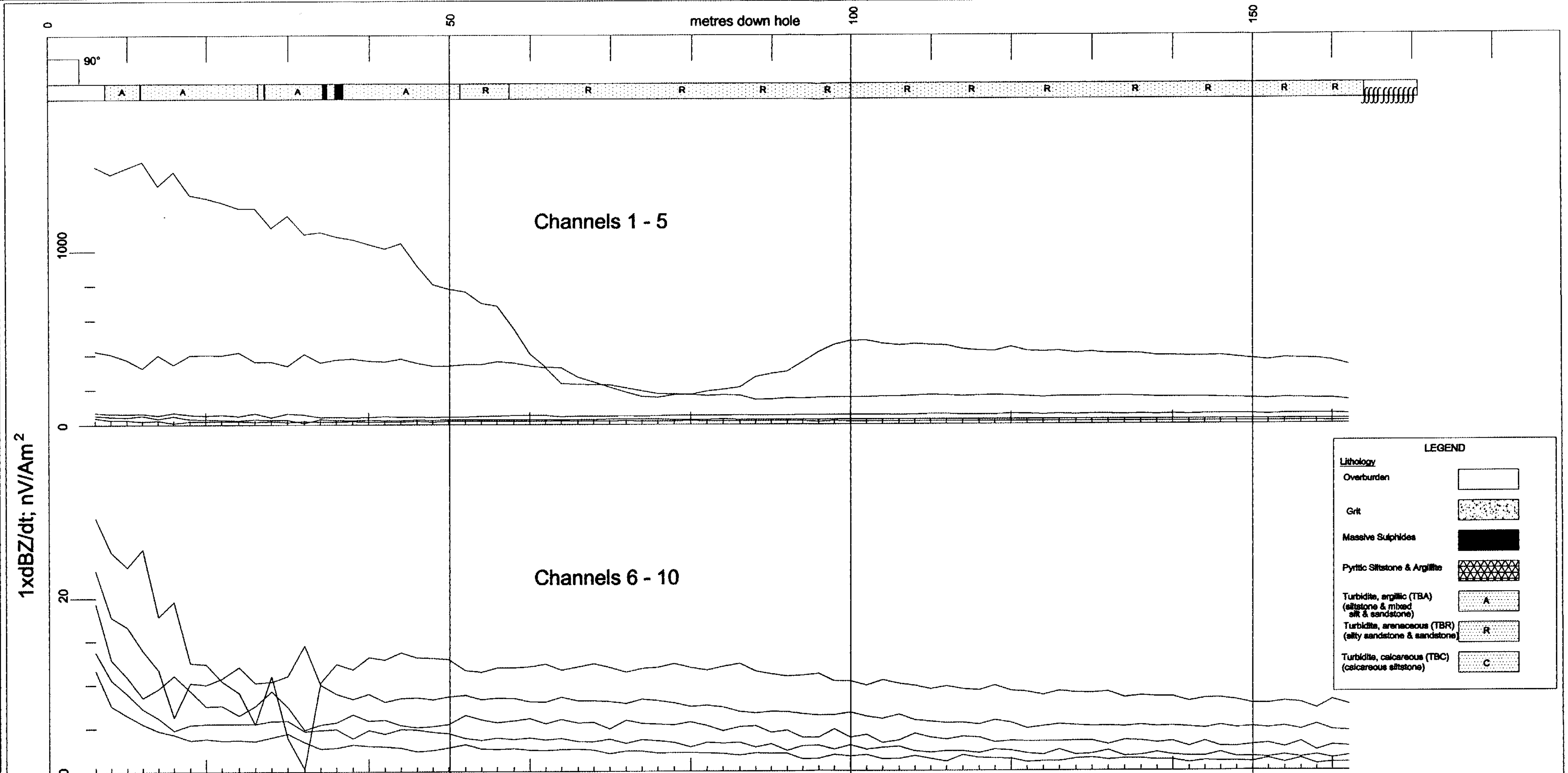
DRILL Hole VC-02
GRAPHIC LOG
and DOWN HOLE T.E.M

N.T.S. 82 K / 15W

Figure A4.1b

MineQuest Exploration Associates Ltd.

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-10&11	ORIGINAL author/drafter/date	RVL	JBR	Dec 00



R. V. LONGE
ENGINEER

0 10 20 30 40 50m
SCALE - 1:500

BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

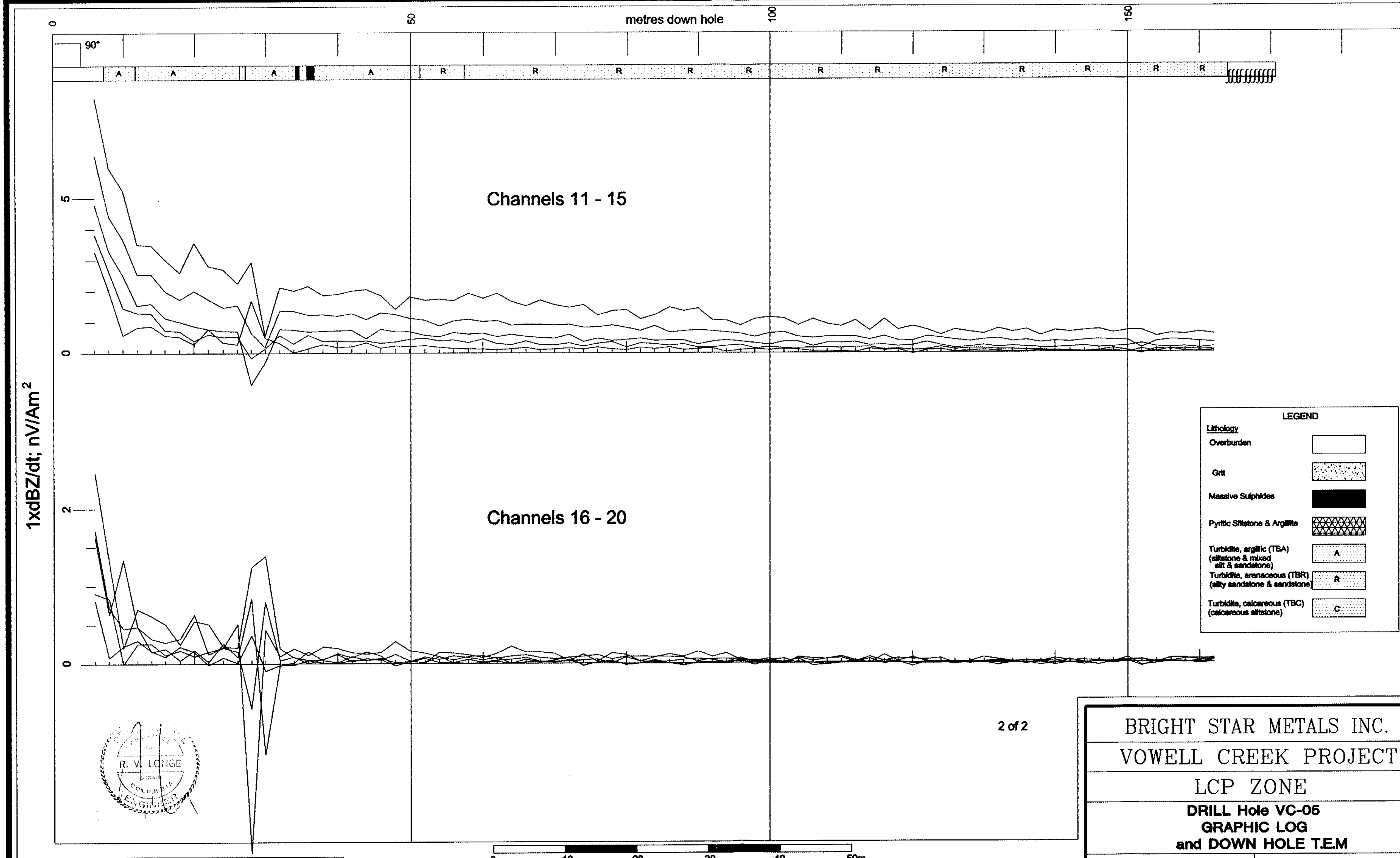
LCP ZONE

DRILL Hole VC-05
GRAPHIC LOG
and DOWN HOLE T.E.M

N.T.S. 82 K/15W | Figure A4.2a.

MineQuest Exploration Associates Ltd.

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-08&09	ORIGINAL author/drafter/date	RVL	JBR	Dec 00



2 of 2

BRIGHT STAR METALS INC.

VOWELL CREEK PROJECT

LCP ZONE

DRILL Hole VC-05
GRAPHIC LOG
and DOWN HOLE T.E.M

N.T.S. 82 K / 15W	Figure A4.2b

MineQuest Exploration Associates Ltd.

To Accompany Report: MQ Report #303	REVISION author/drafter/date			
File Name : (.DWG) MQ303-08&09	ORIGINAL author/drafter/date	RVL	JBR	Dec 00

APPENDIX 5

MEMORANDUM ON RECLAMATION.

MineQuest Exploration Associates Ltd.

MEMORANDUM

TO: Robert Longe — Project Code: VMV

FROM: Damir Cukor — October 30 2000

2000 drill program
Environmental impact and reclamation

Environmental Impact

The 2000 drill program, conducted between August 23rd and October 3rd consisted of five diamond drill holes, completed from two sites; one site was on the north side of Vermont Creek valley and the other on the north slope of the Crystalline Creek drainage. The first site (10m by 10m) was prepared by backhoe, utilizing a previously disturbed area; slide areas on the Ruth-Vermont / Vermont Creek Road were cleared by backhoe (approximately 3m by 750 m total). The drill was moved to the second site by helicopter. Disturbance was restricted to minor damage to road surface grasses and plants from 4X4 traffic on steep stretches of road. On both drill sites sumps were constructed to catch drill cuttings. No drill additives were used during the program. Hydrocarbon spills were minimal - enviromatting, provided by the drill contractor was on site for use in case of spillage. During the drill move no hydraulic fluids were lost.

Reclamation

Reclamation required minor contouring of backhoe disturbed areas, including the first drill site and berms on parts of the road affected by slides, and seeding and fertilizing of the same and of areas disturbed by 4X4 traffic. Grass seed, supplied by CREST BROOK Forest Industries was Wet Forest Erosion Control Mix (25% White Clover, 25% S.C. Red Clover, 25% Red Fescue, 20% Perennial Ryegrass, 5% Kentucky Bluegrass). Cross-ditches were constructed on the Ruth-Vermont Road to help prevent road surface washout. Some metal parts left from the old mine site were removed.

APPENDIX 6

STATEMENT OF QUALIFICATIONS

Robert Longe, P.Eng.

Rick Walker, P.Geo.

STATEMENT OF QUALIFICATIONS

Robert Longe, P.Eng.

I, Robert Longe, hereby declare that:

1) I am a consulting geologist with a business office at # 400 - 789 West Pender Street, Vancouver, B.C., V6C 1H2
2) I am President of MineQuest Exploration Associates Ltd., a company performing geological consulting and contract exploration services for the mineral exploration industry.
3) I am a graduate of Cambridge University, (B.A. Hons., 1961 Natural Science Tripos, Parts 1 & 2, Geology) and of McGill University (M.Sc., 1965).
4) I am a Fellow of the Geological Association of Canada, and a member of the Association of Professional Engineers and Geoscientists of British Columbia.
5) I have practised my profession as geologist for over 30 years.
6) I have made several examinations of the Ruth-Vermont former mine, and have worked on the VMT claims, the LCP zone in particular, since 1991.
7) I personally supervised the program described in this report.
8) I am a Director, Officer and Shareholder (directly and indirectly) of Kimber Resources Inc., the holder of approximately 16% of the outstanding shares of Bright Star Metals Inc. which owns the Vowell Creek claims. Bright Star is indebted to Kimber for $90,000.
9) I am a director of Bright Star Metals Inc. and hold options in that company.
10) I own a controlling interest in MineQuest Exploration Associates which, as a shareholder of Kimber, is an indirect shareholder of Bright Star Metals Inc.

Signed ______________
R.V. Longe, P.Eng

Vancouver, B.C., December 4th, 2000

STATEMENT OF QUALIFICATIONS

Richard T. Walker, P.Geo.

I, Richard T. Walker, of 656 Brookview Crescent, Cranbrook, BC, hereby certify that:

1) I am a graduate of the University of Calgary of Calgary, Alberta, having obtained a Bachelors of Science in 1986.

2) I obtained a Masters of Geology at the University of Calgary of Calgary, Alberta in 1989.

3) I am a member in good standing with the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4) I am a member of good standing with the Association of Professional Engineers and Geoscientists of the Province of British Columbia.

5) I am a consulting geologist and Principal with the firm of Dynamic Exploration Ltd. with offices at 656 Brookview Crescent, Cranbrook, British Columbia.

6) I am ~~the~~ an author of this report which is based on work I personally performed between September 1 and 16, 2000.

Dated at Cranbrook, British Columbia this day of December, 2000.

Richard T. Walker, P.Geo.

Vancouver, B.C., December 4th, 2000

APPENDIX 7

COST STATEMENT

Vowell Creek Project
Items invoiced to Nov 8, 2000

Fees & Labour					
R. Walker	23.75 days	@	$400		$ 9,500.00
D. Cukor	28.00 days	@	350		9,800.00
R. Longe	11	@	700		7,700.00
Drafting	22 hours	@	46		1,012.00
Food and accomodation					
Camper rental					$ 1,200.00
Motel & meals					3,743.58
Transportation					
Truck renal	16 days	@	$ 75		$ 1,200.00
Mileage	724 km	@	$ 0.30		217.20
Truck rental					2,203.48
ICBC off-road insurance					112.00
ATV rental					445.98
Rental car, Avis					198.88
ATV insurance					200.00
Expenses & disbursemenets, R.Longe					912.35
Rental car, Budget					316.47
Expenses, D. Cukor					457.50
Subcontractors					
Britton Bros, Diamond Drilling					$ 80,293.91
Mason's backhoe					7,647.00
Stan Lozinski					720.00
Alpine Helicopters					6.603.30
JB Engineering					2,060.00
McElhanney Consulting					4,005.52
Bondar Clegg Laboratories					2,513.15
Disbursements					
including: supplies, rentals, reprographics long distance, courier, permits					$ 2,867.00
Subtotal			$ 145,929.32		
Management Fee	@ 10%				$ 14,592.93
Subtotal			$ 160,522.25		
GST					$ 11,236.56
TOTAL to November 8, 2000					$171,758.81