CASSIAR PROJECT

1980 - ASSESSMENT REPORT

NTS 104P 1, 4, 5, 8 LIARD M.D.

59° 15 N 129° 47 W APPROX CENTRE OF PROP.

GEOL
DIAD
EMGR
SOIL
SILT
LINE

MINERAL RESOURCES
ASSESSMENT REPORT
NO. 9262

C. J. BLOOMER 1980

INTRODUCTION

Shell Canada Resources Limited entered into an option agreement in March of 1979 with W. J. Storie on an 86 claim property near Cassiar, British Columbia (Figure 1).

Immediately following the signing of the option agreement in 1979, 70 additional claims were staked within the after-acquired area of the property (Alta 1, 2, 3, 4, 5).

Within the property are silver-lead-zinc occurrences known since 1922. Since that time, several exploration companies have worked the property. The previous exploration served to outline several scattered Ag-Pb-Zn bodies with an aggregate total of 600,000 tonnes grading 171 grams/tonne Ag, 5% Pb and 4% Zn, a stratabound, possibly volcanogenic, Cu/Zn body of 90,000 tonnes grading 1.2% Cu and 0.9% Zn and quartz veins with gold and silver.

The presence of tin within the Au/Pb/Zn bodies was recognized in 1978 when samples taken by British Columbia Department of Mines Geologist Andre Panteleyv returned high tin values: a chip sample of the Pant Showing assayed 1.5% Sn over 3.6 metres and a grab sample from the middle "D" zone assayed 3.5% Sn. The tin values were proven to be from Cassiterite.

Shell's 1979 exploration program was directed toward evaluating the tin potential of the known showings and to outline favourable areas for additional mineralization. The property was mapped at a scale of 1:5,000. All showings were mapped and sampled along with available drill core from past work. Approximately 66 line kilometres were cut in three grids over which magnetic, I.P. and shootback E.M. surveys were run. A reconnaissance geochemical survey was also run across the property.

The 1979 program showed the Ag-Pb-Zn mineralization to be hosted exclusively by Cambrian Atan Group carbonates as replacements along east-west and in some cases northeast-southwest structural zones. The presence of tin in some of the showings was confirmed. Several untested potential areas warranting diamond drilling were identified. For a detailed summary of the 1979 program and results, see the report by C. J. Bloomer.

The 1980 program consisted of diamond drilling, geological mapping, geochemistry and geophysics.

Approximately 600 metres of diamond drilling was completed in seven holes. Five holes were drilled on Grid 79-1 to test the Granite Creek Showing, and other isolated geophysical anomalies previously untested (Figure 9). Two holes were drilled on Grid 79-4, one hole under the Pant Showing and one below the showing along the same structural trend (Figure 10).

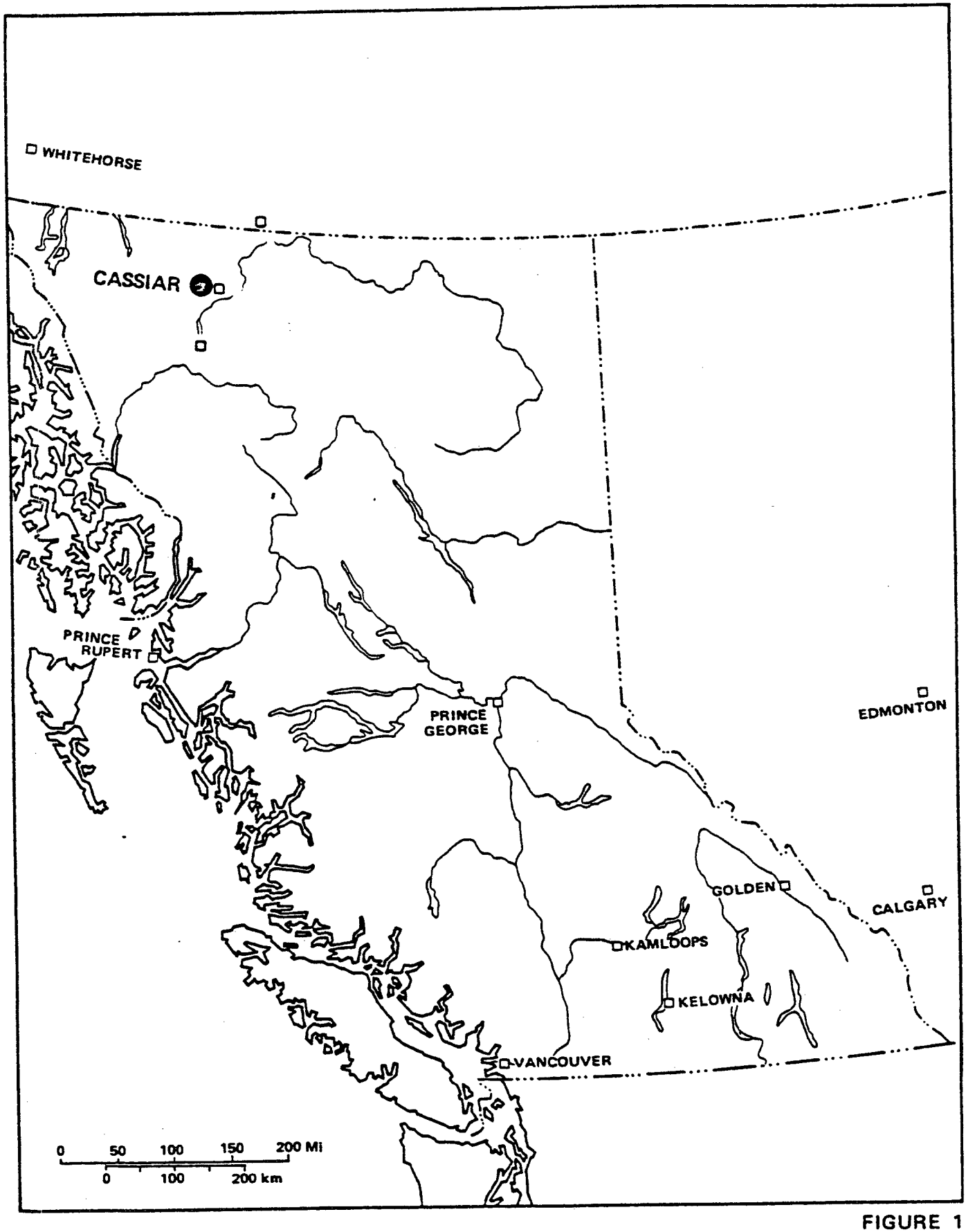
WHITEHORSE
CASSIAR
PRINCE RUPERT
PRINCE GEORGE
EDMONTON
GOLDEN
CALGARY
KAMLOOPS
KELOWNA
VANCOUVER
0 50 100 150 200 Mi
0 100 200 km

FIGURE 1

ok

Two holes were drilled on the Granite Creek Showing, one intersected mineralization, DDH 80-2: 3.05 metres of pyrite, pyrrhotite, sphalerite, and trace galena assaying 11.66 grams/tonne Ag, 0.1 % Pb, 14 % Zn, and 0.03 % Sn. Other holes on Grid 79-1 showed magnetic anomalies were due to disseminated pyrrhotite in Atan Quartzites, shootback and I.P. conductivity anomalies along the Atan-Kechika contact to be due to disseminate pyrite and pyrrhotite with graphite in argillites.

Massive sulphides within a strong structural zone were intersected beneath the Pant Showing on Grid 79-4 in two zones returning assays of 0.94% Sn over 0.9 metres in the first zone, 0.61% Sn over 0.2 metres with 296.2 grams/tonne Ag over 0.4 metres in the second zone.

A portion of the time spent on the 1980 program was used to evaluate the Reo Claim gold quartz veins, the Lang Creek Cu-Zn Showing and an extension of Grid 79-1.

Approximately 12.0 kilometres of grid was cut over the Reo Claim gold quartz veins. A gold soil geochemical survey was run over the grid with a portion of the grid run for silver and copper. An anomalous gold trend over the exposed vein area of about 100 x 300 metres was outlined with an outer contour of plus 250 ppb gold and a peak value of approximately 2,500 ppb. Silver and copper anomalies were coincident with the gold. Several small gold anomalies of 50 ppb were also outlined. A 3.5 km E.M.-16R survey was run over the exposed vein area. The grid was geologically mapped at 1:2,500.

The Lang Creek Showing was examined by shootback over a 13 kilometre grid. While a broad conductive zone was recognized, no discrete anomalies of possible sulphides were outlined. Geological mapping at a scale of 1:2,500 showed the conductive trend to be a formational feature of pyritic/graphitic argillites.

A 2.7 kilometre extension was added to Grid 79-1 to cover fringe anomalies generated in 1979. Magnetic, I.P. and shootback E.M. surveys were run over the extension. The 1979 anomalies proved to be limited and not worthy of future followup. No new anomalies were outlined.

Forty-nine claim units were staked along the southern boundary of the Cassiar Project, to cover altered intrusive rocks similar to those hosting the Casmo MoS_2 deposit (Bright 3, 4, 5, 6). No significant anomalies were generated.

An additional 1,000 metres of diamond drilling is proposed for 1981 to test further the Pant Zone and the Reo Claim quartz veins. Geological mapping of the Bright Claims is also proposed.

SUMMARY

The 1980 field program on the Cassiar Project commenced June 15, 1980 and terminated October 4, 1980. The following is a summary of the field operations and results.

Shell optioned 86 claims from W. J. Storie near Cassiar, British Columbia in March of 1979 (Figure 2). In May of 1979, 70 additional units were staked in the after-acquired area of the agreement; Alta 1 - 5 inclusive.

The lithologies underlying the Cassiar Project are hosts for numerous mineralized occurrences which have been subjected to varying degrees of exploration since 1922. Six significant mineralized areas have been outlined by past exploration.

1. D-Zone (Pit, Zone and Chiera Claims): Pb/Zn/Ag mineralization as galena, sphalerite, magnetite, pyrite, pyrrhotite, pyrolusite, and siderite replacement bodies in Cambrian Atan Group carbonates. The best occurrence is 90,000 tonnes of drill indicated reserves grading 75 grams/tonne Silver, 3.3% Pb, and 6.3% zinc.

2. Magno Property: Pb/Zn/Ag mineralization in three zones of galena, sphalerite, magnetite, pyrite, pyrrhotite, pyrolusite, and siderite in Cambrian Atan Group carbonates. The three zones and their respective drill indicated ore potential are as below:

   - East Zone - 142,500 tonnes of 4.06% Pb, 4.40% Zn, 110 grams/tonne Ag, 1 gram/tonne Au, over an average width of 5.5 metres.

   - Middle West Zone - 85,000 tonnes of 9.43% Pb, 5.34% Zn, 250 grams/tonne Ag over an average width of 3 metres.

   - West Zone - 221,000 tonnes of 5.4% Pb, 3.4% Zn, 200 grams/tonne Ag over an average width of 2.5 metres.

3. Lang Creek Showing (Alta-5 and Lang Claims): 27,000 tonnes of 1.2% Cu, 0.9% Zn in a chalcopyrite, chalcocite, sphalerite, pyrite massive sulphide lens in Devonian-Mississippian volcano-sedimentary rocks of the Sylvester Group.

4. Pant Showing (BEV Claim): 1.2% Sn in a cassiterite-bearing, arsenopyrite, pyrite, marcasite, siderite massive sulphide body. The mineralization occurs at a faulted contact between Cambrian Atan Group Carbonates and Cambrian-Ordovician argillites of the Kechika Group.

5. Quartz Veins (Reo Claim): Tetrahedrite and pyrite in massive quartz veins. Visible gold reported in the past.

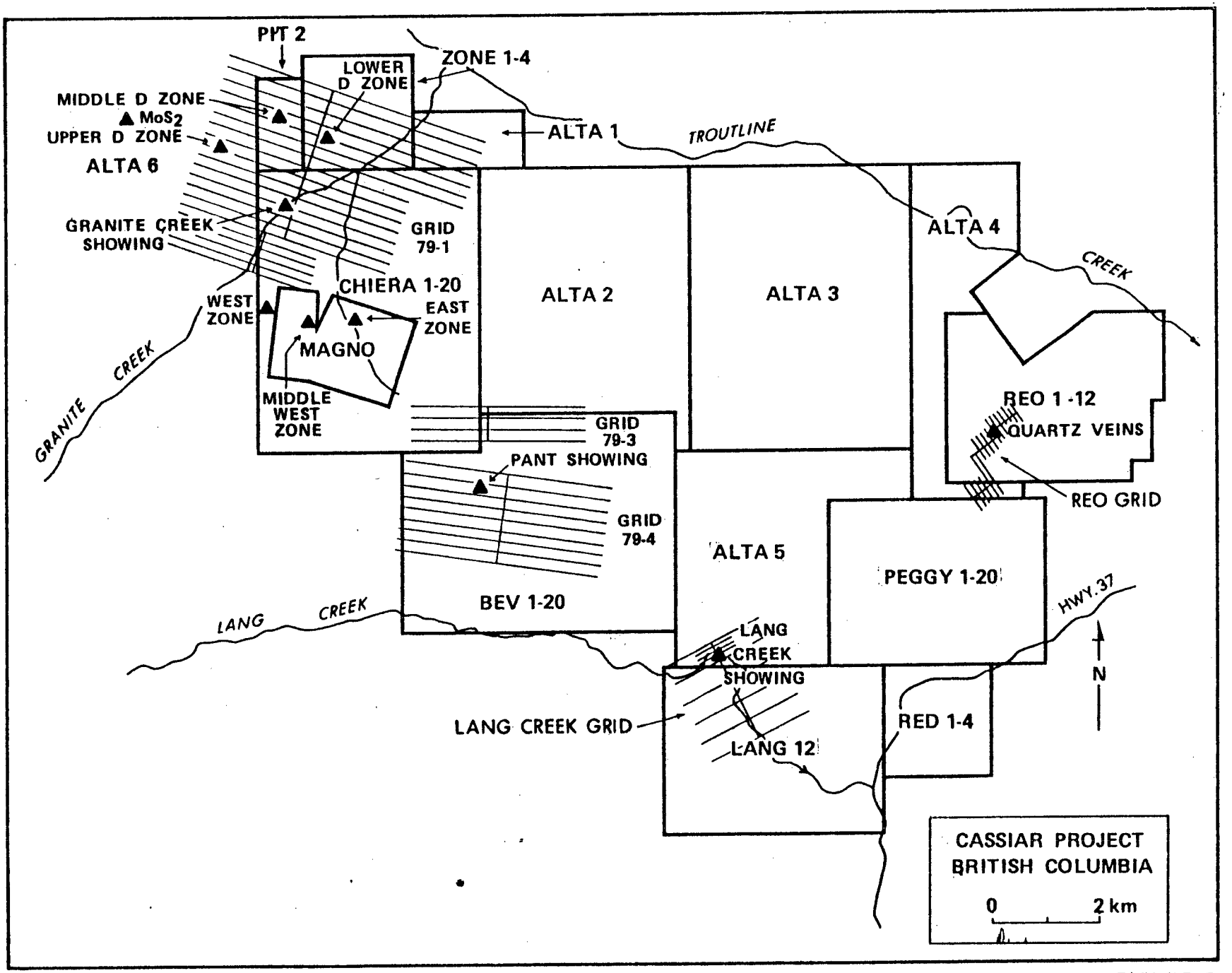
PIT 2
ZONE 1-4
LOWER D ZONE
MIDDLE D ZONE
▲ MoS2
UPPER D ZONE
ALTA 6
ALTA 1
TROUTLINE
GRANITE CREEK SHOWING
GRID 79-1
CHIERA 1-20
WEST ZONE
EAST ZONE
MAGNO
MIDDLE WEST ZONE
GRANITE CREEK
ALTA 2
ALTA 3
ALTA 4
CREEK
REO 1-12
QUARTZ VEINS
REO GRID
GRID 79-3
PANT SHOWING
GRID 79-4
BEV 1-20
ALTA 5
PEGGY 1-20
HWY.37
LANG CREEK
LANG CREEK SHOWING
LANG CREEK GRID
LANG 12
RED 1-4
N
CASSIAR PROJECT
BRITISH COLUMBIA
0
2 km

FIGURE 2

The 1980 exploration program consisted of diamond drilling, geological mapping, geochemistry, and geophysics. The program was designed to followup on geophysical anomalies generated in 1979. The Lang Creek Cu-Zn Showing and the Reo Gold quartz zone, not investigated in detail during 1979, were further explored in 1980. Additional ground was acquired over a potential molybdenite-bearing intrusive of the Cassiar Batholith south of Shell's Casmo Property.

Diamond drilling was conducted in two phases: the first phase began June 15 and terminated June 30, the second phase began August 21 and terminated September 2. Seven holes were drilled for a total of 508 metres. Five holes were drilled on Grid 79-1 and two holes on Grid 79-4 (Figures 9, 10) (Table 3).

DDH 80-1 was collared on Line 12+00S 2+00W on Grid 79-1, immediately north of the Granite Creek Showing. The hole was drilled to a depth of 104.5 metres intersecting two zones of massive recrystallized limestone considered to be the host rock for the showing, but no mineralization (Figure 12).

DDH 80-2 was collared immediately above the Granite Creek Showing and drilled to a depth of 56.7 metres. A zone of massive recrystallized limestone was encountered containing 3.02 metres of massive sphalerite, pyrrhotite, pyrite, and trace galena, assaying 14% Zn, 11.66 grams/tonne Ag, 0.1% Pb, and 0.03% Sn (Figure 13).

DDH 80-3 was collared on Line 12+00S 8+30W on Grid 79-1 and drilled to a depth of 50.3 metres to test a local magnetic high. Disseminated pyrrhotite was encountered throughout the hole sufficient to explain the magnetic high (Figure 14).

DDH 80-4 was collared on Line 12+00S 1+30E of Grid 79-1 and drilled to a depth of 114.6 metres to test a magnetic high. Pyrrhotite in Atan quartzites and carbonates were intersected (Figure 15).

DDH 80-5 was collared on Line 4+00N 1+20E on Grid 79-4 and drilled to a depth of 102.7 metres. The hole was drilled 200 metres downslope of the Pant Showing to test the structural contact zone between the Atan and Kechika Groups. A 10 cm zone of pyrite-pyrrhotite mineralization was encountered in a fault zone with a thin carbonate horizon. The sulphides however, returned nil tin values (Figure 16).

DDH 80-6 was collared on Line 6+00N 1+20W on Grid 79-4 and drilled to a depth of 88.7 metres under the Pant Showing. The hole encountered a three metre structural zone containing two sulphide lenses of pyrite-pyrrhotite with trace arsenopyrite in a carbonate horizon and

a quartz vein carrying galena. The following assay results were recorded: 0.9 metres of 0.94% Sn, 0.2 metres of 0.61% Sn, <0.01% Pb, 16.5 grams/tonne Ag, 0.6 metres of 0.08% Cu, 0.22% Pb, 0.74% Zn, 0.10% Sn, 49 grams/tonne Ag, 0.4 metres of 2.28% Pb, 296.2 grams/tonne Ag (Figure 17).

DDH 80-7 was collared on Line 8+00S 6+20E on Grid 79-1 and drilled to a depth of 90.5 metres to test a highly conductive structural zone with local mag highs between the Atan and Kechika Groups. Pyrrhotite and pyrite within graphitic shales were encountered throughout (Figure 18).

The drilling program showed the Granite Creek Showing to be of limited extent and local magnetic highs on Grid 79-1 to be due to pyrrhotite within Atan Quartzites. The Atan-Kechika contact tested on Grid 79-1 was shown to be non-mineralized. Both holes on Grid 79-4 encountered sulphides within the structural contact between the Atan and Kechika groups. The structure zone is strong and consistent along strike with a potential for additional mineralization.

An 11 kilometre extension southeast to Grid 79-1 failed to outline new anomalies.

The Lang Creek Cu/Zn Showing was mapped in detail and covered by shootback E.M. over a 16 kilometre grid. The shootback E.M. survey was designed to test in detail the immediate area of the showing and to examine the surrounding area on a broad scale along the stratigraphic trend. Both the geology and geophysics outlined a formational conductive zone made up of graphitic/pyritic cherty argillites with intercalated intermediate volcanoclastic rocks. No potential sulphide anomalies were identified.

A 3.5 kilometre grid was initially cut over the known area of gold bearing quartz on the Reo Claim: Grid 80-1. A copper-silver-gold soil geochemical survey outlined a 100 x 300 metre area anomalous in gold with coincident copper and silver anomalies. The outer contour of the area has a 250 ppb cut-off with a 2,500 ppb high. An EM-16R survey showed a conductivity low trend roughly paralleling the geochemistry. A 8.5 kilometre extension was cut on the western end of 80-1 to cover other smaller quartz outcrops. A gold soil geochemical survey was run over the extension. Isolated anomalies were outlined but were of a lower magnitude and appear not to be related to the zone to the east.

Forty-nine additional claim units were staked east of Cassiar Moly property on the Southern boundary of the Cassiar Project. The area is underlain by quartz monzonite phases of the Cassiar Batholith similar to those hosting both Shell's Casmo deposit and the Cassiar Moly property. The rocks are locally altered with crosscutting structures related to the Cassiar moly property. A stream silt and soil geochemical survey was run over the claims and produced several isolated anomalies in the 15 - 25 ppm Mo range.

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1. LOCATION AND ACCESS

Cassiar is situated approximately 500 kilometres from Whitehorse, Yukon Territory and 480 kilometres from Stewart, British Columbia via all weather gravel highways (Figure 1). A gravel airstrip capable of receiving up to Twin Otter size aircraft lies 3 kilometres from the townsite.

The townsite is served by regular bus service to Watson Lake, Yukon Territory, 86 kilometres from Cassiar and by trucking service to Watson Lake and Stewart.

The project area is easily accessed with a four wheel drive vehicle.

2. PROPERTY

The Cassiar Project constitutes 156 mineral claims situated near Cassiar, British Columbia in the Liard Mining District (Table 1) (Figure 2).

Assessment credit applied for in this report is for all 156 claim units indicated in Table 1, except Bright 3, 4, 5, and 6.

TABLE 1

SCHEDULE OF LANDS

CASSIAR PROJECT CLAIM HOLDINGS AND PRESENT STATUS				
CLAIM GROUP				
NAME	NUMBER	UNITS	RECORDING DATE	PRESENT ASSESSMENT GOOD UNTIL
PIT	1	1	9 APRIL 1973	1982
	2	1	9 APRIL 1973	1982
CHIERA	1 - 20	20	31 MARCH 1975	1982
ZONE	1 - 4	4	4 APRIL 1975	1982
LANG	1 - 12	12	8 APRIL 1976	1982
REO	1 - 12	12	27 MAY 1976	1982
PEGGY	1 - 12	12	15 FEB. 1977	1982
BEV	1 - 20	20	28 FEB. 1977	1982
RED	1 - 4	4	29 JUNE 1977	1982
ALTA	1	2	31 MAY 1979	1982
	2	20	31 MAY 1979	1982
	3	20	31 MAY 1979	1982
	4	12	31 MAY 1979	1982
	5	16	31 MAY 1979	1982
	10	15	21 AUG 1979	1982
BRIGHT	3	16	5 AUG. 1980	1981
	4	12	5 AUG. 1980	1981
	5	16	5 AUG. 1980	1981
	6	9	5 AUG. 1980	1981

3. GEOLOGY

3.1 General

The following geological summary is based on reconnaissance and detailed geological mapping during 1979 by Shell personnel and on maps and reports from the Geological Survey of Canada (G.S.C. Memoir 319 McDame Map Area, Cassiar District, British Columbia, 1963).

The project area is situated on the western limb of the McDame Synclinorium; a major northwest striking structural feature. Precambrian through Devonian sedimentary rocks form the east and west limbs of the synclinorium with a Devono-Mississippian volcanic and sedimentary package forming the core (Table 2).

The lowermost unit outcropping on the property are quartzites and carbonates of the Lower Cambrian Atan Group. Conformably overlying the Atan Group to the east is the Cambro-Ordovician Kechika Group, a shale and slate sequence with some argillaceous sections. The Kechika Group is conformably overlain to the east by Ordovician and Silurian carbonate rocks of the Sandpile Group and Middle to Upper Devonian carbonate rocks of the McDame Group. A thrust fault is proposed between McDame Group rocks and Devonian-Mississippian volcano-sedimentary rocks of the Sylvester Group.

To the west the quartzite unit of the Atan Group is in contact with Cretaceous intrusive rocks of the Cassiar Batholith.

Strikes of N20^{o}E to N20^{o}W and dips of from 30° to 70° east are consistent across the property for all rock units; minor variations caused by folding and faulting occur locally.

Contacts between the various rock units are considered to be regionally conformable while faulted contacts are interpreted between units within the project area. This may be due to movement along the contact planes during the formation of the synclinorium. The lithologies are transected by several major east-west trending and northwest-southeast trending strike slip faults and local splays.

Pb, Zn, Ag, Sn mineralization is localized proximal to east-west structural zones as replacement bodies hosted in the Atan Carbonate Member and are considered to be genetically related to MoS_2 bearing intrusive phases of the Cassiar Batholith outcropping immediately to the west of the property.

Cu/Zn mineralization occurs at the contact between Sylvester Group cherty argillites and andesite-dacite pyroclastic volcanic rocks.

TABLE 2

TABLE OF FORMATIONS

JURASSIC AND CRETACEOUS

1. CASSIAR batholith - Leucocratic [illegible] pink to grey quartz-monzonite. Fine to medium grained with some quartz-feldspar porphyritic sections. Well jointed, fractured with some quartz, fluorite, sericite, beryl fracture fillings. Trace molybdenite.

UPPER DEVONIAN AND LOWER MISSISSIPPIAN

2. SYLVESTER GROUP

2A. BASALT AND ANDESITE - dark green, grey green, fine to medium grained, mostly flow rocks with some tuff (2A-T), agglomerate (2A-AGG), breccia (2A-BX), and pillows (2A-P). The massive flow rocks have positive fractures with chlorite or laumontite. Pyrite occurs as minor disseminations.

2B. DACITE - light grey green, fine and medium grained. Mostly lapilli size pyroclastic (2B-L) and breccia or pillow fragments (2B-BX) or as fine grained possible welded tuff (2B-T); containing disseminated chalcocite and lesser chalcopyrite near the Long Creek showing.

2C. DIORITE - dark green, medium to coarse grained also as dykes and sills within 2A.

2D. ARGILLITE - Black and grey-black, laminated to finely bedded to massive; cherty sections and interbeds. Graphitic and sometimes pyritic minor grit or micro-conglomerate interbeds. Shale and Slate, and Limestone.

MIDDLE AND UPPER DEVONIAN

3. McDAME GROUP

3A. DOLOMITIC SANDSTONE, SANDSTONE, CHERT, QUARTZITE - Blue-grey, grey, finely bedded to laminated. Interbeds and laminations of Quartzite and Chert.

ORDOVICIAN, SILURIAN AND (?) DEVONIAN

4. SANDPILE GROUP

4A. LIMESTONE - Grey, light grey, and lesser grey-black, massive highly folded and contorted, sometimes fissile. Recrystallized quartz veining throughout.

CAMBRIAN AND ORDOVICIAN

5. KECHIKA GROUP

5A. ARGILLITE, SHALE, SLATE - black to grey-black; mostly argillite with a pervasive wild slatey cleavage, some sections of shale and slate; cherty and calcareous sections throughout, laminated to bedded, pyrite occurs as fine disseminations up to 1% and as fine streaks.

5B. PHYLLITE - black, friable, carbonaceous, with minor pyrite.

5C. ARGILLACEOUS LIMESTONE - grey-black, massive, with argillite and shale fragments.

CAMBRIAN

LOWER CAMBRIAN

6. ATAN GROUP

6A. LIMESTONE - blue-grey to dark grey, laminated to well-bedded to massive, with flaggy patches and minor fragmental or breccia sections (6A-BX).

6B. RECRYSTALLIZED LIMESTONE (MARBLE) - buff, white, massive and as stringers and patches in 2A, large rhombohedric crystals.

6C. DOLOMITE - yellow, buff, brown, rose, crystalline, massive, with some friable sections, minor pyritohedrons in the crystalline portions.

6D. QUARTZITE - maroon, green, brown, and tan, well-bedded with cross bedded sections, pyrite and lesser pyrrhotite as disseminations and stringers.

6E. HORNFELSIC QUARTZITE - maroon, green, buff, and brown; pure quartzite beds are crystalline, less pure beds are schistose and contain andalusite patches; chlorite clots occur in the chlorite-rich green beds; more abundant pyrite and pyrrhotite than in 2D as stringers and scales along fracture surfaces and minor massive banded pyrite-pyrrhotite.

6F. SHALE AND SLATE - black, grey, and buff, laminated, pyritic, and carbonaceous, with some calcareous interbeds.

NO AGE

7. QUARTZ VEINING

Massive white "Bull Quartz", sections of hackly graphitic quartz and vuggy quartz with tetrahedrite, chalcopyrite, and pyrite. Contacts are carbonatized with ankerite.

8. INTERMEDIATE DYKE

3.2 Lithology

3.2.1 Lower Cambrian

3.2.1.1 Atan Group

The Atan Group attains a maximum thickness of 1,000 metres over its regional exposure. Within the project area, the Atan Group appears to be no more than 500 metres thick. The group comprises limestone, dolomite, quartzite, shale, slate, siltstone, and minor argillite.

3.2.1.1.1 Atan Group - Lower Quartzite Member

Compositionally the quartzite varies from pure quartzite to one in which an argillaceous component forms the bulk of the rock. The quartzite is thickly bedded in its lower section grading upward into thinly bedded to crossbedded to laminated sections at the top of the section. Interbeds can be tan, rose, white, maroon, and green. The fine grained, green, chloritic beds predominant in the basal section. The argillaceous component increases toward the top of the sections where there are interbeds up to 10 cm thick between quartzite beds.

Pyrite and pyrrhotite are common throughout the quartzite section, occurring as disseminations, stringers, platy partings along bedding surfaces, and as disseminations and clots in chloritic patches.

Where the quartzite unit is in contact with the intrusive rocks, along the western border of the property, it is severely hornfelsed. The hornfelsic quartzite is distinguished by recrystallization of the purer quartzite beds, the development of andalusite, chlorite, and biotite in the more argillaceous beds, and the development of micaceous-andalusite schists in the dominantly argillaceous beds. Pyrite, pyrrhotite and sporadic chalcopyrite content also increase with the degree of hornfelsing to the point where conformable, concise lenses of mainly pyrite are formed within the quartzite along the immediate contact with the intrusive. The increase in pyrite-pyrrhotite is especially notable in the green chloritic beds.

A section of bleached siltstone - argillite was noted along the extreme eastern contact with the intrusive with remnant cubic pyrite up to 5 mm.

The only observed lithological contact between the Atan Quartzite Member and the overlying Atan Carbonate Member lies within Granite Creek on Grid 79-1. The contact is gradational over a 10 metre section with laminated interbeds of argillaceous quartzite in laminated blue-grey to light grey siliceous limestone grading into massive banded limestone. Other contacts on the property between the quartzite

and the carbonate are zones faulting and brecciation.

3.2.1.1.2 Atan Group - Upper Carbonate Member

The carbonate unit of the Atan Group is composed of laminated to thickly bedded to massive blue-grey to dark grey limestones, buff, pink, and light grey dolomite, massive and fine grained buff colored marble, and minor intercalations of quartzite, shale and slate.

Near the contact with the underlying quartzite unit the limestone is blue-grey to dark grey laminated with intercalated argillaceous quartzites. One breccia section was noted near the contact. Throughout most of the section the limestone is thickly bedded to massive with intermittent flaggy portions.

Dolomite occurs as yellow, buff, brown and rose in small and large scale patches in structural zones within the limestone. The pinkish sections are due to the presence of rhodochrosite as local stringers and patches along with chlorite and tremolite in the more altered and broken sections. Locally within more altered sections, dark brown sphalerite crystals are lightly dispersed along hairline fractures.

Marble occurs as irregular patches within the limestone. Some areas are massive, consisting of mostly calcite crystals 2 - 5 mm in size, weathering in places to calcite sand. The marble can also be fine grained and well indurated and sometimes siliceous. Fine grained marble has also weathered to a sandy material in some areas.

Calcite "veins" up to 1 cm thick occur as swarms shot throughout highly broken unaltered limestone.

A large area of the limestone has also been totally altered to tremolite near the Pant Zone. This may be a thermal metamorphic effect of a shallow cupola off the main batholith underlying the altered area. Some minor quartz veining and trace sphalerite was also noted associated with the tremolite zone.

Silver-lead-zinc mineralization is emplaced as irregular replacement shoots along east-west structural zones within the Atan Carbonate Unit. The structures appear to be tensional features possibly related to the intrusive body to the west. Locally, the replacement bodies are conformable but are mostly confined to the structural zone. Galena with a silver-lead ratio of approximately 1:1 and sphalerite comprise the bulk mineralogy of the showings. Gangue material is usually siderite, carbonate, tremolite and silica with varying quantities of pyrolusite. Fine grained cassiterite is associated with arsenopyrite in some showings. Pyrrhotite, pyrite, and

magnetite also occur in varying quantities within the mineralized showings. Barren pyrite-pyrrhotite, pyrite, and pyrrhotite massive sulphide bodies also replace the limestone irregularly along the structural zones. The limestone is universally altered to dolomite proximal to the sulphide bodies. Mineralization is sometimes spatially related to basic dykes intruded along the structures.

The mineralized shoots vary in thickness from several centimetres up to 7 metres. Diamond drilling has shown that the mineralization can achieve volumes of up to a few hundred thousand tonnes with average grades of 171 gram/tonne Ag, 5% Pb, and 4% Zn with trace Au. Tin distribution is erratic and is always associated wtih arsenopyrite.

3.2.2 Cambrian and Ordovician

3.2.2.1 Kechika Group

The Kechika Group is dominantly a dark grey to black weathering sequence of argillite, cherty argillite, carbonaceous argillite, calcareous argillite and minor dark grey friable carbonate. The argillite is thinly bedded to laminated with a pervasive slatey cleavage. The rocks appear tightly folded in places.

While a conformable contact with the underlying Atan Group is presumed, within the project area the contact is a fault zone.

Disseminated pyrite up to several percent occurs throughout the sequence. Some of the pyrite occurs along laminations.

A faulted zone defines the upper contact of the Kechika Group with the overlying Sandpile Group.

3.2.3 Ordovician and Silurian

3.2.3.1 Sandpile Group

Within the project area the Sandpile Group is a distinctive sequence of laminated light grey to grey dolomite and dolomitic sandstone with local interbeds of dark grey quartzite. Bedding is generally laminated to thinly bedded with a few dolomite beds up to 1 metre thick.

The Sandpile Group appears to be slightly folded.

A fault is interpreted between the Sandpile Group and the overlying McDame Group.

3.2.4 Middle and Upper Devonian

3.2.4.1 McDame Group

Dark grey dolomite and limestone constitute the McDame Group. The group is well bedded with thicknesses of from several centimetres to one metre for individual beds. Seams of white chert and chert nodules are common throughout.

Within the project area the McDame is highly folded and contorted with breccia sections. The contact with the overlying Sylvester Group is faulted.

3.2.5 Devonian - Mississippian

3.2.5.1 Sylvester Group

The Sylvester Group is a sequence of intercalated basic to intermediate volcanic flows and pyroclastics, argillite and minor limestone. The Group occupies the core of the McDame Synclinorium.

3.2.5.1.1 Sylvester Group - Volcanic Unit

The volcanic unit of the McDame Group is dominantly basalt to andesite with horizons of dacite. Flow rocks are the predominant lithology, with thick intercalated horizons of fine grained tuff. The pyroclastic varieties are mostly intermediate in composition. Pillowed sections and pillow breccia sections of limited extent were also noted.

The flow rocks are massive, fine to medium grained, and sometimes porphyritic. Some of the fine grained flows may be tuff horizons. Pyroxene and to a lesser degree plagioclase make up the porphyritic phase. A common characteristic of the fine grained flows and tuffs are networks of hairline fractures filled with chlorite or epidote.

3.2.5.1.2 Sylvester Group - Argillite Member

Intercalated within the volcanic rocks are laminated to thinly bedded cherty argillites, calcareous argillites and graphitic argillites. They are light grey to grey-black to black with minor interbeds of grey-green tuff. A medium grained pyritic "grit" is present in some sections.

Exposed along Lang Creek is a Cu/Zn massive sulphide body at the contact between a pyritic cherty argillite and an intermediate tuff horizon. The mineralization appears to be a conformable body of chalcopyrite, chalcocite, and pyrite. The tuff horizon is stained with malachite and contains disseminated chalcopyrite and chalcocite. Past diamond drilling outlined 27,000 tonnes of 1.2% Cu and 0.9% Zn.

3.2.6 Cretaceous

3.2.6.1 Cassiar Batholith

A porphyritic quartz monzonite phase of the Cassiar Stock outcrops on the south and northwest portions of the property. The lithology to the southwest is mainly a light grey to grey biotite quartz monzonite grading into a pink porphyritic quartz monzonite to the east at the contact. Phenocrysts are mainly plagioclase and microcline feldspar. The rock is locally kaolinized and sericitized with some pyrite. Fracture fillings of quartz, green muscovite and light purple fluorite occur locally within the quartz monzonite and sometimes contain molybdenite. Aplite dykes occur along the contact with the sedimentary rocks. To the northwest, the intrusive is a quartz monzonite porphyry, pinkish in color, with mantled plagioclase up to 2 cm. An area of pegmatite appearing as a small dome approximately 2 metres across and a quartz vein or dyke approximately 0.5 of a metre thick peak contains rosettes of molybdenite.

A pervasive jointing pattern striking roughly east-west and dipping shallowly to the north is present throughout the intrusive.

Along the southwest contact with the Atan Group sediments immediately northwest of the Alta 8 Claim, are garnet-diopside, garnet-actinolite, skarn lenses and massive pyrite magnetite replacement bodies within dolomitized limestone. The skarns contain traces of disseminated scheelite while the pyrite bodies are barren.

Within the project area the contact of the batholith is generally flat lying in the southwest to vertical in the northwest.

3.2.7 Quartz Veins and Greenstone Dykes

An extensive zone of massive quartz veins outcrops within the Reo Claim Group. The quartz is exposed for approximately 300 metres along a cat road occurring as veins of up to 5 metres thick emplaced in a carbonatized zone within Sylvester Group volcanic rocks. The quartz varies from massive white "bull" quartz to sheared, graphitic quartz to massive vuggy quartz with tetrahedrite and chalcopyrite. Visible gold has been reported in the tetrahedrite-bearing quartz. Soil samples taken along the cat road in 1979 ran from 100's of ppb to a high of 3,600 ppb. The veins strike approximately north-south and appear to have an almost vertical dip.

Quartz veins also occur along the batholith contact and within Atan sediments proximal to the contact. These veins are small and discontinuous and are unmineralized.

East-west striking greenstone dykes irregularly crosscut all the lithologies on the property. The dykes are dark green to light grey

in color and fine grained and sometimes porphyritic. The phenocrysts vary from euhedral plagioclase up to 1 cm in size, rounded knots of pink k-feldspar, and rounded, fractured, quartz phenocrysts up to 5 mm in size. Some of the dykes carry disseminated pyrite. Thickness varies from 0.5 of a metre to 2 metres. The largest dyke occurs with Pb/Zn/Ag mineralization along an east-west structure on the Magno Property.

4. STRUCTURE

Regionally, the rocks underlying the Cassiar Project fall along the western margin of the McDame Synclinorium and are considered to be a conformable sequence. However, within the project area, faulted contacts were observed between all the rock units which may be due to movement related to the formation of the synclinorium.

Northwest-southeast strikes and easterly dips are consistent across the property with local variation attributed to internal folding and faulting.

Vertical east-west trending fault zones are hosts for Pb/Zn/Ag replacement mineralization and to a lesser degree fault zones trending approximately N160°E. The east-west fault system is the most prominant structural feature. This east-west trend is also reflected within the intrusive rocks by a pervasive jointing system trending N70°E with steep dips to the north.

5. GRID GEOLOGY

5.1 Grid 79-1 Extension

An 11 kilometre extension to Grid 79-1 was cut up Granite Creek. The grid extension is underlain by the Atan Group Quartzites and the Cassiar Stock toward the south end of the grid (Figure 3).

Geological mapping failed to locate any new showings or areas of outcrop as the grid extension is covered by glacial till and talus.

5.2 Reo Grid - Grid 80-1

A 12 kilometre grid was cut over gold bearing quartz vein terrain underlying the Reo claim. Initially, a 3.5 km grid was cut over the area with known gold bearing quartz veins, this area underlies lines 0+00 through 6+00E. A second grid was cut west of the first grid to cover terrains that may be potential hosts for the gold bearing quartz veins, lines 1+00W to 10+00W (Figure 4).

Past work on the Reo claim had uncovered an extensive area at quartz veining, this area lies immediately south of the baseline between lines 1+00E and 4+00E. The veins are up to 5 metres thick and are emplaced along carbonatized zones within andesites of the Sylvester Group. Carbonatized zones carry sporadic mariposite. The quartz varies from massive white "bull quartz" to sheared quartz with graphite along fracture surfaces and vug linings and massive vuggy quartz containing tetrahedrite and chalcopyrite.

The area underlain by lines 1+00W through 10+00W is covered by glacial till, outcrop density is about 2%. Two quartz zones within Sylvester Group volcanics were noted. These outcroppings are both of massive bull quartz with some pyrite.

5.3 Lang Creek Grid, Grid 80-2

Outcrop on the Lang Creek Grid is restricted to bank exposures along Lang Creek, and to road cuts and trenches scattered across the grid (Figure 8).

The grid is underlain by rocks of the Sylvester Group and are dominantly andesitic volcanic rocks with intercalated lenses of argillite.

The volcanic rocks are a medium green to apple-green color. Grain size varies from fine to medium grained. The fine grained rocks are mostly tuffs and the medium grained rocks are flows and pillowed flows with minor flow breccias.

The argillites form lenses and thin horizons within the volcanic rocks. The argillites are black, finely laminated with up to 1% disseminated pyrite. Horizons of cherty argillite and grit are also present.

The Lang Creek Cu/Zn body is situated proximal to line 2+00S at the baseline along Lang Creek. The showing appears as a possibly stratabound body at the contact between a pyritic cherty argillite and an intermediate tuff horizon. The mineralization is of chalcopyrite, chalcocite, and pyrite. The tuff horizon is stained with malachite and contains disseminated chalcopyrite and chalcocite.

All rocks display a strong foliation parallel to bedding. Some chlorite alteration is present and manganese staining is common.

6. GEOCHEMISTRY

6.1 Geochemistry of the Reo Grid, Grid 80-1

A 3.5 kilometre grid was cut over the known gold quartz vein area of the Reo Claim and a copper, silver, gold geochemical survey was run. Samples were taken of the B_1 soil horizon were possible as soil cover on the grid is quite variable and a number of cut roads cross the grid. Kraft bags were used to package the sample and were half-filled. Samples were taken at 25 metre stations (Figures 6, 7, 8).

A coincident copper-silver-gold anomaly was outlined in a 100 x 300 metre area between lines 1+00E and 3+00E near the baseline. The outer contour of the area has a 250 ppb cut-off.

An 8.5 kilometre extension was cut on the western edge of the grid, lines 1+00W to 10+00W. A gold geochemical survey was run over the area and outlined isolated anomalies in the 50 ppm range. The anomalies are of a lower magnitude than the grid area to the east and appear to be unrelated.

6.2 Bright Geochemistry

A reconnaissance Mo geochemical survey was run over the Bright 3, 4, 5, 6 claims. Samples taken were from stream silts and contour B_1 soils (Figure 10).

No significant anomalies were outlined. A few sub-anomalous values in the 15 - 25 ppm range were located and warrent some limited follow-up.

7. DIAMOND DRILLING

Diamond drilling was conducted in two phases: the first phase began June 15 and terminated June 30, the second phase began August 21 and terminated September 2. Seven holes were drilled for a total of 508 metres (Table 3).

Five holes were drilled on Grid 79-1 to test magnetic and I.P. anomalies generated in 1979. The target in this case was Ag-Pb-Zn mineralization of the D-Zone and Magno Zone type.

Two holes were drilled on Grid 79-4 to test the Pant Showing and the faulted contact between the Atan and Kechika groups for possible tin mineralization.

7.1 DDH 80-1

DDH 80-1 was collared on line 12+00S 2+00W on Grid 79-1, approximately 50 metres north of the Granite Creek Showing (Figure 10). The hole was drilled at 300° true at a 45° angle to a depth of 104.5 metres.

The hole was drilled to test the lateral downdip strike extension of the Granite Creek Showing. Massive, white to cream colored, recrystallized limestone was intersected in two zones. No massive sulphides were encountered, less than 1% disseminated pyrite and one 5 mm pyrrhotite veinlet were the only sulphides intersected.

Since massive recrystallized limestone is universally associated with the Ag-Pb-Zn replacements, the drill hole is interpreted to have penetrated the unmineralized flank of the showing and to have defined the northern limit of the mineralization.

7.2 DDH 80-2

DDH 80-2 was collared at L12+12 S2+25W immediately above the Granite Creek Showing (Figure 11). The hole was drilled at 285° true at a 45° angle to a depth of 56.7 metres.

A zone of massive recrystallized limestone was intersected containing 3.02 metres of massive sphalerite, pyrrhotite, pyrite, and trace galena assaying 14% Zn, 11.66 grams/tonne Ag, 0.1% Pb, and 0.03% Sn.

The hole was drilled approximately 12 metres above the showing. The pyrrhotite content of the intersection was sufficient to explain the two station magnetic anomaly associated with the showing.

TABLE 3

1980 CASSIAR DRILLING

DRILL HOLE NUMBER	GRID LOCATION	AZIMUTH	DIP	DRILLED DEPTH	TARGET	RESULTS	ASSAY NUMBER	INTERVAL (METRES)	SPb	% Zn	ASSAY VALUE % Sn	% Cu	% Mo	Au oz/t
DDH 80-1	Grid 79-1: L12+00S 2+00W	300°	-45°	104.6 m	Possible strike extension of the Granite Creek Showing	Intersected two zones of massive recrystallized limestone, thought to be the host for the showing but no mineralization	3091P-80-1-1	99.4 - 100.4 (1.0)	Nil	Nil	Nil			
							3091P-80-1-2	100.4 - 101.4 (1.0)	Nil	Nil	Nil			
							3091P-80-1-3	101.4 - 102.0 (0.6)	Nil	Nil	Nil			
DDH 80-2	Grid 79-1: L12+12S 3+25W	285°	-45°	56.7 m	Drilled under the Granite Creek Showing to test the downdip extent.	Intersected 4.6 m of massive sulphide within a zone of massive recrystallized limestone.(sphalerite, pyrite, pyrrhotite, galena)	3091P-80-2-1	37.0 - 42.3 (4.6)	0.1	14	0.03			11.00
DDH 80-3	Grid 79-1: L12+00S 8+30W	300°	-45°	50.3 m	A small isolated magnetic high and local I.P. anomaly.	Intersected Atan quartzites (hornfelsic) with pyrite & pyrrhotite.								
DDH 80-4	Grid 79-1: L13+00S 3+30E	296°	-60°	114.6 m	A deep magnetic anomaly within the Atan Carbonates.	Intersected Atan quartzites intercalated in Atan Carbonates with pyrite and pyrrhotite.	3091P-80-4-1	85.3 - 86.6 (1.3)			<0.01			
							3091P-80-4-2	86.6 - 87.5 (0.9)			<0.01			
							3091P-80-4-3	93.0 - 94.5 (1.5)			0.01			
							3091P-80-4-4	94.5 - 96.0 (1.5)			<0.01			
							3091P-80-4-5	96.0 - 97.5 (1.5)			<0.01			
							3091P-80-4-6	97.5 - 99.0 (1.5)			<0.01			
							3091P-80-4-7	99.0 - 100.5 (1.5)			<0.01			
							3091P-80-4-8	100.5 - 102.0 (1.5)			<0.01			
							3091P-80-4-9	102.0 - 103.6 (1.5)			<0.01			
							3091P-80-4-10	103.6 - 105.2 (1.6)			<0.01			
							3091P-80-4-11	105.2 - 106.5 (1.4)			<0.01			
							3091P-80-4-12	106.6 - 108.2 (1.6)			<0.01			
DDH 80-5	Grid 79-4: 1+20E 5.4[illegible]+1	280°	-45°	102.7 m	The Atan-Kechika Contact and associated structural zone with magnetic high and I.P. anomaly.	Intersected a strong structural zone with a pyrite horizon within graphitic/pyritic Kechika argillites. Dip direction of structure not known.	3091P-80-5-1	81.9 - 82.1 (0.2)			0.01			
							3091P-80-5-2	83.6 - 83.7 (0.1)			0.01			
							3091P-80-5-3	85.4 - 85.6 (0.2)			0.01			
							3091P-80-5-4	85.9 - 86.0 (0.1)			<0.01			
							3091P-80-5-5	86.4 - 86.5 (0.1)			<0.01			
							3091P-80-5-6	86.6 - 86.7 (0.1)			0.01			
DDH 80-6	Grid 79-4: L6+05N 1+00W	300°	-45°	88.7 m	Drilled under the Pent Showing to test the downdip extent.	Intersected two massive sulphide bands within a strong structural zone; footwall quartz vein with galena. Dip direction of structure unknown.	3091P-80-6-1	12.2 - 13.1 (0.9)			0.04			
							3091P-80-6-2	16.8 - 17.0 (0.2)	<0.01		0.61			46.0
							3091P-80-6-3	17.0 - 17.6 (0.6)	0.22	0.74	0.10	0.08		49.6
							3091P-80-6-4	17.0 - 18.2 (0.4)	2.20					296.2
DDH 80-7	Grid 79-1: L8+00S 6+41E	304°	-45°	90.5 m	The Atan Kechika Contact and associated structural zone with coincident mag and I.P. anomaly.	Intersected graphite/pyritic Kechika argillites.								

7.3 DDH 80-3

DDH 80-3 was collared on line 12+00 8+30W on Grid 79-1 (Figure 11). The hole was drilled at 300° true at a 45° angle to a depth of 50.3 metres.

DDH 80-3 was drilled to test an isolated magnetic anomaly within Atan Group Quartzites, up to 2% disseminated pyrrhotite was encountered in hornfelsic quartzites.

7.4 DDH 80-4

DDH 80-4 was collared on line 12+00S 1+30E on Grid 79-1 (Figure 13). The hole was drilled at 296° true to a depth of 114.6 metres. Initially the hole was begun at a 45° angle, however the angle was steepened to 60° due to highly broken ground.

The hole was drilled to test a deep magnetic anomaly; up to 1% pyrrhotite within unhornfelsed Atan Quartzites intercalated with limestone was intersected.

7.5 DDH 80-5

DDH 80-5 was collared on L1+20E of Grid 79-4 (Figure 14). The hole was drilled at 280° true at -45° to a depth of 102.7 m.

The hole was drilled to test the Atan Kechika contact downslope from the Pant Showing with an associated magnetic and I.P. anomaly. A strong structural zone was intersected along with graphitic and pyritic Kechika Argillites and a thin sulphide lense within carbonate. The sulphide returned nill tin values.

The fault zone is considered to be the same associated with the Pant Showing.

7.6 DDH 80-6

DDH 80-6 was drilled on L 6+05N 1+00W on Grid 79-4 at 300° true and -45° to a depth of 88.7 m (Figure 15).

The hole was drilled to test the Pant Showing. Two zones of massive sulphide within carbonate were encountered with a faulted footwall containing a galena-bearing quartz vein.

The following assay results were recorded: 0.9 metres of 0.94% Sn, 0.2 metres of 0.61% Sn, < 0.01% Pb, 16.5 grams/tonne Ag, 0.6 metres of 0.08%

Cu, 0.22% Pb, 0.74% Zn, 0.10% Sn, 49 grams/tonne Ag, 0.4 metres of 2.28% Pb and 296.2 grams/tonne Ag.

DDH 80-6 showed the Pant Showing has a downdip extent and that the grade remains at approximately 1% Sn.

7.7 DDH 80-7

DDH 80-7 was collared on L 8+00S 6+41E of Grid 79-1 and drilled at 304° true at -45° to a depth of 90.5 m (Figure 15).

DDH 80-7 was drilled to test a coincident mag and I.P. anomaly along the Atan - Kechika Contact. The hole intersected graphitic/pyritic argillites of the Kechika Group.

8. GEOPHYSICS

8.1 Terms of Reference

In July, 1980, EM16R and VLF-EM surveys were run over the Reo grid for the purpose of delineating quartz veins known to be a potential source of gold in the area, and help further understand the grid geology. Seven lines totalling 3.5 km in length were surveyed. Each line was 500 m long and spacing between the lines was 100 m. The measurement interval was normally 25 m.

A Geonics EM16 unit was used to do the VLF-EM survey using the Maryland transmitter (NSS). The same unit was used with a resistivity attachment (EM16R) to measure the apparent resistivity and phase difference between the orthogonal electric (E) and magnetic (H) field components by utilizing the Seattle transmitter (NLK). The EM16R survey was done in E perpendicular (TM) mode.

The main reason behind measuring apparent resistivities was the expectation that the quartz veins would be more resistive than the host medium and would stand out as high resistivity anomalies. VLF-EM survey would detect conductive sulphides which might be associated with quartz veins in minor amounts.

Shootback EM surveys were conducted over Lang Creek grid and the 1980 extension of grid 79-1. Four lines which were 200 metres apart and totalling 2.7 km in length were surveyed in the extension grid 79-1. Length of lines surveyed in the Lang Creek grid totalled approximately 13 km. The first five northerly lines in the Lang Creek grid were 100 m apart and they covered an area where most of the previous drilling activity on the Lang Creek Showing had taken place. The remaining four lines to the south were 400 m apart and they were surveyed mainly for reconnaissance purposes.

Separation between the Shootback EM coils was 100 m. Horizontal transmit mode was used. Tilt angles were measured every 25 m at frequencies of 390 Hz and 1830 Hz.

8.2 Reo Grid Results and Conclusions

Apparent resistivity and phase measurements are presented as contour maps and VLF-EM tilt angle and ellipticity measurements are displayed as profiles (Figures 16, 17, 18). The geological features which are interpreted from the geophysical data are superimposed on the contour maps.

During the surveys, two types of quartz veining was observed over outcrops. One type seemed quite undisturbed and massive, and a second type was sheared and broken, and contained clay seams. The sheared type was more

widespread in the area and did not seem to respond to the techniques employed. The conclusion drawn from this is that the conductivity contrast between the sheared quartz veins and surrounding volcanic rocks is very small or negligible. The undisturbed type of quartz veins were observed on outcrops in the vicinity of some of the apparent resistivity peaks, therefore it is believed that some of the high resistivity anomalies were caused by the massive type of quartz veins.

Apparent resistivities drop to values less than 100 ohm-m near the south end of the grid from average values of 400 to 500 ohm-m observed in other parts of the grid. Tilt angle and phase readings were also anomalous over that area. Therefore, presence of a contact between some conductive sediments (e.g. shales) and more resistive volcanic rocks is inferred along the southern boundary of the grid.

All of the geophysical data point towards presence of a major discontinuity bisecting the grid diagonally in a northwesterly direction. This feature has been interpreted as a fault.

8.3 Grid 79 Extension - Lang Creek Grid results and Conclusions

No conductor was detected in the 1980 extension of grid 79-1. It is concluded that this area is underlain by resistive Atan carbonates and quartzites with no significant massive conductor (Figure 19).

A number of long strike length formational conductors paralleling the regional strike of sediments were detected in the Lang Creek grid. The width of the zone of low conductivity is approximately 800 to 1,000 m across the grid (eg. between 5W and 3E along L-0) (Figures 20, 21).

Numerous outcrops of argillaceous and volcanic rocks belonging to the Sylvester group have been noted over the conductive area. Some well defined individual anoamlies found in this broad conductive zone (eg. at 3E along L-3S) are attributed to the presence of graphitic or pyritic horizons within the argillites.

9. CONCLUSIONS

The 1980 diamond drilling program on Grid 79-1 tested all of the favourable geophysical anomalies generated in 1979. Magnetic anomalies were due to disseminated pyrrhotite in the Atan Quartzites. IP and shootback anomalies were due to graphitic and pyritic argillites of the Kechika Group. No new targets were generated on the Grid 79-1 extension.

Drilling on the Granite Creek Showing defined the potential of the mineralization. While high grade in zinc, the mineralization appears to be a small discontinuous pod or vein.

Shootback EM anomalies on the Lang Creek Grid are due to graphitic and pyritic argillites of the Sylvester Group. Geological mapping failed to locate additional Cu/Zn mineralization or favourable geology. No new targets worthy of further followup were generated on the Lang Creek Grid.

The drilling on Grid 79-4 proved the existence of a strong structural zone along the Atan Kechika contact associated with the Pant Showing. The drill hole directly beneath the Pant Showing intersected sulphide mineralization similar to the showing and outlined a minimal depth extent to the mineralization. Further work on the Pant Zone is necessary to further define the potential for additional tin mineralization.

A gold geochemical anomaly and coincident geophysical anomaly over outcroppings of sulphide-bearing quartz veins on the Reo Claim indicates a potential gold-bearing quartz system similar to the NuEnergy mine.

10. RECOMMENDATIONS

A 600 metre diamond drilling program is recommended in 1981 to further test the Pant tin zone and the Reo Zone quartz veins.

No additional work is recommended on the D-Zone or Magno Zone Ag/Pb/Zn bodies as past work has been sufficient to define the potential of the two zones and the potential for dramatically increasing the tonnage of the deposits is nil.

No further work is recommended on the Lang Creek Zone as there were no targets generated in 1980 that would suggest additional Cu/Zn mineralization. Past work on the showing appears to have adequately defined the size and extent of the deposit.

Additional mapping and prospecting of Bright 3, 4, 5, and 6 claims is recommended to follow-up the 1980 geochemistry.

11. QUALIFICATIONS OF AUTHOR

I, Christopher J. C. Bloomer, state that I am a geologist in Minerals Exploration of Shell Canada Resources Limited of Calgary, Alberta. I have obtained a B.Sc., '77 degree at the University of Toronto and have practiced my profession since graduation. I was directly involved with the work submitted here in this report.

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PROVINCE OF ONTARIO

APPENDIX I

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT		B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.: Grid 79-1

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates - June 1980

LOGGING:

ASSAYING: Chemex Labs, Calgary

LOGGED BY: H. Brown

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ. 300°	-45°	104.5 m

LANDMARKS: DDH Location: Grid 79-1 L12+00S 2+00 W

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	0.0-6.1	Overburden	
	6.1 -7.4	Limestone Dirty grey-white coarse crystaline Limestone interbanded by dark grey fine crystaline Limestone which has small zones of pyrrhotite, sphalerite, & odd pyrite Banding is at 90° with fractures also at 70°, 45°, and 20° Fractures often show slickensides with mineralization of Limonite & Hematite Coarse Limestone often shows vugs (up to 2 cm) Core is badly broken and very poor recovery	C.A. 80 - 90° throughout
	7.4-8.84	Limestone Bluish-grey medium grained Limestone interbanded with coarser grain white Lm (2 mm) banding at odd angles mainly 45° & 80° Some zones show marble-cake texture of white Limestone Fractures of 45° & 90° with some slickensides, with Hematite & Limonite	
	8.84 - 9.04	Marble Medium grained creamy-white No banding, fractures show slickensides (80°)	
	9.04 - 9.74	Limestone	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS: Lm - Limestone

SHEET INTERVAL: from..... to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ⊕
	9.04 - 9.74 (Cont'd)	Similar to 7.4 - 8.84 except a little darker Vugs along fractures comman & banding of white Limestone very abstract Fractures of 45° common with slickensides	
	9.74 - 12.30	Marble Fine grain creamy white Lm similar to 8.84 - 9.04 No banding except for zone (20 cm) of bluish-grey Lm. (Similar to 7.4 - 8.84) Fractures of 45° common, no additional mineralization - badly broken core	
	12.30 - 17.90	Limestone Bluish-grey medium grain Lm similar to 7.4 - 8.89 with banding of 45° and 10° At 17.2 brcciated zone for 30 cm fragments of .5 - 2.0 cm, tend to be elongated along 30° plane, also disseminated pyrite Last 2.3 m is of very dark fine grain Lm with little or no bedding except for zone of creamy white coarse grain Lm at an angle of 45° & 20 cm thick Disseminated pyrite found throughout section	
	17.90 - 30.30	Megarecrystaline Limestone Extremely coarse grain, clear white Very consistant, no banding	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT:

SUR SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ... TO ...	INT. IN FT.	REC. OVERY	ASSAY RESULTS					
	17.90 - 30.30 (Cont'd)	Fractures of 30° - 40° often with Limonite as mineralization exceptions											
	27.90 - 30.30	Banding of bluish-grey & white types (45° & 60°)											
		Fractures of 30° - 40° no mineralization but some slickensides											
	28.65	Zone of thick band of Calcite, large clear crystals, thickness 20 cm.											
	30.30 - 32.90	Limestone											
		Greyish-black blending to white											
		Fine grain, at 31.90, band of white Lm at 45° of 1 cm											
		Fractures of 50 - 60° some with slickensides & Limonite staining											
	32.90 - 41.00	Dolomite (Sucrosic Dolomite)											
		Fine grain, creamy white to yellow, silt-like dolomite											
		Iron stain with Limonite in variable angle fractures											
		Banding occurs between soft yellow silty dolomite to harder white silty dolomite.											
		Vugs occur variably throughout section mainly along fractures											
		Disseminated pyrite is found throughtout section.											

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from ... to ...

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Lithotog)	Structural Angle SYMBOL C.A./Dip @
		At 39.00 for 20 cm is a brecciated zone with Hematite & extremely fractured	39.0 - 39.2 Fault
	41.00 - 63.45	Limestone Fine grain bluish grey silty Limestone in bands with white-grey more calcite-rich Limestone	
		Banding is mostly at 90° except at 44.60, 47.80, 53.70, 58.50 where .5 cm bands of white Lm at - 0 - 20° int the other bands	C.A. - 90°
		Small scapolite (1-2mm) crystals are found in bands of bluish-grey Lm at 42.90, 43.80	
		Disseminated pyrite is found throughout section found most common along fresh calcite filled fractures	
		Brecciated zones at 47.50, 51.00, has fragments up to 1.5 cm long, matrix is of white calcite-rich Limestone. .	
		Marble-cake texture chlorite & Pyrite veins @ 59.60 - 61.00	
		Fractures are of very high angle 70° & often filled with calcite.	
	63.45 - 76.00	Limestone Medium grain bluish-grey bands with medium grain white Limestone	
		Dark bands are thin (1 cm) compared to the white, bands at 90°.	C.A. - 90°
		Disseminated pyrite throughout except for veins of pyrite, Hematite, & chlorite from	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from..... to.....

MVN082V

SHELL CANADA LIMITED - MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
	63.45 - 76.00 (Cont'd)	from 65.00 - 65.59 Scapolite (.5 mm) & pyrite crystals found in concentrated zone (10 cm) at 71.00 From 75.00 - 76.00 there is a marble-cake texture of black banded finer Lm in the medium grain white Lm. Fractures of general high angle (70^0) with pyrite & calcite often associated.											
	76.00 - 77.00	<u>Megacrystaline Limestone</u> Identical to 17.90 - 30.30 Coarse grain, clear white Unfractured with disseminated pyrite											
	77.00 - 87.70	<u>Limestone</u> Same as 63.95 = 76.00 except dark bands more predominant Banding is also more irregular At 80.80 - 81.00 there is a band of Megacrystaline Lm similar to 17.90 - 30.30 Fractures are of lower angle 40 - 70^0 with one at 0^0 found at 79.00 which is filled with calcite, all fractures tend to be filled with calcite. Brecciated zone at 82.20 has fragments up to 2 cm, pyrite very abundant matrix white fine grain Lm.											

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-1

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS %Pb	%Zn	%Sn			
	77.00 - 87.70 (Cont'd)	At 82.30 - 83.00 a very thick zone of bluish-grey Lm with abundant pyrite At 85.50 for 20 cm is a multiple fracture zone (fractures 45° which gives a breccia type zone with up to 1 cm fragments, disseminated pyrite 86.50 for 20 cm is another zone of megacrystaline Lm similar to other zones found in this formation											
	87.70 - 104.55	Megacrystaline Limestone Similar to 17.90 - 30.30 Extremely coarse grain, clear white except for zones like 75.27 - 101.70 which is bluish-grey medium grained marble-cake texture which is banded with the coarser white Limestone. This bluish-grey Lm tends to have abundant pyrite veins is especially common along fractures The bands of white Lm are Fe stained & sometimes have pyrite (disseminated) along fractures Fractures tend to be medium to high angle 45° - 70° Within thick pyrite veins (ie. 99.57, 100.67, 101.20, 101.60) or veins of pyrrhotite scattered throughout the section E.O.H. 104.55 m		3091P-80-1-1	99.4 - 100.4	1.0	95	nil	nil	nil			
				3091P-80-1-2	100.4 - 101.4	1.0	95	nil	nil	nil			
				3091P-80-1-3	101.4 - 102.0	.6	95						

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from..... to.....

MVN082V

SHELL CANADA LIMITED - MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-2

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E W	M
		1/4	UNIT	B	No.	L	POR	
		N S	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates - June 1980

LOGGING:

ASSAYING: Chemex Labs (Calgary)

LOGGED BY: D. Parbery

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ. 285°	-45°	56.7 m

LANDMARKS: DDH Location: Grid 79-1 L12-12S 2+25W

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO	INT. IN ~~FT.~~ m	REC-OVERY	ASSAY RESULTS Ag oz/t	Zn%	Pb%	Sn%		
	0.0-6.1	Overburden											
	6.1-7.3	Dark grey-blue limestone with white calcite veins 20 - 40°											
	7.3-8.7	Broken Core - grey-blue Lst. w/ white, calcite veins & vugs											
	8.7-11	White-grey recrystallized Lst. w/ blue-grey Lst. patches & stringers. Limonite stained fractures 40 - 50° & 60 - 70°. Pyrite on a 20 - 30° fracture. Blue-grey Lst. in contact w/ white recrystallized Lst. at 40 - 50°	Core Angle Varies 50 - 60°										
	11-12.2	Brecciated blue-grey Lst. w/ white calcite veins 10 - 20° & 70 - 90°. Pyrite present.											
	12.2-17.6	White (marble) recrystallized Lst., coarse grained. Fractures show limonite coating. Fractures at 50 - 60°, 60 - 70°, 30 - 40°, 0 - 10°, 20 - 30°.		3091P-80-2-1	17.6 - 22.25	4.65	85	0.34	14.0	0.1	0.03		
	17.6 - 22.25	Mineralized zone, contact at 20 - 30°. Vugs present. Pyrrhotite & sphalerite & some pyrite present. Calcite patches present. Last 0.7 m Lst. patches abundant & large. Pyrite & pyrrhotite only.											
	22.25 - 23	Blue-grey Lst. w/ Pyrite, Pyrrhotite patches Pyrite, pyrrhotite with large patches of light blue Lst., several cm's.											
		Contact w/ blue-grey Lst. 20 - 30° Blue-grey Lst. with white recrystallized Lst. sections of 10 - 20 cm thickness. Contacts at 50 - 60°. Very thin pyrrhotite veins 10 - 20°.											
	23 - 24.2	White to Light blue-grey Lst. Limonite stained											

SYMBOLS AND ABBREVIATIONS: Lst. - Limestone, w/ - with All Units are Atan Group

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-2

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ●
		fractures 50 - 60°, 20 - 30°, 30 - 40°.	
	24.2 -	Dark blue-grey Lst. Banded appearance due to variation in color. Limonite stain 20 - 40° Patches (2 cm) & veinlets of white calcite present.	
	25.1 - 29.1	White to light blue-grey Lst. Stringers of green-blue Lst. present. Limonite stain on fractures 40 - 50°, 30 - 40° & 50 - 60°. Silty Lst. at 28 m.	
	29.1 - 29.85	Light blue-grey Lst. w/ limonite filled fractures 0 - 10°, 80 - 90°, 40 - 50°. White patches of Lst. several cm's long.	
	29.85 - 32	Blue-grey & grey-white Lst. alternating in patches. Limonite on fractures 20 - 30°, 50 - 60°, 10 - 20°. Stylolites present 90° to core axis.	
	32-33	Blue-grey Lst. w/ fractures 40 - 50°, 20 - 30°. Veins of Lst. 0.5 cm thick. 70 - 90°.	
	33-35	Blue-grey Lst. partially brecciated. Banded look due to color variations. Bands 90° to core axis. White calcite vein 80 - 90°. Vugs 0.5 - 0.8 cm diameter. Limonite stained fractures 30 - 40°, 40 - 50°, 60 - 70°	
	35 - 36	Light blue-grey Lst.. Limonite in fractures and veinlets.	
	36 - 41.8	Dark blue-grey Lst. w/ a "marbled" appearance, also somewhat banded. Bands are due to a color difference & are up to 1.5 cm thick at 90° to core axis. Some Lm stain on fractures, not common. Fractures frequently filled by white calcite. Patches of calcite (white)	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-2

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ⊕	SAMPLE No.	FROM ..... TO.....	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
		common up to several cm's in length. Fractures 50 - 60°, 80 - 90°, 40 - 50°, 20 - 40°, Some pyrite found in fractures in breccia. Fragments outlined by / cemented by a dark blue-black Lst.											
	41.8 - 42.9	White marble alternating w/ dark blue-grey Lst. Contact between units are 40 - 50°, 50 - 60° Blue-grey units contain fractures 30 - 40°, 70 - 80° w/ white calcite. Some Lm staining. 0.12 m of brecciated Lst.											
	42.9 - 45.1	Dark grey-blue Lst. w/ above mentioned banding Some brecciated sections w/ white calcite cement. Dark blue-black Lst. "blobs" common Fractures 80 - 90° and 40 - 50°. Bands of white calcite and 40 - 50° fractures w/ white calcite present both up to 1.5 cm thick. f.g. Pyrite present in irregular fractures.											
	45.1 - 49	Dark blue-grey Lst. with bandings as described above. Bands 70 - 90° to core axis. White calcite in veins & fractures 30 - 40°, 60 - 70° & 50 - 60° to C.A. Bands up to 2 cm thick somewhat "marbled" appearance. Light blue-grey Lst. occurs in sections up to 1.5 cm thick.											
	49 - 56.7	Banded dark blue-grey Lst. Bands 60 - 90° from C.A. Bands are alternating light & dark grey-blue Lst. Thin 1 mm white calcite veins & fracture filling 30 - 40°, 10 - 20°. Some limonite staining and f.g. disseminated pyrite on fractures.											
		E.O.H.											

SYMBOLS AND ABBREVIATIONS: Lm - Limonite, C.A. - Core Axis

SHEET INTERVAL: from.....to.....

MVN082V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-3

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E W	M
		1/4	UNIT	B	No.	L	POR	
		U N	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates - June 1980

LOGGING:

ASSAYING: Chemex Labs, Calgary

LOGGED BY: D. Parbery

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ. 300°	-45°	50.3 m

LANDMARKS: DDH Location: Grid 79-1 L12+00S 8+30W

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Lithologi)	Structural Angle SYMBOL C.A./Dip ⊕
	0 - 3	Overburden	
	3 - 15	Grey-green, brown thinly laminated quartzite Laminations at 60 - 80° to C.A. Thin /mm qtz. veins at 40 - 50°. Fractures at 10 - 20°, 50 - 60°, 60 - 70° and 20 - 30°. Brown colored sections 6 - 6.3 m, 11.3 - 11.4 m and 14.6 - 14.9 m contain biotite crystals 4 mm in diameter & poorly formed Some Lm staining on fractures	3 - 15 CA 60 - 80°
	15-27	As above - Core is broken Thin quartz veins 1 mm thick at 40 - 60°. Fractures at 40 - 50°, 50 - 60°, 60 - 70° & 20 - 30°, some w/ Lm staining. Biotite crystals in brown colored sections 16.5 - 16.7 m, 15.3 - 15.4 m, 17.4 - 17.6 m, 23.2 - 23.4 m, 23.9 - 24 m, 24.2 - 24.3 m. Gives a spotted appearance. Some pyrite & pyrrhotite in fractures (23.8m)	
	27-38.3	Grey brown & grey-green laminated quartzite Spotted sections due to biotite crystals, common. Fractures at 20 - 30°, 30 - 40°, 40 - 50°, 60 - 70° Thin (1 mm) white, calcite veins present	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS: All units are Atan Group. Quartzite is hornfelsic.

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-3

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		LI/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ●	SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
	27-38.3 (Cont'd)	(34 - 46 m) 20 - 40° From 35.5 - 37.5 m core appears brecciated due to great abundance of very thin (1 mm) quartz veinlets & cross-cutting fractures. Laminations slightly less well noticable than in previous sections. Pyrite in some fractures. Most noticeable in 28.8 - 30.4 m section w/ calcite.											
	38.3 50.3	Dark-grey finely laminated quartzite. Spotted (biotite) sections uncommon. Most noticeable at 38.3 - 39.4 m Very thin (1 mm) quartz veinlets occur at 30 - 40°, 40 - 50°, 60 - 70° Fractures common 60 - 70°, 70 - 80°, 50 - 60° Fractures w/ calcite 10 - 20°. Core is broken - 15%, good recovery Small (1n 1 mm) disseminated pyrite crystals in fractures. Pyrite increases in content towards end of hole (especially noted in last 4 - 5 m), as does purplish tinge to rock color. Two altered sections, 44.4-44.5 m & 49.2 - 49.35 m green color. 1st section contains a pyrite vein 30-40° & 3-4 mm thick w/ some calcite & a bright green mineral. Contacts 2/ Quartzite at 60 - 70°.											

SYMBOLS AND ABBREVIATIONS: SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-3

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ●
	E.O.H.	2nd section contains a quartz vein 20 - 30° and contacts quartzite at 60 - 70°	
		E.O.H.	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN082V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates

LOGGING:

ASSAYING: Chemex Labs

LOGGED BY: D. Parbery

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ. 296°	-60°	114.6 m

LANDMARKS: DDH Location: Grid 79-1 L13+00S 1+30E

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ●
	0 - 3	Casing & Overburden	
	3-17.4	Dark Blue-grey Lst w/ 2 sections of light grey blue lst, on, - = 5 m thick, the other 1 m thick.	
		Dark Lst has a 'marbled' appearance, brecciated in places w/ light colored Lst as fragments. (at 3.4 & 7.4 m)	
		Light colored Lst contains white/grey patches	
		Both types of Lst are fractured. Fractures (some w/ calcite) at 30 - 40°, 40 - 50°, 60 - 70°, & 70 - 80° to C.A.	
		Calcite Veins at 20 - 30°, 40 - 50°	3 - 17.4 m Core Angle 30 - 40°
		Core broken between 4 - 5 m	
		Small, 1 - 2 cm patches of light grey-blue Lst noticable throughout the dark Lst.	
		Some layering 30 - 40° at 11.7 - 11.9 m	
		Brecciation at 15.5 - 17.7 m	
		Mineralization of pyrrhotite at 17.35 m. <1%	
	17.4 - 18.7	Broken dark blue-black shale	
	18.7 - 22.	Dark blue-grey Lst with 2 quartzite sections, one 0.5 m thick at 18.7 - 19.2 and the other 1 m thick at 20.8 - 21.8 m	
		Quartzite is brown & thinly laminated. Laminations are 60 - 70° to C.A.	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS Sn%					
3091P-80-4-1	85.3 - 86.6	1.3	90	<0.01					
3091P-80-4-2	86.6 87.5	0.9	90	<0.01					
3091P-80-4-3	93 - 94.5	1.5	90	<0.01					
3091P-80-4-4	94.5 - 96.0	0.5	90	<0.01					
3091P-80-4-5	96.0-	1.5	90	<0.01					
3091P-80-4-6	97.5 - 99.0	1.5	90	<0.01					
3091P-80-4-7	99.0 100.5	1.5	90	<0.01					
3091P-80-4-8	100.5 - 102.0	1.5	90	<0.01					

SYMBOLS AND ABBREVIATIONS: w/ - with; Lst - Limestone; C.A. - Core Axis

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ⊕
	18.7-22 (Cont'd)	Occasional thin (0.5 - 1.5 cm) quartzite sections appear in the Lst at 50 - 60° contact and 60 - 70° contact.	
		Both Lst & quartzite have fractures at 50 - 70° to C.A.	
		Lst shows calcite veining (0.2 - 0.5 cm thick) 30 - 40°, 50 - 60°	
		Lst is brecciated.	
	22-28.1	Dark grey-blue Lst. w/ some brecciated & some dolomitic sections.	
		Lst and brecciated Lst contain calcite veins 0 - 10°, 30 - 40°, 50 - 60° from 0.3 - 2.0 cm thick.	
		Some chlorite present in brecciated section 22.8 - 23.3, m	
		Other brecciated section 26.3 - 26.9 m	
		Dolomitic Lst., 24.36 - 28.1 m	
	28.1 - 32.2	Broken core of mostly dark blue-grey dolomitic Lst. w/ some Lst.	
		Calcite veins present 40 - 50° to C.A. 0.2 - 0.5 cm thick, w/ disseminated pyrite	
	32.2 - 43.3 m	Dark blue-grey Lst. Brecciated and banded sections w/ abundant calcite veining - marbled appearance.	

SAMPLE No.	FROM ..... TO	INT. IN EST. m	REC-OVERY	ASSAY RESULTS Sn%					
3091P-80-4-9	102.0 - 103.6	1.6	90	<0.01					
3091P-80-4-10	103.6 - 105.2	1.6	90	<0.01					
3091P-80-4-11	105.2 106.6	1.4	90	<0.01					
3091P-80-4-12	106.6 108.2	1.4	90	<0.01					

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ⊕	SAMPLE No.	FROM ..... TO.....	INT. IN FT.	REC-OVERY	ASSAY RESULTS
	32.2 - 43.3 m (Cont'd)	Brecciated section 32.2 - 33 m and 37 - 37.6m Rest of core is laminated w/ laminations 40 - 60° to C.A. Laminations are fine, thin interlayered light & dark blue-grey Lst. Larger scale (2 cm - 10 cm) thick laminations are also seen. Calcite occurs on fractures, 40 - 50° and 50 - 60° and in veins 0.1 - 0.8 cm thick at 20 - 30°, 30 - 40°, 40 - 50°, 60 - 70° to C.A. Veining occurs singly and in a network. Last 2 m not banded/laminated.						
	43.3 - 77.8 m	Dark blue-grey Lst. laminations as mentioned above. Calcite veining common. Some sections brecciated. White calcite ('patch'), thick veining at 43.3 - 43.6 m. Brown shale sections 0.2 - 10.0 cm thick interlayed Lst. between 43.7 - 46.5 m. Contact w/ Lst. at 40 - 60° to C.A. Shale is slightly calcaeous. Marbled appearance to Lst. Brecciated sections have light grey blue Lst. fragments. (49.8 & 54.15 and 55.0 - 55.3 m) Calcite veins from 0.1 - 3 cm thick at 20 - 30°, 30 - 40°, 40 - 50°, 50 - 60°, and 70 -						

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		LN	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
	43.3 - 77.8 m (Cont'd)	- 80° to C.A. Some sections w/out laminations 51.9 - 55.6m Lst. is fragmental in places. Clasts are less than 2.5 cm in diameter. Black Lst. section 0.6 m thick found at 56.4 m depth. Fractures at 30 - 40°, 40 - 50°, 50 - 60°, and 60 - 70°, to C.A., some w/ calcite on them. Below 60.65 m calcite veining is much less common and laminations are less distinct. Some disseminated pyrite Brown-grey calcareous sections noted at 68.9 - 69.1 m and from 70.8 - 71.9 m depth and 74.5 - 75.1 m depth.											
	77.8 - 107.6	Dark blue-grey Lst. is interlayered w/ brown-grey to brown laminated calcereous shale units and a grey-white, maroon & brown quartzite which contains some fine calcite veins. The quartzite and shale are dominant over the Lst. Contacts w/ Lst. are at 40 - 50°, 50 - 60° to C.A. Chlorite is present w/ the quartzite Bedding (Layering) contacts are distinct and some show lode features. Fractures show slickensides, and contain calcite, in some cases.											

SYMBOLS AND ABBREVIATIONS: SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/S	SEC	DEG LAT	MIN	DEG.LONG	MIN	

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	77.8 - 107.6	Fractures are at 0 - 10°, 10 - 20°, 40 - 50°, 50 - 60°, 60 - 70° to C.A. Lst. sections are 1.0 - 2 m thick. Quartzite & shale layers are generally 0.3 - 5 cm thick w/ some sections 50 cm thick. Smaller Lst. sections are found at greater depth. Calcite veins rare. Generally 40 - 50° to C.A. Various units contact 40 - 60°. Lst fragments surrounded by shale & quartzite noted infrequently (102.9m) Very little visible mineralization. Pyrite and possibly pyrrohotite present on some fractures and breaks in core (v.f.g.) Brecciated Lst found interlayered w/ shale/ quartzite. Lst contains chlorite and is oriented 0 - 20° from C.A.	77.8 - 107.6 Core Angles 40 - 60°
	107.6 - 114.61m	Dark blue-grey Lst. Brecciated. No laminations. Some pyrite on fracture 30 - 40° (111.2 m) Calcite veins generally fine in size 40 - 50° 0.4 cm thick. Note large calcite vein 30 - 40° to C.A. and 2 cm thick. Chlorite present in matrix. Fragments are large (several cm) in Lst. Bx.	
	114.61	E.O.H.	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS: Bx - Breccia

SHEET INTERVAL: from..... to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: DDH-80-5

POLITICAL UNIT: /

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.		L	POR
		N/S	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Caotes - August 1980

LOGGING:

ASSAYING: Chemex Labs, Calgary

LOGGED BY: A. W. Gourlay

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS: DDH Location: Grid 79-4 L4+00N 1+02E

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	0 - 6.7	Overburden	
	6.7-47.9	Finely black to medium grey argillite, numerous fine bands of calcite, interbedded. Well developed sedimentary slump features, and numerous small slips displaying well developed slickensides subparallel to the bedding.	76.2- 70-80° to C.A. 21.3- 50-60° to C.A.
		67' - 70' - 1 cm blebs of py and minor po in irregular calcite masses.	
		From 70' increasing calcite content in the form of stringers and stringer networks, locally creating zones of disrupted core up to 10 cm.	
		From 107', increasing occurence of discrete of carbonate, mostly calcite, up to 2 cm (interbeds?). Consistant C.A. - 60 - 65°	40.2- 50-60° to C.A.
		123' - 130 - broken and crumbled core, strong 1 cm oxide stain.	
		134' - 139' - zone of mottled argillite, color veins from light green, brown, to dark grey, black.	
		47.9 m - fault zone, marked by 13 cm of grey clay.	
	47.9 - 77.7	Interbedded finely banded black to dark grey argillite and finely banded, black to brown, very fine grained quartzite. Indistinct zones of greenish chlorite up to 1 cm common. Occasional calcite (carbonate veins) up to 10 cm, irregular shape.	57.6- 70-75° to C.A. 76.7- 70-75° to C.A.
		248' - calcite veining disrpts bedding over 30 cm zone. 253' - calcite veining disrupts bedding over 50 cm, inclusions of well bedded quartzite.	

SAMPLE No.	FROM ..... TO	INT. IN FT. m	REC. OVERY	ASSAY RESULTS Sn%					
3091P-80-5-1	81.9 - 82.1	.2	100	<.01					
3091P-80-5-2	83.6 - 83.7	.1	100	<.01					
3091P-80-5-3	85.4 - 85.6	.2	100	<.01					
3091P-80-5-4	85.9 - 86.0	.9	100	<.01					
3091P-80-5-5	86.4 - 86.5	.1	100	<.01					
3091P-80-5-6	86.6 86.7	.1	100	<.01					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from ..... to .....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-A 5

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG		MIN

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
		255 - 255.5' - 3% py through small zone, some assoc. vein but most dsm in core.	
	77.7 - 80.5	Interbedded brown and maroon quartzites, green to black argillite. Finely bedded, consistant C.A. zones up to 5 cm of 2 - 3% py/po.	79.2 - 65-70° to C.A.
	80.5 - 81.1	Interbedded black to dark grey argillite and calcite.	
	81.1 - 85.3	Interbedded brown and grey quartzite with minor black to dark grey argillite. This zone carries numerous dsm sulphide zones up to 15 cm, also small 2 - 3 cm zones of blebs of msv po/py. Lower 60 cm 2 - 3% dsm py., entire 14' cut by stringes of py, approx. 1/2'.	
	85.3 - 102.7	Grey, recrystallized limestone. Massive except for upper 20 cm. Sharp, irregular contact with overlying quartzites, marked by 1 cm quartz vein.	85.3 - 45-50° to C.A.
	280.3 - 281	4% sulphides, disseminated py with minor po.	
	85.9 - 86.0	massive sulphides, mostly py with very minor po.	
	282.25 - 283.6	2% dsm sus, irregular blebs of py & po limestone cut by numerous 2-3 mm calcite veins, themselves offset by fractures and breccia.	
	86.4 - 86.5	MSV po & py, irregular shape with disnet upper and lower contacts in a brecciated limestone.	
	86.6 - 86.7	MSV po & py, upper boundary indistinct dsm through brx., lower contact sharp with dark grey clay & fault gouge.	

SAMPLE No.	FROM ..... TO.....	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-4 5

POLITICAL UNIT:

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		L/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip	SAMPLE No.	FROM TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
		86.7 - dark grey clay, marks fault. 86.7 - MSV quartz vein, 1% dsm py.											
		86.8 - 87.5 brecciated limestone, dark grey LST cut by numerous small calcite filled fractures.											
		87.5 - 89.0 disrupted limestone or poorly developed brecciated limestone, cut and offset by occasional calcite filled fractures.											
		89.0 - 102.7 Massive, recrystallited, grey limestone, cut by occasional calcite veins.											
	102.7	E.O.H.											

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from ..... to .....

MVN082V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-6

POLITICAL UNIT:

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		N	SEC	DEG LAT	MIN	DEG.LONG	MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates - August 1980

LOGGING:

ASSAYING: Chemex Labs, Calgary

LOGGED BY: C. J. Bloomer

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ. 300°	-45°	88.7 m

LANDMARKS: DDH Location: Grid 79-4 L6+05N 1+00W

OTHER FEATURES:

FORM/ UNIT	DEPTH m	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	0 - 3.3	Overburden	
	3.3-6.1	Kechika Group Black Argillite with interbedded light grey calcaereous interbeds and laminations. Bedding is slumped and faulted. Some contoured calcite stringers.	Core Angle 50 - 60°
	6.1-8.2	1.9 metres of core lost-fault?	
	6.1-12.2	Broken and ground core, mostly argillite and some quartz vein material, limonite stained.	
	12.2 - 13.17	Massive Sulphide Pyrite-Pyrrhotite with trace arsenopyrite in a carbonate gange. Sharp contacts @ 45° Carbonate occurs as breccia fragments within the sulphides.	
	13.17 - 17.1	Altered Carbonate Grey to light grey fine grained altered carbonate. Random hairline fractures with chlorite. Trace disseminated pyrrhotite and in fractures. Random limonite stained fractures. Quartz vein @ 14.54 - 14.74. Limonite stained.	Quartz vein contact @ 14.54 - 25°
		Quartz vein @ 15.1 - 15.3	Quartz vein contact @ 15.1 - 25°
		Quartz vein 16.1 - 16.85 - Fractured with limonite stains	Fault Gouge @ 15.7-16.1 crushed quartz vein limonite stained.
		Quartz vein 17.0 - 17.1 Some carbonate inclusions - Hairline fractures filled with Galena & pyrrhotite. Fractures are random.	17.1 - sharp contact with massive sulphide almost 80° to C.A.

SAMPLE No.	FROM ..... TO.....	INT. IN FT. m	REC. OVERY	ASSAY RESULTS Sn%	Pb%	Ag oz/t	Cu%	Zn%
3091P - 80-6-1	12.2 -	.9	95	0.094				
3091P - 80-6-2	16.8 - 17.0	.2	100	0.61	<0.01	0.48		
3091P - 80-6-3	17.0 - 17.6	.6	80	0.10	0.22	1.44	0.08	0.74
3091P - 80-6-4	17.8 - 18.2	.4	95		2.28	8.64		

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED - MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-6

POLITICAL UNIT: ...../.....

SUR SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	17.1 - 17.83	Massive Sulphide Pyrrhotite, pyrite, trace asenopyrite, appears to be laminated. Laminations would be @ 90° to Core Axis. Trace scheelite at end of the section.	
	17.83 - 18.27	Silicified Zone Dark grey amorphous random dense fracturing filled with calcite - clots and veinlets.	
	18.27 - 18.5	Carbonate White to grey-white carbonate	18.5-18.7 - Fault Zone gouge-limonite
	18.5 - 19.0	Light grey-green carbonate - Green - chlorite Fractured (Some Limonite in fractures).	
	19.0 - 19.5	Carbonate Lightly grey carbonate fine grained one cm quartz vein with limonite selveges.	
	19.5 - 20.4	Crushed Zone Carbonate and quartz Limonite, one small patch of disseminated sulphides.	19.5-20.4 Fault Zone
	20.4 - 21.3	Atan Quartzite? Fine grained laminated greey grey with brown (Biotite Rich) sections. Section is crushed and broken.	
	21.3 - 27.1	Fault Gouge Orange brown limonite stain. Appears to be mostly bleached quartzite with some quartz veining.	21.3 - 27.1 Fault Zone
	27.1 - 28.3	Atan Quartzite Laminated, brown to grey-brown, fractured, slickensided, limonite stained. Quartz & trace sulphides in fractures.	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN082V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-6

POLITICAL UNIT:

SUR SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.		L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG		MIN

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Lithologi	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO.....	INT. IN FT.	REC. OVERY	ASSAY RESULTS					
	28.3 - 36.3	Atan Quartzite Grey brown, laminated, cross-bedded brown (biotite rich) interlaminations. Mottled texture imparted by pinhead size disseminated brown patches. (Biotite? or andulusite?)											
	36.3 - 39.4	Atan Quartzite Same as 28.3 - 36.3 only without brown patches Cm zones of white (bleached) quartzite. (Alteration? Primary?) with chlorite patches pyrrhotite and hairline fractures healed with quartz.											
	39.4 - 39.5	White Zone White quartzite? Alteration? Crosscutting quartz vein 2 mm with chlorite and pyrrhotite. Chlorite blebs and stringers with pyrrhotite. Contacts are sharp. Centre of zone has a 3 cm section of grey brown quartzite with "stopped edges". Possibly a dilation feature healed with silica or chlorite/skarn and sulphides. Contacts at 90° to C.A.											
	39.5 - 42.4	Atan Quartzite Same as 36.3 - 39.4	Core Angle consistant @ 90° through-out hole.										
	42.4 - 43.9	White Zone Same as 39.4 - 39.5											
	43.9 - 44.66	Atan Quartzite 36.3 - 39.4											
	44.66 - 45.2	White Zone Same as 39.4 - 39.5 - Quartz vein (Clear not white) with pyrite.											

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN082V

SHELL CANADA LIMITED - MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-6

POLITICAL UNIT: ...../.....

SUR SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Lithologs)	Structural Angle SYMBOL C.A./Dip @
	45.2 - 45.7	Atan Quartzite Same as 36.3 - 39.4	
	45.7 - 45.8	White Zone Same as 39.4 - 39.5	
	45.8 - 47.0	Atan Quartzite Same as 36.3 - 39.4	
	47.0 - 48.3	White Zone Same as 39.5 - 39.5 - only with some epidote patches and more mixing with the quartzite	
	48.3 - 50.26	Atan Quartzite Same as 36.3 - 39.4	
	50.26 - 50.34	White Zone Same as 39.4 - 39.5	
	50.34 - 53.2	Atan Quartzite Same as 36.3 - 39.4	
	53.2 - 53.5	White Zone Same as 39.4 - 39.5	
	53.5 - 60.1	Atan Quartzite Same as 36.3 - 39.4	
	60.1 - 60.3	White Zone Same as 39.4 - 39.5	
	60.3 -	Zone of Quartzite (same as 36.3 - 39.4) and white zones (same as 39.4 - 39.5) closely spaced with quartz crosscutting both zones. Here the white zones appear to be quartz veins. White zones have chlorite in fractures and as blebs, often with sulphides less than 1%. Quartzite has a red-brown color more than brown-red.	70.60 - 71.62 Fault Zone

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from ..... to .....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-6

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC		TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR	
		LN	SEC	DEG LAT	MIN	DEG.LONG		MIN

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

WORK DONE Name Dates Remarks

DRILLING:

LOGGING:

ASSAYING:

LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

LANDMARKS:

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip @
	66.8 - 77.1	Atan Quartzite Same as 36.3 - 39.4 Less white zones - only small fractures. Some disseminated sulphides less than 1%.	73.4 - 73.48 Fault Zone Gouge
	77.1 - 82.3	Atan Quartzite Same as 36.3 - 39.4 - only with brown mottled appearance due to disseminated brown spots (Biotite? andalusite?).	
	82.3 - 83.4	Atan Quartzite Same as 36.3 - 39.4 - without brown spots. Fractures with quartz veins light green cast diss. sulphides less than 1%.	Core Angle 80 - 90
	83.4 - 83.6	Green fine-grained massive quartzite. Diss. sulphides less than 1% and sulphides along fractures	Fault Zone Gouge 81.4 - 81.5
	83.6 - 88.7 -	Atan Quartzite Same as 82.3 - 83.4 - disseminated sulphides less than 1%. White Zone - 87.5 - 87.6 5 samples taken for thin section.	
	88.7	E.O.H.	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED — MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-7

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks

DRILLING: D. W. Coates - August, 1980

LOGGING:

ASSAYING: Chemex Labs, Calgary

LOGGED BY: A. W. Gourlay

ADDITIONAL INFO.:

CLAIM/PERMIT NO.:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ 304°	-45°	90.5 m

LANDMARKS: DDH Location: Grid 79-1 L8+00S 6+41E

OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Lithologi	Structural Angle SYMBOL C.A./Dip ●
	0 - 4.8m	Overburden	
	4.8 - 38.1 m	Argillite (Kechika) Black very finely laminated, well developed slump features, highlighted by thin beds (≤ 2 mm) of calcareous argillite or calcite. Also numerous, irregularily shaped bodies (veins?) of calcite, locally slightly iron stained, occasionally small zones of subhedral PO associated with irregular calcite bodies, or highly distorted calcite layer. Numerous small fractures offset the lighter calcite layer, small displacements 5 - 10 mm, consistent c/a of 45° - 50°. Rampant slump features make bedding c/a measurements difficult. Calcareous bed content increases,	19.8m - 20.1m 70° c/a
	38.1 - 42.9 m	Black Argillite, sulphide bearing, lacks well developed laminations over 80% of length, mostly disrupted (breccia?). 1 - 2% sulphides disseminated throughout. Sulphides both PY & PO appear to be more closely associated with irregular bodies of calcite while the PY is dsm throughout. There are also zones of predominantly PY alternating with zones of predominantly PO.	
	42.9 m - 44.2 m	Fault Zone. Mostly black graphitic argillite clay-gouge, with minor brecciated zones composed of calcite fragments in a black argillite matrix. Highly friable, crumbly core displaying shiny graphitic faces.	
	42.2 m - 45.1 m	Black, graphitic, sulphide bearing argillite, 1-2% disseminated PY & PO, minor beds or veins	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC. OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS: Py - pyrite, Po - Pyrrhotite - dsm - disseminated

SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-7

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE		
		LSD	SEC	TWP	RGE	E/W	M
		1/4	UNIT	B	No.	L	POR
		N/S	SEC	DEG LAT	MIN	DEG.LONG	MIN

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Litholog)	Structural Angle SYMBOL C.A./Dip ●
		of calcite, bearing some of the sulphides.	44.8 60 - 65° c/a
	45.1 m - 49.1 m	Breccia & fault gouge of black, graphitic argillite, bearing 1 - 2% dsm PY & PO. Same as 43 m - 44.2 m Note: Entire fault zone extends from 43 m - 44.2 m.	
	49.1 m - 55.2 m	Grey to black, finely laminated argillite, crosscut by numerous calcite veins from 1 mm to 20 cm thick. Larger calcite veins have an irregular shape, and contain associated blebs of sulphides, mostly PY, up to 2 cm diameter. < 1% subhedral blebs of PO disseminated through core, as well as two, 1 cm bands of 5% PY & PO	60 - 65° c/a
	55.2 m - 76.5 m	Black, graphitic, sulphide bearing argillite majority of disseminated sulphide is parallel to the laminations, and is PY. Most of the core retains a consistent lamination, displayed by the disseminated PY, although there are zones of slumped argillite, the slumps highlighted by the PY. Numerous calcite "veins" subparallel to the laminations, and, to a lesser degree crosscutting. Most are < 3 mm thick, the thicker veins often carry sulphides, mostly PY.	217' - 40 - 45° c/a
	76.5 m - 77.7 m	Fault Zone of argillite and calcite - a fault gouge.	
	77.7 m - 78.6 m	Bleached and silicified argillite, grey green color, cut by numerous small quartz veins and some small pyrite stringers.	
	78.6 m - 82.3 m	Interbedded black and light, slightly calcareous argillite. Locally 1-2% disseminated sulphides, mostly PY, associated with zones of intense calcite veining, developing networks	

SAMPLE No.	FROM ..... TO	INT. IN FT.	REC-OVERY	ASSAY RESULTS					

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN062V

SHELL CANADA LIMITED – MINERALS DEPARTMENT
DRILL HOLE OR SECTION DATA RECORD

PROJECT NAME: Cassiar Project
PROJECT NO.: 3091P
HOLE/SEC. NO.: 80-7

POLITICAL UNIT: ...../.....

SUR. SYSTEM	LOC. EXCEPTION	LATITUDE			LONGITUDE			
		LSD	SEC	TWP	RGE	E/W	M	
		1/4	UNIT	B	No.	L	POR	
		U/N	SEC	DEG LAT	MIN	DEG.LONG	MIN	

WORK DONE Name Dates Remarks
DRILLING:
LOGGING:
ASSAYING:
LOGGED BY:

	LATITUDE	DEPARTURE	ELEVATION (DATUM)	BEARING	INCLINATION	LENGTH
FIELD LOCATION						
SURVEY GRID	N	E		AZ.		

ADDITIONAL INFO.:
CLAIM/PERMIT NO.:
LANDMARKS:
OTHER FEATURES:

FORM/ UNIT	DEPTH	LITHOLOGY, Texture, Structure, Mineralization (Lithologi	Structural Angle SYMBOL C.A./Dip @	SAMPLE No.	FROM ..... TO.....	INT. IN FT.	REC-OVERY	ASSAY RESULTS					
		of calcite veins - 1% disseminated PY through core with two 1 cm zones of 4% dsm PY at 80.2 m. Also blebs 5 cm diameter, of PY associated with irregular bodies of calcite.											
	82.3 m - 82.8 m	Bleached and silicified argillite, same as 77.7 - 78.6, grey green color, cut by numerous small quartz veins, and the stray pyrite stringers.											
	82.8 m - 83.2 m	Fault Zone Breccia and fault zone of graphitic, pyritic, calcareous argillite.											
	83.2 m - 90.5 m	Black, pyritic argillite. 2 - 3% disseminated PY throughout, locallized along bedding. Poorly developed laminations, some possible slump features Locally slightly graphitic. Some lighter calcareious beds.	281' - 60 - 65° c/a										
	90.5 m	E.O.H.											

SYMBOLS AND ABBREVIATIONS:
SHEET INTERVAL: from.....to.....

MVN082V

APPENDIX II

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 465-9877 TELEX 037-41596

CERTIFICATE OF ANALYSIS

• MINERAL • GAS • WATER • OIL • SOILS • VEGETATION • ENVIRONMENTAL ANALYSIS

SHELL CANADA RESOURCES LIMITED

DATE OCT.14/80

GEOCHEM ANALYSIS Diamond Drilling

PROJECT NO. 916-1-1271

LOCATION	CU PPM	PB PPM	ZN PPM
80-1-1	10.0	25.0	110.0
2	10.0	60.0	105.0
3	10.0	15.0	80.0

CTA MEMBER CANADIAN TESTING ASSOCIATION

Certified by .....

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
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CERTIFICATE OF ANALYSIS

• MINERAL • GAS • WATER • OIL • SOILS • VEGETATION • ENVIRONMENTAL ANALYSIS

SHELL CANADA RESOURCES LTD.

DATE AUGUST 26, 1980.

PROJECT NO. 916-1-988

Diamond Drilling

LOCATION	Ag oz/ton	Zn %	Pb %	Sn %
80-2-1	0.34	14.0	0.1	0.03
80-4-1				<0.01
2				<0.01
3				0.01
4				<0.01
5				<0.01
6				<0.01
7				<0.01
8				<0.01
9				<0.01
10				<0.01
11				<0.01
80-4-12				<0.01

CTA MEMBER CANADIAN TESTING ASSOCIATION

Certified by ..... Andrew Hunt for G.S.

CHEMEX LABS LTD.

212 BROOKSBANK AVE.
NORTH VANCOUVER, B.C.
CANADA V7J 2C1
TELEPHONE: 984-0221
AREA CODE: 604
TELEX: 04-352597

• ANALYTICAL CHEMISTS • GEOCHEMISTS • REGISTERED ASSAYERS

CERTIFICATE OF ASSAY

CERTIFICATE NO. 70152
INVOICE NO. 39693
RECEIVED Sept.16/80
ANALYSED Oct.17/80

TO: Shell Canada Resources Ltd.,
Minerals Dept.,
P.O.Box 100,
Calgary, Alberta T2P 2H5

ATTN: Cassiar Project Drilling

SAMPLE NO. :	% Copper	% Lead	% Zinc	% Tin	Oz/Ton Silver
3091p-80-5-1				0.01	
5-2				0.01	
5-3				0.01	
5-4				<0.01	
5-5				<0.01	
5-6				0.01	
6-1				0.94	
6-2		<0.01		0.61	0.48
6-3	0.08	0.22	0.74	0.10	1.44
3091p-80-6-4		2.28			8.64

CTA MEMBER CANADIAN TESTING ASSOCIATION

REGISTERED ASSAYER, PROVINCE OF BRITISH COLUMBIA

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 8112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 485-9577 TELEX 037-41596

CERTIFICATE OF ANALYSIS

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SHELL CANADA RESOURCES

DATE
OCT.14/80

GEOCHEM ANALYSIS BRIGHT 3,4,5,6

PROJECT NO.
916-1-1271

LOCATION	MO PPM
A13- 1	-1.0
2	-1.0
3	43.0 ✓
4	5.0
5	-1.0 *
6	24.0 ✓
7	18.0 ✓
8	-1.0
9	3.0
10	-1.0
11	6.0
12	5.0
13	5.0
14	8.0
15	8.0
A14- 1	-1.0
2	-1.0
3	-1.0
4	-1.0
5	-1.0
6	4.0
7	7.0
8	9.0
9	8.0
10	4.0
11	5.0
12	4.0
13	5.0
14	2.0
15	3.0
16	2.0
17	5.0
18	22.0 ✓
19	3.0
20	4.0
21	-1.0
22	3.0
23	3.0
24	1.0
25	3.0

CTA MEMBER CANADIAN TESTING ASSOCIATION

CHEMEX

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CERTIFICATE OF ANALYSIS

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SHELL CANADA RESOURCES

DATE OCT.14/80

GEOCHEM ANALYSIS BRIGHT 3,4,5,6

PROJECT NO. 916-1-1271

LOCATION	MO PPM
A14-26	3.0
27	3.0
28	2.0
29	3.0
30	10.0 ✓
31	3.0
32	3.0
33	4.0
34	2.0
35	4.0
36	4.0
37	4.0
38	-1.0
39	-1.0
40	-1.0
41	2.0
A15- 1	36.0 ✓
2	-1.0
3	3.0
4	-1.0
5	5.0
6	3.0
7	4.0
8	4.0
9	-1.0
10	1.0
11	-1.0
12	-1.0
13	5.0
14	-1.0
15	2.0
16	10.0 ✓
17	20.0 ✓
18	7.0
19	6.0
20	12.0 ✓
21	10.0 ✓
22	8.0
23	2.0
24	4.0

CTA MEMBER CANADIAN TESTING

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 465-9677 TELEX 037-41596

CERTIFICATE OF ANALYSIS

• MINERAL • GAS • WATER • OIL • SOILS • VEGETATION • ENVIRONMENTAL ANALYSIS

SHELL CANADA RESOURCES

DATE OCT.14/80

GEOCHEM ANALYSIS BRIGHT 3,4,5,6

PROJECT NO. 916-1-1271

LOCATION	MO PPM
A15-25	7.0
A16- 1	2.0
2	2.0
3	6.0
4	1.0
5	4.0
6	22.0 ✓
7	9.0
8	2.0
9	3.0
10	2.0
11	-1.0
12	4.0
13	3.0
14	2.0
15	7.0
16	0.3
17	4.0
18	11.0 ✓
19	2.0
20	4.0
21	3.0
22	7.0
23	-1.0
24	3.0
25	5.0
26	5.0
27	10.0 ✓
28	7.0
30	2.0
31	4.0
32	7.0
33	15.0 ✓
34	3.0
35	6.0
36	6.0
37	7.0
38	4.0
39	5.0

CTA MEMBER CANADIAN TESTING

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 465-9877 TELEX 037-41596

CERTIFICATE OF ANALYSIS

• MINERAL • GAS • WATER • OIL • SOILS • VEGETATION • ENVIRONMENTAL ANALYSIS

SHELL CANADA RESOURCES LTD.

DATE July 10, 1980

PROJECT NO. 916-1-680

Red Grid.

LOCATION	Ag PPM	Au PPB	Cu PPM
BASELINE 0+00E	<1	325	13
0+25E	<1	285	15
0+50E	<1	735	79
0+75E	<1	260	13
1+00E(1)	<1	735	16
1+00E(2)	<1	835	13
1+50E	<1	785	12
1+75E	1	800	137
2+00E	<1	345	15
2+25E	2	1790	48
2+50E	2	185	40
2+75E	1	285	9
3+00E	1	1700	60
3+25E	<1	220	30
3+50E	<1	185	14
3+75E	<1	185	22
4+00E	<1	115	31
4+25E	<1	185	22
4+50E	<1	160	11
4+75E	<1	160	19
5+00E	<1	135	13
5+25E	<1	-	9
5+50E	<1	185	14
5+75E	<1	135	11
BASELINE 0+00S	<1	160	52
0+25S	<1	100	111
0+50S	<1	115	13
0+75S	1	100	12
1+00S	<1	135	16
1+25S	<1	115	14
1+50S	<1	135	16
1+75S	<1	115	8
2+00S	<1	70	4
2+25S	<1	160	6
0+25N	<1	160	64
0+50N	1	85	106
0+75N	<1	115	17
1+00N	<1	115	16

CTA MEMBER CANADIAN TESTING ASSOCIATION

Certified by .....

CHEMEX

CALGARY 2021 - 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 465-9877 TELEX 037-41596

CERTIFICATE OF ANALYSIS

• MINERAL • GAS • WATER • OIL • SOILS • VEGETATION • ENVIRONMENTAL ANALYSIS

SHELL CANADA RESOURCES LTD.

DATE July 10, 1980

PROJECT NO. 916-1-680

Red Grid

LOCATION		Ag PPM	Au PPB	Cu PPM
BASELINE	1+25N	<1	160	16
	1+50N	<1	550	38
	1+75N	<1	135	23
	2+00N	<1	185	22
	2+25N	<1	535	10
	2+50N	<1	160	17
L1E	0+25S	<1	220	3
	0+50S	1	260	7
	0+75S	1	550	23
	1+00S	<1	220	6
	1+25S	1	285	7
	1+50S	<1	220	14
	1+75S	<1	210	6
	2+00S	<1	930	13
	2+25S	<1	385	10
	2+50S	1	480	16
	0+25N	<1	385	12
	0+50N	1	160	63
	0+75N	<1	100	13
	1+00N	<1	160	21
	1+25N	<1	100	19
	1+50N	<1	100	19
	1+75N	<1	100	17
	2+00N	<1	135	16
	2+25N	<1	115	15
	2+50N	<1	160	17
L2E	0+25S	1	1000	64
	0+50S	<1	200	66
	0+75S	1	250	27
	1+00S	<1	115	23
	1+25S	<1	160	66
	1+50S	1	135	24
	1+75S	1	115	22
	2+00S	<1	85	16
	2+25S	<1	115	12
	2+50S	1	115	18
	0+25N	2	2300	74
	0+50N	<1	100	15

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SHELL CANADA RESOURCES LTD.

DATE July 10, 1980

PROJECT NO. 916-1-680

Red Grid

LOCATION		Ag PPM	Au PPB	Cu PPM
L2E	0+75N	<1	100	10
	1+00N	<1	115	19
	1+25N	<1	115	20
	1+50N	<1	220	21
	1+75N	<1	135	24
	2+00N	<1	220	33
	2+25N	<1	85	82
	2+50N	<1	160	19
L3E	0+25S	2	900	188
	0+50S	3	2420	151
	0+75S	1	325	48
	1+00S	1	100	51
	1+25S	<1	100	35
	1+50S	<1	260	37
	1+75S	<1	325	17
	2+00S	<1	160	16
	2+25S	<1	70	9
	2+50S	<1	175	12
	0+25N	<1	175	12
	0+50N	<1	70	7
	0+75N	<1	85	13
	1+00N	<1	615	9
	1+25N	<1	115	18
	1+50N	<1	150	20
	1+75N	<1	135	16
	2+00N	<1	160	38
	2+25N	<1	260	74
	2+50N	<1	325	17
L4E	0+25S	<1	175	19
	0+50S	<1	160	12
	0+75S	<1	615	66
	1+00S	<1	160	58
	1+25S	<1	325	55
	1+50S	<1	185	28
	1+75S	<1	135	63
	2+00S	<1	100	18
	2+25S	<1	160	25
	2+50S	<1	150	46

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SHELL CANADA RESOURCES LTD.

DATE July 10, 1980

PROJECT NO. 916-1-680

Re. Grid

LOCATION		Ag PPM	Au PPB	Cu PPM
L4E	0+25N	<1	70	19
	0+50N	<1	100	18
	0+75N	<1	115	17
	1+00N	<1	135	21
	1+25N	<1	115	18
	1+50N	<1	85	101
	1+75N	<1	135	21
	2+00N	<1	70	28
	2+25N	<1	70	23
	2+50N	<1	115	31
L5E	0+25S	<1	70	24
	0+50S	<1	35	19
	0+75S	<1	50	20
	1+00S	<1	135	9
	1+25S	<1	175	17
	1+50S	<1	100	21
	1+75S	<1	440	18
	2+00S	<1	115	17
	2+25S	<1	135	10
	2+50S	<1	115	15
	0+25N	<1	85	9
	0+50N	<1	135	13
	0+75N	<1	100	9
	1+00N	<1	85	7
	1+25N	<1	85	11
	1+50N	<1	510	10
	1+75N	<1	220	9
	2+00N	<1	615	22
	2+25N	<1	135	24
	2+50N	<1	100	34
L6E	0+00S	1	100	12
	0+25S	<1	100	13
	0+50S	<1	160	20
	0+75S	<1	100	31
	1+00S	<1	50	22
	1+25S	1	85	48
	1+50S	<1	85	48
	1+75S	<1	175	39

CTA MEMBER CANADIAN TESTING ASSOCIATION

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EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
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SHELL CANADA RESOURCES LTD.

DATE July 10, 1980

PROJECT NO. 916-1-680

Red Grid

LOCATION		Ag PPM	Au PPB	Cu PPM
L6E	2+00S	1	160	187
	2+25S	<1	100	19
	2+50S	<1	250	34
	0+25N	<1	100	12
	0+50N	<1	100	12
	0+75N	<1	85	13
	1+00N	<1	70	13
	1+25N	<1	70	11
	1+50N	<1	50	15
	1+75N	<1	70	16
	2+00N	<1	85	12
	2+25N	<1	85	17
	2+50N	<1	50	15

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CALGARY 2031 4th AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 465-9677 TELEX 037-41596

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SHELL CANADA RESOURCES

DATE OCT. 27/80

GEOCHEMICAL ANALYSIS

PROJECT NO. 916-1-1574

Re Geo

LOCATION	AU PPB
L1W0+25N	-10.0
0+50N ?	85.0
1+00N	80.0
1+25N	-10.0
1+50N	-10.0
0+00	15.0
0+25S	50.0
1+25S	100.0
1+50S	15.0
1+75S	-10.0
2+00S	-10.0
L2W0+25N	35.0
0+50N	-10.0
0+75N	20.0
1+50N	15.0
0+00	-10.0
0+25S	35.0
0+50S → missing one	50.0
1+25S	160.0
1+75S	35.0
2+00S	70.0
2+25S	15.0
2+50S	-10.0
2+75S	-10.0 ?
L3W0+25N	15.0
0+75N	-10.0
1+00N	-10.0
0+50N	-10.0
0+00S	20.0
0+25S	20.0
0+50S	60.0
0+75S	-10.0
1+50S	-10.0
1+75S	20.0
2+00S	-10.0
2+25S	-10.0
2+50S	-10.0
2+75S	-10.0
3+00S	-10.0
3+25S	-10.0

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CALGARY 202, 4[illegible] AVE. N.E. CALGARY, CANADA T2E 5P2
TELEPHONE (403) 276-9627 TELEX 038-25541
EDMONTON 6112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 486-9677 TELEX 037-41596

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SHELL CANADA RESOURCES

DATE OCT. 27/80

GEOCHEMICAL ANALYSIS

PROJECT NO. 916-1-1574

REO GRID

LOCATION	AU PPB
BLW2+00W	15.0
2+25W	-10.0
2+50W	100.0
2+75W	-10.0
3+00W	-10.0
3+25W	-10.0
3+50W	70.0
3+75W	50.0
4+00W	-10.0
4+25W	-10.0
4+50W	-10.0
4+75W	-10.0
5+00W	20.0
5+25W	35.0
5+50W	20.0
5+75W	-10.0
6+00W	-10.0
BL5S4+00W	175.0
4+50W	-10.0
4+75W	-10.0
5+00W	85.0
5+25W	-10.0
5+50W	-10.0
5+75W	-10.0
6+00W	-10.0
6+25W	-10.0
6+50W	-10.0
7+25W	-10.0
7+50W	-10.0
7+75S	-10.0
8+00W	-10.0
9+75W	35.0
7+00W	-10.0
9+50W	70.0
8+00W(A)	-10.0
8+25W	-10.0
8+50W	-10.0
8+75W	-10.0
9+25W	-10.0

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END OF GEOCHEM PROGRAM, REMOVE DISC

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SHELL CANADA RESOURCES

DATE OCT. 27/80

GEOCHEMICAL ANALYSIS

PROJECT NO. 916-1-1574

Re: Geo

LOCATION	AU PPB
L3W3+50S	-10.0
L4W0+25N	-10.0
0+50N	-10.0
0+75N	-10.0
1+00N	-10.0
1+25N	-10.0
1+50N	-10.0
0+00	-10.0
0+25S	-10.0
0+50S	-10.0
0+75S	-10.0
1+75S	-10.0
2+00S	-10.0
2+25S	-10.0
2+50S	40.0
2+75S	60.0
3+00S	-10.0
3+25S	15.0
3+50S	-10.0
3+75S	-10.0
4+00S	-10.0
4+25S	15.0
4+50S	-10.0
4+75S	15.0
7+00S	70.0
7+25S	-10.0
7+50S	-10.0
L5W1+25S	-10.0
1+50S	35.0
2+25S	15.0
2+50S	-10.0
2+75S	-10.0
3+00S	-10.0
3+25S	-10.0
3+50S	15.0
3+75S	20.0
4+00S	-10.0
4+25S	-10.0
4+50S	15.0
4+75S	-10.0

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CALGARY 3021 41 AVE. N.E. CALGARY, CANADA T2E 6P2
TELEPHONE (403) 276-9627 TELEX 036-25541
EDMONTON 8112 DAVIES ROAD, EDMONTON, CANADA T6E 4M9
TELEPHONE (403) 485-9677 TELEX 037-41596

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SHELL CANADA RESOURCES

DATE OCT. 27/80

PROJECT NO. 916-1-1574

GEOCHEMICAL ANALYSIS

Reo Grid

LOCATION	AU PPB
L5W5+75S	15.0
6+00S	-10.0
6+25S	175.0
6+50S	155.0
6+75S	35.0
7+00S	60.0
7+25S	35.0
7+50S	85.0
L6W1+25S	70.0
1+50S	35.0
1+75S	85.0
2+00S	50.0
2+75S	35.0
3+00S	35.0
3+25S	35.0
3+50S	20.0
3+75S	-10.0
4+00S	35.0
4+25S	20.0
4+50S	-10.0
4+75S	-10.0
5+25S	-10.0
5+50S	-10.0
5+75S	-10.0
6+00S	-10.0
6+25S	20.0
6+50S	40.0
6+75S	-10.0
7+00S	-10.0
7+25S	-10.0
7+50S	-10.0
L7W2+50S	-10.0
2+75S	35.0
3+00S	-10.0
3+50S	-10.0
3+75S	-10.0
4+00S	-10.0
4+25S	15.0
4+50S	-10.0
4+75S	-15.0

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SHELL CANADA RESOURCES

DATE OCT. 27/80

GEOCHEMICAL ANALYSIS

PROJECT NO. 916-1-1574

RED GRID

LOCATION	AU PPB
L7W5+25S	15.0
5+50S	-10.0
5+75S	-10.0
6+00S	15.0
6+25S	35.0
6+50S	50.0
6+75S	15.0
7+00S	35.0
7+25S	-10.0
7+50S	175.0
L8W2+50S	-10.0
2+75S	20.0
3+00S	15.0
3+25S	15.0
3+50S	-10.0
3+75S	50.0
4+00S	60.0
4+25S	15.0
4+50S	50.0
4+75S	-10.0
5+25S	-10.0
5+50S	-10.0
5+75S	-10.0
6+00S	-10.0
6+25S	-10.0
6+50S	-10.0
6+75S	-10.0
7+00S	-10.0
7+25S	-10.0
7+50S	-10.0
L9W2+50S	-10.0
2+75S	-10.0
3+00S	-10.0
3+25S	-10.0
3+50S	-10.0
3+75S	-10.0
4+00S	-10.0
4+25S	460.0
4+50S	50.0
4+75S	-10.0

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DATE OCT. 27/80

GEOCHEMICAL ANALYSIS

PROJECT NO. 916-1-1574

RED GRID

LOCATION	AU PPB
L10W6+75S	70.0
7+00S	-10.0
7+25S	15.0
7+50S	-10.0
7+50S(B)	-10.0
L9W5+00S	-10.0
5+25S	-10.0
5+50S	-10.0
5+75S	-10.0
6+00S	-10.0
6+25S	-10.0
6+50S	-10.0
6+75S	-10.0
7+00S	-10.0
7+25S	50.0
7+50S	-10.0
L10W2+50S	50.0
2+75S	35.0
3+00S	115.0
3+25S	80.0
3+50S	60.0
3+75S	-10.0
4+00S	-10.0
4+25S	15.0
4+50S	-10.0
4+75S	-10.0
5+00S	-10.0
5+25S	20.0
5+50S	35.0
5+75S	-10.0
6+00S	-10.0
6+25S	-10.0
6+50S	-10.0
BL10+25W	-10.0
0+50W	-10.0
0+75W	35.0
1+00W	15.0
1+25W	15.0
1+50W	-10.0
1+75W	-10.0

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APPENDIX III

SUMMARY OF EXPENDITURES

CASSIAR PROJECT - 3091P

Labour	$ 21,532.50
Room and Board	17,820.00
Camp Supplies and General Materials	15,688.40
Fuels and Lubricants	1,567.00
Laboratory and Analytical Services	2,882.62
Geophysical Contract (CMG)	1,219.47
Drilling Contract (D. W. Coates)	62,810.28
Line Cutting	6,467.00
Truck Rental	3,147.02
Helicopter	16,754.12
Airphotos, Maps, Reports, Etc.	417.43
Postage, Express, Air Freight	2,974.48
Employee Travel	10,508.55
Aircraft	978.45
	$ 164,767.32

APPENDIX IV

MONTH June 1980

MONTHLY STRETCH SHEET

PROJECT: 3091P - Cassiar

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
CHRIS BLOOMER	X			X		X	X	X	X				X			X	X				X	X			X	X				X	/	14
ANDREW GOURLAY																									X						/	1
ANDY OLNEY																							X								/	1
HAYDEN BROWN																			X	X	X										/	3
BRIAN YAMAMURA	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	/	14
DAVE KNIGHT	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	/	14
DAVID PARBERRY																				X	X	X			X	X					/	5
BRUCE JAGO	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	/	14
TOM SETTERFIELD	X	X	X	X	X	X	X	X	X	X	X	X	X	X																	/	14
ANDREW HOGG														X					X												/	2
ADAM LILLY																																
BRUCE MARTEL																																
GEOFF ORR																																
DRILL CREW (5 MEN)															X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	/	80
PETER SLOMINSKI																																
ROSE GILES																																
GRANT KNOWLES																																
																																162

MONTH July 1980

MONTHLY STRETCH SHEET

PROJECT: 3091P - Cassiar

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
CHRIS BLOOMER																																
ANDREW GOURLAY																																
ANDY OLNEY							X											X														2
HAYDEN BROWN							X																									1
BRIAN YAMAMURA																																
DAVE KNIGHT																																
DAVID PARBERRY																																
BRUCE JAGO																			X	X												2
TOM SETTERFIELD																			X	X												2
ANDREW HOGG																																
ADAM LILLY							X	X	X	X	X	X	X																			7
BRUCE MARTEL							X	X	X	X	X	X	X																			7
GEOFF ORR					X																											1
DRILL CREW (5 MEN)																																
PETER SLOMINSKI																																
ROSE GILES																																
GRANT KNOWLES																																
																																22

MONTH August 1980

MONTHLY STRETCH SHEET

PROJECT: 3091P - Cassiar

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
CHRIS BLOOMER	X															X	X	X	X	X	X		X	X	X		X					11
ANDREW GOURLAY																	X								X		X	X	X	X	X	7
ANDY OLNEY																																
HAYDEN BROWN															X	X	X															3
BRIAN YAMAMURA																																
DAVE KNIGHT																																
DAVID PARBERRY																																
BRUCE JAGO																																
TOM SETTERFIELD																																
ANDREW HOGG																																
ADAM LILLY																			X	X	X	X	X									5
BRUCE MARTEL																			X	X	X	X	X									5
GEOFF ORR															X	X	X		X													
DRILL CREW (5 MEN)																					X	X	X	X	X	X	X	X	X	X	X	55
PETER SLOMINSKI																																
ROSE GILES																																
GRANT KNOWLES																																
																																90

MONTH SEPTEMBER 1980

MONTHLY STRETCH SHEET

PROJECT: 3091P - Cassiar

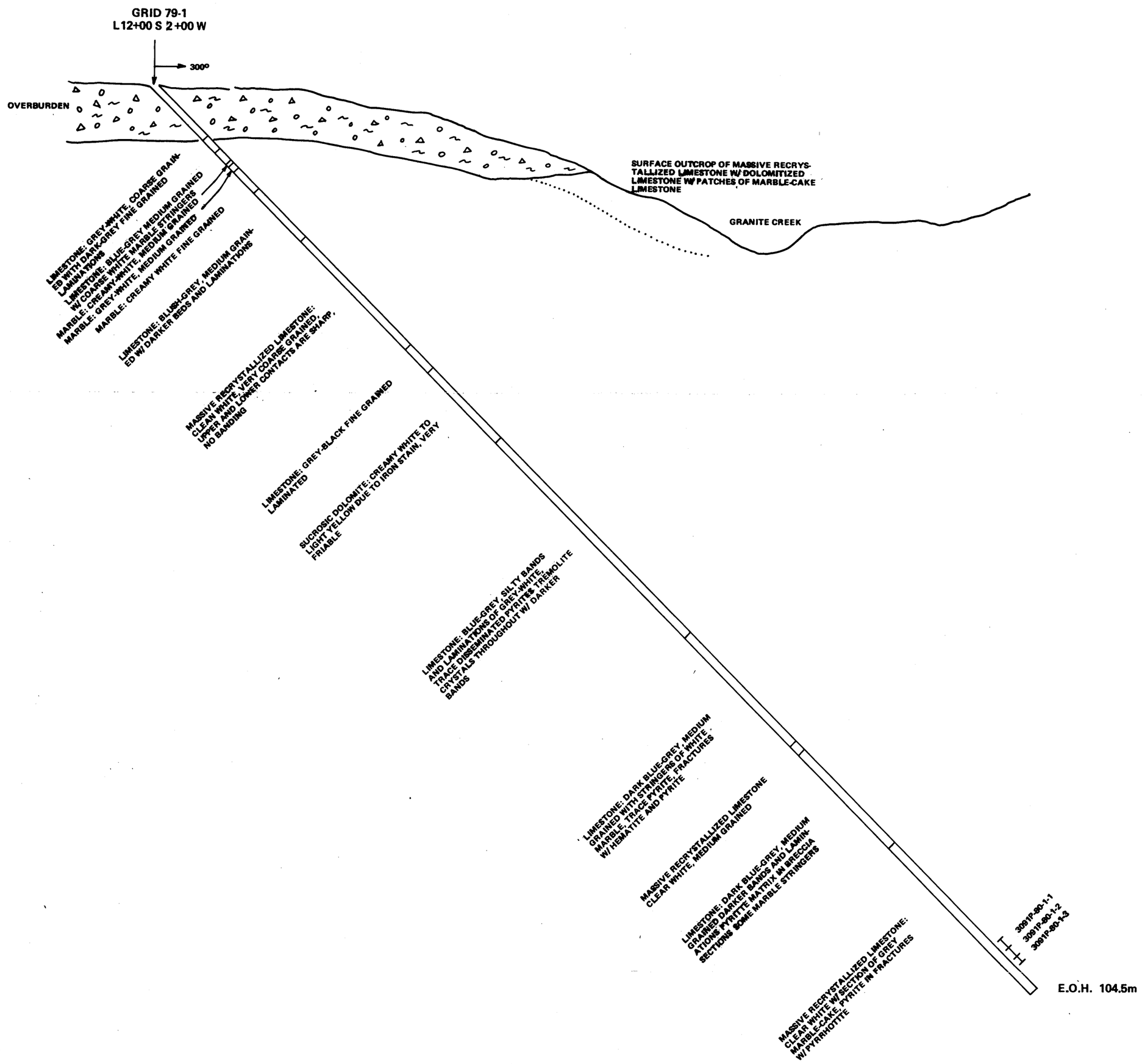
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	TOTAL
CHRIS BLOOMER							X	X	X	X	X	X	X	X																		8
ANDREW GOURLAY	X		X	X	X						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				22
ANDY OLNEY																																
HAYDEN BROWN																																
BRIAN YAMAMURA																				X			X	X	X	X		X				6
DAVE KNIGHT																																
DAVID PARBERRY																																
BRUCE JAGO																																
TOM SETTERFIELD																																
ANDREW HOGG																																
ADAM LILLY							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											15
BRUCE MARTEL							X	X	X	X	X	X	X	X	X	X	X	X	X	X	X											15
GEOFF ORR																																
DRILL CREW (5 MEN)	X	X																														10
PETER SLOMINSKI							X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X				21
ROSE GILES											X	X	X	X	X	X	X			X	X	X										10
GRANT KNOWLES																																
																																122

CASSIAR 3091 P

MONTHLY CUMULATIVE OF LABOUR AND ROOM AND BOARD

	JUNE	JULY	AUGUST	SEPTEMBER	TOTAL MAN DAYS	TOTAL $
TOTAL ROOM AND BOARD MAN DAYS @ $45.00 MAN/DAY	162	22	90	122	396	17,820.00
TOTAL LABOUR MAN DAYS @ AN AVERAGE WAGE OF $82.50 MAN/DAY	82	22	45	112	261	21,532.50

TOTAL = $39,352.50



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

		Cu	Pb	Zn	Sn
3091P-80-1-1	99.4m-100.4m	NIL	NIL	NIL	NIL
3091P-80-1-2	100.4m-101.4m	NIL	NIL	NIL	NIL
3091P-80-1-3	101.4m-102.0m	NIL	NIL	NIL	NIL

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

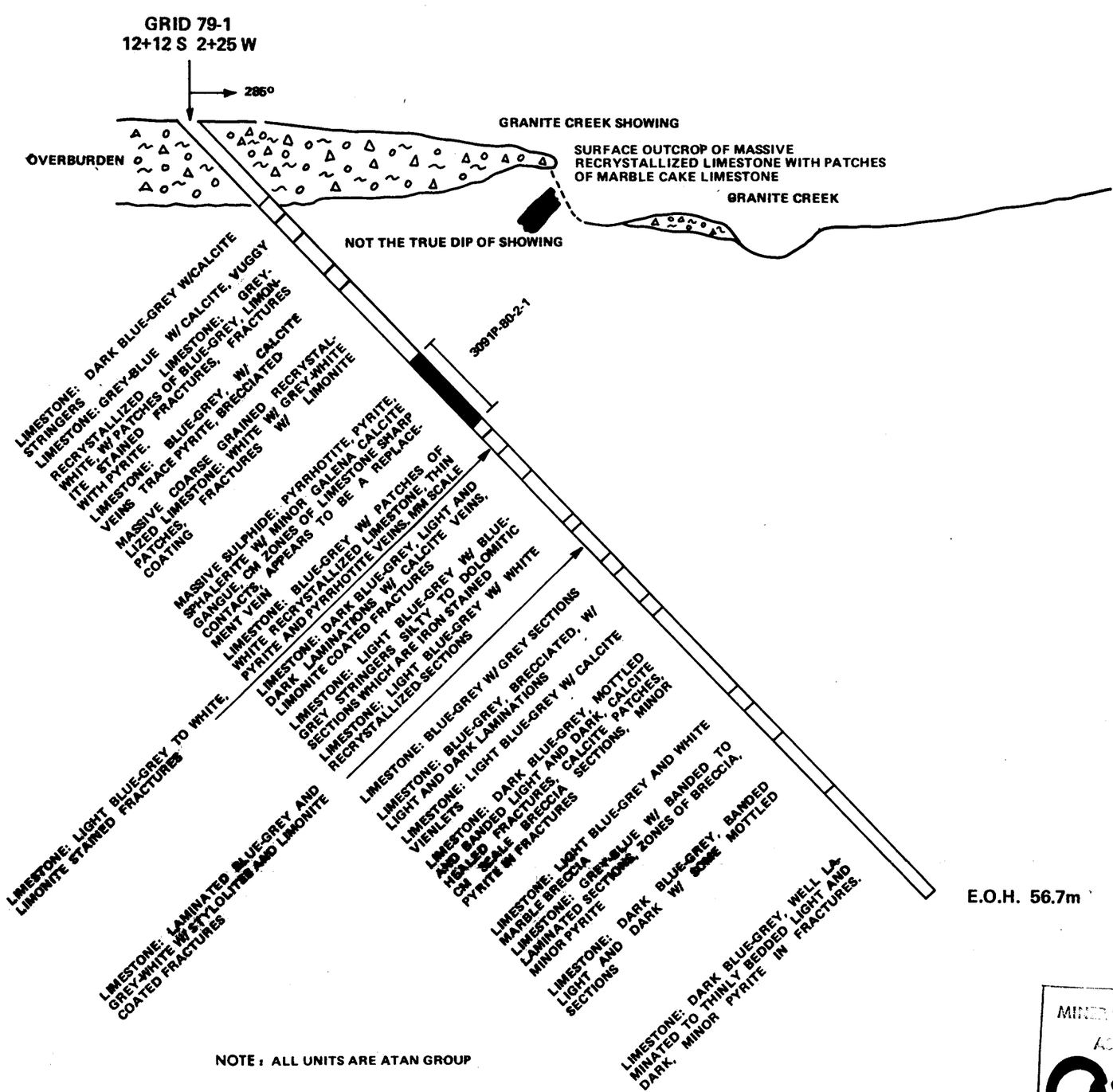
3091P
CASSIAR PROJECT–B.C.

DDH 80-1

GRID 79-1 L12+00S 2+00W
INCLINATION : -45°
AZIMUTH : 300°
TOTAL DEPTH : 104.5m

Figure 12

AUTHOR: G. BLOOMER	SCALE: [illegible]	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



		Ag	Pb	Zn	Sn
3091P-80-2-1	17.7m-22.3m	0.34oz/ton	0.1%	14%	0.03%

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

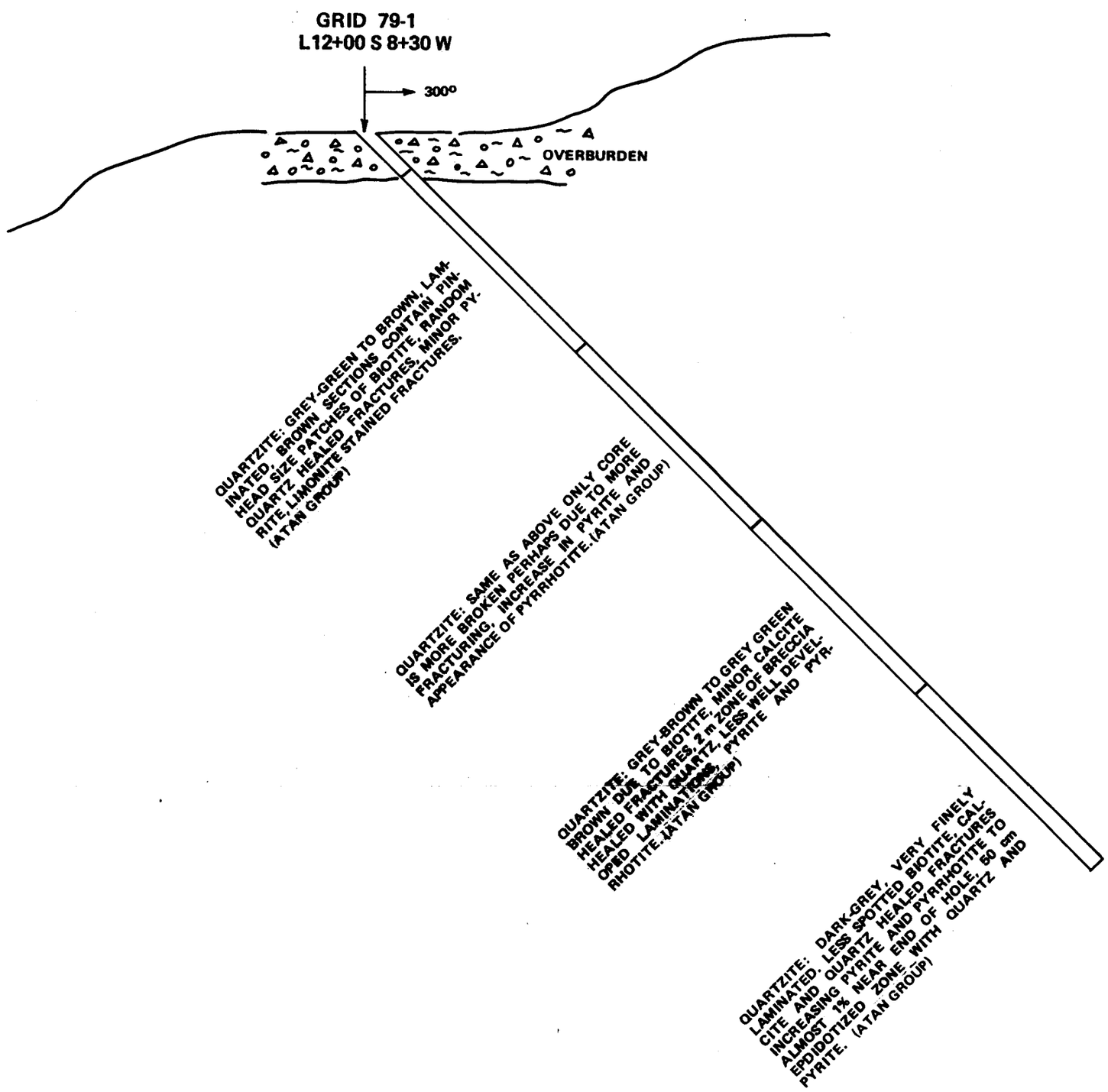
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091P
CASSIAR PROJECT–B.C.
DDH 80-2

GRID 79-1 L12+125 2+25W
INCLINATION : -45°
AZIMUTH : 285°
TOTAL DEPTH : 56.7m

Figure 13

AUTHOR: C. BLOOMER	SCALE: 1:200	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9262
NO.

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

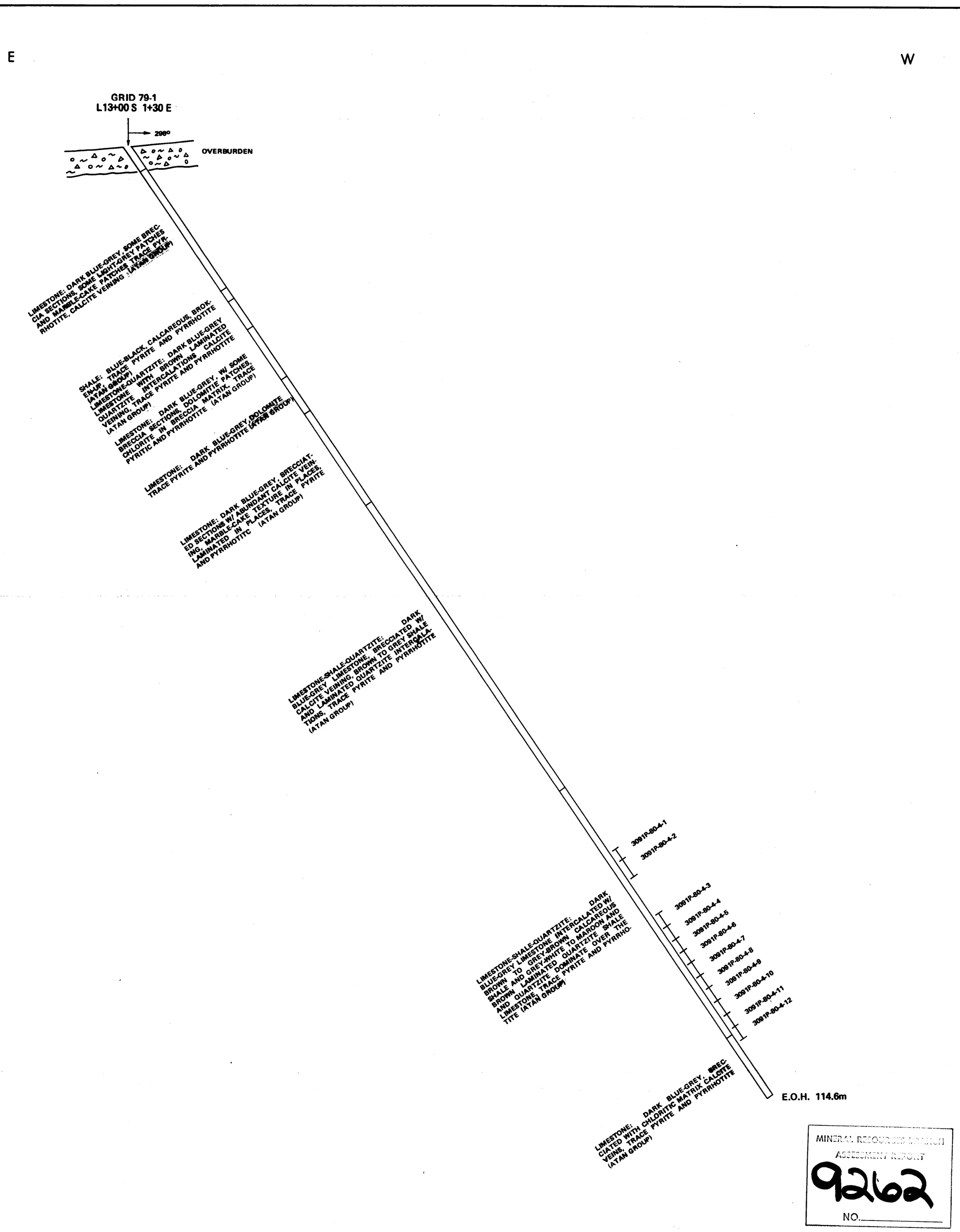
3091P
CASSIAR PROJECT–B.C.

DDH 80-3

GRID 79-1 L12+00S 8+30W
INCLINATION : -45°
AZMITH : 300°
TOTAL DEPTH: 50.3m

Figure 14

AUTHOR: C. BLOOMER	SCALE: 1:250	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



		Sn
3091P-80-4-1	85.3m-86.6m	< 0.01%
3091P-80-4-2	86.6m-87.5m	< 0.01%
3091P-80-4-3	93.0m-94.5m	< 0.01%
3091P-80-4-4	94.5m-96.0m	< 0.01%
3091P-80-4-5	96.0m-97.5m	< 0.01%
3091P-80-4-6	97.5m-99.0m	< 0.01%
3091P-80-4-7	99.0m-100.5m	< 0.01%
3091P-80-4-8	100.5m-102.0m	< 0.01%
3091P-80-4-9	102.0m-103.6m	< 0.01%
3091P-80-4-10	103.6m-105.2m	< 0.01%
3091P-80-4-11	105.2m-106.6m	< 0.01%
3091P-80-4-12	106.6m-108.2m	< 0.01%

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9262
NO.

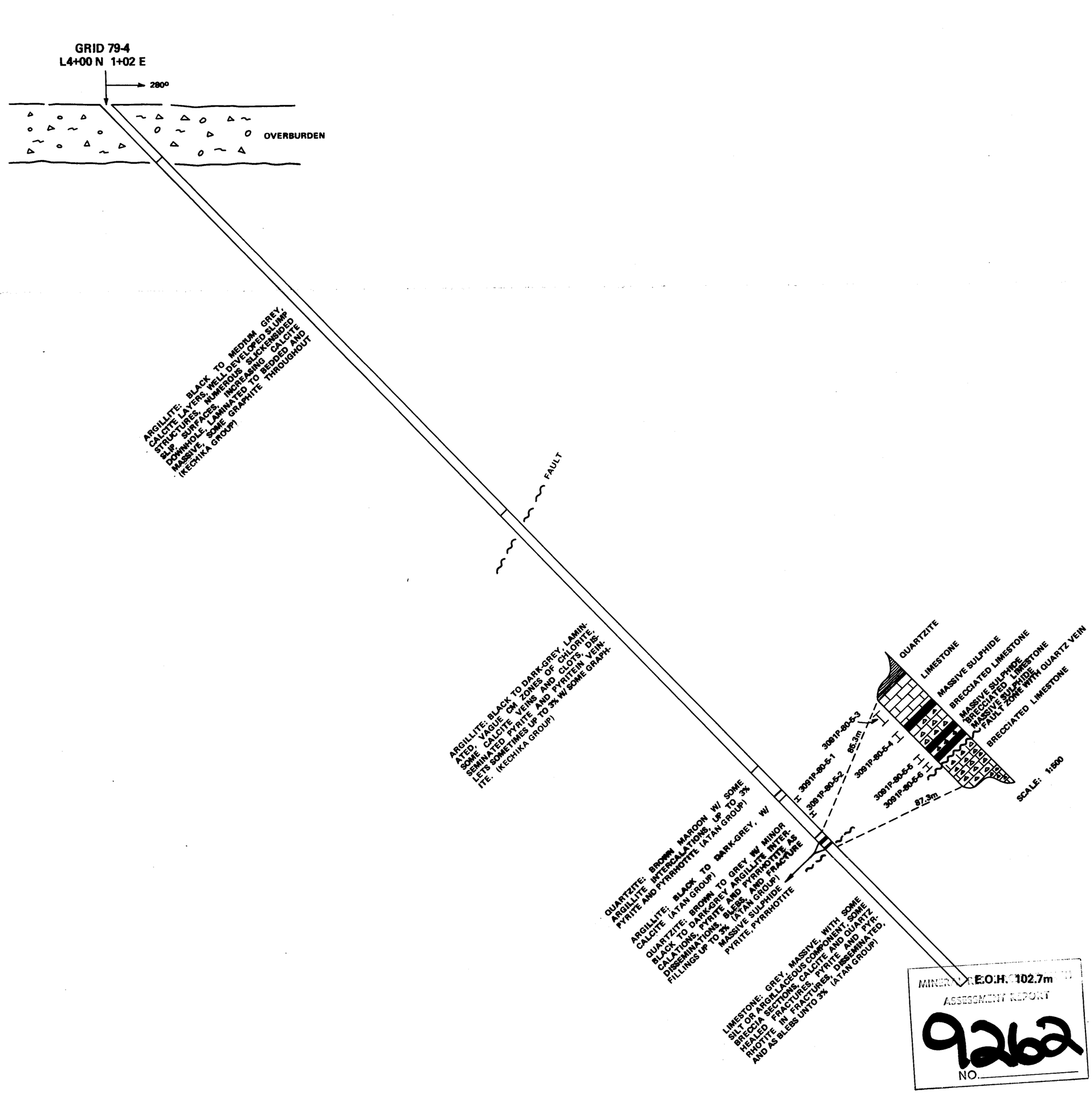
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091P
CASSIAR PROJECT—B.C.
DDH 80-4

GRID 79-1 L13+00S 1+30E
INCLINATION : -60°
AZIMUTH : 296°
TOTAL DEPTH: 114.6m

Figure 15

AUTHOR: C. BLOOMER	SCALE: [redacted]	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



		Sn
3091P-80-5-1	81.9m-82.1m	0.01%
3091P-80-5-2	83.6m-83.7m	0.01%
3091P-80-5-3	84.4m-85.6m	0.01%
3091P-80-5-4	85.9m-86.0m	< 0.01%
3091P-80-5-5	86.4m-86.5m	< 0.01%
3091P-80-5-6	86.6m-86.7m	0.01%

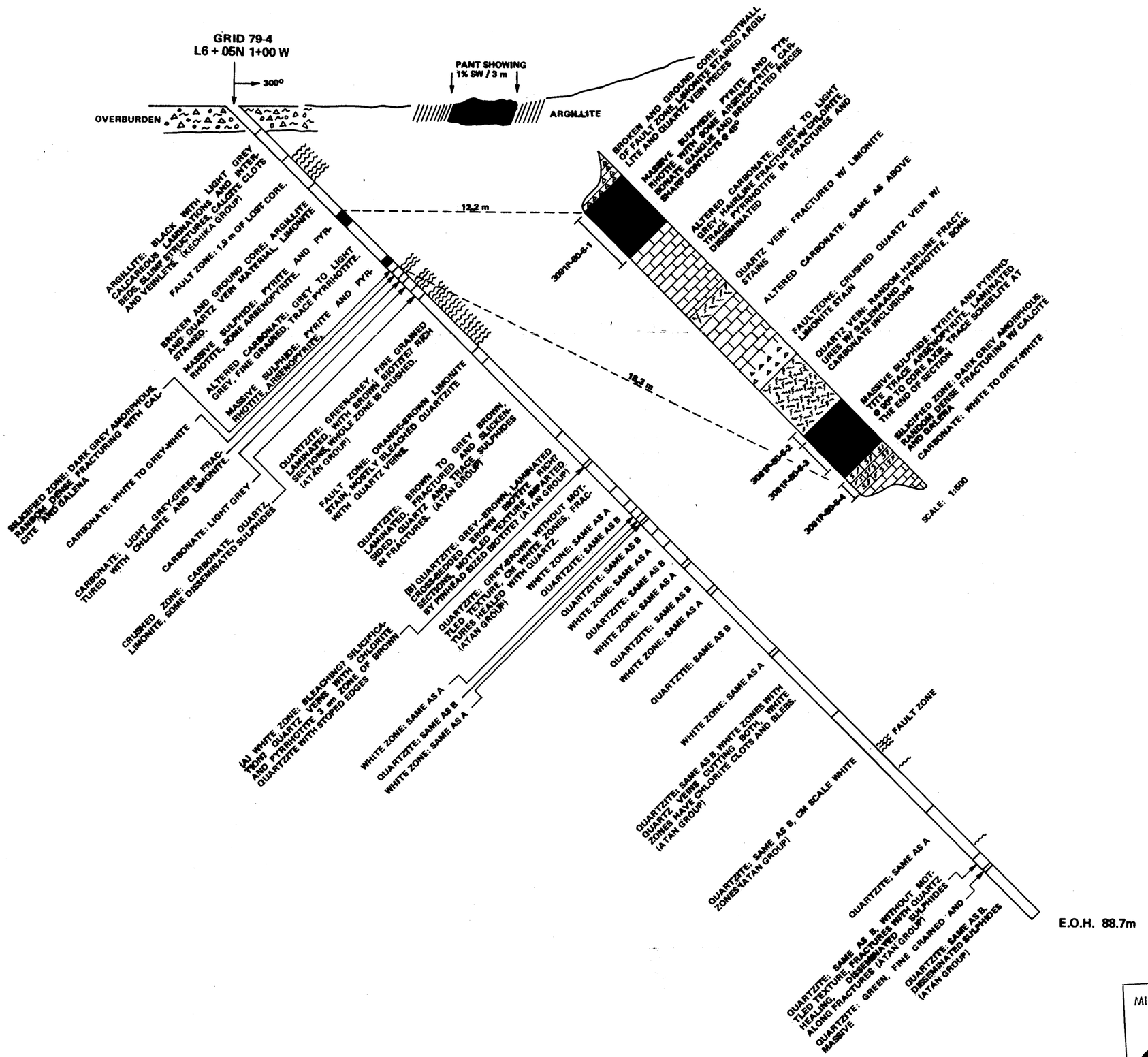
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091P
CASSIAR PROJECT–B.C.
DDH 80-5

GRID 79-4
INCLINATION : -60°
AZIMUTH : 280°
TOTAL DEPTH: 102.7m

Figure 16

AUTHOR: C. BLOOMER	SCALE: 1:250	DRAWING No.:
DATE: OCT, '80	REVISED:	ENCLOSURE No.:
To Accompany		



		Cu	Pb	Zn	Sn	Ag
3091P-80-6-1	12.2m-13.1m				0.94%	
3091P-80-6-2	16.8m-17.0m				0.61%	0.48oz/ton
3091P-80-6-3	17.0m-17.6m	0.06%	0.22%	0.74%	0.10%	1.44oz/ton
3091P-80-6-4	17.8m-18.2m		2.28%			8.64oz/ton

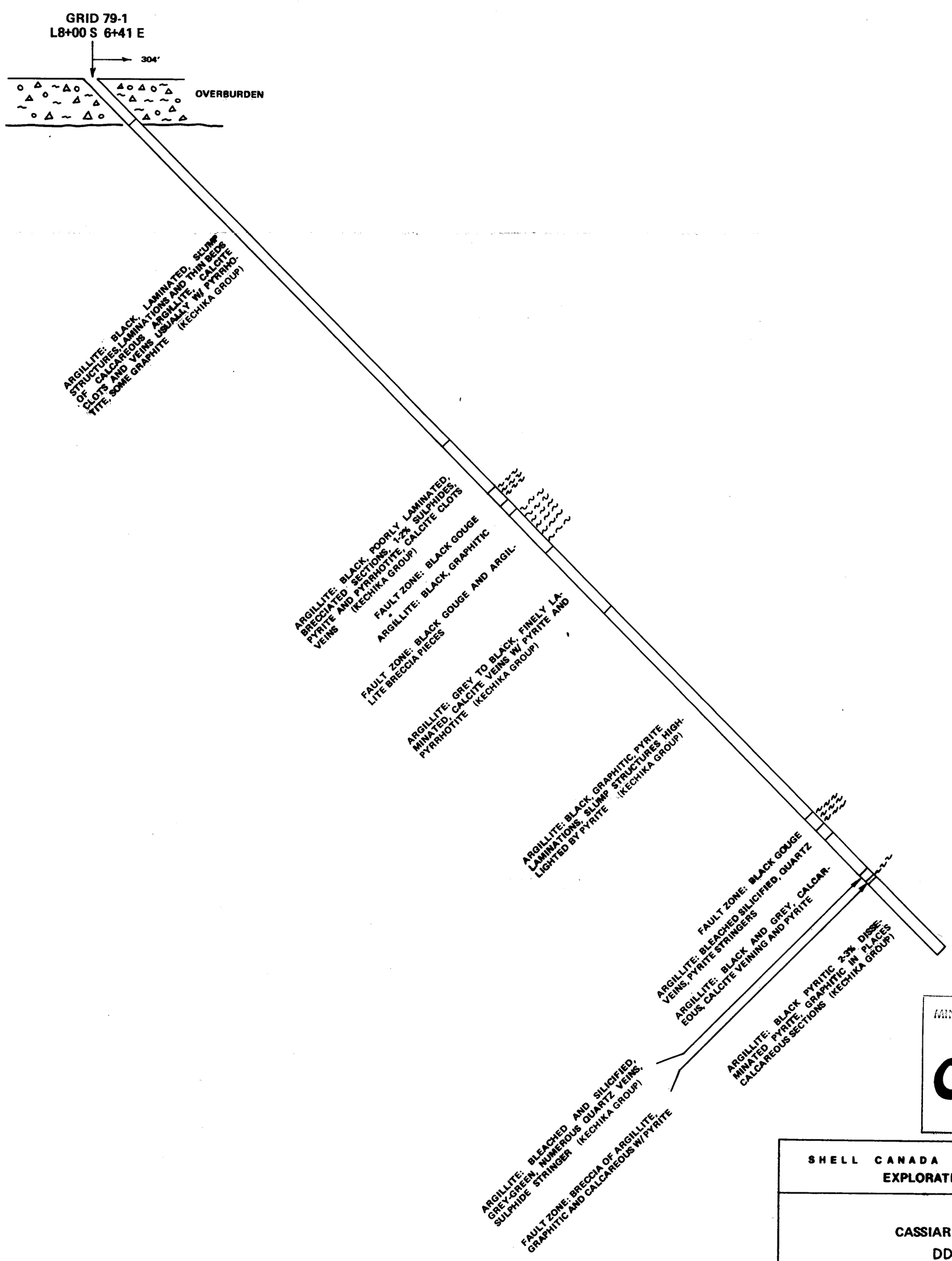
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091P
CASSIAR PROJECT–B.C.
DDH 80-6
GRID 79-4 L6+05N 1+00W
INCLINATION : -45°
AZIMUTH : 300°
TOTAL DEPTH: 90.5m

Figure 17

AUTHOR: C. BLOOMER	SCALE: 1:200	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

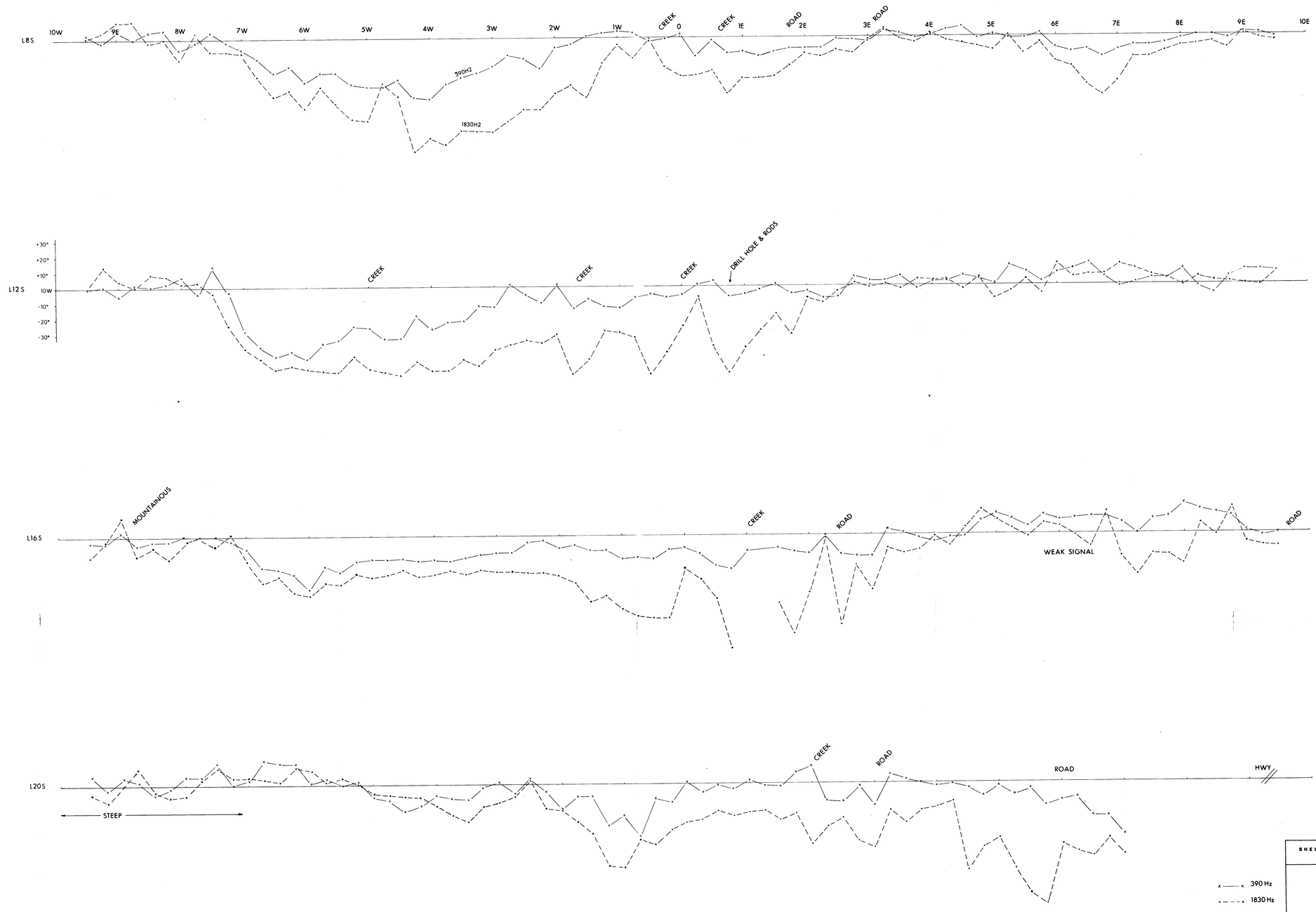
3091P
CASSIAR PROJECT–B.C.

DDH 80-7

GRID 79-1 L8+00S 6+41E
INCLINATION: -45°
AZIMUTH 304°
TOTAL DEPTH: 90.5m

Figure 18

AUTHOR: C. BLOOMER	SCALE: 1:250	DRAWING No.:
DATE: OCT. '80	REVISED:	ENCLOSURE No.:
To Accompany		



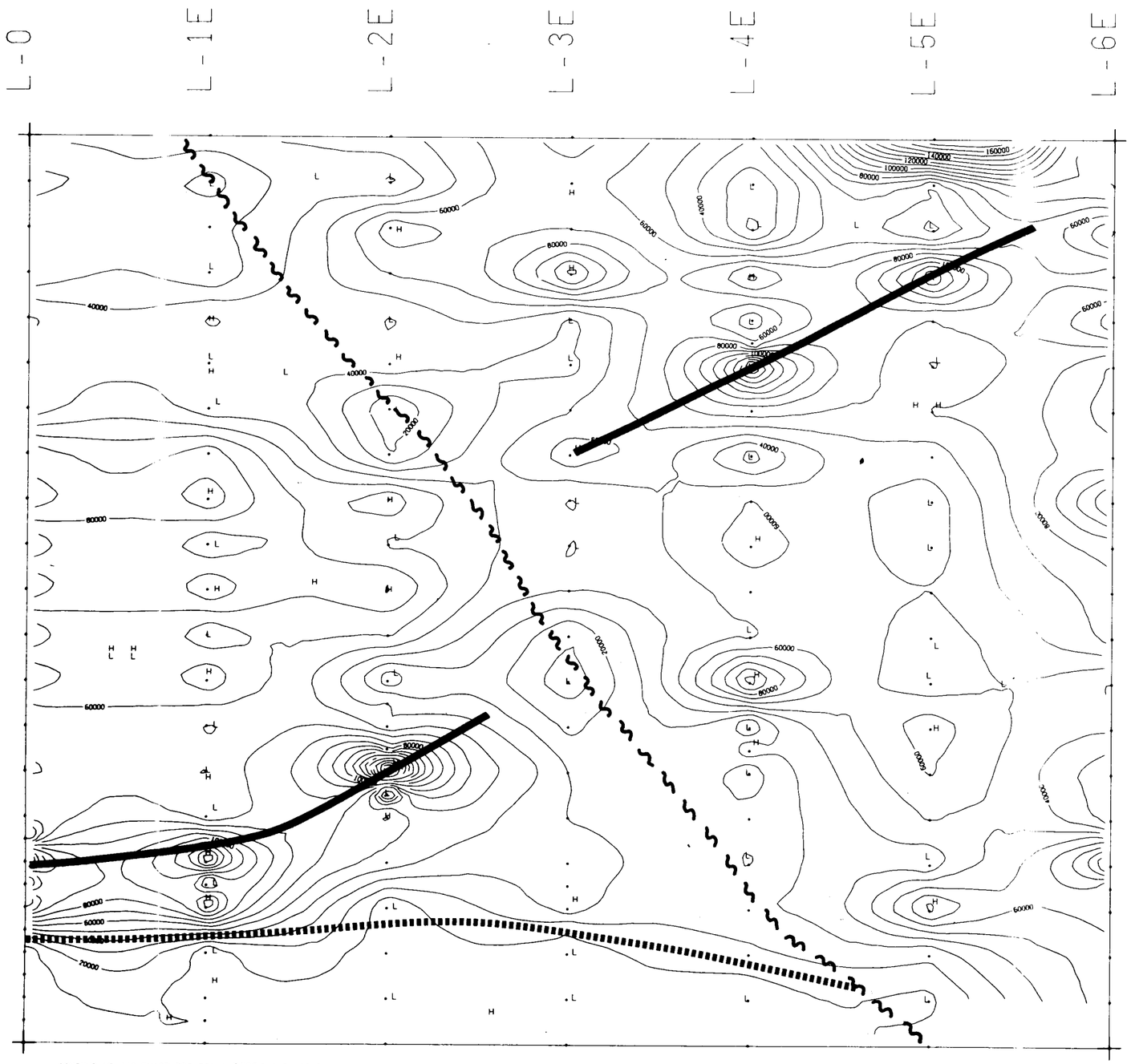
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

CASSIAR PROJECT – 3091P
LANG CREEK GRID - SOUTH
HORIZONTAL SHOOTBACK - EM
TILT ANGLE PROFILES
Figure 24

AUTHOR: S. LAYDAM	SCALE: 1:2500	DRAWING No.:
DATE: NOV 1980	REVISED:	ENCLOSURE No.:
To Accompany		

FRAME No. 693595



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

NOTE : CONTOUR VALUES ARE MULTIPLIED BY 100

INFERRED FAULT
INFERRED CONTACT
INFERRED RESISTIVE BODY AXIS

CONTOUR INTERVAL : 100 Ohm-m

SCALE 1:2500

0 50 100 m

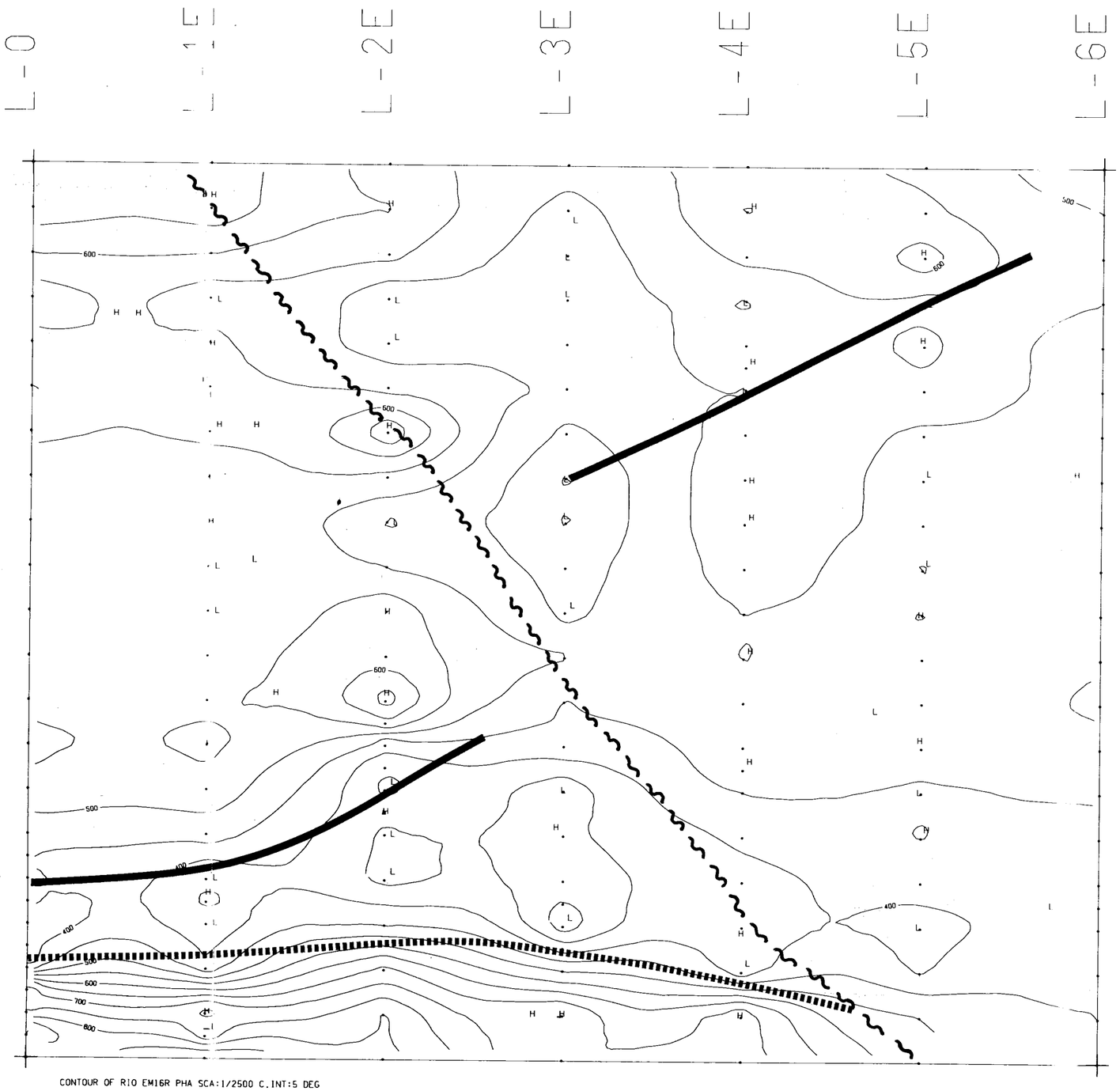
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091 P
CASSIAR PROJECT - B.C.
CONTOUR OF EM16R
APPARENT RESISTIVITY

Figure-19

AUTHOR: S. SAYDAM	SCALE: 1: 2500	DRAWING No.:
DATE: MARCH / 81	REVISED:	ENCLOSURE No.:
To Accompany		

FRAME No. 698786



CONTOUR OF RIO EM16R PHA SCA:1/2500 C.INT:5 DEG

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

NOTE: CONTOUR VALUES ARE MULTIPLIED BY 10

INFERRED FAULT
INFERRED CONTACT
INFERRED RESISTIVE BODY AXIS

CONTOUR INTERVAL : 5 degrees

SCALE 1:2500

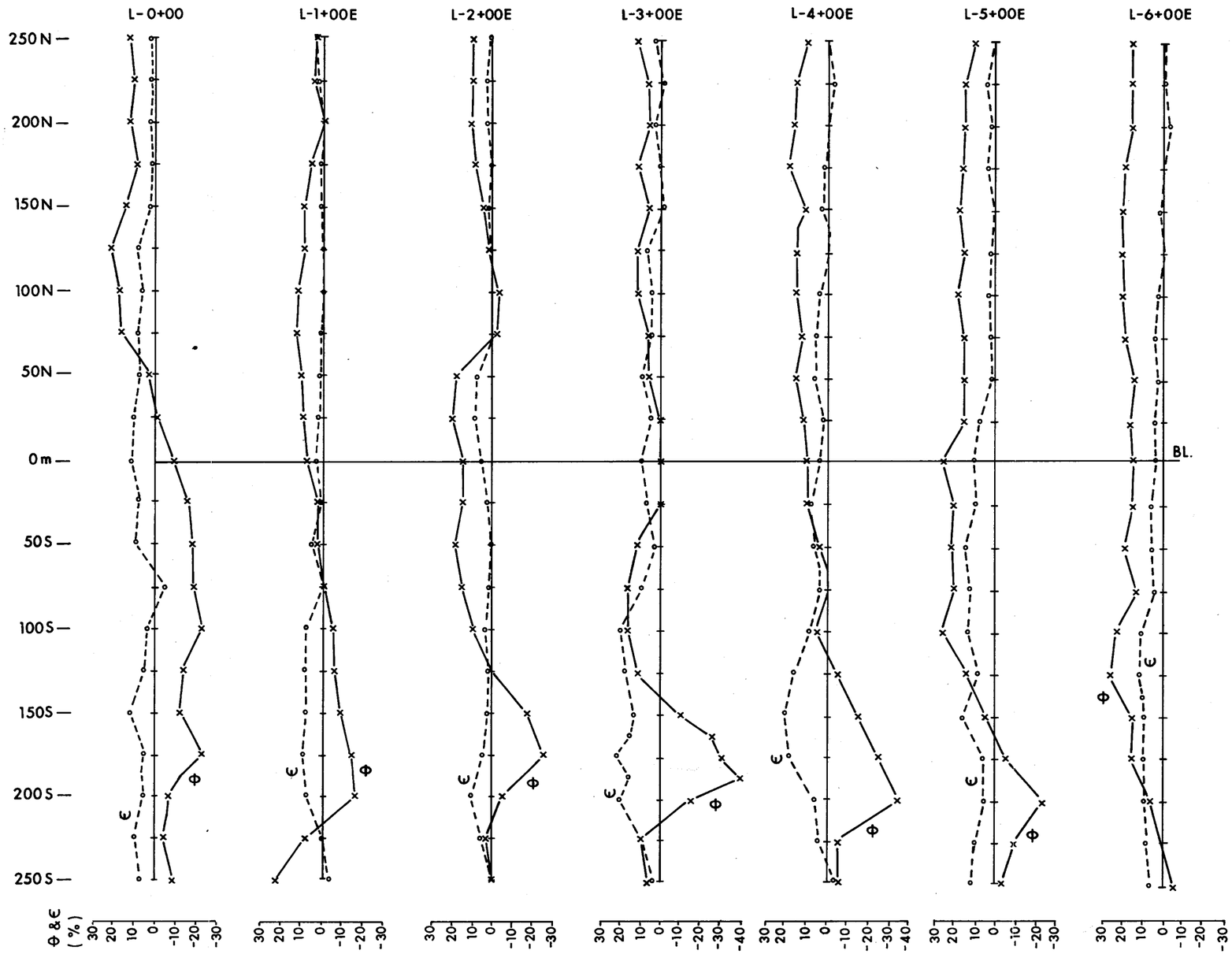
0 50 100 m

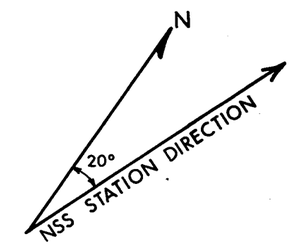
SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3091P
CASSIAR PROJECT - B.C.
CONTOUR OF EM16R
PHASE

Figure 20

AUTHOR: S. SAYDAM	SCALE: 1:2500	DRAWING No.:
DATE: MARCH /81	REVISED:	ENCLOSURE No.:
To Accompany		





MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

Φ ×——× TILT ANGLE (%)

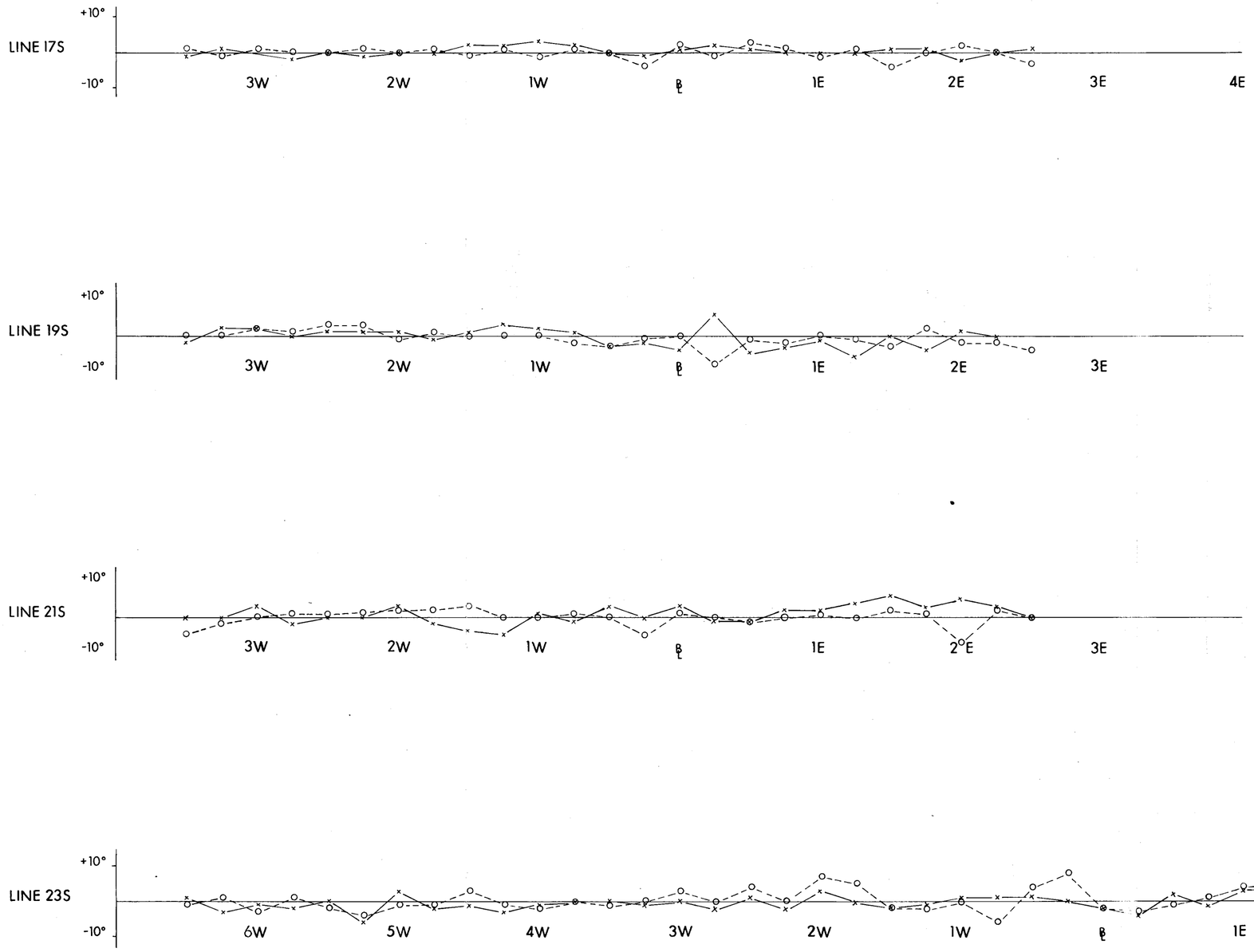
ϵ ∘– – – ∘ ELLIPTICITY (%)

READINGS ARE TAKEN FACING NORTH

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091 P
CASSIAR PROJECT - B.C.
RIO GRID
VLF-EM PROFILES
STA. NSS (MARYLAND)
Figure 21

AUTHOR: S. SAYDAM	SCALE: 1:2500	DRAWING No.:
DATE: MARCH / 81	REVISED:	ENCLOSURE No.:
To Accompany		



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

LOW 390 Hz.

HIGH 1830 Hz.

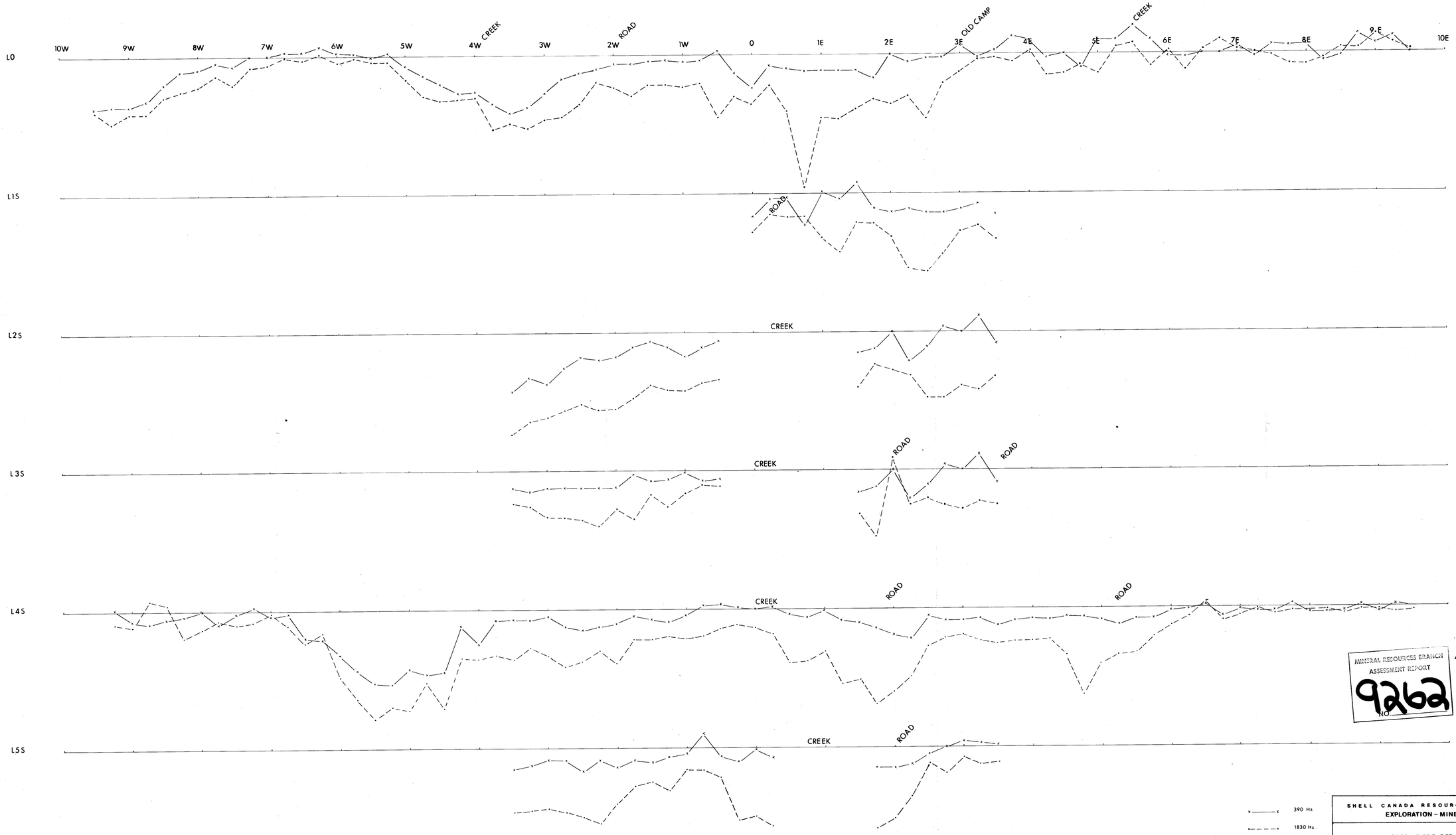
1 cm = 10°

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

CASSIAR PROJECT - 3091P
GRID 79-1 EXTENSION
HORIZONTAL SHOOTBACK - EM
TILT ANGLE PROFILES

Figure 22

AUTHOR: S SAYDAM	SCALE: 1:2500	DRAWING No.:
DATE: NOV. '80	REVISED:	ENCLOSURE No.:
To Accompany		



x——x 390 Hz.

·— — —· 1830 Hz.

1 cm = 10°

SCALE: ←→ 1: 2500

↕ 1:12500

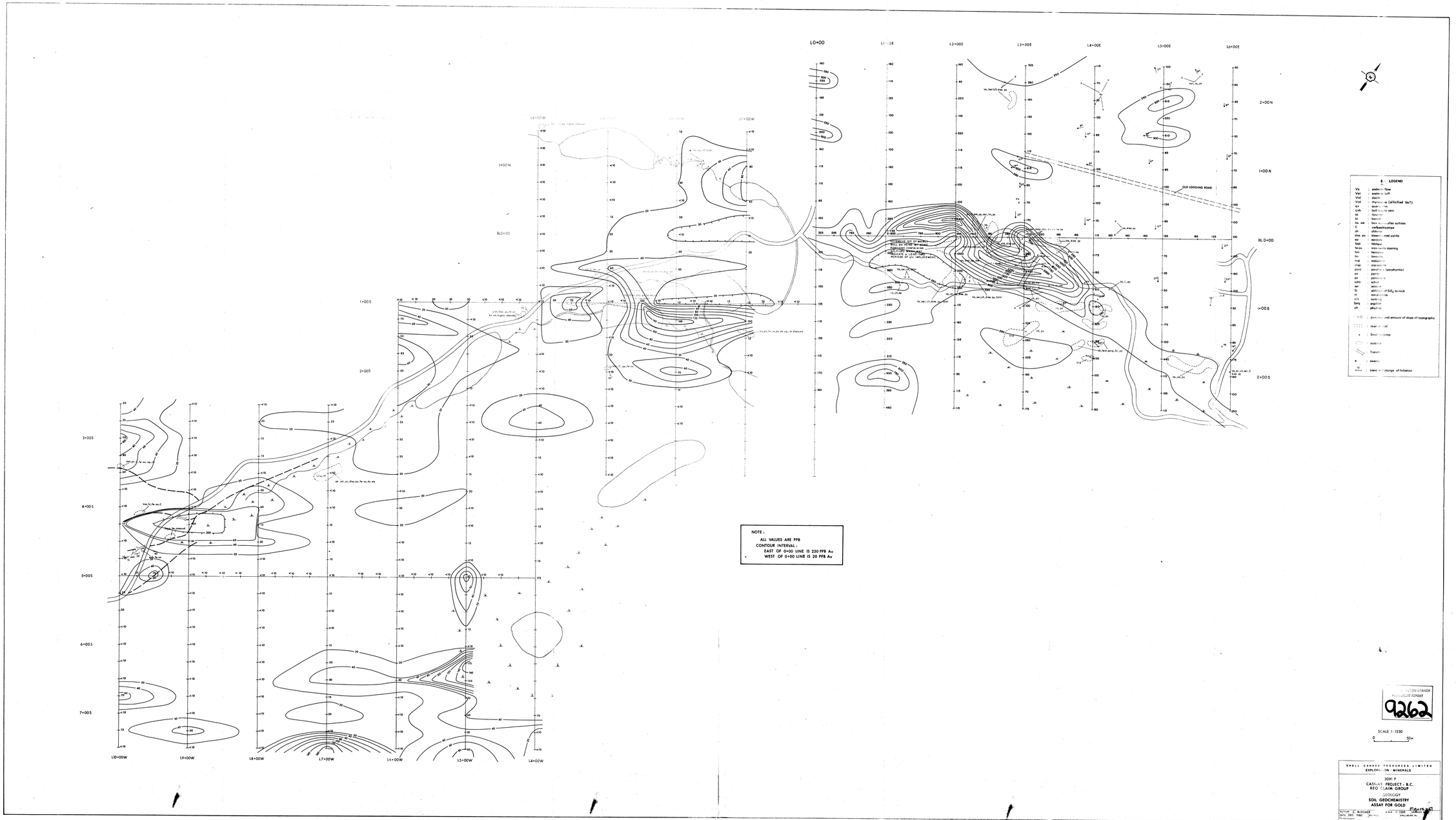
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

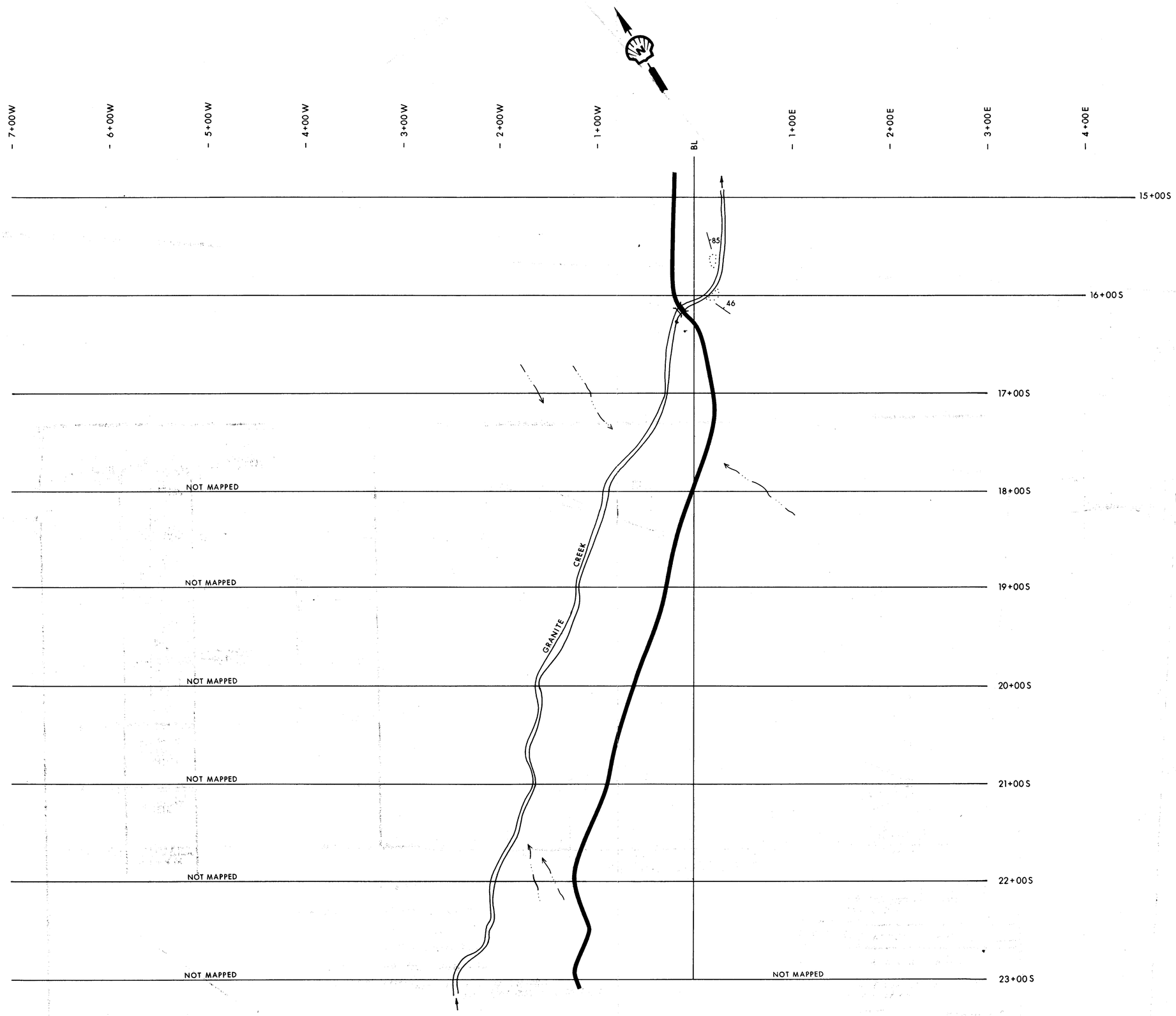
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

CASSIAR PROJECT–3091P
LANG CREEK GRID - NORTH
HORIZONTAL SHOOTBACK - EM
TILT ANGLE PROFILES

Figure 23

AUTHOR: S SALAM		SCALE:	DRAWING No.:
DATE: NOV 1980	REVISED:		ENCLOSURE No.:
To Accompany			


L0+00
L1+00E
L2+00E
L3+00E
L4+00E
L5+00E
L6+00E
L4+00W
L3+00W
L2+00W
L1+00W
L10+00W
L9+00W
L8+00W
L7+00W
L6+00W
L5+00W
L4+00W
2+00N
1+00N
BL0+00
1+00S
2+00S
3+00S
4+00S
5+00S
6+00S
7+00S
OLD LOGGING ROAD
NOTE :
ALL VALUES ARE PPB
CONTOUR INTERVAL :
EAST OF 0+00 LINE IS 250 PPB Au
WEST OF 0+00 LINE IS 20 PPB Au
LEGEND
Vx : andesitic flow
Vxt : andesitic tuff
Vxd : diorite
Vxd : rhyolitic sill (silicified Vxt?)
qv : quartz vein
qvb : bull quartz veins
az : Azurite
bi : biotite
bs wk : bleaching after sulfides
ch : chloritization
ch : chlorite
diss. py : disseminated pyrite
ep : epidote
feld : feldspar
fe ox : iron oxide staining
hm : hematite
lim : limonite
mal : malachite
mag : magnetite
porp : porphyry (porphyritic)
py : pyrite
pz : pyrrhotite
sdst : sulfur
ser : sericite
si : addition of SiO_2 to rock
tr : tetrahedrite
Sery : argillic
ph : phyllitic
: direction and amount of slope of topography
: road or trail
: Small creek
: outcrop
: Trench
: swamp
: trend and plunge of foliation
SCALE 1 : 1250
0 50m
9262
SHELL CANADA RESOURCES LIMITED
EXPLORATION MINERALS
3091 P
CASSIAR PROJECT - B.C.
REG CLAIM GROUP
GEOLOGY
SOIL GEOCHEMISTRY
ASSAY FOR GOLD
AUTHOR C. BLOWER
DATE DEC. 1982
SCALE 1 : 1250
Figure 3



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

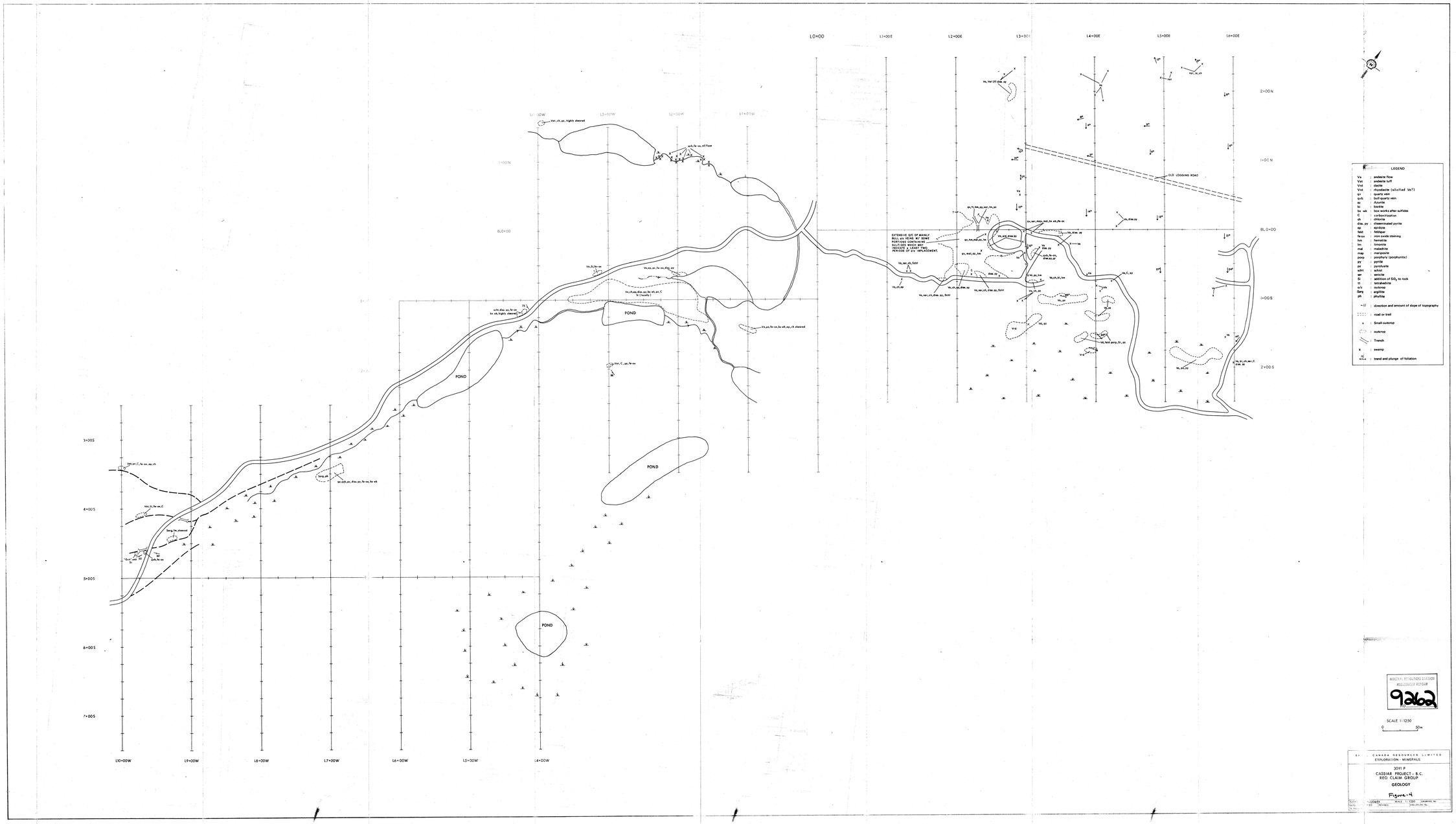
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

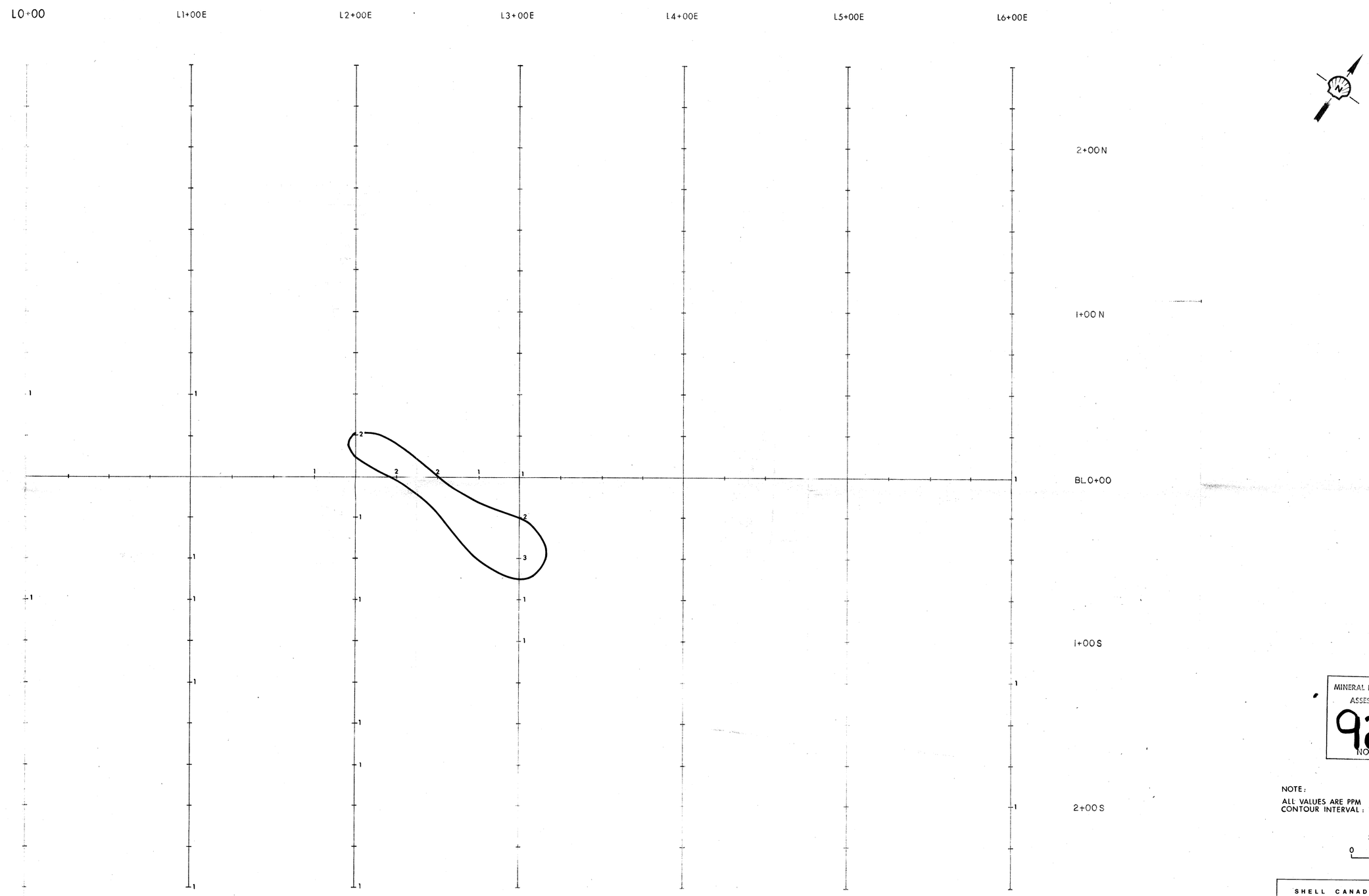
3091 P

CASSIAR PROJECT — B.C.
GRANITE CREEK GRID EXTENSION
GEOLOGICAL MAP

Figure - 3

AUTHOR: A.W. GOURLAY	SCALE: 1:2500	DRAWING No.:
DATE: OCT., 1980	REVISED:	ENCLOSURE No.:
To Accompany		


L0+00
L1+00E
L2+00E
L3+00E
L4+00E
L5+00E
L6+00E
L1+00W
L2+00W
L3+00W
L4+00W
L5+00W
L6+00W
L7+00W
L8+00W
L9+00W
L10+00W
2+00N
1+00N
BL0+00
1+00S
2+00S
3+00S
4+00S
5+00S
6+00S
7+00S
POND
POND
POND
POND
OLD LOGGING ROAD
EXTENSIVE O/C OF MAINLY
RHYOLITE CONTAINING
PORTIONS CONTAINING
PYRITE. ALTERATION
INDICATE > LEAST TWO
PERIODS OF Qtz IMPLACEMENT.
LEGEND
Vx : andesite flow
Vxt : andesite tuff
Vxd : dacite
Vxd : rhyodacite (silicified Vxt?)
qv : quartz vein
qvb : bull quartz vein
az : Azurite
bi : biotite
bx wk : box works after sulfides
C : carbonization
ch : chlorite
diss. py : disseminated pyrite
fd : feldspar
feld : feldspar
fe-ox : iron oxide staining
hm : hematite
lm : limonite
mal : malachite
mag : magnetite
porp : porphyry (porphyritic)
py : pyrite
px : pyroxlenite
schst : schist
ser : sericite
Si : addition of SiO_2 to rock
tt : tetrahedrite
o/c : outcrop
Sarg : argillite
ph : phyllite
→20 : direction and amount of slope of topography
road or trail
x : Small outcrop
outcrop
Trench
swamp
trend and plunge of foliation
SCALE 1:1250
0 50m
9262
CANADA RESOURCES LIMITED
EXPLORATION - MINERALS
3071 P
CASSIAR PROJECT - B.C.
REO CLAIM GROUP
GEOLOGY
Figure-4



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

NOTE:
ALL VALUES ARE PPM
CONTOUR INTERVAL : 2 PPM

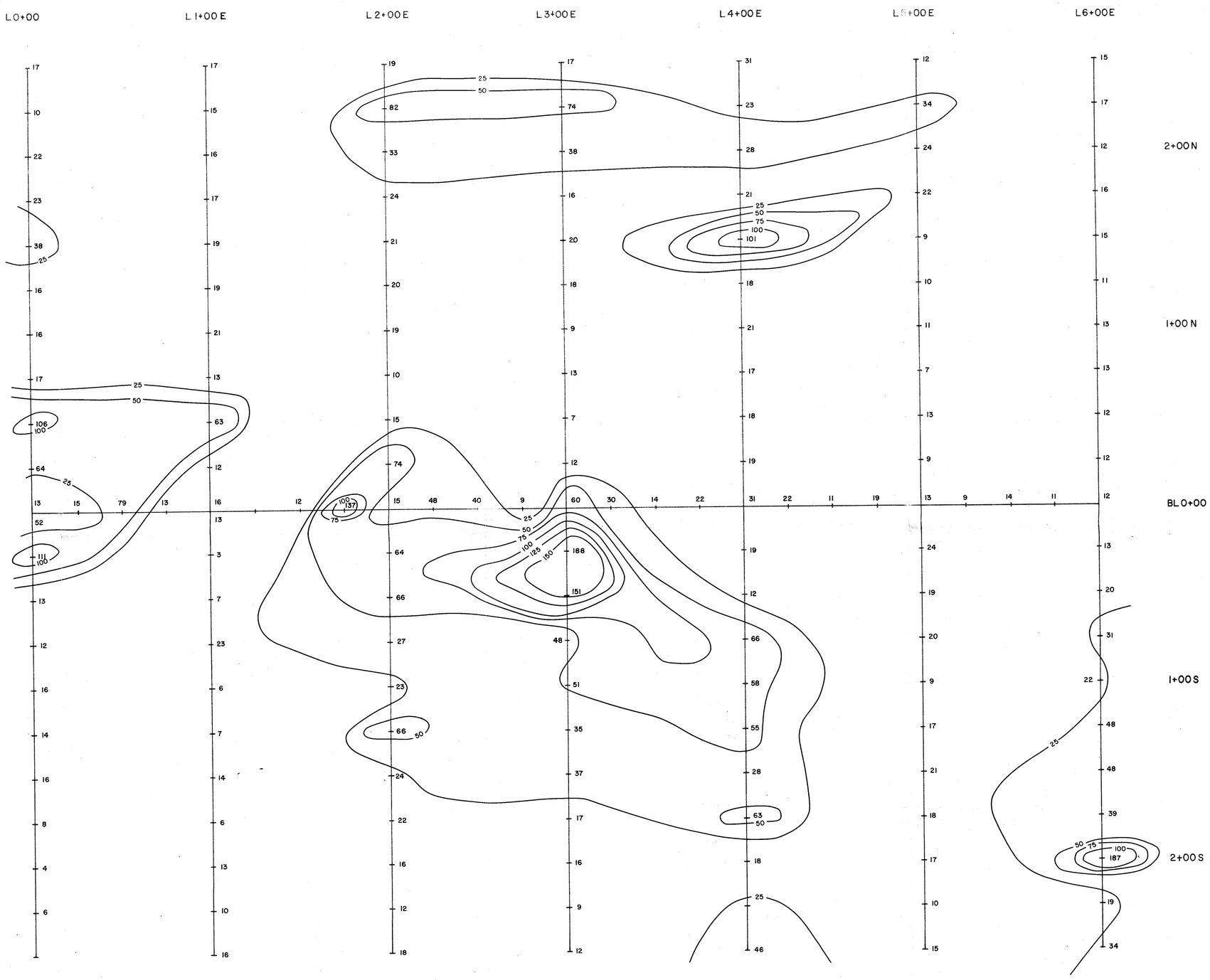
SCALE - 1:1250
0 50m

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091 P
CASSIAR PROJECT - B.C.
REO CLAIM GROUP
SOIL GEOCHEMISTRY
ASSAY FOR: SILVER

Figure 6

AUTHOR: C. BLOOMER		SCALE: 1:1250	DRAWING No.:
DATE: APRIL 1981	REVISED:		ENCLOSURE No.:
To Accompany			



MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

NOTE:
ALL VALUES ARE PPM
CONTOUR INTERVAL: 25 PPM

SCALE - 1:1250

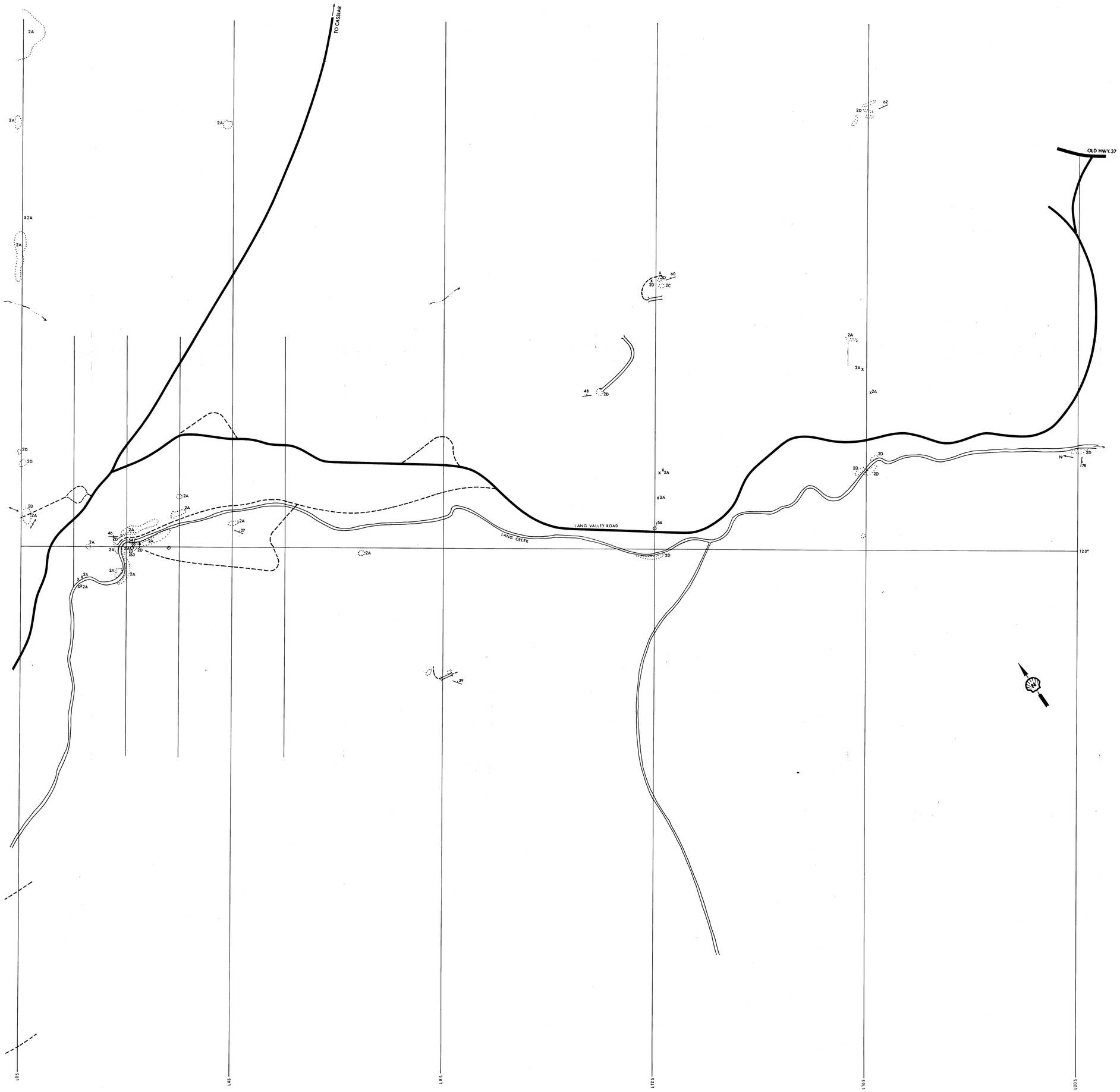
0 50 m

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091P
CASSIAR PROJECT – B.C.
REO CLAIM GROUP
SOIL GEOCHEMISTRY
ASSAY FOR: COPPER

Figure 7

AUTHOR: C. BLOOMER	SCALE: 1:1250	DRAWING No.:
DATE: JUNE, 1980	REVISED:	ENCLOSURE No.:
To Accompany		



BEDDING
FOLIATION
LINEATION
FRACTURE
DIAMOND DRILL HOLE
ROAD
TRAIL
OUTCROP
X SUBCROP
INTERMITTENT STREAM
TRENCH
SHOWING

JURASSIC AND CRETACEOUS

1 CASSIAR BATHOLITH - Endocontact phase pink to grey Quartz-Monzonite, Fine to medium grained with some Quartz-Feldspar Porphyritic sections, Well jointed, fractured with some Quartz, Flourite, Sericite, Beryl fracture fillings. Trace Wolframite.

UPPER DEVONIAN AND LOWER MISSISSIPPIAN

2 SYLVESTER GROUP

2A. BASALT AND ANDESITE – dark green, grey green, fine to medium grained, mostly flow rocks with some Tuff (2A-T), Agglomerate (2A-AGG), Breccia (2A-BX), and Pillows (2A-P). The massive flow rocks have hairline fractures with Chlorite or Epidote. Pyrite occurs as minor disseminations.

2B. DACITE – Light grey-green, fine and medium grained. Mostly Lapilli size Pyroclastic (2B-L) and Breccia or Pillow fragments (2B-BX) or as fine grained possibly sheared Tuff (2B-T) containing disseminated Chalcocite and lesser Chalcopyrite near the Lang Creek Showing.

2C. DIORITE – Dark green, medium to coarse grained also as dikes and sills within 1A.

2D. ARGILLITE – Black and grey-black, laimnated to thinly bedded to massive; charty sections and interbeds, Graphitic and sometimes Pyritic minor grit or micro-conglomerate interbeds, Shale and Slate, and Limestone.

MIDDLE AND UPPER DEVONIAN

3 McDAME GROUP

3A. DOLOMITIC SANDSTONE, SANDSTONE, CHERT, QUARTZITE – blue-grey, grey, thinly bedded to laminated. Interbeds and Laminations of Quartzite and Chert.

ORDOVICIAN, SILURIAN AND (?) DEVONIAN

4 SANDPILE GROUP

4A. LIMESTONE – Grey, light grey, and lesser grey-black, massive, highly folded and contorted, sometimes fissile. Recrytallized Quartz veining throughout.

CAMBRIAN AND ORDOVICIAN

5 KECHIKA GROUP

5A. ARGILLITE, SHALE, SLATE – black to grey-black; mostly argillite with a pervasive mild slatey cleavage, some sections of shale and slate; charty and calcareous sections throughit, laminated to bedded, pyrite occurs as fine disseminations up to 1% and as fine streaks.

5B. PHYLLITE - black, friable, carbonaceous, with minor pyrite.

5C. ARGILLACEOUS LIMESTONE – grey-black, massive, with argillite and shale fragments.

CAMBRIAN

LOWER CAMBRIAN

6 ATAN GROUP

6A. LIMESTONE – blue-grey to dark grey, laminated to well-bedded to massive, with flaggy patches and minor fragmental or breccia sections. (6A-BX)

6B. RECRYSTALLIZED LIMESTONE (MARBLE) – buff, white, massive and as stringers and patches in 2A, large rohmbohedric crystals.

6C. DOLOMITE – yellow, buff, brown, rose, crystalline, massive, with some friable sections, minor pyritohedrons in the crystalline portions.

6D. QUARTZITE – maroon, green, brown, and tan, well-bedded with cross bedded sections, pyrite and lesser pyrrhotite as disseminations and stringers.

6E. HORNFELSIC QUARTZITE – maroon, green, buff, and brown; pure quartzite beds are crystalline, less pure beds are schistose and contain andalusite patches; chlorite clots occur in the chlorite-rich green beds; more abundant pyrite and pyrrhotite than in 2D as stringers and scales along fracture surfaces and minor massive banded pyrite-pyrrhotite.

6F. SHALE AND SLATE – black, grey, and buff, laminated, pyritic, and carbonaceous, with some calcareous interbeds.

7 TACTITE

GARNET - DIOPSIDE AND GARNET ACTINOLITE - minor scheelite mineralization.

8 QUARTZ VEINING

Massive white "Bull Quartz", sections of hackly graphitic quartz and vuggy quartz with tetrahedrite, chalcopyrite, and pyrite. Contacts are Carbonatized

9 INTERMEDIATE DIKE

10 CONGLOMERATE: KECHIKA, SANDPILE
ATAN, LOOSELY CEMENTED

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
NO. 9262

GEOLOGY BY A.W.GOURLAY, G.KNOWLES

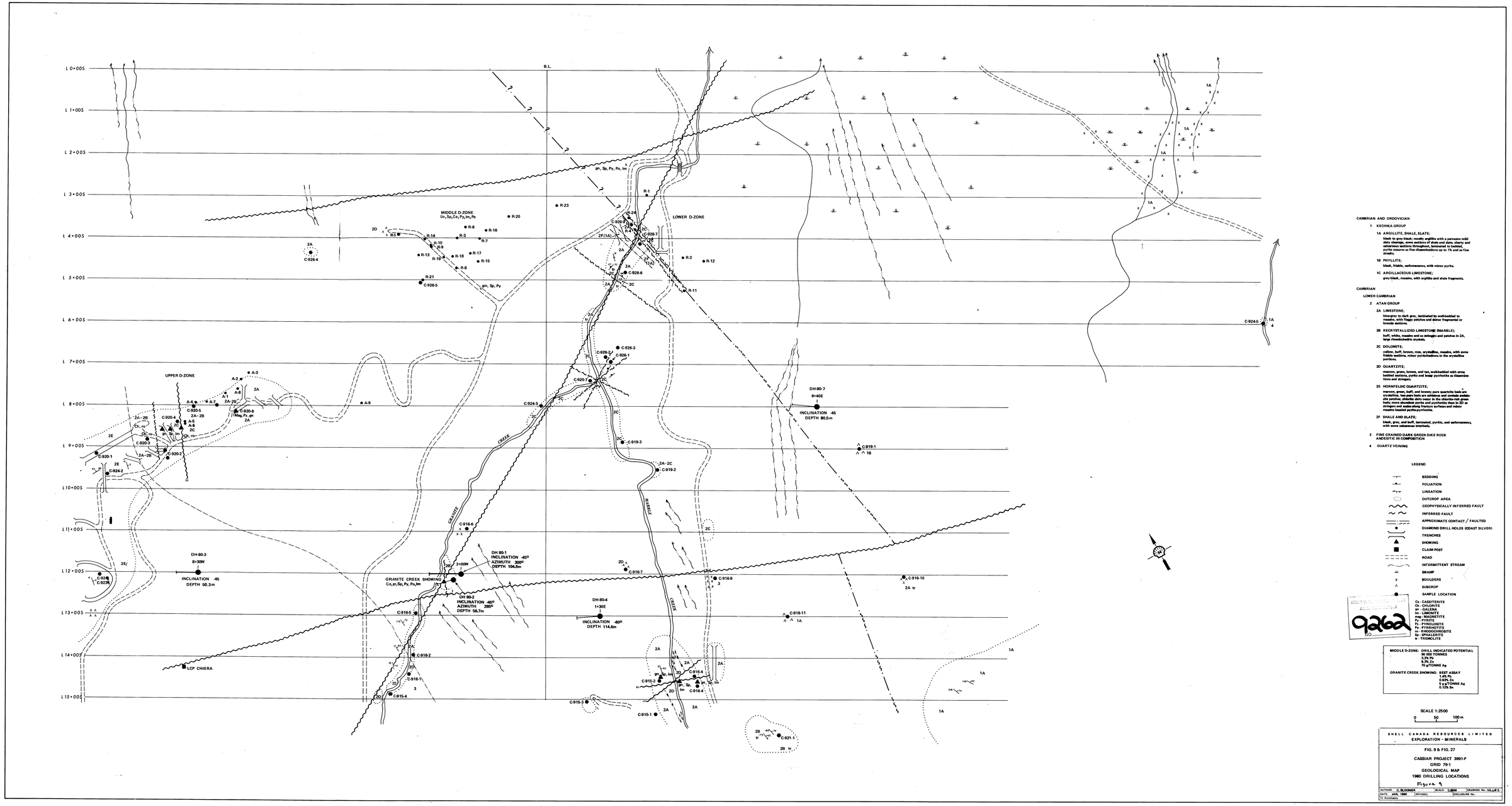
SCALE 1:2500
0 50 100 m

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091 P
CASSIAR PROJECT-B.C.
LANG CREEK GRID
GEOLOGICAL MAP

Figure - 8

AUTHOR: A.W.GOURLAY		SCALE: 1:2500	DRAWING No.:
DATE: OCT.'80	REVISED:		ENCLOSURE No.:
To Accompany			



CAMBRIAN AND ORDOVICIAN

1 KECHIKA GROUP

1A ARGILLITE, SHALE, SLATE;
black to grey-black; mostly argillite with a pervasive mild defy cleavage, some sections of shale and slate; cherty and calcareous sections throughout, laminated to bedded. Some sections as fine disseminations up to 1% and as fine stream.

1B PHYLLITE;
black, friable, carbonaceous, with minor pyrite.

1C ARGILLACEOUS LIMESTONE;
grey-black, massive, with argillite and shale fragments.

CAMBRIAN

LOWER CAMBRIAN

2 ATAN GROUP

2A LIMESTONE;
blue-grey to dark grey, laminated to well-bedded to massive, with flaggy patches and minor fragmental or breccia sections.

2B RECRYSTALLIZED LIMESTONE (MARBLE);
buff, white, massive and as stringers and patches in 2A, large rhombohedric crystals.

2C DOLOMITE;
yellow, buff, brown, cree, crystalline, massive, with some friable sections, minor pyrite/sulfides in the crystalline portions.

2D QUARTZITE;
maroon, green, brown, and tan, well-bedded with cross bedded sections, pyrite and lesser pyrrhotite as disseminations and stringers.

2E HORNFELDIC QUARTZITE;
maroon, green, buff, and brown; pure quartzite beds are crystalline, less pure beds are schistose and contain andalusite patches; chlorite slots occur in the chlorite-rich green beds; more abundant pyrite and pyrrhotite than in 2D as stringers and seams along fracture surfaces and minor massive banded pyrite-pyrrhotite.

2F SHALE AND SLATE;
black, grey, and buff, laminated, pyritic, and carbonaceous, with some calcareous interbeds.

3 FINE GRAINED DARK GREEN DIKE ROCK
ANDESITIC IN COMPOSITION

4 QUARTZ VEINING

LEGEND

BEDDING
FOLIATION
LINEATION
OUTCROP AREA
GEOPHYSICALLY INFERRED FAULT
INFERRED FAULT
APPROXIMATE CONTACT / FAULTED
DIAMOND DRILL HOLES (EDAST SILVER)
TRENCHES
SHOWING
CLAIM POST
ROAD
INTERMITTENT STREAM
SWAMP
BOULDERS
SUBCROP
SAMPLE LOCATION

Co - CASSITERITE
Ch - CHLORITE
gn - GALENA
Im - LIMONITE
Mag - MAGNETITE
Py - PYRITE
Po - PYROLUSITE
Po - PYRRHOTITE
ro - RHODOCHROSITE
Sp - SPHALERITE
tr - TREMOLITE

9262
NO.

MIDDLE D-ZONE:	DRILL INDICATED POTENTIAL 90 000 TONNES 3.2% Pb 6.3% Zn 70 g/TONNE Ag
GRANITE CREEK SHOWING:	BEST ASSAY 1.4% Pb 0.63% Zn 5 g/TONNE Ag 0.12% Sn

SCALE 1:2500
0 50 100 m

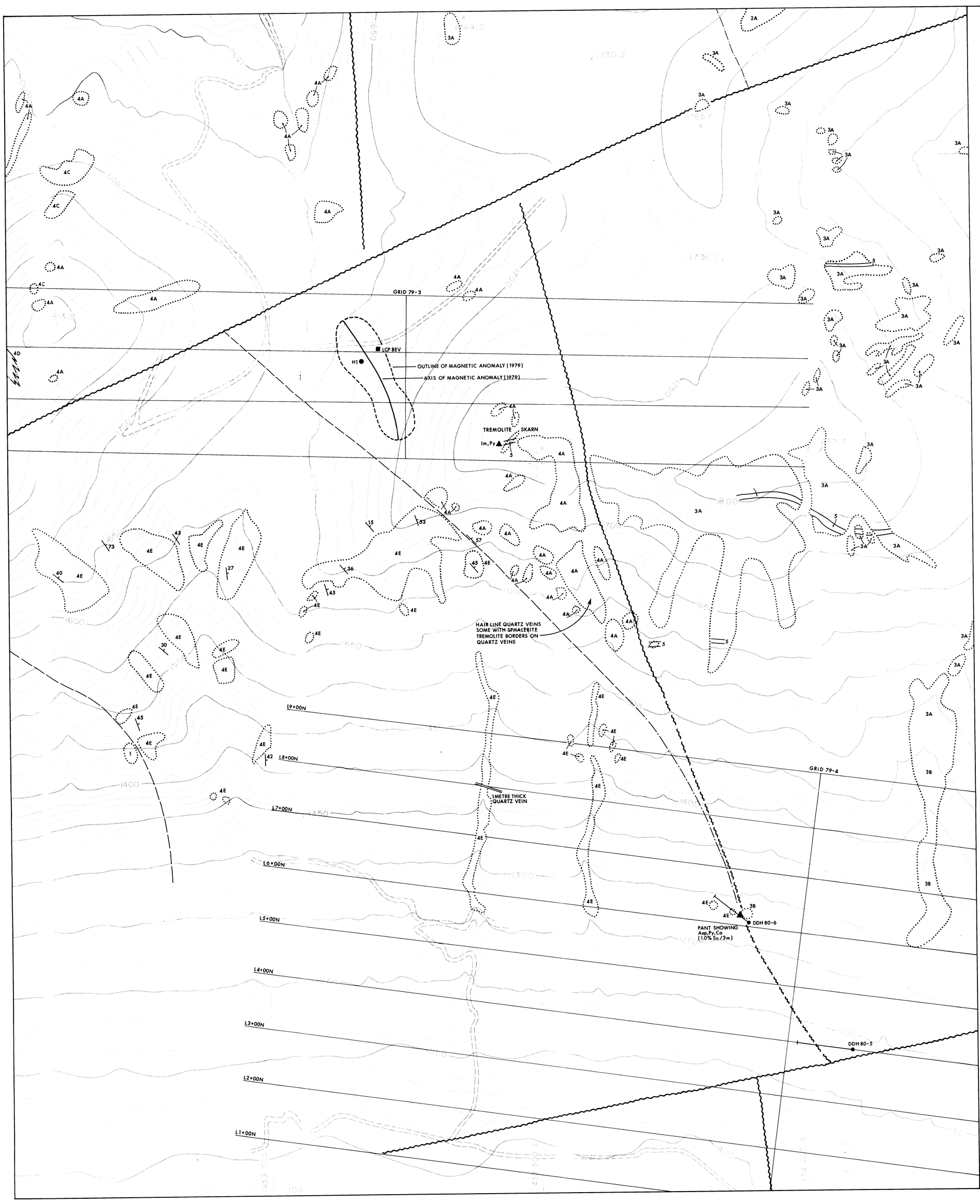
SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

FIG. 9 & FIG. 27

CASSIAR PROJECT 3991-P
GRID 79-1
GEOLOGICAL MAP
1980 DRILLING LOCATIONS

Figure 9

AUTHOR: C. BLOOMER		SCALE: 1:2500	DRAWING No.: VA-48-5
DATE: JAN. 1980	REVISED:		ENCLOSURE No.:
Dr. Anonymous			



DDH H-1: DRILLED BY COAST SILVER (1969)

36.0' - 43.3' 0.08% Sn
63.5' - 75.5' 0.05% Sn
80.0' - 82.0' 0.10% Sn
121.5' - 128.0' 0.20% Sn
145.0' - 147.0' 0.04% Sn
154.0' - 155.6' 0.05% Sn

SAMPLES TAKEN IN 1979 ON Py, Po, Mag INTERSECTIONS OF CORE

JURASSIC AND CRETACEOUS

1. CASSIAR BATHOLITH - ENDOCONTACT PHASE PINK TO GREY QRARTZ-MONZONITE, FINE TO MEDIUM GRAINED WITH SOME QUARTZ-FELDSPAR PORPHYRITIC SECTIONS. WELL JOINTED, FRACTURED WITH SOME QUARTZ, FLOURITE, SERICITE, BERYL FRACTURE FILLINGS. TRACE WOLRAMITE.

ORDOVICIAN, SILURIAN AND (?) DEVONIAN

2. SANDPILE GROUP

2A. LIMESTONE – GREY, LIGHT GREY, AND LESSER GRAY-BLACK, MASSIVE, HIGHLY FOLDED AND CONTORTED, SOMETIMES FISSILE. RECRYTALLIZED QUARTZ VEINING THROUGHOUT.

CAMBRIAN AND ORDOVICIAN

3. KECHIKA GROUP

3A. ARGILLITE, SHALE, SLATE – BLACK TO GREY-BLACK; MOSTLY ARGILLITE WITH A PERVASIVE MILD SLATELY CLEAVAGE, SOME SECTIONS OF SHALE AND SLATE; CHERTY AND CALCAREOUS SECTIONS THROUGHT, LAMINATED TO BEDDED, PYRITE OCCURS AS FINE DISSEMINATIONS UP TO 1% AND AS FINE STREAKS.

3B. PHYLLITE – BLACK, FRIABLE, CARBONACEOUS, WITH MINOR PYRITE.

3C. ARGILLACEOUS LIMESTONE – GREY-BLACK, MASSIVE, WITH ARGILLITE AND SHALE FRAGMENTS.

CAMBRIAN

LOWER CAMBRIAN

4. ATAN GROUP

4A. LIMESTONE –BLUE-GREY, LAMINATED TO WELL-BEDDED TO MASSIVE, WITH FLAGGY PATCHES AND MINOR FRAGMENTAL OR BRECCIA SECTIONS. (6A-BX)

4B. RECRYSTALLIZED LIMESTONE (MARBLE) – BUFF, WHITE, MASSIVE AND AS STRINGERS AND PATCHES IN 2A, LARGE ROHMBOHEDRIC SCYSTALS.

4C. DOLOMITE – YELLOW BUFF, BROWN, ROSE, CRYSTALLINE, MASSIVE, WITH SOME FRIABLE SECTIONS, MINOR PYRITOHEDRONS IN THE CRYSTALLINE PORTIONS.

4D. QUARTZITE – MAROON, GREEN, BROWN, AND TAN, WELL-BEDDED WITH CROSS BEDDED SECTIONS, PYRITE AND LESSER PYRRHOTITE AS DISSEMINATIONS AND STRINGERS.

4E. HORNFELSIC QUARTZITE – MAROON, GREEN, BUFF, AND BROWN; PURE QUARTZITE BEDS ARE CRYSTALLINE, LESS PURE BEDS ARE SCHISTOSE AND CONTAIN ANDALUSITE PATCHES; CHLORITE CLOTS OCCUR IN THE CHLORITE-RICH GREEN BEDS; MORE ABUNDANT PYRITE AND PYRRHOTITE THAN IN 2D AS STRINGERS AND SCALES ALONG FRACTURE SURFACES AND MINOR MASSIVE BANDED PYRITE-PYRRHOTITE.

4F. SHALE AND SLATE – BLACK, GREY, AND BUFF, LAMINATED PYRITIC, AND CARBONACEOUS, WITH SOME CALCAREOUS INTERBEDS.

5. INTERMEDIATE DIKE

9262

SCALE 1:2500

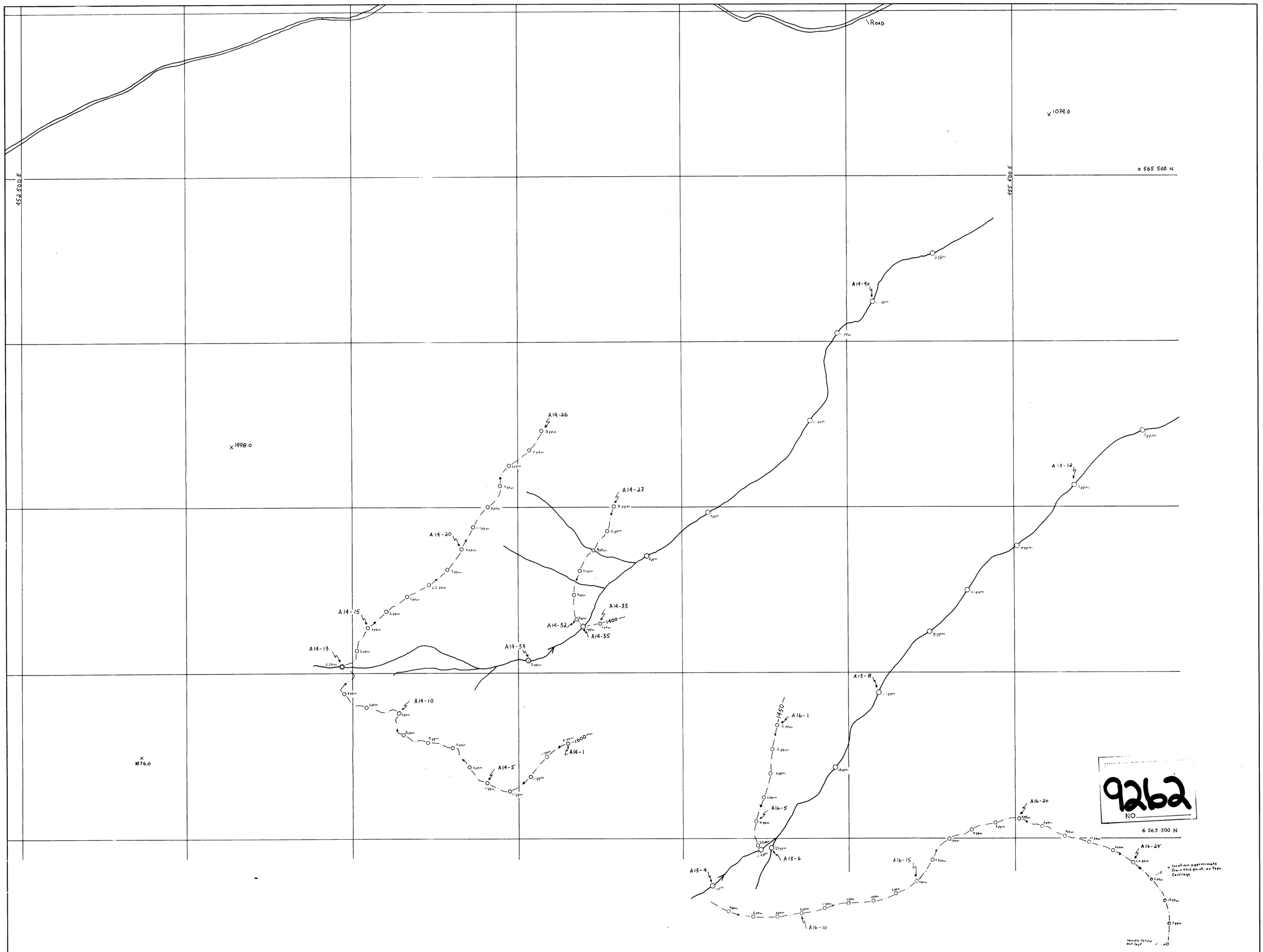
0 50 100 m

SHELL CANADA RESOURCES LIMITED
EXPLORATION – MINERALS

3091 P
CASSIAR - B.C.
GEOLOGICAL DETAIL
GRID 79-3, 79-4 AREA

FIGURE 10

AUTHOR: C. BLOOMER	SCALE: 1:2500	DRAWING No.: VJ-094
DATE: APRIL, 1981	REVISED:	ENCLOSURE No.:
To Accompany		



SCALE 1:5000

0 150 300 m

SHELL CANADA RESOURCES LIMITED
EXPLORATION - MINERALS

3091P
CASSIAR - B.C.
BRIGHT CLAIM GROUP
SOIL AND STREAM GEOCHEMISTRY

Figure 11

CONTOUR SAMPLE INTERVAL : 75 m

AUTHOR: BROWN-ORR		SCALE: 1:5000	DRAWING No.:
DATE: AUGUST, 80	REVISED:		ENCLOSURE No.:
To Accompany			