

COMINCO LTD.

825985

EXPLORATION

NTS: 103H-2W

WESTERN DISTRICT

COM PLAC JOINT VENTURE

1981

TERMINATION REPORT

14 DECEMBER 1981

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copies to: Cominco Ltd.  
Placer Development Ltd.  
Matachewan Consolidated Mines Ltd.

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*in preparation*  
*in preparation*

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WESTERN DISTRICT

14 December 1981

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1981

TERMINATION REPORT

I. INTRODUCTION

Cominco Limited, Placer Development Limited and Matachewan Consolidated Mines Limited entered an agreement in 1981 to carry out exploration along the shear system hosting the former Surf and Pugsley Mines, located on Princess Royal Island, British Columbia. Cominco and Placer mutually shared the expenses, with Cominco being the operator of the programme.

II. LOCATION

The dormant Surf and Pugsley Mines are situated within the Skeena Mining Division (map 103-H-2W) at 53°05'N latitude and 128°53'W longitude. The property is best accessed through Prince Rupert located approximately 160 kilometers to the northwest.

The Surf and Pugsley orebodies located on the north and south sides of Paradise Creek, are approximately eleven kilometers from the wharf and hydroelectric power site at the head of Surf Inlet. Electric tramways and barges formed the supply link from the mines to tidewater.

III. TOPOGRAPHY AND CLIMATE

The topography of the mining camp is extremely rugged, with steep sided mountains rising to a maximum elevation of 1100 meters. Climate is mild, though precipitation during the production history of the camp averaged in excess of 200 inches per year.

IV. MINERAL CLAIMS

Under joint partnership and option agreement with Matachewan Consolidated Mines Ltd., the property comprises 18 claims (131 units) 21 crown grants and four certificates of title. Appendix I contains a detailed breakdown of the ground holdings.

V. HISTORY AND PRODUCTION

Gold mineralization was first discovered at Surf Inlet in the late 1800's, with the first claims located in the fall of 1898.

Shipments of crude ore from the Pugsley Mine began in 1900, and continued for a number of years. There is no record of the tonnage or value produced.

On March 14, 1914 the Tonopah Belmont Development Company acquired the Surf Inlet property. On September 1, 1917 a 400 ton per day capacity mill was placed in operation.

From September 1, 1917 to June 30, 1926, Belmont Surf Inlet Mines produced 848,883 tons of ore of which 57,632 tons came from the Pugsley Mine. The average feed grade of this ore was .425 ounces of gold, .30 ounces of silver and 6 pounds copper per ton. With an average gold price of \$20.67 per ounce, dividends of \$1,437,500.00 were paid out during that time period.

2.

Unfavourable economics forced closure of the mine from 1926 to 1934. At a new price of \$35.00 per ounce gold, an attempt to revive the mine in 1935 failed.

In 1936 the mine was refinanced and the name changed to Surf Inlet Consolidated Gold Mines. Operations continued until December 15, 1942.

Until the end of 1942, total recorded production from the property amounted to 1,091,131 tons of which 169,886 tons came from the Pugsley Mine. Total average recovered grades were .385 ounces gold, .18 ounces silver and .29 percent copper.

In 1946, the Pugsley Mine was unwatered with extensive underground development carried out on the 10th, 11th, and 13th levels. In May 1947 the 900 level Pugsley was extended south to explore the large area to the south of the workings. Sub-ore grades were encountered along that development. No work has been performed on the property since that time. Upon closure of the Pugsley Mine, proven reserves of 13,900 tons plus inferred reserves of 51,000 tons above the 1300 level had been outlined at historical grades. Reserves at the Surf Mine on established levels were believed depleted.

In December 1954, the company name was changed to Surf Inlet Consolidated Mines Ltd. Subsequently the name was changed to Western Surf Inlet Mines Ltd., in November 1959. In May 1966, Matachewan Consolidated Gold Mines Ltd. merged with the company, with five new shares replacing four old shares.

#### VI. 1981 AGREEMENT

According to the terms of the Com Plac joint venture, Placer and Cominco have the sole and exclusive right to acquire an aggregate 40 percent beneficial interest in the Surf Inlet Property by causing their joint venture to incur exploration costs in the amount of \$800,000.00 on or before December 31, 1984.

If they fail to incur those monies by that date they are entitled to make a cash payment in lieu of the deficiency to Matachewan on or before January 15, 1985.

There is a requirement that minimum annual work in the amount of \$100,000 per year be incurred after the exercise of the option or Matachewan can assume position of operator.

#### VII. 1981 PROGRAMME OBJECTIVES

Through shallow diamond drilling, the objective was to test the large tonnage low grade gold potential of the shear systems hosting the Surf and Pugsley Mines.

The drill programme, combined with detailed mapping and sampling of the property, surface showings, and underground workings, would generate an understanding of the geological and structural constraints of mineralization and economic potential.

#### VIII. 1981 PROGRAMME

The programme was executed as per the Cominco - Placer format. Facets of the programme not undertaken were the geophysical orientation survey and bulk metallurgical testing.

Ten drill holes, totalling 1526.4 meters (5008 feet) were cored. Drilling was carried out along the shear zone over a strike extent of 1950 meters (6400 feet). Drill coverage extended south approximately 700 meters from the heart of the Pugsley Mine, was carried out through the Pugsley system and extended to a point some 300 meters south of the southern extension of the main Surf orebody workings.

3.

All holes cut a main zone plus subordinate zones of shearing, alteration and mineralization representing the footwall, hangingwall or combined footwall and hangingwall shears as known to occur with the Surf and Pugsley orebodies.

The property was mapped at 1:5,000 scale. North-south property extensions were also mapped. All known showings were mapped in detail and sampled with the exception of the Wells showing to the northwest of the old townsite.

All accessible portions of the underground workings were mapped and sampled in detail.

Geochemical soil and silt samples were collected as a complement to mapping. Controlled sampling was also carried out over surface exposures of waste dumps adjacent to the Surf and Pugsley workings.

#### IX. 1981 PROGRAMME RESULTS

Drill results definitively established that there is no possibility of creating a large tonnage open pit deposit on the property. A geological summary of the individual drill holes is contained in section XVII of this report.

Mineralization is mainly restricted to one main shear system that splits into a multiplicity of shears in the area of the Pugsley and Surf orebodies.

Each hole intersected a substantial thickness of the main shear system containing alteration and mineralization that is within an order of magnitude comparable to alteration and mineralization contained in the Surf and Pugsley productive centers.

All shear intersections were split for assay and where significant amounts of sulfides were present, the core was halved with the use of a diamond saw.

Drill core assaying revealed discouragingly low values. Best results from each hole are as follows:

DDH 81-1	10.5 - 11.6	1.1 meters @ .044 oz/ton Au
DDH 81-2	116.0 - 116.6	0.6 meters @ .303 oz/ton Au
	116.6 - 117.6	1.0 meters @ <.002 oz/ton Au
	117.6 - 118.6	1.0 meters @ .004 oz/ton Au
	118.6 - 119.6	1.0 meters @ <.002 oz/ton Au
	119.6 - 120.6	1.0 meters @ .02 oz/ton Au
	120.6 - 121.6	1.0 meters @ .004 oz/ton Au
	121.6 - 122.6	1.0 meters @ <.002 oz/ton Au
	122.6 - 123.2	0.6 meters @ <.002 oz/ton Au
	123.2 - 124.0	0.8 meters @ .063 oz/ton Au
DDH 81-3	77.1 - 77.6	0.5 meters @ .013 oz/ton Au
	77.6 - 78.3	0.5 meters @ .014 oz/ton Au
DDH 81-4	116.3 - 116.9	0.6 meters @ .032 oz/ton Au
	116.9 - 117.9	1.0 meters @ .046 oz/ton Au
DDH 81-5	44.2 - 44.7	0.5 meters @ .144 oz/ton Au
DDH 81-6	145.4 - 146.6	1.2 meters @ .099 oz/ton Au
	146.6 - 147.8	1.2 meters @ .007 oz/ton Au
DDH 81-7	60.1 - 60.8	0.7 meters @ .008 oz/ton Au
	60.8 - 61.4	0.6 meters @ .011 oz/ton Au
	61.4 - 61.5	0.1 meters @ .758 oz/ton Au
	61.5 - 62.6	1.1 meters @ .002 oz/ton Au
	62.6 - 63.8	1.2 meters @ .020 oz/ton Au
DDH 81-8(best)	74.1 - 74.6	0.5 meters @ .004 oz/ton Au
	numerous anomalous values	<.002 oz/ton Au
DDH 81-9,10	few anomalous values	<.002 oz/ton Au

4.

Gold values are found to be exclusively associated with higher concentrations of pyrite, regardless of the abundance of quartz, ankerite, sericite, chlorite or calcite. Invariably pyrite is associated with one of these alteration phases.

Surface sampling confirmed gold values in previously discovered surface showings. Assay returns revealed encouraging values over 0.2 - 1.5 meter widths.

Underground sampling was designed to test the altered and mineralized shear in areas where no stoping was undertaken as well as those areas where ore extraction had taken place. The results indicate that select shoots are auriferous, but not all sections containing significant sulfides and alteration necessarily generate economic gold values.

Thirty-eight samples were collected from three waste dumps. This sampling indicates cut values averaging slightly in excess of .05 ounces per ton. Silt and soil sampling did not outline any areas on the property or peripheral to the property where significant new sources of mineralization could occur.

#### X. PROPERTY GEOLOGY

The area mapped is that outlined by the orthophotograph of the property (Plate 81-1) excluding ground west of Bear Lake and the Surf River. All accessible ground was mapped at 1:5,000 scale. Two additional lines east of diamond drill holes 81-2 and 81-3 (Plates 81-2 and 81-3) were mapped at 1:1,000 scale. The quartz vein showings within the shear zone were mapped in detail (scales ranging from 1:10 to 1:100).

Gold mineralization is localized along an extensive shear system that cuts predominantly intrusive and lesser mixed inclusions of gneissic volcanics and sediments of the extensive Coast Range batholith. Rock units are believed to be Triassic in age.

Seven general lithologic units have been recognized during the course of the mapping. They are:

##### 1) Gneiss Unit

The gneiss unit consists of coarse grained, moderate-well banded quartz, biotite, feldspar gneiss and plagioclase, hornblende, biotite gneiss. Accessory minerals include apatite and augite.

Complex folding is common and increases with progression south towards the Pugsley ridge summit. Banding most often conforms roughly to the dip of the shear system.

Within the gneiss, tactite lenses were cut in holes 81-4, 7, 10. These zones, probably bands of metamorphosed limestone contain various quantities of calcite, quartz, red garnet (andradite) pink carbonate (rhodochrosite), epidote, chlorite, diopside.

##### 2) Diorite - Gneiss Contact Zone

The contact between the gneiss unit and diorite is rarely a well defined, sharp boundary. Instead, a type of assimilation zone from 5 to 100 meters wide exists. This zone is characterized by numerous variably oriented gneiss fragments in diorite and irregular diorite dykes (injections in the bordering gneisses). This unit also encompasses those rocks of compositional or textural variance so as to be classified as Dioritic Gneiss or Gneissic Diorite.

##### 3) Diorite

The major unit on the property is diorite with minor associated quartz diorite. In the unaltered state, this unit is medium to coarse grained, granular-weakly foliated. Major constituents include plagioclase (andesine, oligoclase), hornblende, biotite with lesser quartz and accessories of augite, sphene and magnetite. In places the diorite displays a porphyroblastic texture depicting coarser grained, sub-angular feldspar crystals (tectonic origin).



5.

The diorite often contains lensoidal gneiss xenoliths in various stages of assimilation (usually near the contact zone). Adjacent to and within the shear zone, the diorite becomes strongly foliated characterized by the alignment of mafic minerals. However, gneissic banding does not form thus helping to distinguish it from a gneiss of similar mineral composition.

#### 4) Altered Host Rock

*Alteration zone associated with shear system.*

Various phases and intensities of alteration occur within the shear zones.

On the flanks of the shears, subtle kaolinite chlorite, epidote, carbonate and silica alteration occurs. Host units display varying degrees of fracturing, aligning and mylonitization. Minor ankerite calcite, and siderite restricted to fractures are late stage introductions. Breccia like brown cherty ankerite lenses occur occasionally. With progression to the heart of the alteration envelope silica, sericite and ankerite increase at the expense of chlorite, calcite and epidote.

Rocks grade from subtle mylonites, to intense altered rock, wherein all primary textures are obscured. Massive quartz veining with subordinate ankerite and sericite reflect the ultimate alteration zones.

#### 5) Quartz Veins and Mineralization

Throughout the shear zone there are numerous quartz  $\pm$  ankerite, sericite,  $\pm$  sulfide veins. These veins range in thickness from 2 centimeters to 4 meters and commonly display a strong pinch and swell nature. Mineralogically the veins are simple consisting primarily of quartz and variable but lesser ankerite, pyrite and chalcopyrite. Gold occurs almost exclusively with the pyrite. Little free gold has been detected, although silver occurs in this form. A gold telluride, calaverite, was detected in a laboratory analysis of a recently submitted sample. Pyrite and chalcopyrite are associated with at least four different phases of emplacement.

1. Deposition with quartz, sericite, chlorite on main north-south shear trends. Multi stage emplacement (dominantly pyrite).
2. Deposition with quartz, sericite, chlorite on east-west trending shear systems (dominantly chalcopyrite).
3. Deposition along fractures with epidote, potash feldspar, magnetite (distal and likely later stage-mainly pyrite).
4. Deposition with late stage calcite and subordinate hematite (last stage, pyrite = chalcopyrite).

Pyrite and chalcopyrite occur as massive seams on fractures and as disseminations of extremely fine to very coarse grain size throughout the shear-fracture systems. Mineralization occurs in greatest abundance along the vein margins, particularly the footwall side.

Pyrrhotite-pyrite was found to occur in the hangingwall gneissic pegmatite-gneiss in holes 81-4, 5 and 6.

Traces of molybdenite were found occasionally.

#### 6) Pegmatite

The pegmatites are 5 centimeters to 1 meter wide. They are very coarse grained potassium feldspar, quartz  $\pm$  biotite dykes which have intruded the diorite and parts of the shear zone. Accessory minerals include magnetite, hornblende and tourmaline. Albite can be common in areas. Many dykes are simply zoned having a quartz core and quartz plus feldspar margins. No associated wall rock alteration was observed.

#### 7) Diabase

The youngest rocks on the property are the diabase dykes. These dykes are 0.25 to 3.0 meters wide, fine grained mafic porphyries consisting of 1-10 percent plagioclase, pyroxene and olivene(?) phenocrysts. The diabase dykes cut all units plus the shear zone.

## XI. SHOWING GEOLOGY

A detailed description of the mapped showings and sampling results is contained in Appendix II of this report.

## XII. THE FAULT SYSTEM

In part, this section is abstracted from a description by J.E. Gill and A.R. Byers in "Structural Geology of Canadian Ore Deposits" - a Symposium, published by the CIMM, 1948.

The fault zone is visibly traceable for 4400 meters horizontally and 1000 meters vertically. In the vicinity of the two ore zones the system is broadly convex towards the west, striking approximately N23°E at the north end, north-south at the central section and approximately N18°W at the south end. Dips range from 30-60° west, but are most consistently 45° west.

The system comprises a multiplicity of shears including one main footwall shear. True width intersection of main footwall shear altered and mineralized rock varies between 4.6 meters (hole 81-5) and 44.4 meters (hole 81-8). In the vicinity of the Surf and Pugsley ore zones the main footwall shear splits into two parallel plus several oblique shear systems.

Gill and Byers stated that "individual faults show broad corrugations, grooves and striae plunging at various angles, but mainly northward at 30-70° averaging 45°. Evidence suggests that during the main movement, the west or hangingwall moved upward relative to the footwall and ultimately south".

The shear system cuts both gneiss and diorite with no apparent preference towards either unit. Shear expression is manifest by subtle mineral alignment through to intense mylonitization and destruction of parent mineral phases. Intensity of alteration and infilling vein material varies markedly both in the horizontal and vertical sense.

This year's drilling outlined a diminishing series of narrow hangingwall shears with progression north from hole 81-1. Footwall to the main shear system, narrow east-west shears occur mainly in the tested area north of hole 81-4. These shears dip 15-40° to the south and suggest tensional partings related to disturbance down Paradise Creek valley. It is postulated that these shears, which are rich in chalcopyrite, post date the main north-south trend, but exhibit little if any east-west displacement.

Those areas reflecting ore centers or surface mineral showings must represent areas of dilatancy which facilitated the ascent of altering and mineralizing fluids.

## XIII. THE ORE ZONES (From Gill and Byers)

Both the Surf and the Pugsley orebodies persist over a strike extent of roughly 300 meters and known vertical extent of 425 meters. In past production areas maximum shear separation approaches 60 meters with economic vein width ranging between 0.6 meters and 12 meters. Vein lengths range from 30 meters to 300 meters. The ore zones are marked by the presence of numerous veins of milky quartz that have been inserted along slippage surfaces and tension cracks. The quartz is composed of an aggregate of very fine anhedral crystals. The margins of the veins are almost invariably made up of a number of alternating bands of quartz and sericitized country rock lying parallel to one another and to the vein walls and ranging in width from a few meters down to several centimeters. Vein walls form a sharp contact with hosting gneiss or diorite.

Rocks in and near the ore zone contain sericite and carbonate from the alteration of feldspar and broader zones of chlorite from the alteration of hornblende and biotite. Within the quartz, pyrite forms up to 25 percent by volume. A multi stage sulfide emplacement is envisaged, with the majority of gold deposited during the later stages of sulfide mineralization. In the paragenetic sequence, pyrite precedes, is

contemporaneous with and postdates deposition of chalcopyrite and native silver. Other common sulfides and oxides include chalcocite, bornite, covellite, molybdenite, hematite and minor scheelite.

White cream-pink ankerite is locally present in large amounts, mainly in the flanks of the veins. Calcite, dolomite, hornblende, epidote, mariposite, kaolin are common gangue minerals.

The distribution of ore shoots within the veins depended mainly on later fault adjustments during which only the veins along certain shear surfaces and zones were fractured and mineralized.

#### XIV. UNDERGROUND MAPPING (1981 Programme)

##### 900 Level, Pugsley

The major level of the old Pugsley mine - the 900 level - was mapped at a scale of 1:500 and sampled in accessible areas. Condition of the old workings is quite good and good air flow is present in the major drifts examined (901 and 907). Minor back cave is found throughout 901 drift and is less common in 907 drift. Stope debris, however, can be common and, in the case of both drifts, eventually blocks further passageway. Loose hung up in some stopes also limits safe access in the drifts. In total, 335 meters of 901 drift, 160 meters of 907 drift and 903, 905, 909, 911, 912, 913 and 915 cross-cuts are safely accessible.

##### Geology (Plate 81-24)

The geology of the level can be divided into two parts: the West shear system (901 drift) and the East shear system (907 drift). The West shear is a very schistose rock comprising sericite, quartz, carbonate and minor chlorite. Trace disseminated pyrite may also be present. Narrow seams (1 to 3 centimeters) of fault gouge are common. Quartz veinlets in the shear are irregular, narrow and weakly mineralized when present. The major quartz vein first occurs at 250 meters and continues to 335+ meters exhibiting characteristic pinch and swell nature throughout (eg. 2 to 3 meters wide to less than 25 centimeters over a distance along strike of 10 meters). Ankerite and lesser siderite are common constituents of the quartz vein. Sulfide mineralization consists of poddy and banded pyrite and lesser chalcopyrite. Areas rich in the latter are commonly marked by strong malachite staining. The best mineralization is usually found along the footwall contact where concentrations can be as high as 15 percent. Lesser amounts are present along the hangingwall contact whereas the quartz vein cores are often barren.

The East shear differs from West system in that silicification appears to have been more prevalent at the expense of sericite and carbonate. The shear narrows and weakens noticeably at the north end of 907 drift (0 meters) but becomes wider and stronger southward. The major quartz vein first appears at 25 meters (20 centimeters wide), swells to 3 meters wide at 35 meters, and disappears by 55 meters. This quartz vein is divided into three distinct zones: a 0.6 to 0.8 meter wide band along the footwall contact containing 20%, largely banded pyrite and minor chalcopyrite mineralization; a barren quartz core (rarely may have 1-2 percent mineralization in places); and an irregular, weakly mineralized (5 percent pyrite and chalcopyrite) zone along the hangingwall contact. Contacts between each of the zones suggest multiple stage quartz and sulfide deposition.

No major quartz vein is found between 55 meters and 115 meters, 907 drift, but the shear remains strong in this interval. Discontinuous and narrow quartz veinlets containing up to 5 percent pyrite locally are also found. From 115 meters to 160+ meters, the quartz vein reappears, displaying typical pinch and swell nature, as observed in the West system.

Easterly trending structures and/or veins were observed at the 905 cross-cut - 901 drift junction. A 3 to 10 centimeter wide, ankerite-quartz vein with less than 2 percent chalcopyrite and lesser pyrite mineralization is present over a strike length of 9 meters. Narrow, well-defined sericite and chlorite alteration envelopes - typical of the surface east-west veins - are present. This vein intersects the north-south

8.

shear but does not cut it. No age relationship can be deduced though in surface observations the east-west structures overprint the north-south structures. At 9 meters into 905 cross-cut, this vein abruptly swings north-west and disappears into the north side of the cross-cut.

The host rock in both systems is diorite.

Sampling:

Sampling was confined to the 907 drift and consisted of 19 continuous chip samples. Sample emphasis was on 3 meter widths within the drift plus associated cross-cuts.

Results were disappointing, yielding a total weighted sample average of .031 oz/ton Au. Best assays were derived from auriferous ore shoots where stoping had taken place.

Homestake Adit (Plate 81-25)

The Homestake adit is located on the East shear system at 172 meter elevation (Pugsley side) and was drifted along a quartz vein and associated shear. The adit is 105 meters long and presumably represents the start of a higher level to service eventually the then ongoing stoping from the 700 level. The adit is in excellent condition and was mapped at a scale of 1:200.

Geology:

The quartz vein at the entrance is 1.5 meters wide and barren. By 8 meters, the quartz vein has pinched to 40 centimeters but has also become heavily mineralized (up to 15 percent pyrite and chalcopyrite). The vein disappears at 60 meters. The remaining 65 meters is represented by a strongly sericitized and carbonatized rock (locally silicified) containing irregular and narrow (1-2 centimeters) quartz veinlets. Pyrite mineralization (as bands) is minor, becoming more common (5 to 30 percent) towards the end of the adit. Chalcopyrite mineralization decreases sharply southward from 60 meters, becoming significant again at the end of the adit. The shear at the end of the adit has narrowed considerably (40 centimeters) though remains heavily mineralized.

The host rock throughout the adit is diorite.

Sampling:

Sampling consisted of 9 continuous chip samples taken to test the shear throughout the length of the adit.

The arithmetic average of the samples collected yielded a grade of .182 oz/ton Au over 1 meter widths.

Anaconda Adit (Plate 81-9)

The Anaconda Adit is located at 615 meter elevation, on the west bank of the Footwall creek. It is 12.2 meters long and is in excellent condition. It was mapped at a scale of 1:100.

Geology:

The adit was drifted in on a 0.8 meter wide quartz vein which is mineralized (2-5 percent pyrite and chalcopyrite) along the hangingwall contact. The mineralized zone is less than 12 centimeters wide. This vein dies out at 7 meters and another quartz vein appears east of that point, and continues to the end of the adit. The latter vein is essentially barren and contains up to 25 percent, strongly altered host rock breccia along the hangingwall contact. The shear zone prevails throughout the adit comprising sericite, quartz, carbonate and numerous barren quartz veinlets (less than 3 centimeters wide). The host rock is diorite.

Sampling:

Sampling consisted of 4 chip samples to test the footwall, the quartz veins and the hangingwall. Gold values are low.

### 200 and 50 Adit Levels Surf Mine

The Surf 200 level is open for 50 meters before a partial cave blocks safe advance. One sample of a strongly mineralized (> 50 percent pyrite) quartz vein yielded 0.3 oz/ton Au and 1.0 oz/ton Ag over 1 meter.

The large cavernous opening representing the 50 level was not sampled.

### XV. MINE DUMP MATERIAL

The old Surf Inlet mine dumps were investigated and sampled in order to obtain a general overall grade. Approximately 400,000 tons of this material is located around the 550 level adit, Surf mine, and was used as the foundation for the tramway to Bear Lake. The 550 level adit area dumps can be broken down into the West dump, East dump and North dump (Plate 81-22). The West dump is the largest and contains the greatest percentage of bull quartz (Pugsley material). The East and North dumps consist mainly of gneiss and altered diorite (Surf material) though concentrations of quartz are found locally. Sampling of the West dump was conducted along a 110 meter long line at 6 meter intervals. The East dump was sampled along a 42 meter long line at 6 meter intervals. The North dump was not sampled. The resultant gold values are quite varied. The West dump has an average cut value equal to 0.069 oz Au/T and the East dump has an average cut value equal to 0.033 oz Au/T. Both dumps combined give an average value of 0.059 oz Au/T.

The tramway was sampled along a 30 meter long line across a creek cut (Paradise Creek) at 3 meter intervals (Plate 23). This section also had varied values which gave a cut average of 0.053 oz Au/T.

### XVI. SOIL AND SILT GEOCHEMISTRY

Forty-four soil and eighty-two silt samples were collected in conjunction with the mapping. The majority of samples were collected to the south of the property where outcrop exposure is poor. All samples were assayed for Au, Ag and Cu. Good soil and silt development exists only at low elevations along the southern slopes (Cassie and Surf sides). Middle to high elevations including the Pugsley side have very poor soil and fair to poor silt development making meaningful interpretations difficult.

Plate 81-26 illustrates sample locations and results in the orthophoto area. No silver values and only 5 gold values greater than or equal to 10 ppb were obtained. The gold-bearing samples are: Surf SL 81-37 (12 ppb Au) - taken from a moderately developed soil horizon above a mineralized quartz vein near the Bluff showings; Surf 81-2 (742 ppb Au) and Surf 81-77 (582 ppb Au) - both taken from streams which drain the old Pugsley workings and dump material; Surf 81-63 (20 ppb Au) - represents a silt from a stream possibly draining the western diorite - gneiss contact; Surf 81-43 (10 ppb Au) - possibly influenced by the Cassie workings. Surf 81-63 is the only location around which follow-up silt sampling should be undertaken. Copper values are variable but generally low, with higher values possibly attributed to proximity to pegmatite dikes.

Soil and silt samples were also collected outside the orthophoto area. To the west, samples were collected along Bear Lake in the Bear 1 claim group (Plate 81-27) and to the east, samples were taken along major streams within the Jen 2 and Jen 3 claim groups (Plate 81-28). Samples from the Jen 2 and Jen 3 areas had variable copper values and no detectable silver and gold contents. The majority of Bear 1 samples also had only copper values. The Bear 1 samples which had detectable gold contents are: Surf 81-64 (1020 ppb Au); Surf 81-65 (10 ppb Au); Surf 81-66 (20 ppb Au); Surf 81-67 (20 ppb Au). Surf 81-64 represents beach sand from the mouth of Paradise Creek. The other three samples likely have been influenced in part by drainage from the Wells showing.

### XVII. DIAMOND DRILL HOLE SUMMARY

The following is a breakdown of all significant geological information pertaining to each drill hole. Best assay results from each hole were reported in section IX. All remaining assays are included with the drill logs, attached to the report.

10.

(A) DDH Surf 81-1

Hole 1 penetrated a complex alternating sequence of gneiss and diorite. Preceding the footwall shear, 15 distinct fracture-shear zones ranging from 1-2 meters were cut. Intensity of shearing and degree of alteration varies. Sulfide content is low.

The footwall shear was intersected between 108.1 and 139.9 meters. Intensity of deformation, alteration and mineralization varies through the interval. Trace to 1 percent pyrite occurs in this section. The hole bottomed in fresh diorite.

(B) DDH Surf 81-2

Hole 2 penetrated a complex series of intermixed gneiss and diorite. Preceding the footwall shear, 12 distinct shear fracture zones were cut. Average thickness of these systems varies between 1 and 2 meters. Intensity of alteration varies and sulfide content is low.

The main footwall shear was intersected between 102.6 and 127 meters. From 116 - 124 meters a dilatant zone of intense silica, sericite, chlorite, and ankerite alteration was cut. Coarse pyrite averaging 1 percent as vein fill and breccia matrix occurs throughout this, the most economically significant intersection encountered. Beneath the footwall shear, diorite and lesser gneiss was cut.

(C) DDH Surf 81-3

Hole 3 was drilled well beyond the footwall shear zone to test for vein systems to the east. Preceding the footwall shear, 5 distinct 1-2 meter wide shear fracture zones were intersected. The main footwall shear was intersected between 67.5 and 90.2 meters. Local intense alteration with modest pyrite mineralization (1 - 1.5 percent) occurs in this interval. Beneath the footwall shear, 3 distinct bands of fracturing and shearing were encountered over 1-2 meter intervals.

(D) DDH Surf 81-4

Hole 4 penetrated a complex sequence of diorite and gneiss. Preceding the footwall shear, 4 distinct fracture alteration zones were cut. The main footwall shear was intersected between 109.7 and 131.6 meters. Select intervals contain up to 2 percent pyrite associated with quartz, chlorite, sericite and ankerite. No shearing of consequence occurs beneath the footwall shear. The hole bottomed in fresh diorite.

(E) DDH Surf 81-5

Hole 5 was collared at a point between two extensive stoping blocks in the Pugsley Mine. Gneissic pegmatite containing disseminated and fracture controlled pyrite and pyrrhotite occurs near the collar of the hole between 7.1 and 14.6 meters.

The hangingwall shear (west vein) represented by a quartz vein with 3 percent pyrite was intersected between 44.2 and 44.7 meters. Shearing and alteration span the 43.2 - 53.9 meter interval.

A poor expression of the footwall shear was intersected between 86.2 and 90.8 meters. Only 0.1 - 0.2 percent pyrite was encountered.

Four distinct weakly chalcopyrite, pyrite mineralized E-W shears occur within diorite beneath the footwall zone.

(F) DDH Surf 81-6

Drilling problems forced abandonment of this hole near the end of the ore zone at 147.8 meters.

Hole 6 was drilled to test the convergence of the hangingwall and footwall shear systems along the northern extent of mining in the Pugsley orebody. The combined shears were intersected between 115.9 and 147.8 + meters.

Roughly 5 meters of this section is represented by massive quartz distributed over several distinct bands. Intense chlorite, sericite, ankerite alteration also occurs. Pyrite content varies from trace to one percent over most of the zone with a few assay intervals averaging 1.5 - 3.0 percent pyrite.

(G) DDH Surf 81-7

One main shear was intersected between 58.3 and 72.8 meters. Section 60.1 - 60.8 averages 3.0 percent pyrite with massive pyrite occurring between 61.4 and 61.5 meters. Approximately 2 meters of quartz was intersected in this zone. The remainder of the zone averages 0.1 - 1.0 percent pyrite occurring with locally intense sericite, chlorite, calcite and ankerite alteration. The hole was terminated in fresh diorite.

(H) DDH Surf 81-8

Hole 8 cut a broad erratic zone of shearing (main shear) and moderate alteration between 67.2 and 111.6 meters. Several narrow zones of fresh rubbly diorite occur within this section. The 82.7 - 83.1 meter interval averages 10 percent pyrite. The remaining assay intervals range from trace to 2.0 percent pyrite. Chalcopyrite occurs intermittently. Several weakly mineralized E-W shears occur footwall to the main zone. The hole terminated in fresh competent diorite.

(I) DDH Surf 81-9

The main shear was intersected between 22.8 and 47.0 meters. This zone is very weak and no mineralization of significance was cut. Epidote and chlorite represent the main alteration phases.

The hole was continued well into the footwall of the main shear. Minor zones of shearing with weak alteration and traces of mineralization occur through the remainder of the hole.

(J) DDH Surf 81-10

The main shear was intersected between 53.4 and 72.2 meters. Quartz veining of an aggregate total of roughly one meter occurs within this zone. Assay intervals range between trace and 5.0 percent pyrite. A few narrow E-W shears were cut beneath the main zone.

### XVIII. CONCLUSIONS AND RECOMMENDATIONS

The 1981 programme was designed to evaluate the near surface economic potential of the Surf Inlet property. From this evaluation, it is recognized that open pit potential does not exist, but it is also apparent that a widely spaced drill programme is not sufficient to test satisfactorily the underground mining potential on the property. While the shear is strong and continuous, ore shoots (excepting those within the Surf system) are narrow and discontinuous both in a horizontal and vertical sense. As a result, drilling to establish new ore centers distal from the Surf and Pugsley is a major gamble.

The negative assay returns from this years drilling cannot accurately reflect the actual gold values in the veins in the vicinity of the drill holes. The erratic distribution of gold mineralization was a constant concern of the former operators.

The limited 1981 underground evaluation established that former operators were very thorough. As a result, possibilities of salvaging former underground workings is not considered feasible as the re-development expense per ton of ore generated would not be profitable.

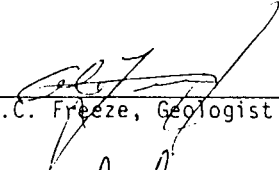
It is highly possible that staff of the Surf mine placed too much emphasis on the southwest plunge theory and did not accurately assess the ground to the north of the former workings. There is a good chance that new reserves could be established in that area. Unfortunately access is difficult.

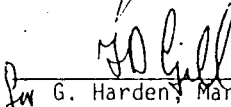
The depth extensions of the Surf and Pugsley ore centers as well as the area between them represent the only obvious untested exploration targets on the property. There is no reason to suspect that the host structures and the associated Surf and Pugsley mineralized centers do not persist to considerably greater depths.

In the Surf Mine, 930,000 tons of ore was mined over a vertical range of 1400 feet, equivalent to 660 tons per vertical foot. Vein widths ranged from 2-40 feet, averaging 10 feet. Further depth extensions would likely not exceed this figure and as such, development of another 500,000 tons of ore would require a 750 foot depth extension.

In the Pugsley Mine, productive vein systems averaged 4 feet. Approximately 170,000 tons of ore was mined over a vertical range 700 feet equivalent to 240 tons per vertical foot.

With the knowledge that further ore development in the area of the Surf and Pugsley mines will require a considerable capital expenditure, these targets are not particularly attractive at present metal prices.

Report by:   
A.C. Freeze, Geologist

Endorsed by   
G. Harden, Manager  
Exploration  
Western District

ACF/skg



APPENDIX I

SURF INLET CLAIMS

SKEENA M.D., B.C.

NTS: 103-H-2W

<u>CLAIMS</u>	<u>UNITS</u>	<u>RECORD NOS.</u>	<u>DATE LOCATED</u>	<u>DUE DATES</u>
BEAR 1	15	2221	April 16/80	April 16/87
BEAR 2	15	2222	April 16/80	April 16/87
BEAR 3	20	2223	April 16/80	April 16/87
JEN 1	20	2693	Nov. 27/80	Nov. 27/86
JEN 2	20	2694	Nov. 27/80	Nov. 27/86
JEN 3	10	2695	Nov. 27/80	Nov. 27/86
JEN 4	20	2696	Nov. 27/80	Nov. 27/86
SHEET ANCHOR FR.	1(18.16 Ha.)	1979(2105)	Jan. 14/80	Jan. 14/87
SUMMIT	1(18.58 Ha.)	1980(226)	Jan. 14/80	Jan. 14/87
BONANZA	1(18.57 Ha.)	1981(224)	Jan. 14/80	Jan. 14/87
ANACONDA	1(20.63 Ha.)	1982(223)	Jan. 14/80	Jan. 14/87
TUNDER- FR.	1(17.54 Ha.)	1983(221)	Jan. 14/80	Jan. 14/87
HOMESTAKE	1(17.62 Ha.)	1984(21)	Jan. 14/80	Jan. 14/87
SEAGULL	1(20.19 Ha.)	1985(2097)	Jan. 14/80	Jan. 14/87
BROWN BEAR	1(13.08 Ha.)	1987(2099)	Jan. 14/80	Jan. 14/87
LITTLE TOMMY FR.	1(17.15 Ha.)	1986(2098)	Jan. 14/80	Jan. 14/87
SUNLIGHT FR.	1(10.49 Ha.)	1988(2103)	Jan. 14/80	Jan. 14/87
SEA LION FR.	1(19.44 Ha.)	1989(2104)	Jan. 14/80	Jan. 14/87

18 claims = 131 units

CROWN GRANTS

<u>NAME</u>	<u>LOT</u>	<u>NAME</u>	<u>LOT</u>
BEE	1915	INDEPENDENCE FR.	222
BENCH	35	LA QUIVREE	39
BLUE BELL	2485	LAKE FR.	32
BLUFF	34	LAKEVIEW	229
CASSIE	228	MOUNTAIN FR.	37
DLS	31	MARCIA	2484
EXCELSIOR	9	OLIVE	227
GRANITE	1916	PRINCESS ROYAL	7
GULCH	33	SADIE	8
		SEA FR.	1914
		TWIN PEAKS	38
		UTAH FR.	36

CERTIFICATES OF TITLE

- (1) No. 80162 - 1
- (2) No. 9244 - 1
- (3) No. 14746 - 1
- (4) No. 12251 - 1

APPENDIX IISHOWING GEOLOGYCassie Showing

The Cassie showing is located 2.5 kilometers south of the 900 level portal, Pugsley mine, at 518 meter elevation on the south slope of the Pugsley ridge. A 65.5 meter adit has been driven into the showing. It is in fair condition but due to an unstable back mapping was not attempted. The showing consists of a narrow (0.5 meter) quartz vein in the adit which has split into two narrower quartz veins outcropping immediately up dip (Plate 81-4). The quartz veins are irregularly mineralized along the margins. The mineralization comprises 2 to 5 percent (locally up to 15 percent) coarse-grained, pale brassy pyrite. No chalcopyrite was observed.

The adjacent host rock has been sericitized and chloritized. The footwall altered zone contains up to 10 percent ankerite. Within a meter on either side of the main quartz vein, unaltered diorite and gneiss form the respective hangingwall and footwall units.

The quartz vein was traced northward, within the shear, for almost the length of the adit before disappearing. Southward, the vein does not cross the adjacent creek. A 3 to 5 centimeter wide, barren quartz stringer, hosted by weakly altered diorite is found in the creek's south bank and likely represents a pinching of the vein in that direction.

Sampling:

Five chip samples of the showing were taken plus a sample from the ore dump located immediately southwest of the adit entrance (Plate 81-4). Assays show that the altered host rock contains negligible gold values whereas the two quartz vein samples contain 4,300 ppb Au (0.12 oz Au/T) and 6,000 ppb Au (0.18 oz Au/T) over 0.20 and 0.40 meter widths. The ore dump sample yielded 63,000 ppb Au (1.84 oz Au/T). There are no copper values of significance.

Summit Showing

Approximately 400 meters north of the Cassie showing and between 700 and 725 meter elevation lie a series of quartz vein showings comprising the Summit showings. Only the veins at 720 to 725 meter elevation were mapped and sampled (Plate 81-5). This showing is similar to the Cassie in that gneiss occurs in the footwall while diorite occurs in the hanging wall. The quartz veins are narrow (0.15 to 0.80 meter) and contain variable pyrite mineralization within a 2 to 6 centimeter wide zone along the hanging wall margin. The remainder of the veins are essentially barren. The host rock has been strongly sericitized, chloritized and to a lesser degree, silicified.

Sampling:

Four chip samples were taken, testing the hangingwall, footwall, and two areas of the quartz vein (Plate 81-5). Assays show reasonable gold values where pyrite is abundant (6670 ppb Au; 0.19 oz Au/T), over 0.80 meters. There are no copper values of significance.

Bonanza Showing

The Bonanza showing is located on the west bank of the Footwall Creek at an elevation of 792 meters. The showing consists of two mineralized quartz veins approximately 12 meters apart. The upper or western vein is 0.60 meter wide and the lower or eastern vein is 1.25 meters wide (Plate 81-7). Mineralization of the upper quartz vein consists of a 0.20 meter wide zone along the footwall margin containing 10 to 15 percent pyrite

and lesser chalcopyrite. The remainder of the vein contains 2 to 5 percent disseminated chalcopyrite and rare pyrite. The lower quartz vein compares to the upper vein but has more chalcopyrite in the footwall pyrite zone. The intermediate area between the two veins and immediate footwall and hanging wall rocks are typical shear zone rocks, having undergone intense sericitization, lesser silicification and minor chloritization. No sulfide mineralization was observed in these zones. Outside the confines of the shear zone, the hanging wall unit is gneiss and the footwall unit is diorite (the reverse of the Cassie and Summit showings).

Sampling:

Five chip samples were taken to test the hangingwall, footwall, intermediate zone, and the two quartz veins. (Plate 81-6) Results for the two quartz vein samples are 4020 ppb Au (0.12 oz Au/T) over 0.60 meter and 12,800 ppb Au (0.37 oz Au/T) over 1.25 meters, for the upper and lower veins respectively. Both samples contain over 1.0 percent copper. Samples of the host rock have insignificant gold contents and low (though markedly higher relative to the Summit and Cassie showings) copper and silver values.

Diabase Showing

The Diabase showing is located on the Pugsley side at an elevation of 775 meters and is a part of the hangingwall system of shears. It is exposed in a bluff face near the base of a four meter high waterfall (Plate 81-7). The quartz vein is up to 0.70 meter wide and contains numerous, strongly altered host rock remnants. The footwall contact is marked by a reddish fault gouge zone containing up to 5 percent pyrite. The shear zone on either side of the vein is strongly altered comprising sericite, lesser carbonate and quartz, and minor chlorite. The shear at this location has been cut by a steeply dipping, 2 to 3 meter wide diabase dike. No distinct contact features were observed other than chilled margins within the dike.

Sampling:

Four chip samples were taken to test the hangingwall, footwall, quartz vein and the diabase dike. The quartz vein sample assayed 4400 ppb Au (0.13 oz Au/T) over 0.70 meter. The remaining samples yielded insignificant metal contents.

Hangingwall Shear, East of DDH 81-1

Downstream from the Diabase showing are numerous hangingwall shear quartz veins. A shear, east of DDH 81-1 is found at an elevation of 700 meters. This showing contains a very narrow (0.30 meter) heavily mineralized quartz vein (Plate 81-8). The mineralization comprises 5 to 15 percent pyrite and minor to trace chalcopyrite. The footwall rocks are strongly schistose, and contain sericite, chlorite, and carbonate alteration. The hangingwall rock is weakly altered diorite.

Sampling:

Three chip samples were taken to test the hangingwall, footwall, and quartz vein (Plate 81-8). The quartz vein sample assayed 4230 ppb Au (0.12 oz Au/T) over 0.30 meter. The host rock samples have negligible metal content.

Hangingwall Shear, East of DDH 81-2

This showing represents a hangingwall shear zone due east of DDH 81-2 at an elevation of 550 meters. (Plate 81-10) Two narrow (2 to 3 centimeter) barren quartz veins are present. Alteration of the diorite host rock consists of sericite, quartz and lesser chlorite and carbonate.

Sampling:

Sampling consisted of two, 2 meter long chip samples to test the whole shear zone (Plate 81-10). Assay results indicate no measurable precious metal content.

### Independence Showings

The Independence showings are located in the Footwall Creek (main shear system, Pugsley side) between 310 meters and 350 meters elevation. These showings represent the largest outcropping of quartz on the Pugsley side. They are largely devoid of mineralization. The showings comprise one major (0.60 to 0.80 meter wide) and two minor (0.20 to 0.40 meter wide) northerly trending quartz veins and a significant, 1 to 2 meter wide, northeasterly trending chalcopyrite-bearing shear-vein system. The northernmost showing in the creek is found at an elevation of 330 meters and consists of a 0.30 meter wide, barren quartz vein in strongly sericitized and silicified diorite (Plate 81-11-A).

The next showing, 15 meters upstream at an elevation of 340 meters, is the northeasterly trending system. It consists of a 0.30 to 0.40 meter wide quartz vein and paralleling 1 to 10 centimeter wide quartz veinlets and shears (Plate 81-11-B). The quartz vein contains strongly altered host rock breccia and 10 to 15 percent chalcopyrite mineralization. The mineralization occurs in semi-massive form along the hangingwall contact and adjacent to some breccia fragments. Ankerite is a common constituent in places. Wallrock alteration consists of narrow (up to 10 centimeters), strongly sericitized envelopes. The associated veinlets comprise quartz, ankerite and variable, but lesser chalcopyrite. They are flanked by narrow sericitized envelopes. The alteration associated with the northeasterly system overprints the alteration of the northerly system.

The major quartz vein is found further upstream at an elevation of 348 meters. It is 0.50 to 0.80 meter wide. (Plate 81-11-C) Trace pyrite occurs as lenses along the footwall margin. Ankerite is common throughout the vein. The host rocks have been strongly sericitized and silicified. A third, parallel 0.20 to 0.40 meter wide quartz vein is present 10 meters to the west. This vein is barren.

A 12 meter long adit was driven on a quartz vein below the creek showings, 20 to 30 meters west of the Footwall Creek, at an elevation of 310 meters. The quartz vein at this location is barren.

#### Sampling:

Sampling consisted of six chip samples to test the hangingwall, footwall and quartz vein at 330 meters and 348 meters elevation (Plates 81-11-A and 81-11-C). Results show trace to non-measurable precious metal contents. An additional chip sample was taken across the main northeasterly trending vein and immediate wallrock (Plate 81-11-B). Predictably, this sample assayed close to 1.0 percent copper but it also had a higher gold value (460 ppb Au) over 0.30 meter, than the northerly trending vein samples.

### Sadie's Creek - 195 meter el. Showing

This showing, part of the west (hangingwall) shear system is located in Sadie's Creek. It consists of a persistent quartz vein exhibiting strong pinch and swell features (Plate 81-12). The quartz vein has heavy pyrite mineralization as lenses or pods along its margins. Minor disseminated chalcopyrite is found in the southern part of the showing. Narrow (2 to 5 centimeter) quartz veinlets oblique to the main vein are present east of the showing. These veinlets consisting of quartz, ankerite and minor pyrite, chalcopyrite mineralization were formed contemporaneously with the main vein depositional event.

The host rock is sericitized and silicified diorite. In areas, reddish brown cherty ankerite bands occur.

#### Sampling:

Three chip samples were taken to test the footwall, hangingwall and quartz vein (Plate 81-12). Results show that the pyrite-rich areas of the quartz vein are auriferous grading 19,000 ppb Au (0.55 oz Au/T) over 0.75 meter. The host rock samples have insignificant precious metal contents.

### Sadie's Creek - 165 meter el. Showing

Further downstream on Sadie's Creek is another quartz vein showing of the

west shear system. This showing consists of a strongly mineralized quartz vein exhibiting typical pinch and swell features (Plate 81-13). Over a strike length of 20 meters, the quartz vein swells from 5-10 centimeters to 1.5-2.0 meters, then pinches to 0.3 meter before swelling again to 0.9-1.0 meter. The mineralization of the vein is concentrated along the footwall margins in the swells and comprises up to 20 percent poddy pyrite. Alteration consists mainly of sericitization with lesser silicification and carbonitization.

Sampling:

Three chip samples were taken to test the hangingwall, footwall and quartz vein (Plate 81-13). Typically, significant gold values were only obtained from the vein sample which assayed 12,000 ppb Au (0.35 oz Au/T) over 1.0 meter.

Sadie's Creek - 145 meter el. Showing

This showing consists of two, narrow mineralized quartz veins (Plate 81-14). The west vein represents the continuation of the main vein in the 700 level adit and the nearby breakthrough. The mineralization comprises a 2 to 3 centimeter wide, massive pyrite + chalcopyrite layer along the footwall contact, 10 to 15 percent pyrite along the hangingwall contact and disseminated chalcopyrite in the core and hangingwall zones. The east vein is narrower and consists of 5 percent banded and disseminated pyrite and chalcopyrite.

In both cases, the disappearance of the vein is marked by a strongly schistose and sericitized zone. Other parts of the host rock have been strongly altered to sericite, chlorite and quartz.

Sampling:

Three chip samples were taken to test the hangingwall, footwall and quartz vein of the west vein and one, 1 meter wide chip sample was taken of the east vein and adjacent wallrock (Plate 81-14). Results show that the west vein is highly auriferous (45,000 ppb Au - 1.31 oz Au/T) over 0.60 meter and copper-rich (1.02 percent Cu). The adjacent wallrock has insignificant gold and silver values but is abnormally rich in copper. The east vein sample is also auriferous (1340 ppb Au - 0.04 oz Au/T) and contains anomalous copper values.

Sadie's Creek - 125 meter el. Showing

A quartz vein and shear zone parallel the main zone just west of the creek (700 level adit). At this elevation the quartz vein is 0.30 meter wide and is heavily mineralized (Plate 81-15). Mineralization consists of 10 to 15 percent pyrite and chalcopyrite. Alteration of the hosting shear zone is noticeably weaker than in other showings as remnant diorite textures are easily recognizable.

Sampling:

Three chip samples were taken to test the footwall, hangingwall and quartz vein (Plate 81-15). The quartz vein assayed 7900 ppb Au (0.23 oz Au/T) and 2130 ppm Cu over .30 meter. The wallrock samples yielded low values.

Sadie's Creek - 105 meter el. Showing

This showing is the downstream continuation of the 125 meter showing. The main quartz vein is further west of the creek. This showing contains a 5 to 60 centimeter wide weakly mineralized quartz vein consisting of up to 3 percent pyrite and chalcopyrite (Plate 81-16). The sulfides are generally concentrated along the footwall margin. Ankerite is a common constituent in areas. Alteration of the hostrock consists of sericitization, chloritization and silicification.

Located 5 meters downstream are 2 paralleling, 2 to 5 centimeters wide quartz veins. These veins contain up to 10 percent pyrite and chalcopyrite mineralization within narrow alteration envelopes.

Sampling:

Three chip samples were taken to test the footwall, hangingwall and quartz vein (Plate 81-16). An additional sample was taken of the shear encompassing the two quartz veins downstream. Precious metal contents of the upstream sample are insignificant. The downstream sample had higher values grading 1600 ppb Au (0.05 oz Au/T) over 1.0 meter. Copper values are high in both vein samples.

Sadie's Creek - 95 meter el. Showing

The 95 meter elevation showing is located just south of the junction between the Footwall and Sadie's Creeks. It represents the northernmost showing of the main quartz vein and shear system on the Pugsley side. The quartz vein is heavily mineralized (10 to 20 percent pyrite and chalcopyrite) and is hosted in a schistose, strongly altered zone containing numerous mineralized quartz stringers (Plate 81-17). Alteration comprises sericite, chlorite and carbonate.

Sampling:

Four chip samples were taken to test the footwall, hangingwall and two places along the quartz vein (Plate 81-17). Assay results show that the previous correlation between high gold content and pyrite concentration does not hold for this showing. Samples of heavily mineralized veins only assayed 960 ppb Au (0.03 oz Au/T) over 1.0 meter and 1760 ppb (0.05 oz Au/T) over 0.5 meter. All samples contain high copper content.

E-W Veins, Sadie's Creek

Located at the mouth of Sadie's Creek (junction with Paradise Creek) are numerous east-west, shallow southward dipping quartz veinlets. These veinlets range in thickness from 3 to 50 centimeters and consist of quartz, sericite, chlorite, ankerite plus minor chalcopyrite and trace magnetite (Plate 81-18). The chalcopyrite occurs as irregular massive pods throughout the veinlets.

Sampling:

Three, one meter wide chip samples across some of the veinlets were taken (Plate 81-18). Results confirm the high copper contents but the veinlets contain negligible gold values.

Bluff Showings

The Bluff showings are located on the Surf side beginning at the 200 level adit area (280 meter elevation) and traceable up strike and dip to 348 meter elevation. The showing in the 200 level adit area consists of a 3 meter wide quartz vein containing 5 to 15 percent sulfides (pyrite and lesser chalcopyrite) concentrated in the footwall half of the vein (Plates 81-19-A and 81-19-B). Large, strongly altered host rock remnants can be common in parts of the vein. The adjacent wallrock is strongly altered to sericite, chlorite, carbonate plus quartz. The footwall contact is marked locally by a massive ankerite layer.

The showing at 348 meter elevation consists of a 1.0 to 4.0 meter wide quartz vein (Plate 81-20). The vein contains 10 to 15 percent pyrite and chalcopyrite mineralization along the footwall margin whereas the rest of the vein has 1 to 2 percent disseminated chalcopyrite. The adjacent footwall consists of a breccia zone of altered diorite in a siliceous matrix. Otherwise, the hosting shear is the typical schistose sericite, chlorite, quartz rock.

Sampling:

Five chip samples were taken in the 200 level adit area to test the footwall, hangingwall, the sulfide-rich footwall zone of the quartz vein, hangingwall zone of the quartz vein, and a quartz vein left in a pillar up dip and strike from the adit (Plate 81-19-A and 81-19-B). Gold values from the three quartz vein samples are highly variable as the sulfide-rich pillar vein graded 30,000 ppb Au (0.88 oz Au/T) over 1.0 meter, the sulfide rich footwall zone graded 1540 ppb Au (.04 oz Au/T) over 1.0 meter,

and the sulfide-poorer hangingwall zone graded 6230 ppb Au (0.18 oz Au/T) over 1.5 meters. The host rock samples contain negligible precious metal content. Copper content is insignificant in all samples.

Three chip samples were also taken from the 348 meter elevation showing to test the footwall, hangingwall and quartz vein (Plate 81-20). Gold content of the sulfide-rich quartz vein is low grading 1400 ppb Au (0.04 oz Au/T) over 1.5 meters. The vein, however, has significant copper content (0.97 percent Cu). The host rock contains negligible precious metals but has anomalous copper values.

#### Ridge Shear Zone

The Ridge Shear Zone is located at the summit of the ridge separating the Pugsley orebody and the Cassie showing. It represents the widest surface expression of the shear zone on the property as at this point the hangingwall and main shear systems have converged into one. No quartz showings are present in this zone. The Ridge shear is approximately 100 meters wide and occurs in diorite. The eastern margin is transitional as unsheared, weakly foliated diorite becomes increasingly foliated westward (Plate 81-21-A). Pegmatite dikes at small angles to the foliation are common within this part of the shear. Also in this section, epidote blebs up to 10 centimeters in diameter are frequent. The core of the shear, approximately 35 meters wide, is characterized by moderate alteration comprising sericitization, carbonitization, chloritization and, to a lesser degree, silicification (Plates 81-21-A and 81-21-B). Westward, the shear grades into unaltered gneiss over a distance of 10 meters (the gneiss is distinguished from potentially similar gneissic diorite by having a greater amount of biotite and quartz, and by the presence of numerous small scale folds - not found in gneissic diorite).

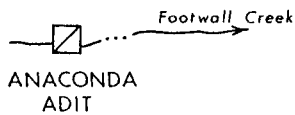
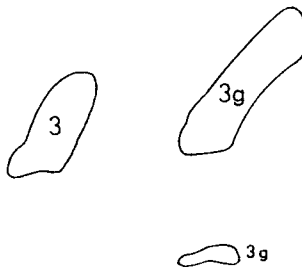
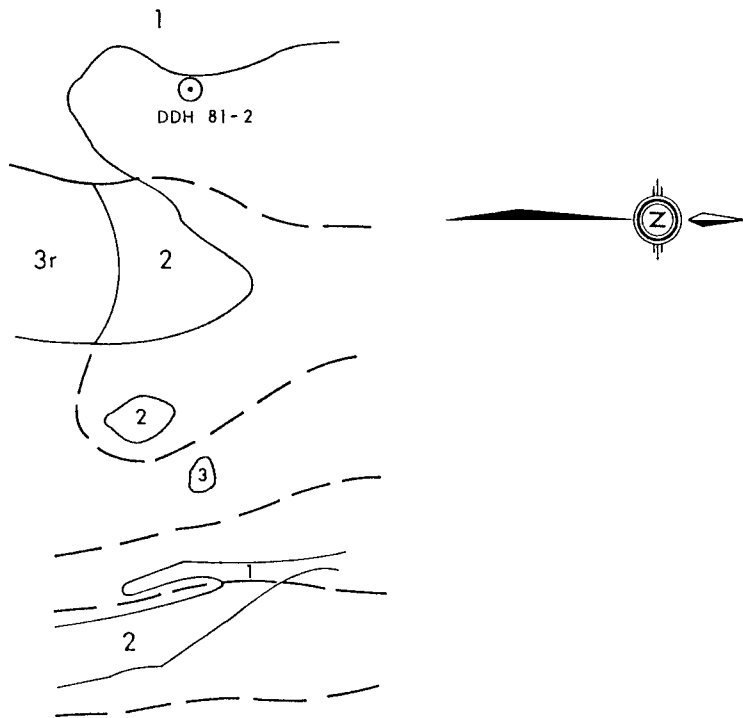
#### Sampling:

The whole zone was sampled using 10 meter sampling widths (Plate 81-21-A). The individual samples consisted of equally sized rock chips collected every meter. The core of the shear was resampled over a length of 21 meters (Plate 81-21-B). Individual samples consisted of semi-continuous chips over 3 meters. Assay results show no precious metal content within the shear zone except for one sample in the core area - (SR-81-61) which graded 640 ppm Au and 7.3 ppm Ag. Copper content decreases towards the core of the zone from both margins.

#### Unmapped Showings

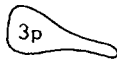
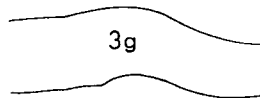
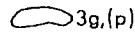
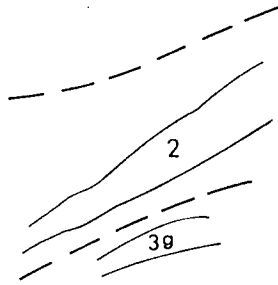
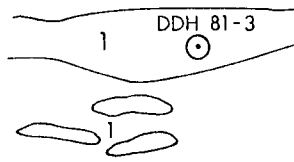
Approximately 150 meters west of the Diabase showing lies a northeasterly trending, shallow dipping quartz vein hosted by gneiss (Plate 81-1). The quartz vein is 0.20 to 0.50 meters wide and is irregularly mineralized with pyrite. A grab sample (SR-81-16) of the mineralized section gave the following metal values: 207 ppm Cu; 230.0 ppm Ag; 22,800 ppb Au (0.66 oz Au/T).

Another mineralized showing occurs on the Pugsley side at an elevation of 200 meters, 250 meters east of the Footwall Creek (Plate 81-1). This showing is a narrow (5 to 10 centimeter) but persistent, chalcopyrite-bearing quartz vein. Ankerite is also a common constituent. A grab sample assayed: 9.16 percent Cu; 147.0 ppm Ag; 2360 ppb Au (0.07 oz Au/T).



Drawn by: S.J.J.		Traced by: H.H.		<b>SURF INLET</b> SURFACE GEOLOGY ALONG HORIZONTAL PROJECTION for DDH 81-2 (090° Az)			
Revised by	Date	Revised by	Date				





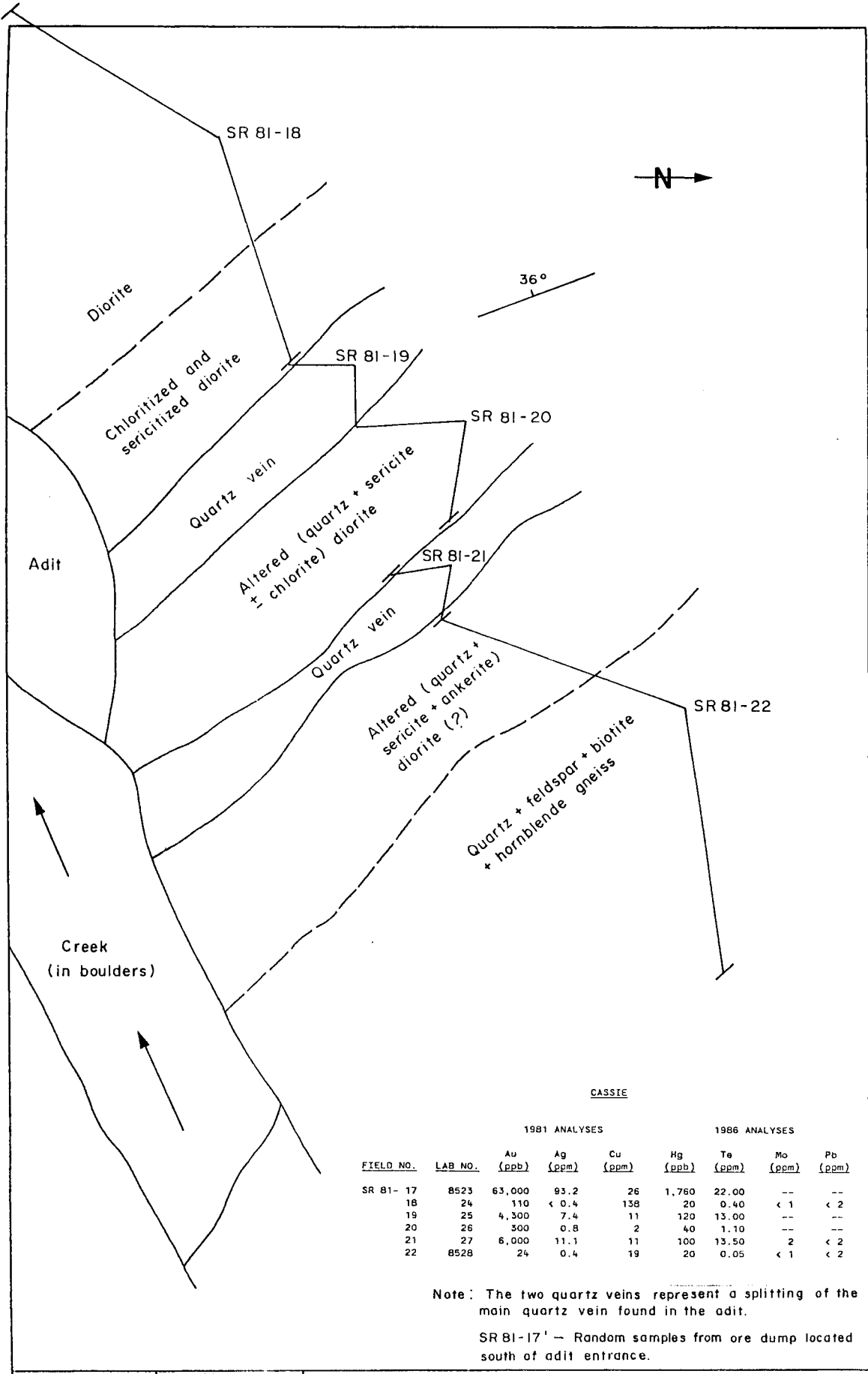
Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
 SURFACE GEOLOGY ALONG HORIZONTAL PROJECTION  
 for DDH 81-3 (099° Az)

Scale: 1 : 1000

Date: SEPT. 1981

Plate: 81-3



CASSIE

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81-17	8523	63,000	93.2	26	1,760	22.00	--	--	
18	24	110	< 0.4	138	20	0.40	< 1	< 2	
19	25	4,300	7.4	11	120	13.00	--	--	
20	26	300	0.8	2	40	1.10	--	--	
21	27	6,000	11.1	11	100	13.50	2	< 2	
22	8528	24	0.4	19	20	0.05	< 1	< 2	

Note: The two quartz veins represent a splitting of the main quartz vein found in the adit.

SR 81-17' - Random samples from ore dump located south of adit entrance.

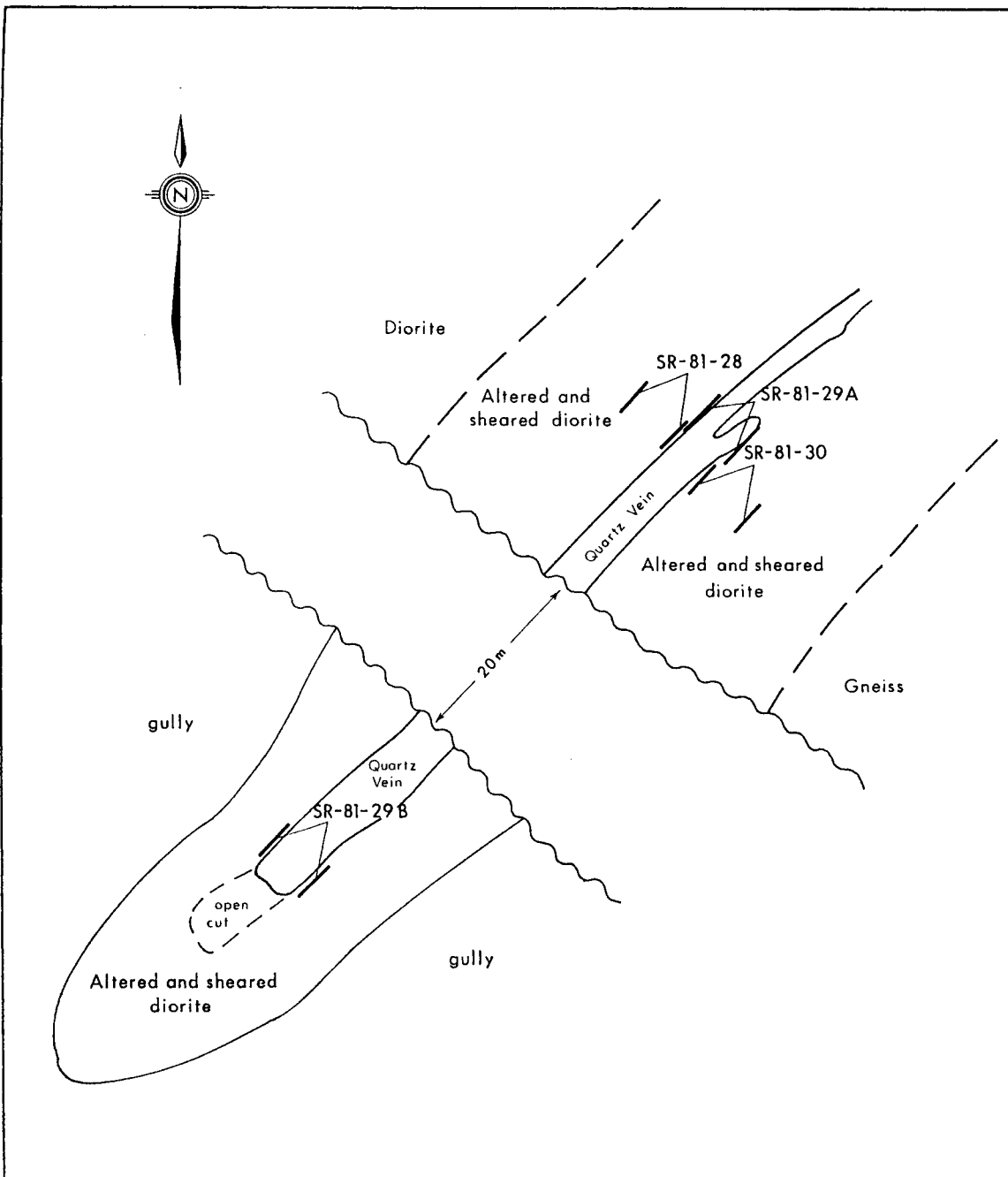
Drawn by: SJJ		Traced by: FJF	
Revised by	Date	Revised by	Date

**SURF INLET**

**GEOLOGY AND SAMPLE LOCATION**

**CASSIE SHOWING**

Scale: 0 0.25m Date: AUG. 25, 1981 Plate: 4



SUMMIT

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 28	9431	170	< 0.4	18	60	0.60	--	--	
29A	9432	6,670	14.5	152	260	15.00	1	< 1	
29B	9433	1,760	3.7	15	170	6.00	--	--	
30	9434	380	1.0	63	40	1.35	< 1	< 2	

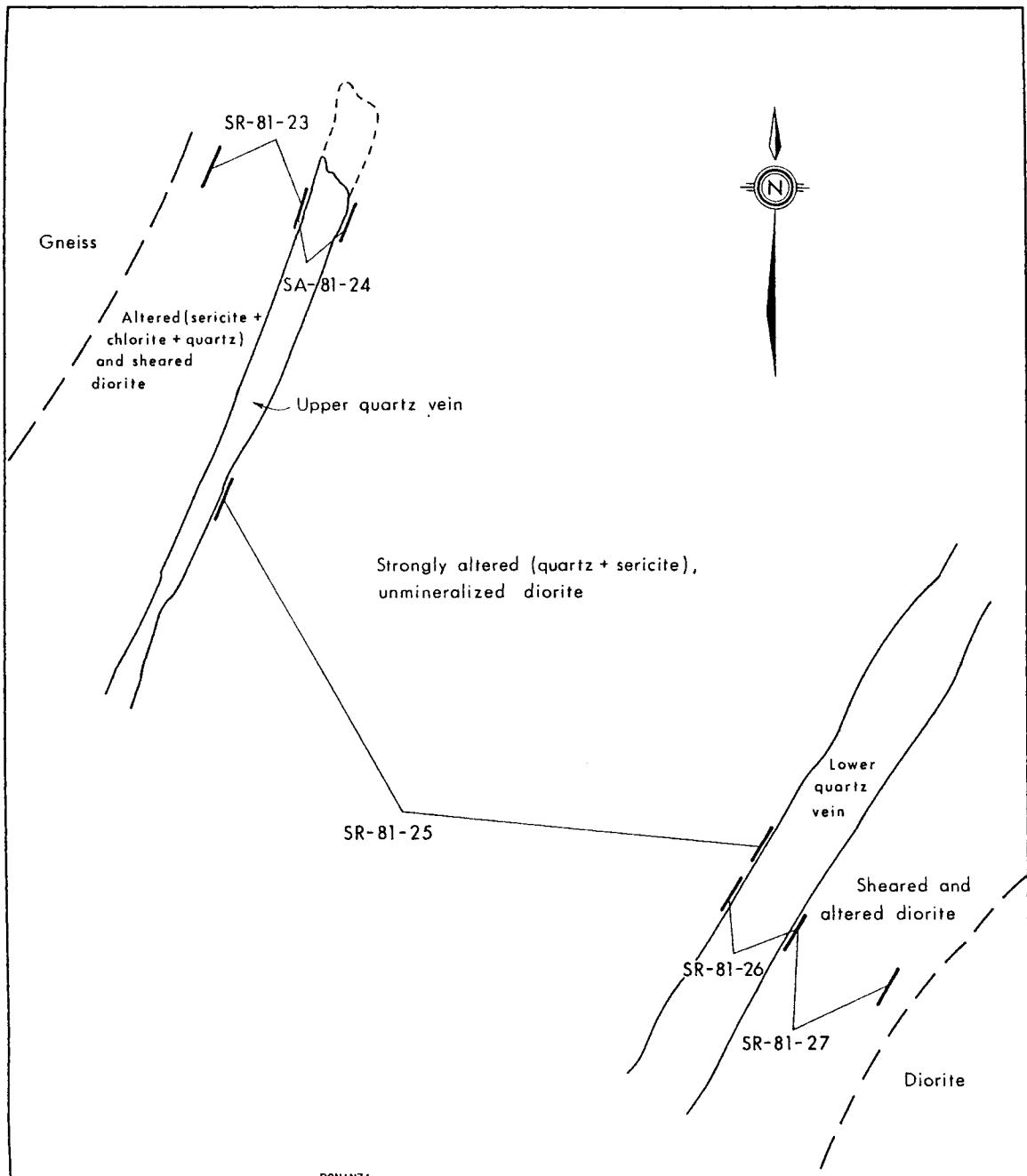
Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
**GEOLOGY and SAMPLE LOCATION**  
**SUMMIT SHOWING**

Scale: 0 1 2m

Date: SEPT. 1981

Plate: 5



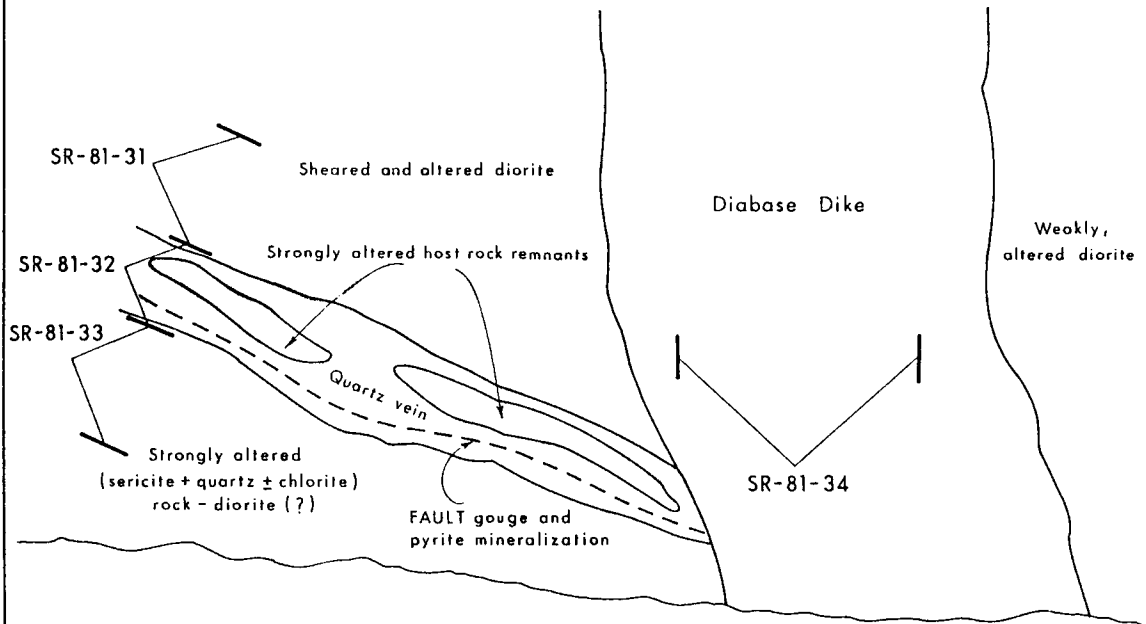
**BONANZA**

1981 ANALYSES		1986 ANALYSES							
FIELD NO.	LAB. NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 23	8617	238	1.0	25	20	26.00	< 1	< 2	
24	18	4,020	36.9	10,780	240	13.50	4	< 2	
25	19	90	1.2	70	90	9.00	< 1	< 2	
26	20	12,800	86.0	17,200	4,600	32.50	--	--	
27	21	156	1.2	252	60	1.50	--	--	

Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
**GEOLOGY and SAMPLE LOCATION**  
**BONANZA SHOWING**

Scale: 0 1 2m	Date: SEPT. 1981	Plate: 6
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NOTE: SECTION IS OF A BLUFF FACE, LOOKING SOUTH

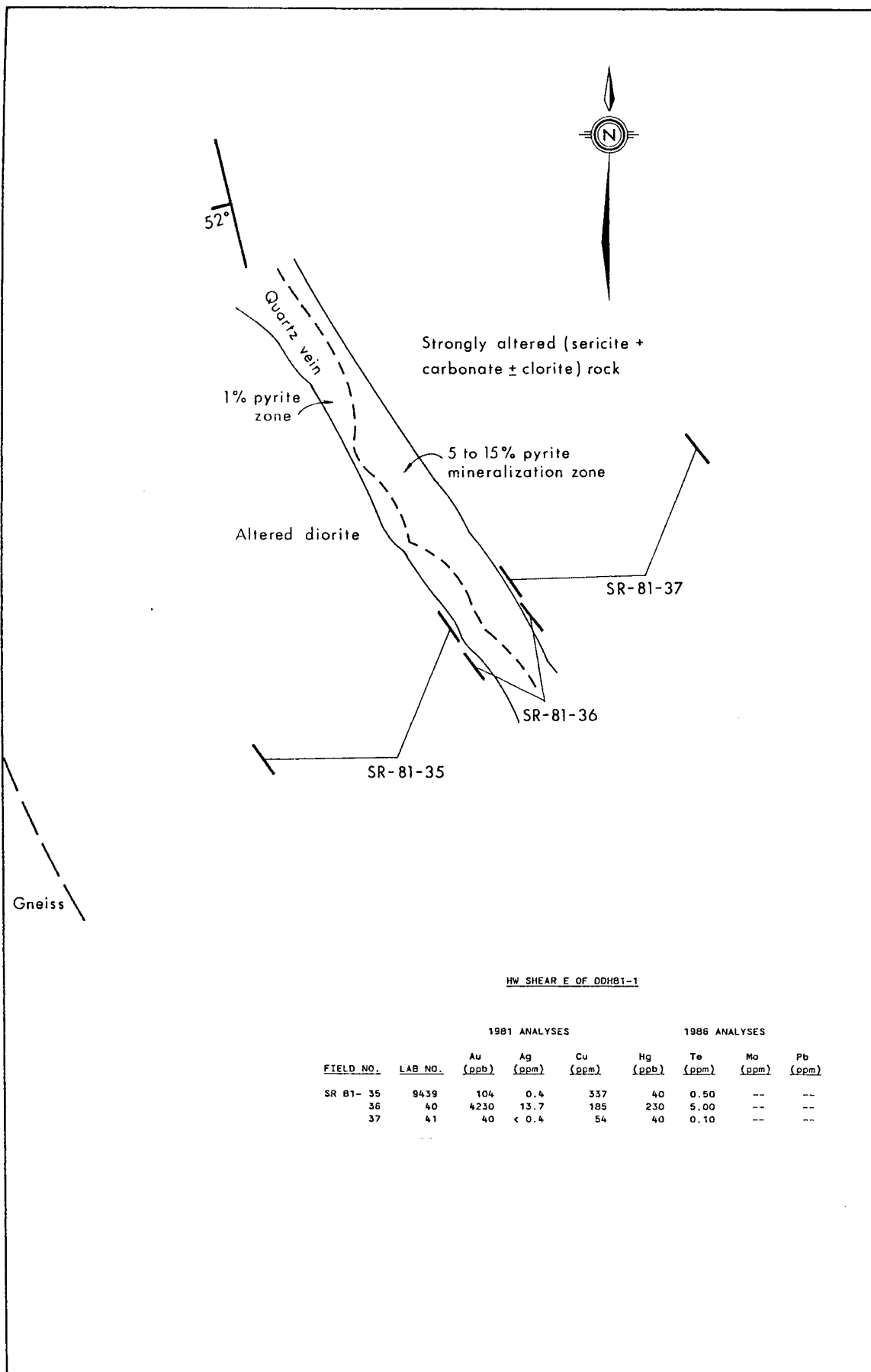
DIABASE

FIELD NO.	LAB NO.	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 31	9435	22	< 0.4	48	20	0.10	--	--
32	36	4,400	24.4	28	100	15.00	35	< 2
33	37	60	2.0	47	20	0.30	--	--
34	38	74	0.6	71	40	0.50	1	< 2

Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
DIABASE SHOWING

Scale: 0 0.5 1m	Date: SEPT. 1981	Plate: 7
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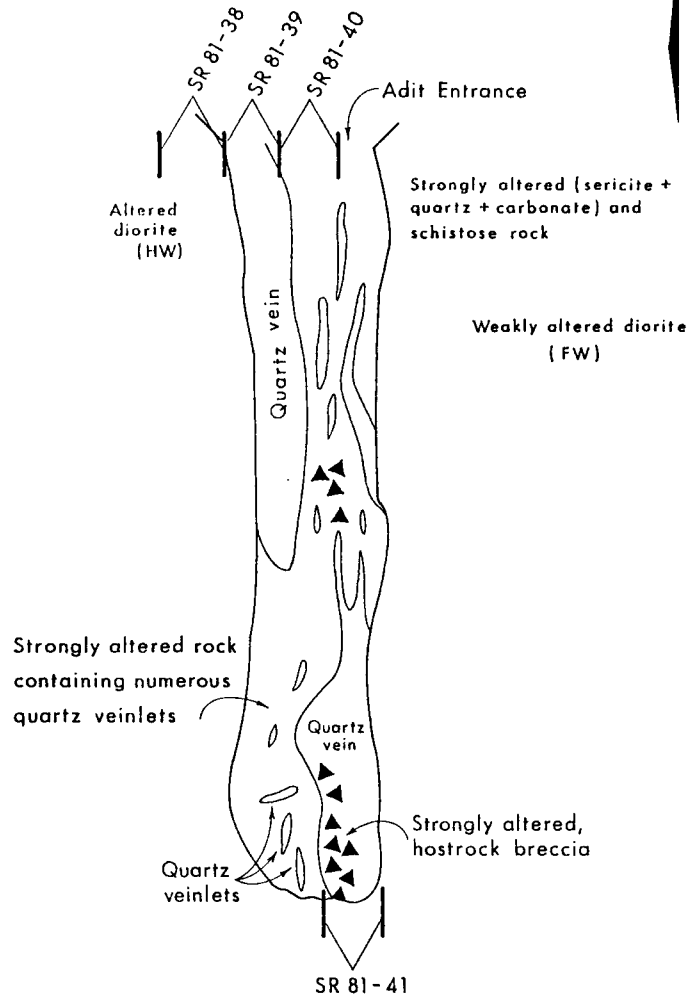


		1981 ANALYSES			1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 35	9439	104	0.4	337	40	0.50	--	--
36	40	4230	13.7	185	230	5.00	--	--
37	41	40	< 0.4	54	40	0.10	--	--

Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
**GEOLOGY and SAMPLE LOCATION**  
 HW Shear, East of DDH 81-1

Scale: 0 0.5m Date: SEPT. 1981 Plate: 8



ANACONDA

		1981 ANALYSES			1986 ANALYSES			
FIELD NO.	LAB. NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 38	9442	20	< 0.4	8	180	0.10	5	2
39	9443	230	1.3	13	80	1.00	20	< 2
40	9444	10	< 0.4	6	30	0.05	--	--
41		40	< 0.4	10	--	--	--	--

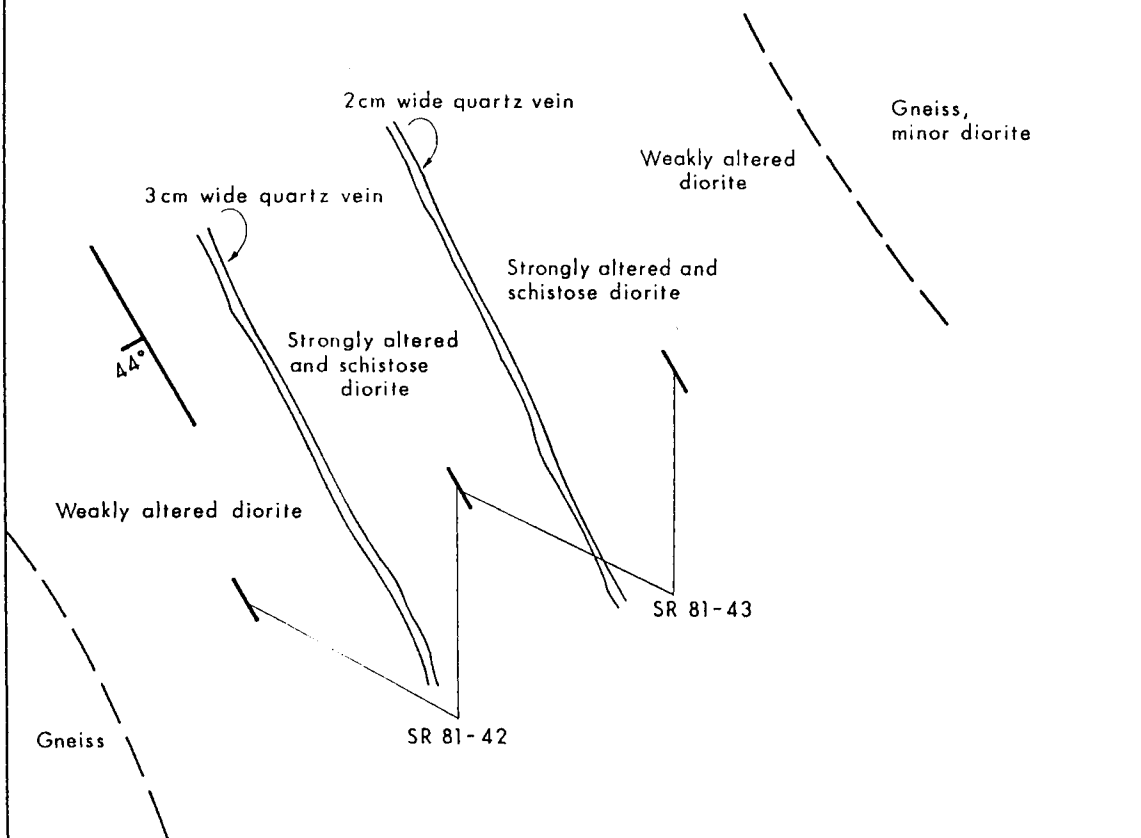
Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
ANACONDA ADIT

Scale: 0 1 2m

Date: SEPT. 1981

Plate: 9



HW SHEAR E OF DDH-2

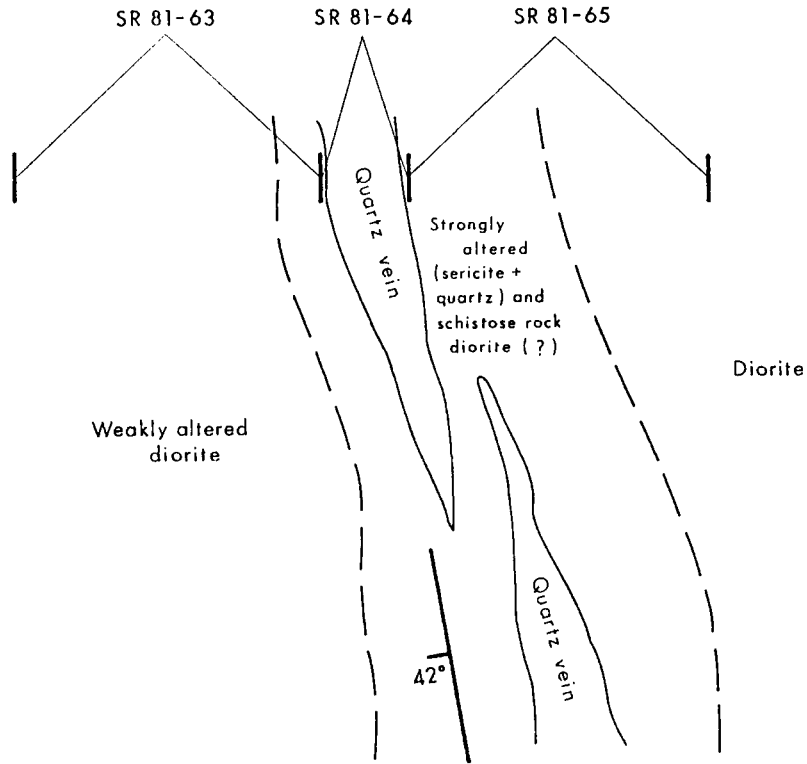
		1981 ANALYSES			1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 42	9446	< 10	< 0.4	21	20	<0.05	--	--
43	47	< 10	< 0.4	14	20	0.05	--	--

Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
**GEOLOGY and SAMPLE LOCATION**  
 HW Shear, East of DDH 81-2

Scale: 0 0.5 1m      Date: SEPT. 1981      Plate: 10





INDEPENDENCE A

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 63	9874	10	< 0.4	12	20	0.05	--	--	
64	75	< 10	< 0.4	3	20	0.05	--	--	
65	76	< 10	< 0.4	9	10	< 0.05	--	--	

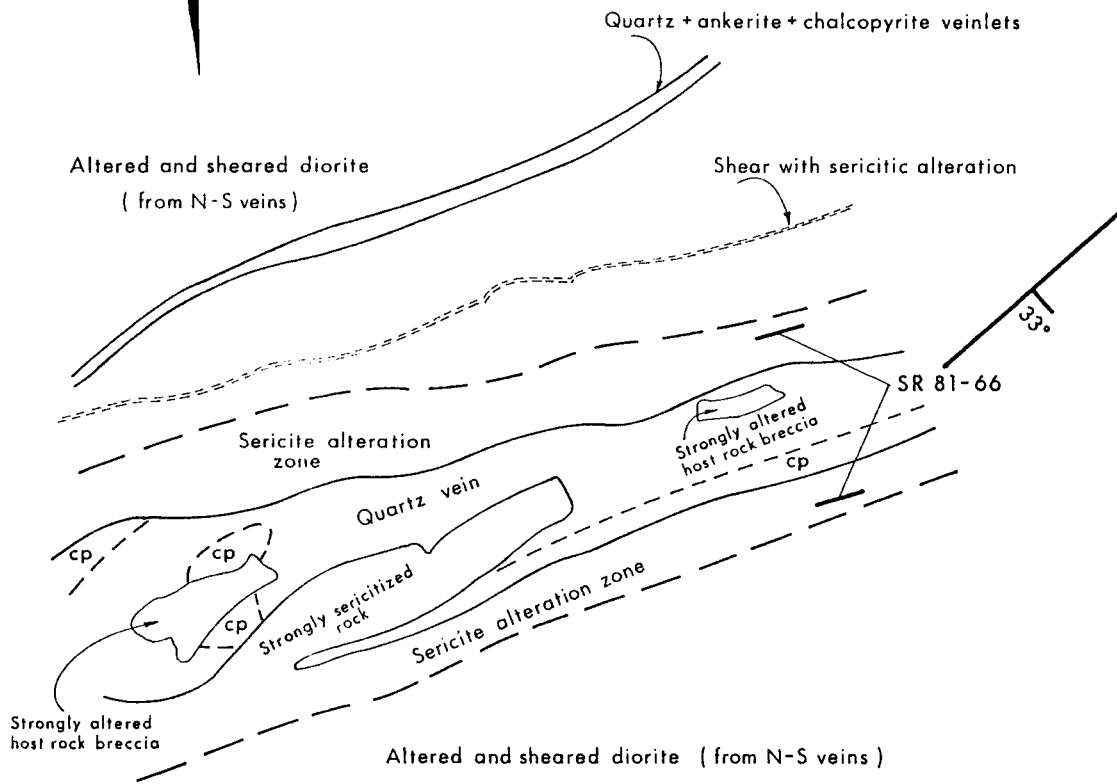
Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
INDEPENDENCE SHOWING - A

Scale: 0 0.5m

Date: SEPT. 1981

Plate: 11-A



INDEPENDENCE B

		1981 ANALYSES				1986 ANALYSES			
<u>FIELD NO.</u>	<u>LAB. NO.</u>	<u>Au</u> (ppb)	<u>Ag</u> (ppm)	<u>Cu</u> (ppm)	<u>Hg</u> (ppb)	<u>Te</u> (ppm)	<u>Mo</u> (ppm)	<u>Pb</u> (ppm)	
SR 81- 66	9877	460	3.6	9,350	40	2.4	--	--	

Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
INDEPENDENCE SHOWING - B

Scale: 0	0.25m	Date: SEPT. 1981	Plate: 11- B
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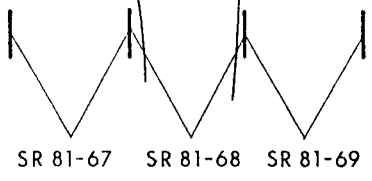
Strongly altered (sericite + quartz) and schistose rock-diorite (?)

Quartz vein

45°

Altered and sheared diorite

Diorite



INDEPENDENCE C

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 67	9878	50	< 0.4	14	10	0.05	--	--	
68	79	10	< 0.4	30	20	0.05	--	--	
69	80	40	< 0.4	6	10	< 0.05	--	--	

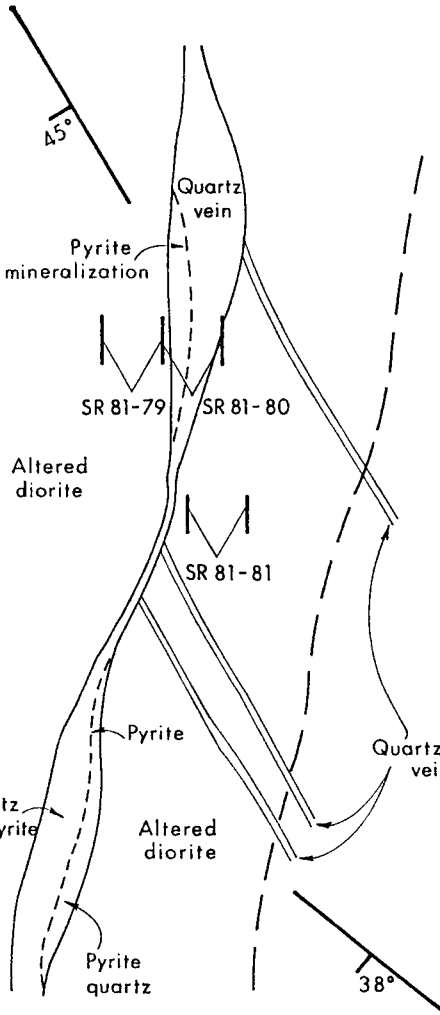
Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
INDEPENDENCE SHOWING - C

Scale: 0 0.5 1 m      Date: SEPT. 1981      Plate: 11-C



Gneiss



SADIE'S CREEK  
195 m ELEV.

1981 ANALYSES				1986 ANALYSES				
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 79	9976	< 10	< 0.4	14	100	0.05	--	--
80	77	19,000	10.0	403	200	13.50	--	--
81	78	100	< 0.4	47	40	0.25	--	--

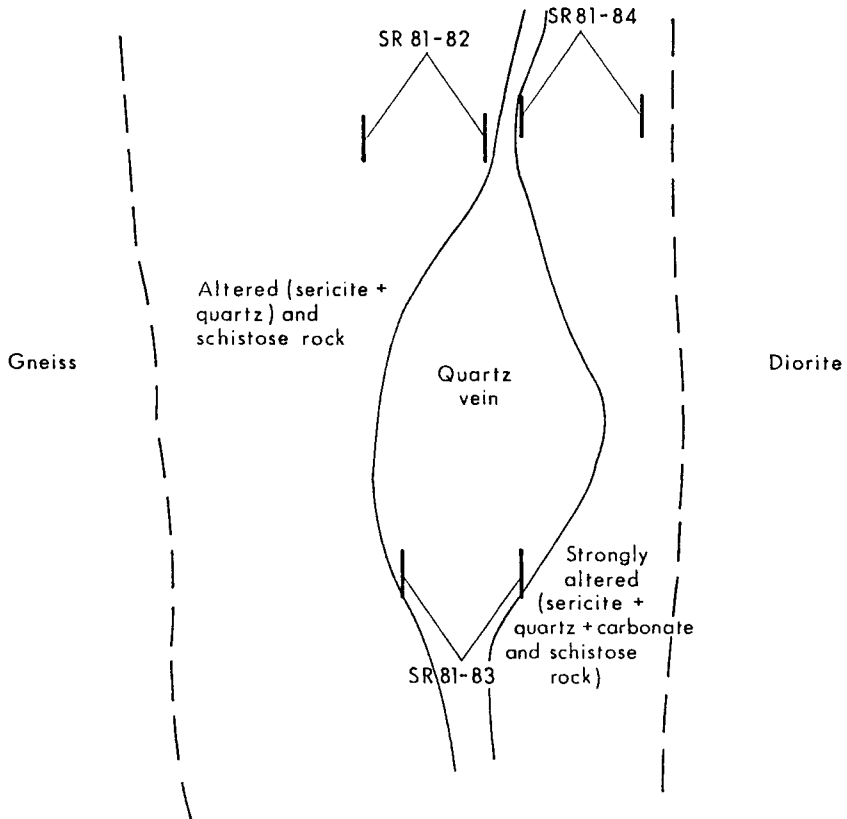
Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
SADIE'S CREEK SHOWINGS - 195m el.

Scale: 0 1 2m

Date: SEPT. 1981

Plate: 12



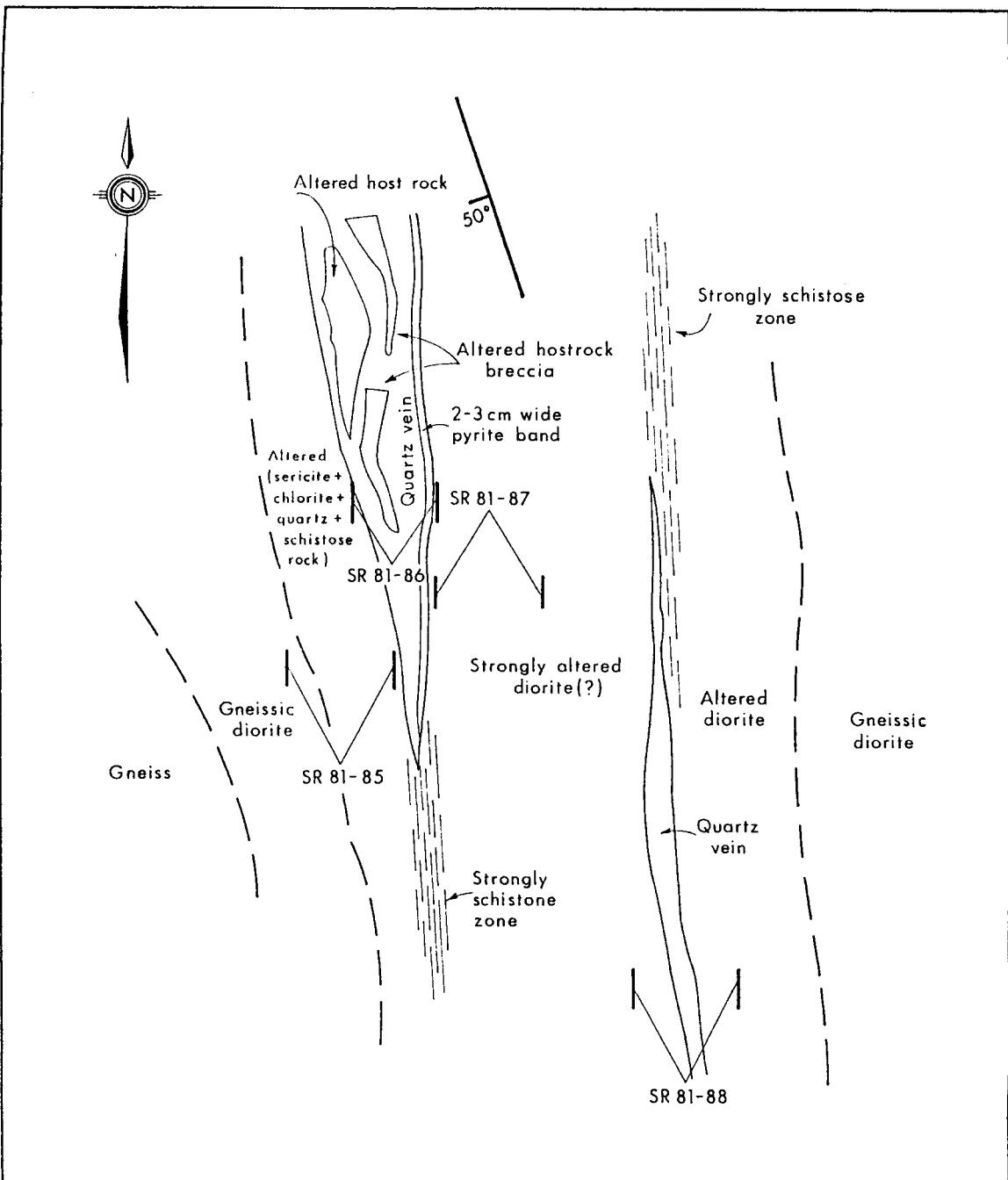
SADIE'S CREEK  
165 m ELEV.

		1981 ANALYSES			1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 82	9979	70	< 0.4	32	20	0.20	--	--
83	80	12,000	2.9	42	80	13.30	--	--
84	81	200	< 0.4	44	40	0.75	--	--

Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
SADIE'S CREEK SHOWINGS - 165m el.

Scale: 0 0.5 1m      Date: SEPT. 1981      Plate: 13



SADIE'S CREEK  
145 m ELEV.

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81-85	9882	400	< 0.4	782	20	3.10	1	10	
86	83	45,000	15.1	10,200	240	33.00	4	8	
87	84	80	< 0.4	549	40	0.40	--	--	
88	85	1,340	< 0.4	450	40	2.45	--	--	

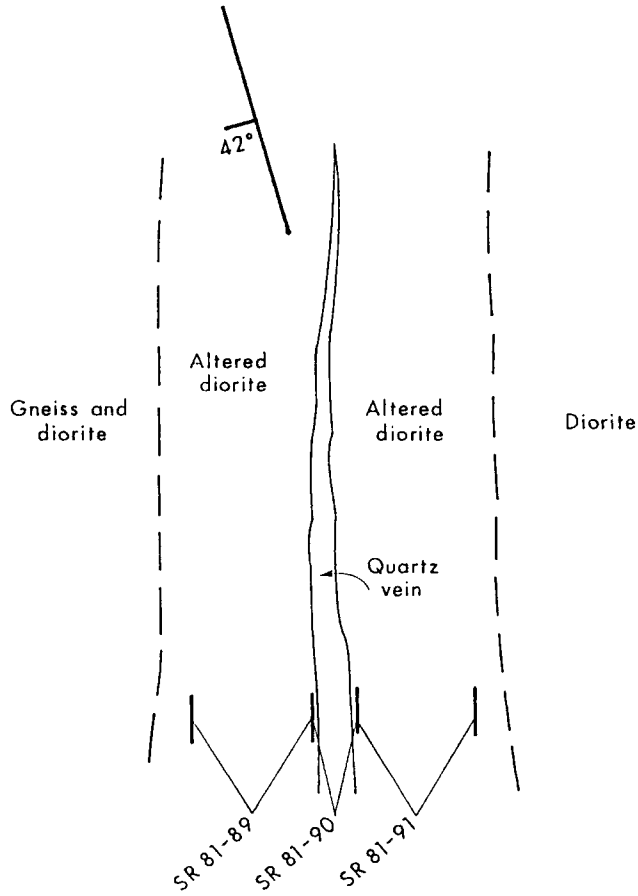
Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
SADIE'S CREEK SHOWINGS - 145m el.

Scale: 0 0.5 1m

Date: SEPT. 1981

Plate: 14



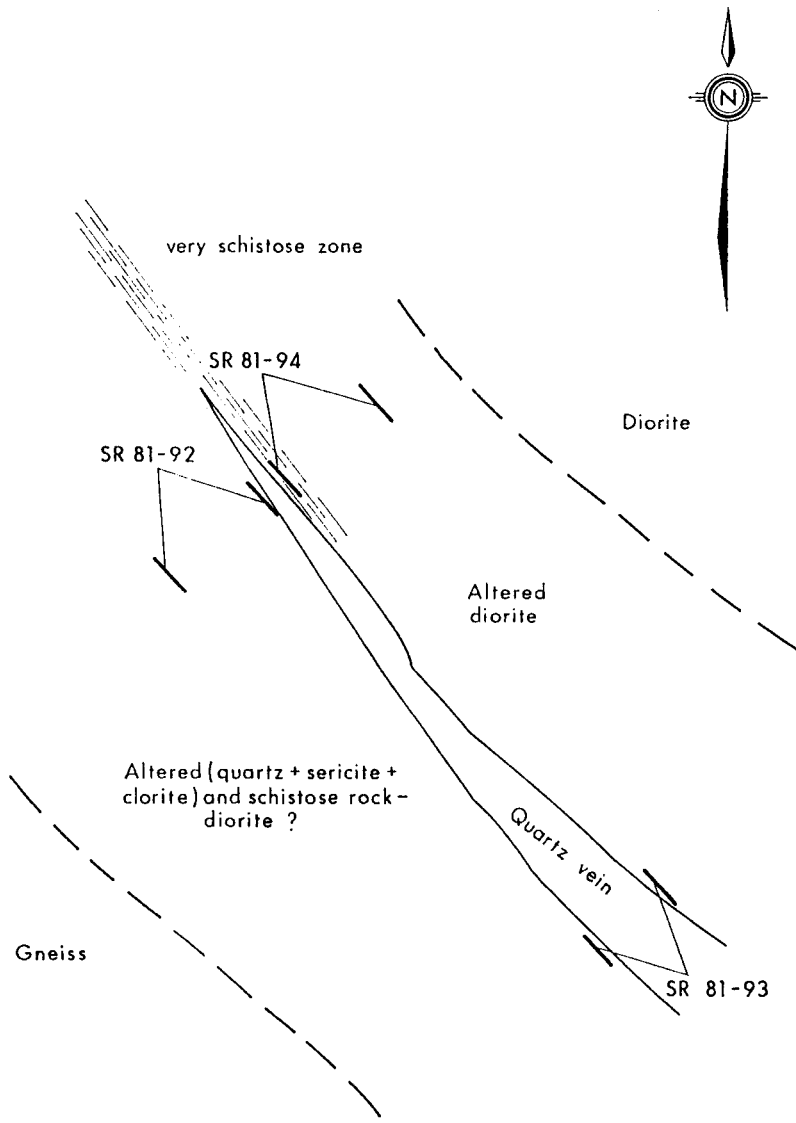
SADIE'S CREEK  
125 m ELEV.

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81-89	9986	20	0.4	21	20	0.15	< 1	4	
90	87	7,900	2.5	2,130	70	6.90	2	2	
91	88	20	0.4	22	10	0.05	< 2	< 2	

Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
SADIE'S CREEK SHOWINGS - 125 m el.

Scale: 0 0.5 1 m      Date: SEPT. 1981      Plate: 15



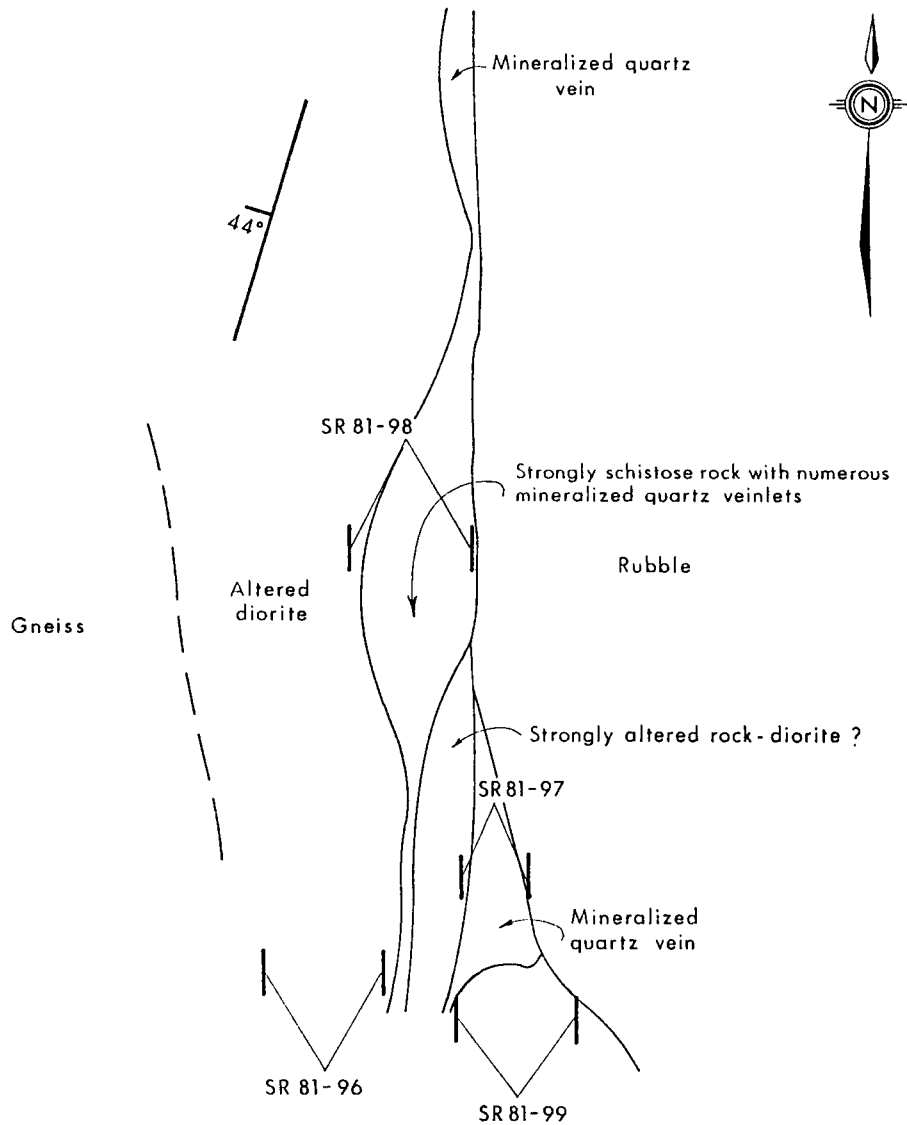
SADIE'S CREEK  
105 m ELEV.

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB. NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 92	9989	30	0.4	18	30	0.50	< 1	4	
93	90	440	0.4	724	30	2.00	--	--	
94	91	30	0.4	189	20	0.10	--	--	
95	92	1,600	0.4	1,380	30	2.10	< 1	2	

\* a 1 m long chip sample encompassing 2, 2-5 cm wide quartz veins located 5 m north of above showing.

Drawn by: S. J. J.		Traced by: H. H.		<b>SURF INLET</b> GEOLOGY and SAMPLE LOCATION SADIE'S CREEK SHOWINGS - 105 m el.			
Revised by	Date	Revised by	Date				
				Scale: 0 0.5 1m		Date: SEPT. 1981	Plate: 16





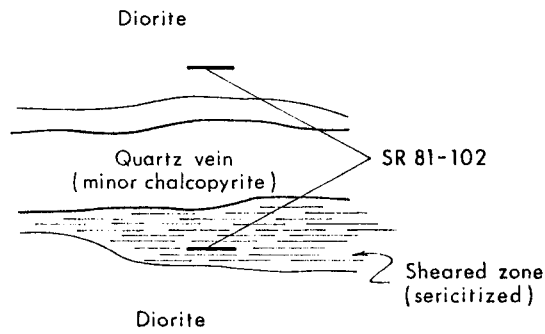
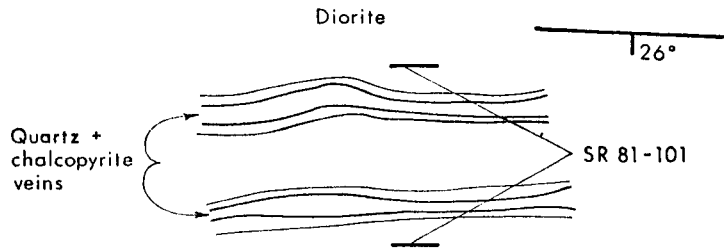
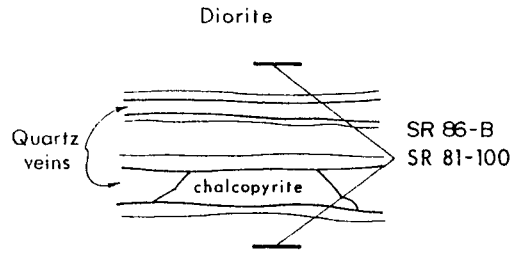
SADIE'S CREEK  
95 m ELEV.

1981 ANALYSES				1986 ANALYSES				
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81-96	9993	10	0.4	112	10	0.20	--	--
97	94	1,760	3.5	1,718	40	1.75	2	< 2
98	95	960	1.3	1,590	70	1.80	--	--
99	96	100	0.4	740	50	0.30	< 1	2

Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
SADIE'S CREEK SHOWINGS - 95 m el.

Scale: 0 0.5 1m Date: SEPT. 1981 Plate: 17



E-W VEIN AT MOUTH OF SADIE'S CREEK

1981 ANALYSES

FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81-100		10	11.0	54,100	--	--	--	--
101		20	1.7	3,630	--	--	--	--
102		110	1.1	6,010	--	--	--	--

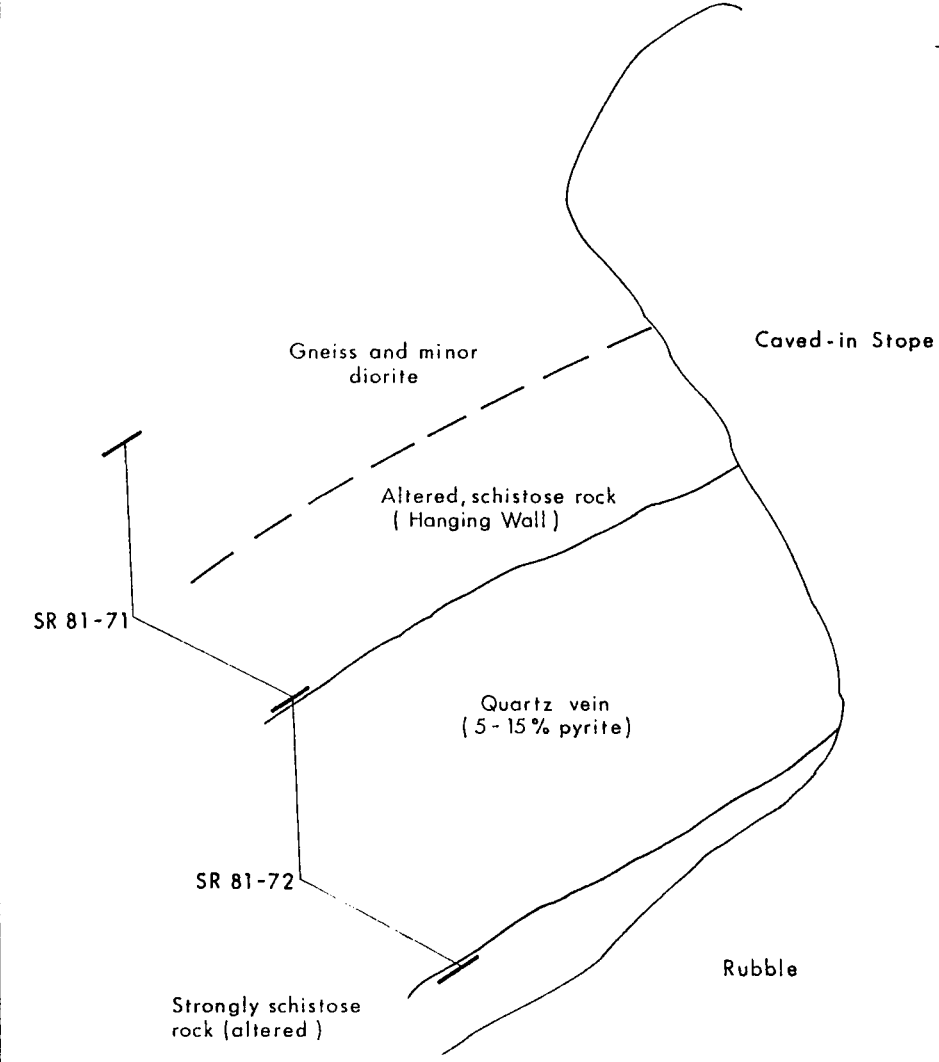
1986 ANALYSES

86-B	B	450	13	> 1%	250	1.0	5	6
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Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
E - W VEINS - MOUTH OF SADIE'S CREEK

Scale: 0 0.5 1m Date: SEPT. 1981 Plate: 18



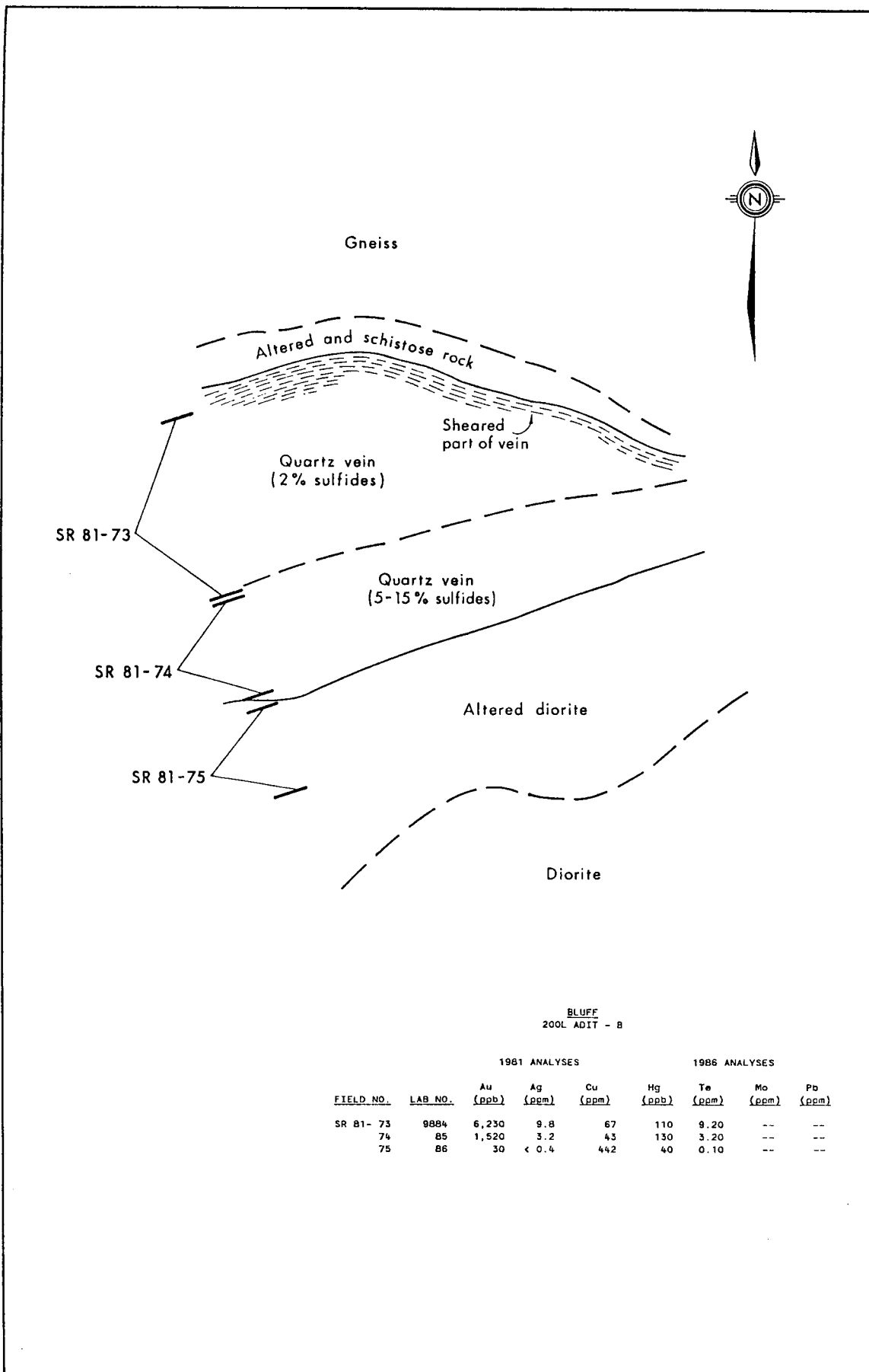
BLUFF  
200L ADIT - A

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 71	9882	140	0.4	45	40	0.95	--	--	
72	9883	30,000	97.7	224	660	29.00	--	--	

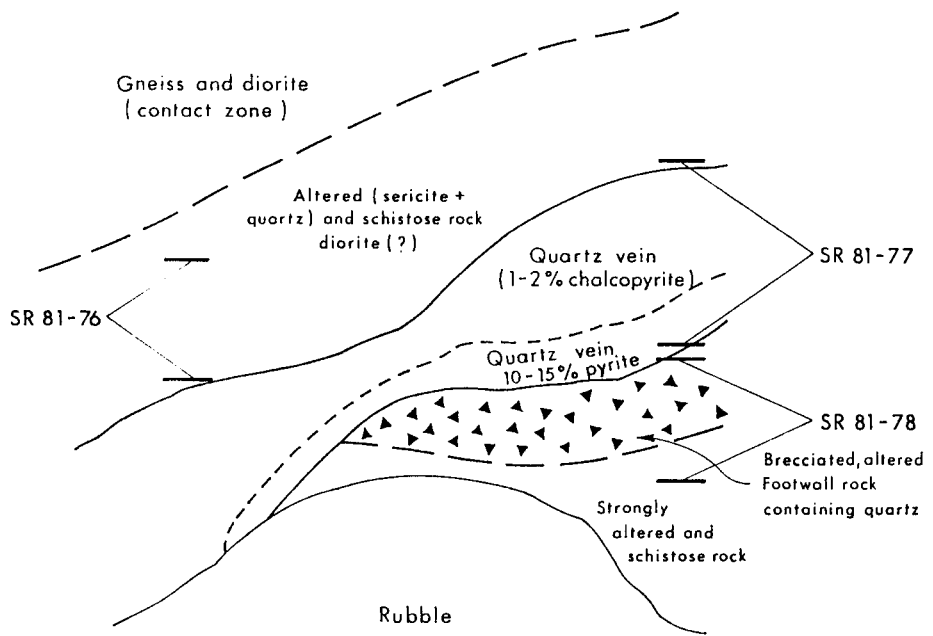
Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
BLUFF SHOWING - 200 L. ADIT AREA

Scale: 0 0.5m Date: SEPT. 1981 Plate: 19 A



Drawn by: S. J. J.		Traced by: H. H.		<h2 style="margin: 0;">SURF INLET</h2> <p style="margin: 0;">GEOLOGY and SAMPLE LOCATION</p> <p style="margin: 0;">BLUFF SHOWING - 200 L. ADIT AREA</p>				
Revised by	Date	Revised by	Date	Scale: 0 0.5 1m		Date: SEPT, 1981		Plate: 19 B



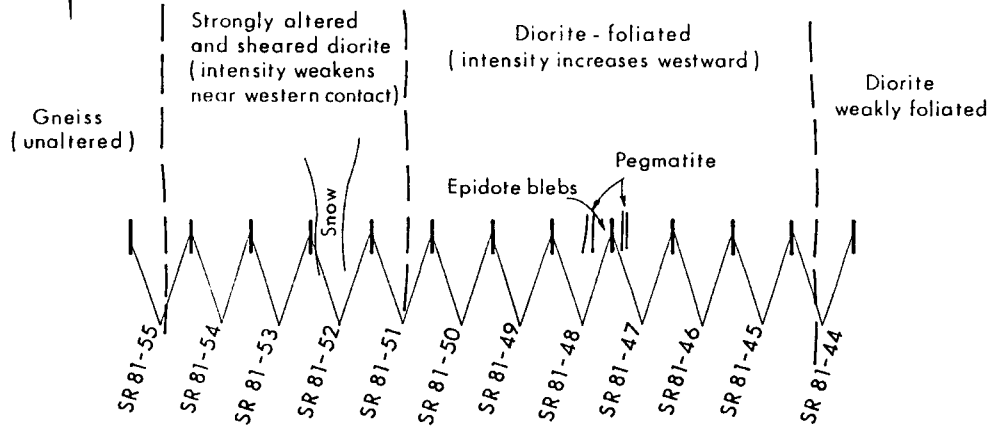
BLUFF  
348m ELEV

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81- 76	9887	100	0.4	241	30	0.25	--	--	
77	88	1,400	7.5	9,670	90	1.80	7	28	
78	89	160	< 0.4	619	20	0.25	< 1	28	

Drawn by: S.J.J.		Traced by: H.H.	
Revised by	Date	Revised by	Date

**SURF INLET**  
GEOLOGY and SAMPLE LOCATION  
BLUFF SHOWING - 348 m ELEVATION

Scale: 0 0.5 1m      Date: SEPT. 1981      Plate: 20



RIDGE SHEAR ZONE A

FIELD NO.	LAB NO.	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 44		< 10	< 0.4	38	--	--	--	--
45		< 10	< 0.4	24	--	--	--	--
46		10	< 0.4	36	--	--	--	--
47		< 10	< 0.4	19	--	--	--	--
48		< 10	< 0.4	15	--	--	--	--
49		< 10	< 0.4	19	--	--	--	--
50		10	< 0.4	19	--	--	--	--
51		< 10	< 0.4	29	--	--	--	--
52	9810	< 10	< 0.4	23	30	< 0.05	--	--
53		< 10	< 0.4	16	--	--	--	--
54		< 10	< 0.4	59	--	--	--	--
55		< 10	< 0.4	15	--	--	--	--

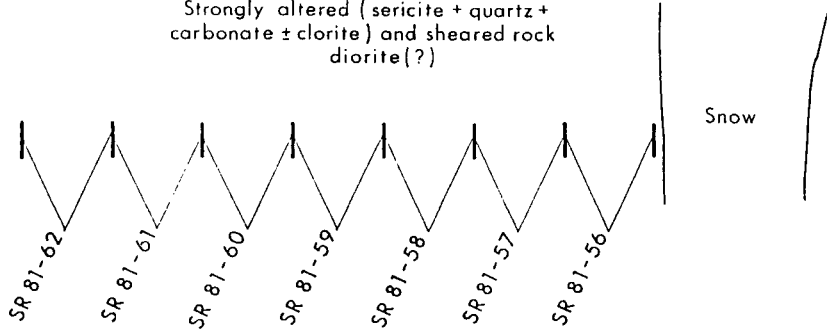
Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
RIDGE SHEAR ZONE - A

Scale: 0 10 20 30m Date: SEPT. 1981 Plate: 21 A



Strongly altered (sericite + quartz +  
carbonate ± chlorite) and sheared rock  
diorite(?)



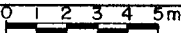
RIDGE SHEAR ZONE B

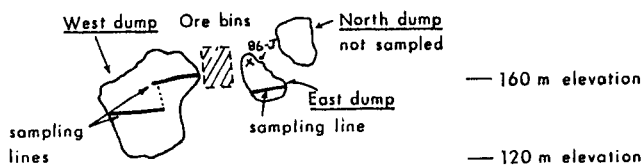
1981 ANALYSES

FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81- 56	9814	< 10	< 0.4	14	20	< 0.05	--	--
57		< 10	< 0.4	12	--	--	--	--
58		< 10	< 0.4	21	--	--	--	--
59	9817	< 10	< 0.4	39	20	< 0.05	--	--
60		< 10	< 0.4	14	--	--	--	--
61	9819	640	7.3	64	80	5.50	< 1	4
62	20	< 10	< 0.4	56	20	0.05	< 1	4

Drawn by: S. J. J.		Traced by: H. H.	
Revised by	Date	Revised by	Date

SURF INLET  
GEOLOGY and SAMPLE LOCATION  
RIDGE SHEAR ZONE - B

Scale:  Date: SEPT. 1981 Plate: 21 B



Note: Samples were taken at 6m intervals along the sampling lines.  
 1. West dump samples: SR 81-125 (western flank) to SR 81-143 (eastern flank).  
 2. East dump samples: SR 81-144 (western flank) to SR 81-151 (eastern flank).

SURF 550 DUMPS - WEST

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81-125	10605	7,170	0.8	117	20	8.00	--	--	
126	10606	130	0.6	577	60	0.30	3	300	
127		690	0.7	290	--	--	--	--	
128		4,280	9.3	1,646	--	--	--	--	
129	10609	1,820	2.2	2,510	20	2.25	--	--	
130	10610	14,800	5.3	1,626	40	10.00	1	26	
131		560	0.7	272	--	--	--	--	
132		1,240	1.0	259	--	--	--	--	
133	10633	470	0.8	405	40	0.60	--	--	
134		480	0.5	558	--	--	--	--	
135		10,200	4.8	1,094	--	--	--	--	
136		3,600	2.7	240	--	--	--	--	
137		860	0.9	160	--	--	--	--	
138		4,900	9.6	1,768	--	--	--	--	
139		2,150	1.0	394	--	--	--	--	
140	10620	10,200	5.9	3,490	100	12.50	--	--	

SURF 550 DUMPS - EAST

		1981 ANALYSES				1986 ANALYSES			
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
SR 81-141		1,140	1.8	523	--	--	--	--	
142	10622	144	2.1	444	50	2.05	--	--	
143		1,080	1.7	3,460	--	--	--	--	
144	10624	980	0.4	202	40	1.55	--	--	
145	10625	230	< 0.4	60	60	2.50	3	25	
146	10626	5,210	4.6	1,459	150	5.70	93	18	
147		1,680	1.4	752	--	--	--	--	
148	10628	272	< 0.4	15	60	0.40	--	--	
149	10629	4,770	1.2	270	40	4.70	--	--	
150	10630	144	2.1	444	50	2.05	--	--	
151		124	< 0.4	874	--	--	--	--	

		1986 ANALYSES						
FIELD NO.	LAB NO.	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
86-J	J	45,571	52	5,838	470	58.3	117	3

103 H/2W

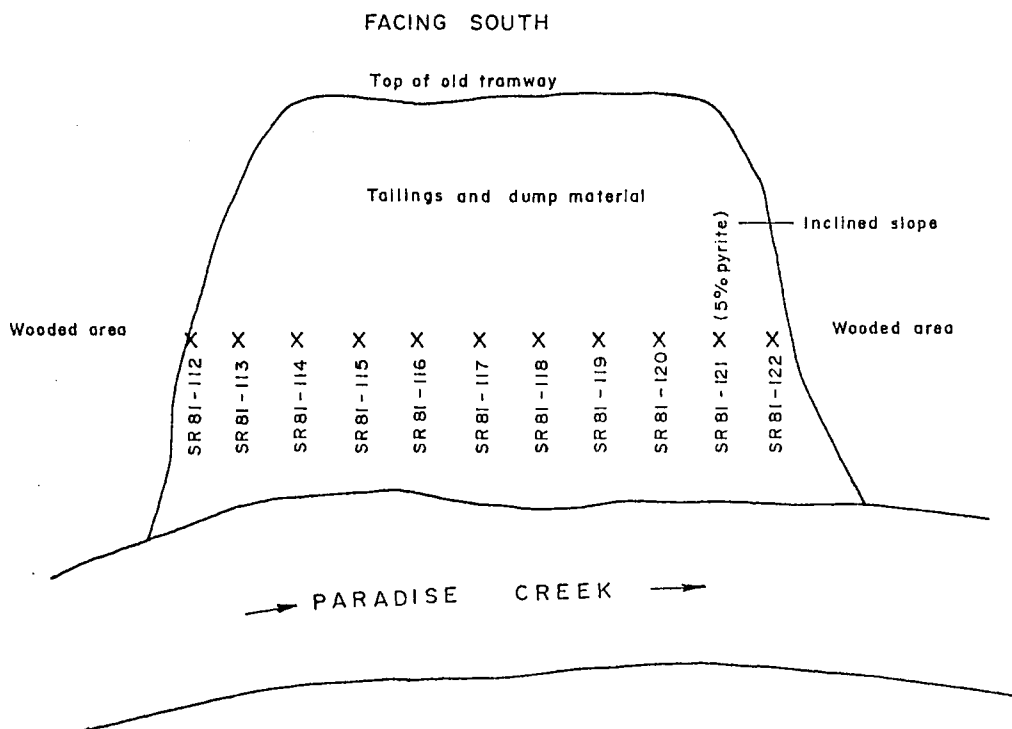
SURF INLET

Drawn by: SJJ		Traced by: FJF		GEOLOGY AND SAMPLE LOCATIONS DUMP SAMPLES - SURF WASTE DUMPS			
Revised by	Date	Revised by	Date				
Scale: 0 50 100m		Date: Sept. 1, 1981		Plate: 22			



PARADISE CREEK DUMP

FIELD NO.	LAB NO.	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
SR 81-112	10212	2,540	0.6	397	110	7.70	--	--
113		1,600	1.2	1,244	--	--	--	--
114	10214	580	0.9	889	70	2.05	--	--
115		1,620	0.9	616	--	--	--	--
116	10216	190	0.7	426	40	0.45	--	--
117		230	0.4	98	--	--	--	--
118	10218	690	1.2	200	100	1.20	13	2
119	10219	3,250	1.0	750	60	15.50	13	4
120		1,500	1.8	2,500	--	--	--	--
121	10221	18,000	8.0	8,330	120	11.50	--	--
122		3,690	2.4	8,660	--	--	--	--



SURF INLET

103 H / 2W

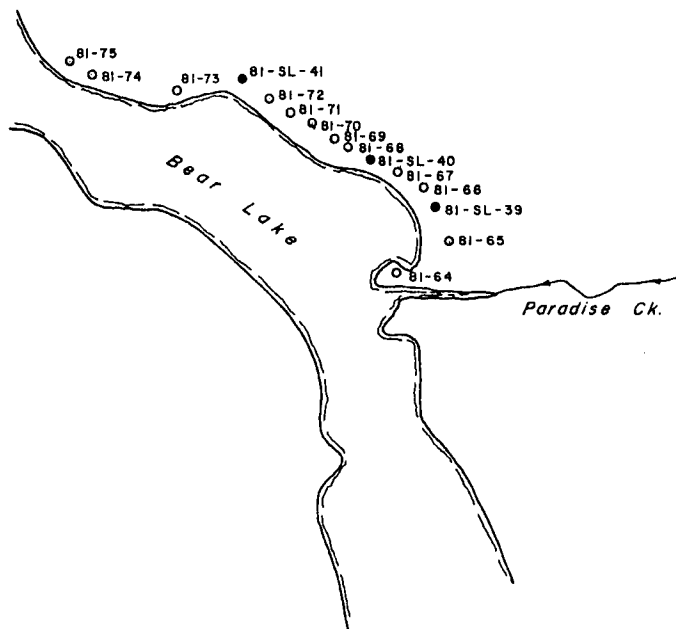
Drawn by: SJJ		Traced by: FJF	
Revised by	Date	Revised by	Date

GEOLOGY AND SAMPLE LOCATIONS  
DUMP SAMPLES FROM CREEK CUT  
PARADISE CREEK

Scale: 0 5 10m

Date: Sept. 1, 1981

Plate: 23



SILT SAMPLES (O)

Sample no.	Cu (ppm)	Ag (ppm)	Au (ppb)
Surf 81-64	39	0.8	1020
81-65	4	-	10
81-66	5	-	20
81-67	4	-	20
81-68	3	-	-
81-69	5	-	-
81-70	5	-	-
81-71	1	-	-
81-72	3	-	-
81-73	1	-	-
81-74	7	-	-
81-75	11	-	-

SOIL SAMPLES (●)

Sample no.	Cu (ppm)	Ag (ppm)	Au (ppb)
Surf 81-SL-39	7	-	-
81-SL-40	4	-	-
81-SL-41	5	-	-

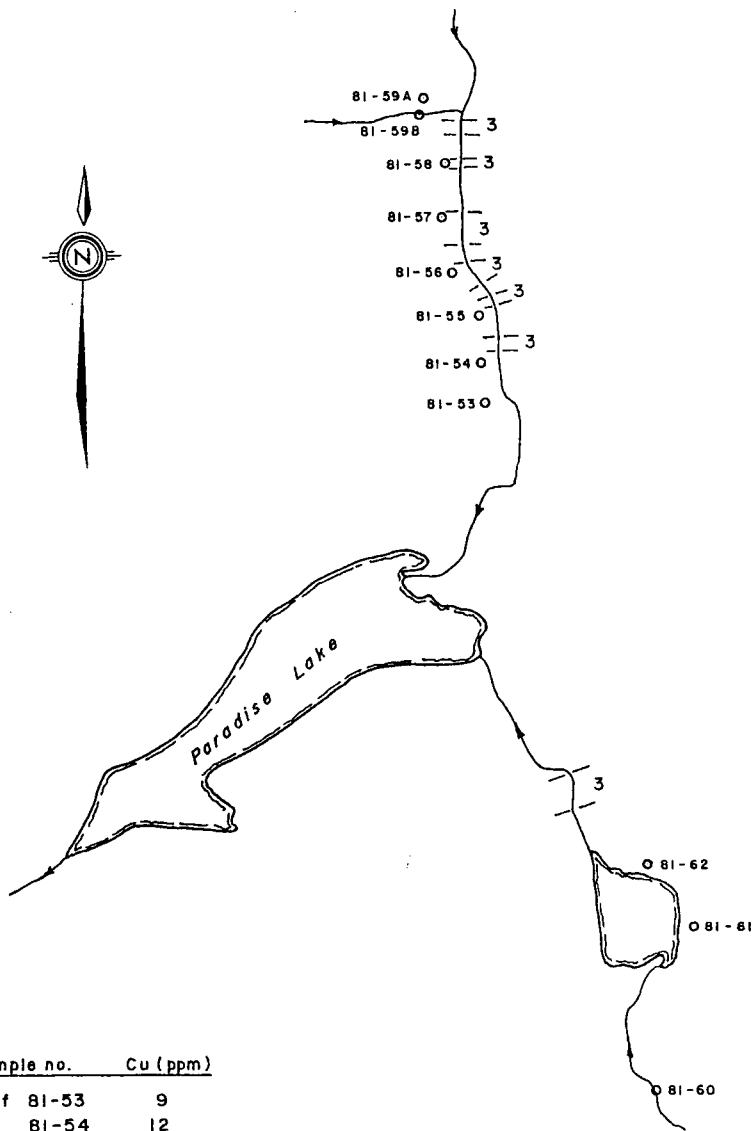
NOTE: - indicates values below detection.  
 Surf 81-64 represents beach sand sampled from mouth of Paradise Ck.

SURF INLET



103 H/2W

Drawn by: SJJ		Traced by: FJF		SILT AND SOIL GEOCHEMISTRY BEAR I CLAIM GROUP			
Revised by	Date	Revised by	Date				
Scale: 1" = 1/4 mile				Date: Sept. 3, 1981		Plate: 81-27	



Sample no.	Cu (ppm)
Surf 81-53	9
81-54	12
81-55	10
81-56	12
81-57	15
81-58	24
81-59A	19
81-59B	32
81-60	9
81-61	13
81-62	13

3 Diorite.

NOTE : Ag and Au values for all samples are below detection limits.

SURF INLET



103H/2W

Drawn by: SJJ		Traced by: FJF	
Revised by	Date	Revised by	Date

GEOLOGY AND SILT SAMPLE LOCATIONS  
JEN 2 and 3 CLAIM GROUPS

Scale: 1" = 1/4 mile

Date: Sept. 3, 1981

Plate: 81-28

W

E

Elevation 310m  
Bearing 090°  
Angle -45°

DDH 81-4

88.0-108.0

88.0-88.0

88.0-87.4

88.0-88.0

103.8-104.8

109.7-110.7

COLLAR ELEVATION  
1017'

Main Footwall  
Shear

Main Footwall  
Shear

Scale 1:2000

176.8

176.8

DDH81-4

1981 ANALYSES

1986 ANALYSES

LAB NO.	DEPTH (ft)	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	5.5-13.5	< 10	< 0.4	63				
	62.3-64.3	< 10	< 0.4	23				
	65.9-67.4	< 10	< 0.4	141				
	86.0-88.6	< 10	< 0.4	15				
	103.8-104.8	< 10	< 0.4	16				
	109.7-110.7	10	< 0.4	12				
	110.7-114.3	< 10	< 0.4	22				
9860	110.7-111.7	< 10	< 0.4	32	20	< 0.05	--	--
	114.3-115.3	100	< 0.4	118	--	--	--	--
9855	115.3-116.3	28	< 0.4	34	20	0.05	< 1	< 2
9854	116.3-116.9	1100	1.3	518	20	2.25	1	< 2
9853	116.9-117.9	1600	1.4	510	20	2.50	1	2
9852	117.9-118.9	< 10	< 0.4	61	20	0.10	--	--
	118.9-119.9	46	< 0.4	33				
	119.9-120.9	20	< 0.4	20				
	120.9-128.9	< 10	< 0.4	25				
9846	123.9-124.9	< 10	< 0.4	15	20	< 0.05	--	--
	128.9-129.4	140	< 0.4	112				
	129.4-131.6	< 10	< 0.4	16				

103 H/2W

SURF INLET

Drawn by: ACF	Traced by: FJF
Revised by: SG	Revised by: Sept 86

DDH 81-4

Scale: 0 5 10 m Date: October, 1981 Plate: 29

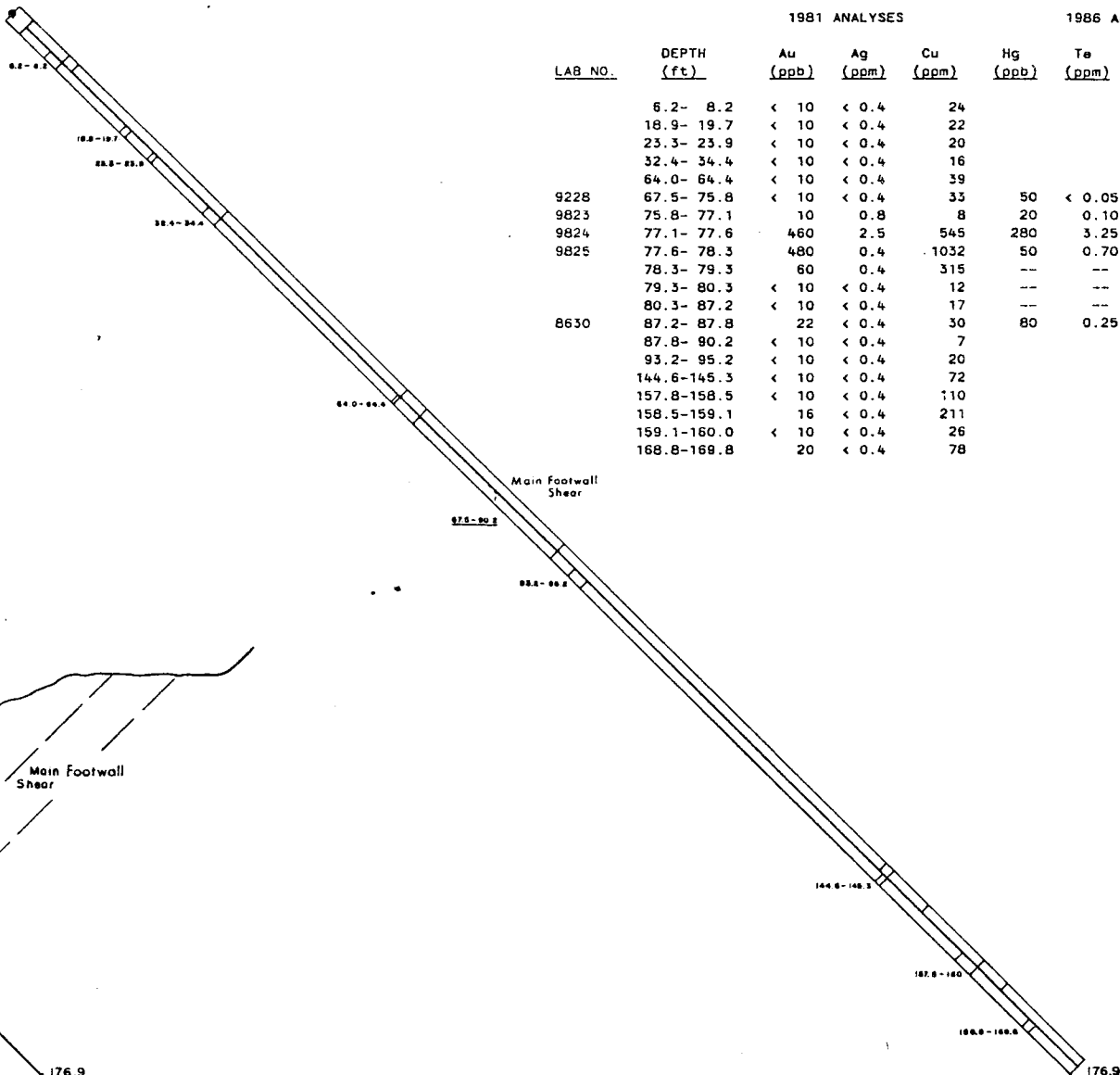
W

E

DDH81-3

Elevation 420m  
Bearing 099°  
Angle -45°

DDH 81-3



LAB NO.	DEPTH (ft)	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	6.2- 8.2	< 10	< 0.4	24				
	18.9- 19.7	< 10	< 0.4	22				
	23.3- 23.9	< 10	< 0.4	20				
	32.4- 34.4	< 10	< 0.4	16				
	64.0- 64.4	< 10	< 0.4	39				
9228	67.5- 75.8	< 10	< 0.4	33	50	< 0.05	--	--
9823	75.8- 77.1	10	0.8	8	20	0.10	--	--
9824	77.1- 77.6	460	2.5	545	280	3.25	1	10
9825	77.6- 78.3	480	0.4	1032	50	0.70	--	--
	78.3- 79.3	60	0.4	315	--	--	--	--
	79.3- 80.3	< 10	< 0.4	12	--	--	--	--
	80.3- 87.2	< 10	< 0.4	17	--	--	--	--
8630	87.2- 87.8	22	< 0.4	30	80	0.25	< 1	2
	87.8- 90.2	< 10	< 0.4	7				
	93.2- 95.2	< 10	< 0.4	20				
	144.6-145.3	< 10	< 0.4	72				
	157.8-158.5	< 10	< 0.4	110				
	158.5-159.1	16	< 0.4	211				
	159.1-160.0	< 10	< 0.4	26				
	168.8-169.8	20	< 0.4	78				

COLLAR ELEVATION 1378'

Main Footwall Shear

Scale 1:2000

176.9

168.8-169.8

176.9

103 H / 2 W SURF INLET

Drawn by: ACF	Traced by: FJF
Revised by: Date	Revised by: Date
SG	Sept 86

DDH 81-3

Scale: 0 5 10 m Date: October, 1981 Plate: 28

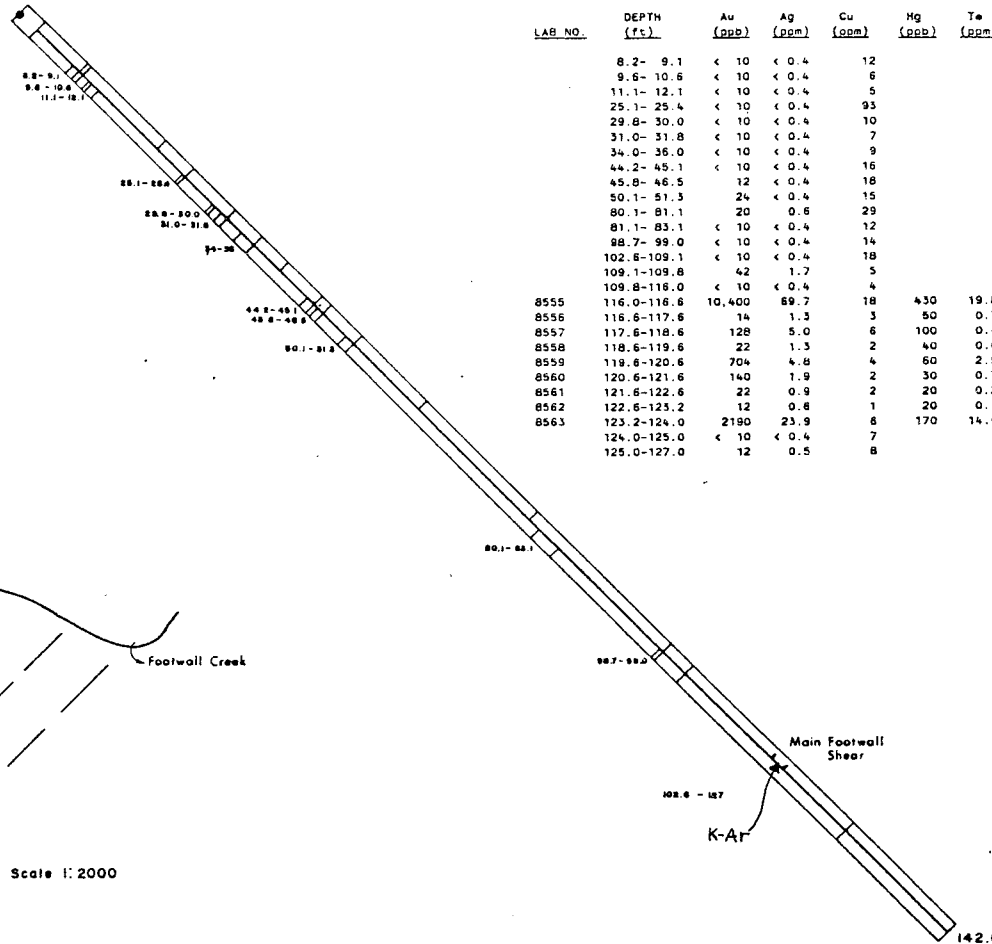
W

E

DDH81-2

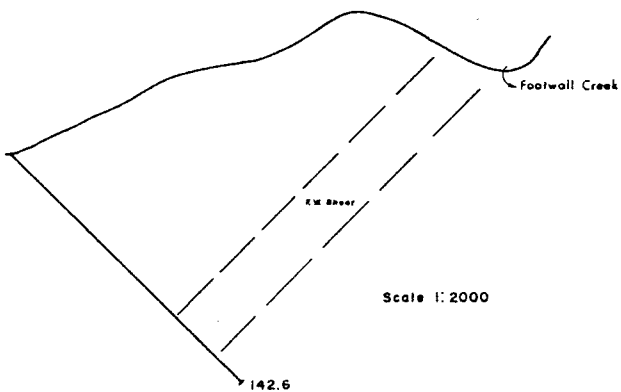
Elevation 560m  
Bearing 090°  
Angle -45°

DDH 81-2



LAB. NO.	DEPTH (ft.)	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	8.2- 9.1	< 10	< 0.4	12				
	9.6- 10.6	< 10	< 0.4	6				
	11.1- 12.1	< 10	< 0.4	5				
	25.1- 25.4	< 10	< 0.4	93				
	29.8- 30.0	< 10	< 0.4	10				
	31.0- 31.8	< 10	< 0.4	7				
	34.0- 36.0	< 10	< 0.4	9				
	44.2- 45.1	< 10	< 0.4	16				
	45.8- 46.5	12	< 0.4	18				
	50.1- 51.3	24	< 0.4	15				
	80.1- 81.1	20	0.6	29				
	81.1- 83.1	< 10	< 0.4	12				
	88.7- 99.0	< 10	< 0.4	14				
	102.6-109.1	< 10	< 0.4	18				
	109.1-109.8	42	1.7	5				
	109.8-118.0	< 10	< 0.4	4				
8555	116.0-118.6	10,400	69.7	18	430	19.80	1	< 2
8556	118.6-117.6	14	1.3	3	50	0.70	< 1	< 2
8557	117.6-118.6	128	5.0	6	100	0.60	< 1	< 2
8558	118.6-119.6	22	1.3	2	40	0.05	< 1	< 2
8559	119.6-120.6	704	4.8	4	60	2.50	< 1	< 2
8560	120.6-121.6	140	1.9	2	30	0.75	< 1	< 4
8561	121.6-122.6	22	0.9	2	20	0.25	2	< 2
8562	122.6-123.2	12	0.6	1	20	0.10	< 1	< 2
8563	123.2-124.0	2190	23.9	8	170	14.60	4	< 2
	124.0-125.0	< 10	< 0.4	7				
	125.0-127.0	12	0.5	8				

COLLAR ELEVATION 1837'



103 H/2W

SURF INLET

Drawn by: ACF		Traced by: FJF	
Revised by	Date	Revised by	Date
Sg	Sept 86		

DDH 81-2

Scale: 0 5 10 m Date: October, 1981 Plate: 27

W

E

DDH81-1

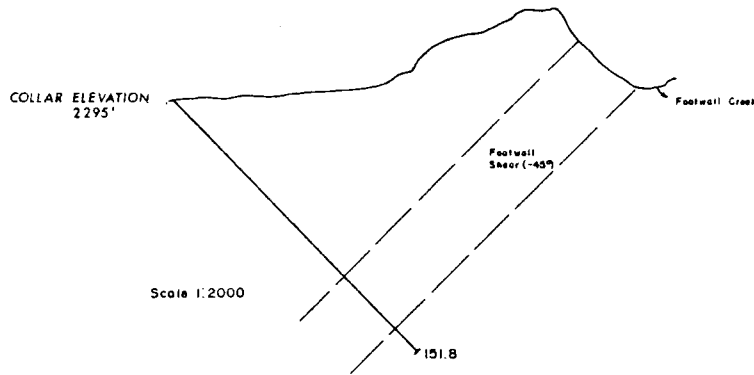
Elevation 700m  
Bearing 090°  
Angle -45°

DDH 81-1

1981 ANALYSES

1986 ANALYSES

LAB NO.	DEPTH (ft)	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	5.0- 5.6	116	5.4	440				
	10.5- 11.6	1522	10.3	46				
	18.4- 19.2	24	1.0	50				
	19.2- 20.1	36	2.2	48				
	28.0- 29.0	< 10	1.1	38				
	35.3- 36.3	104	1.1	70				
	45.7- 46.0	< 10	0.8	14				
	47.4- 47.8	14	0.8	58				
	67.1- 67.6	10	0.8	16				
	74.5- 75.3	< 10	0.8	28				
	77.8- 78.6	< 10	0.5	20				
	78.6- 79.6	80	1.2	8				
	90.0- 90.6	< 10	0.9	13				
	90.6- 91.6	30	0.9	13				
	95.9- 96.9	< 10	0.5	28				
	97.9- 98.4	< 10	< 0.4	4				
	99.0- 99.4	< 10	< 0.4	10				
	101.4-101.7	< 10	0.7	30				
	108.1-114.2	< 10	0.4	16				
7634	114.2-115.6	10	< 0.4	66	40	0.15	--	--
	115.6-116.2	12	< 0.4	67	--	--	--	--
7637	118.7-120.0	< 10	< 0.4	114	30	0.10	--	--
7646	131.3-132.3	36	< 0.4	125	30	0.30	3	8
	132.3-136.7	< 10	< 0.4	93	--	--	--	--
8529	156.7-138.1	166	0.6	395	350	2.35	< 1	2
	158.1-159.1	28	0.5	828				
	159.1-159.9	< 10	< 0.4	14				



103 H / 2 W		SURF INLET	
Drawn by: ACF	Traced by: FJF	DDH 81-1	
Revised by: [ ]	Date: [ ]		
Revised by: [ ]	Date: [ ]		
Revised by: [ ]	Date: [ ]		
Scale: 0 5 10 m		Date: October, 1981	Plate: 26

W

E

LAB NO.	DEPTH (ft)	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	26.1- 27.1	< 10	< 0.4	65				
	38.2- 39.6	< 10	< 0.4	19				
	49.2- 49.5	< 10	< 0.4	6				
13346	53.4- 53.8	< 10	< 0.4	22	30	< 0.05	--	--
13377	53.8- 54.0	< 10	< 0.4	19	80	0.10	--	--
	54.0- 63.3	< 10	< 0.4	22	--	--	--	--
13350	57.0- 58.0	< 10	< 0.4	21	80	< 0.05	--	--
13356	63.3- 63.6	< 10	< 0.4	287	210	0.15	--	--
	63.6- 72.2	< 10	< 0.4	13				
13362	70.2- 72.2	< 10	< 0.4	15	70	< 0.05	--	--
	103.4-104.7	< 10	< 0.4	49				
	106.4-106.7	< 10	< 0.4	50				
	111.6-113.0	< 10	< 0.4	55				
	113.5-114.3	< 10	< 0.4	30				
	124.4-125.1	< 10	< 0.4	41				
	127.1-129.0	< 10	< 0.4	49				
	129.4-129.9	< 10	< 0.4	16				
	148.0-149.5	< 10	< 0.4	69				

Elevation 155 m  
Bearing 090°  
Angle - 45°

DDH 81-10

26.1-27.1

38.2-39.6

49.2-49.5

53.4-53.8

Main Shear

103.4-104.7

106.4-106.7

111.6-113.0

113.5-114.3

124.4-125.1

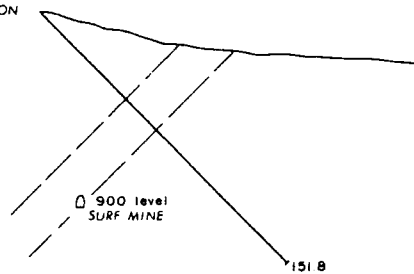
127.1-129.0

129.4-129.9

148.0-149.5

151.8

COLLAR ELEVATION  
509'



Scale 1:2000

103 H/2 W

SURF INLET

Drawn by	ACT	Checked by	FJA
Revised by		Revised by	
SG	Sept 86		

DDH 81-10



W

E

Elevation 50 m  
Bearing 090°  
Angle -50°

DDH 81-9

DDH81-9

LAB NO.	DEPTH (ft)	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
13317	22.8- 24.8	< 10	< 0.4	9	40	< 0.05	--	--
13321	30.8- 32.8	< 10	< 0.4	55	70	0.05	--	--
13345	37.6- 38.0	< 10	< 0.4	58	60	0.10	--	--
	22.8- 47.0	< 10	< 0.4	20				
	52.0- 52.4	< 10	< 0.4	72				
	58.3- 58.9	16	< 0.4	11				
	58.9- 61.6	< 10	< 0.4	10				
	65.5- 68.6	< 10	< 0.4	160				
	77.9- 78.7	< 10	< 0.4	55				
	80.5- 80.7	< 10	< 0.4	64				
	80.9- 81.6	< 10	< 0.4	196				
	84.6- 85.5	< 10	< 0.4	211				
	87.6- 87.9	< 10	< 0.4	158				
	90.2- 91.8	< 10	< 0.4	57				

Main Shear

22.8-47.0

52.0-52.4

58.3-58.9

58.9-61.6

65.5-68.6

77.9-78.7

80.5-80.7

80.9-81.6

84.6-85.5

87.6-87.9

90.2-91.8

Surf 900 (proj.)

COLLAR ELEVATION  
164'

Scale 1:2000

148.7

148.7

103 H / 2 W				SURF INLET			
Drawn by: ACF		Traced by: FJF		DDH 81-9			
Revised by	Date	Revised by	Date				
SG	Sept 86						
Scale: 0 5 10 m				Date: October, 1981		Plate: 34	

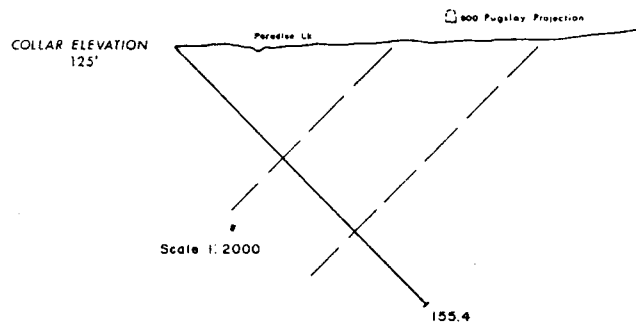
W

Elevation 38 m  
Bearing 090°  
Angle -45°

DDH 81-8

LAB NO.	DEPTH (ft)	1981 ANALYSES			1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
12526	67.2- 68.1	124	< 0.4	14	60	0.35	6	14
	68.1- 69.0	< 18	< 0.4	12				
	69.0- 69.2	120	< 0.4	35				
	69.2- 71.6	30	< 0.4	11				
	71.6- 72.0	< 10	< 0.4	21				
12531	74.1- 74.6	160	< 0.4	11	50	0.05	--	--
	74.6- 75.6	20	< 0.4	16				
	75.6- 75.9	56	< 0.4	19				
	75.9- 77.0	72	< 0.4	20				
12535	80.4- 81.3	< 10	< 0.4	22	40	0.05	--	--
	82.2- 82.7	< 10	< 0.4	8				
12537	82.7- 83.1	122	2.3	402	60	0.45	3	< 2
	83.1- 84.5	< 10	< 0.4	33				
	87.8- 91.8	< 10	< 0.4	12				
12543	91.8- 92.6	70	1.7	125	70	0.15	--	--
	92.6- 96.6	< 10	< 0.4	13				
	99.2- 99.7	< 10	< 0.4	21				
12548	105.6-106.6	< 10	< 0.4	17	30	0.05	--	--
	109.2-111.6	< 10	< 0.4	17				
	112.6-113.6	< 10	< 0.4	8				
	117.4-121.3	< 10	< 0.4	24				

Main Shear



103 H / 2 W		SURF INLET	
Drawn by: ACF	Traced by: F.J.F.	DDH 81 - 8	
Revised by: Date	Revised by: Date		
SG	Sept. 86		
Scale: 0 5 10 m		Date: October, 1981	Plate: 33

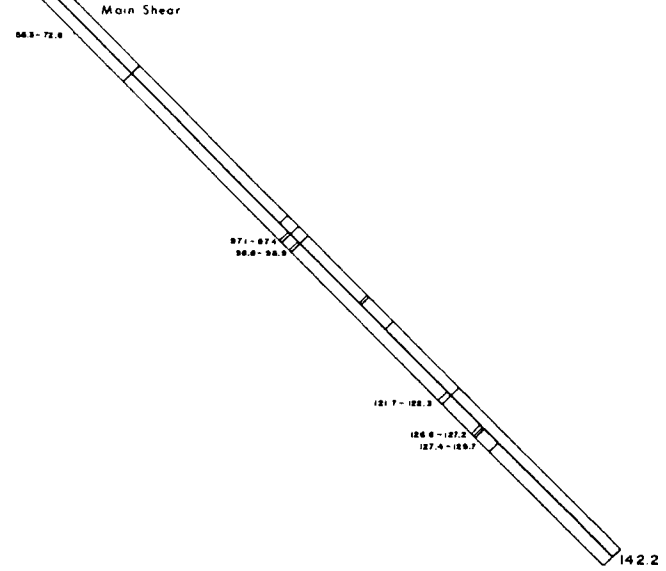
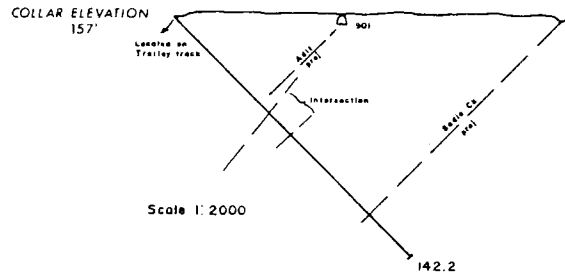
W

DDH81-7

Elevation 48m  
Bearing 090°  
Angle -45°

DDH 81-7

LAB NO.	DEPTH (ft)	1981 ANALYSES				1986 ANALYSES			
		Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)	
	58.3- 58.6	40	< 0.4	24					
12507	58.6- 60.1	< 10	< 0.4	12	80	0.05	--	--	
12508	60.1- 60.8	284	0.8	87	60	0.65	1	4	
	60.8- 61.4	384	< 0.4	7	--	--	--	--	
12510	61.4- 61.5	26,000	5.1	41	260	19.00	1	< 2	
12511	61.5- 62.6	64	< 0.4	13	40	0.10	--	--	
12512	62.6- 63.8	702	< 0.4	6	20	1.10	--	--	
	63.8- 64.8	170	< 0.4	79	--	--	--	--	
12514	64.8- 65.8	60	< 0.4	18	20	0.10	--	--	
12515	65.8- 66.8	22	< 0.4	23	20	0.05	--	--	
	66.8- 67.8	42	< 0.4	9					
	67.8- 72.8	< 10	< 0.4	14					
	97.1- 97.4	< 10	< 0.4	7					
	98.8- 98.9	< 10	< 0.4	407					
	121.7-122.3	< 10	< 0.4	81					
	126.8-127.2	< 10	< 0.4	34					
	127.4-128.4	22	< 0.4	45					
	128.4-129.7	64	< 0.4	83					



103 H / 2 W		SURF INLET	
Drawn by: ACF	Traced by: FJF	DDH 81-7	
Revised by: Date	Revised by: Date		
SC	Sept 86		
Scale: 0 5 10 m		Date: October, 1981	Plate: 32

W

Elevation 130 m  
Bearing 090°  
Angle -45°

DDH 81-6

DDHB1-6

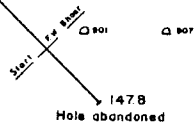
1981 ANALYSES

1986 ANALYSES

LAB. NO.	DEPTH (ft)	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	74.7-79.7	< 10	< 0.4	64				
	81.7-86.7	< 10	< 0.4	40				
	115.9-116.4	28	< 0.4	7				
	116.4-118.4	< 10	< 0.4	11				
	118.4-120.4	10	< 0.4	9				
	120.4-124.1	< 10	1.0	27				
10654	124.1-125.1	28	1.2	26	30	0.15	--	--
	125.1-126.1	< 10	< 0.4	37				
	126.1-127.1	12	< 0.4	20				
	127.1-134.4	< 10	0.7	32				
10644	134.4-135.4	140	1.6	15	20	0.35	< 1	4
	135.4-136.4	70	1.5	26				
	136.4-137.4	20	1.5	13				
	137.4-139.4	< 10	1.0	10				
10639	139.4-140.4	64	1.9	21	20	0.15	--	--
	140.4-141.4	20	1.2	29				
	141.4-142.4	< 10	< 0.4	52				
10636	142.4-143.4	30	< 0.4	13	20	0.05	--	--
	143.4-144.4	100	< 0.4	62				
	144.4-145.4	90	< 0.4	12				
10633	145.4-146.6	3380	< 0.4	11	10	4.00	4	6
10632	146.6-147.8	250	< 0.4	36	20	0.50	--	--

COLLAR ELEVATION  
426.5'

Scale 1:2000



74.7-79.7

81.7-86.7

118.4-147.8

Main Shear

147.8

103 H/2W

SURF INLET

Drawn by: ACF	Traced by: FJF
Revised by: SG	Revised by: SG
Date: Sept 86	Date: Sept 86

DDH 81-6

Scale: 0 5 10 m Date: October, 1981 Plate: 31

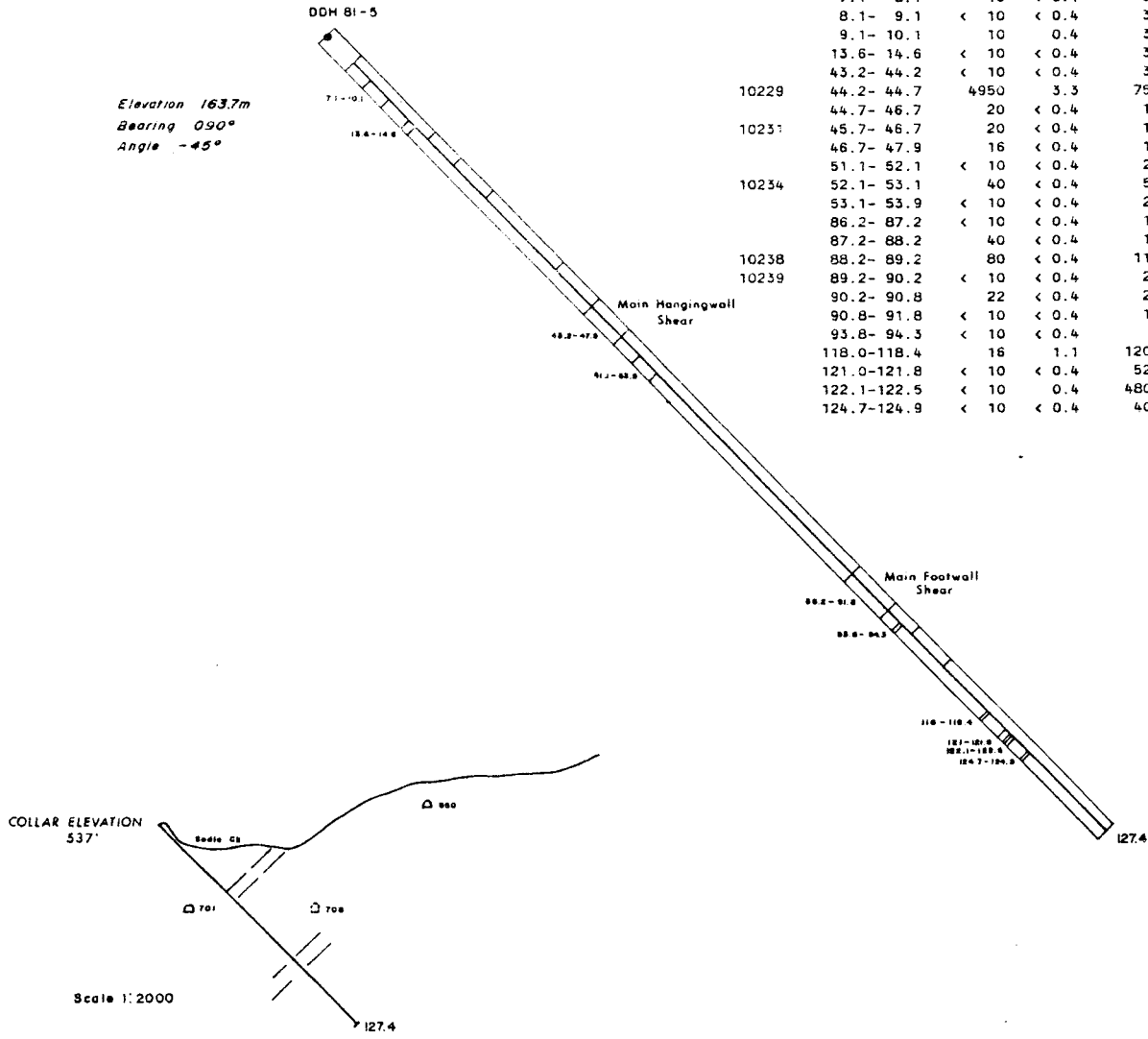
W

DDH81-5

1981 ANALYSES

1986 ANALYSES

LAB NO.	DEPTH (ft)	Au (ppb)	Ag (ppm)	Cu (ppm)	Hg (ppb)	Te (ppm)	Mo (ppm)	Pb (ppm)
	7.1- 8.1	40	< 0.4	53				
	8.1- 9.1	< 10	< 0.4	34				
	9.1- 10.1	10	0.4	35				
	13.6- 14.6	< 10	< 0.4	31				
	43.2- 44.2	< 10	< 0.4	35				
10229	44.2- 44.7	4950	3.3	752	80	7.00	1	2
	44.7- 46.7	20	< 0.4	14	--	--	--	--
10231	45.7- 46.7	20	< 0.4	16	20	0.10	--	--
	46.7- 47.9	16	< 0.4	17	--	--	--	--
	51.1- 52.1	< 10	< 0.4	25	--	--	--	--
10234	52.1- 53.1	40	< 0.4	56	20	0.05	< 1	< 2
	53.1- 53.9	< 10	< 0.4	24	--	--	--	--
	86.2- 87.2	< 10	< 0.4	15	--	--	--	--
	87.2- 88.2	40	< 0.4	14	--	--	--	--
10238	88.2- 89.2	80	< 0.4	117	20	0.25	< 1	4
10239	89.2- 90.2	< 10	< 0.4	26	20	0.05	--	--
	90.2- 90.8	22	< 0.4	24				
	90.8- 91.8	< 10	< 0.4	19				
	93.8- 94.3	< 10	< 0.4	5				
	118.0-118.4	16	1.1	1205				
	121.0-121.8	< 10	< 0.4	529				
	122.1-122.5	< 10	0.4	4800				
	124.7-124.9	< 10	< 0.4	405				



103 H / 2 W		SURF INLET	
Drawn by: ACF	Traced by: FJF	DDH 81-5	
Revised by: Date	Revised by: Date		
SG	SGP/BG		
Scale: 0 5 10 m		Date: October, 1981	Plate: 30