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Preliminary geologic and rock-chip geochemical data from drill core and trenches at the Shumagin gold deposit, Unga Island, Alaska

by

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INTRODUCTION

The Shumagin gold deposit (55° 13' 25" N., 160° 34' 45" W.) is located at the head of Baralof Bay on Unga Island south of the Alaska Peninsula 13 km southeast of Sand Point, Alaska, and about 900 km southwest of Anchorage (fig. 1). Martin (1905, p. 101) first noted the existence of the Shumagin claim group in 1904. In 1908, Atwood (1911, p. 127) observed two quartz ledges at Shumagin, a 15-m-wide southern ledge, probably the quartz breccia vein, and a 1-m-wide northern ledge, probably the Lucky Friday vein. He also noted the existence of a 24-m-long upper adit and a 110-m-long lower one, both with cross-cuts on the Lucky Friday vein (Atwood, 1911, p. 127). The lower adit is presently accessible.

In 1945 engineers from the U.S. Bureau of Mines (Webber and others, 1946), found the quartz breccia vein to be barren of gold and the Lucky Friday vein to contain as much as 10.3 g/t Au. Subsequent regional mineral compilations (Cobb, 1972; MacKevett and Halloway, 1977) rely on the data of Atwood (1911). During 1983-1987, Alaska Apollo Gold Mines Ltd. explored the Shumagin deposit with 2,825 m (9,269 ft) of core drilling (Queen, 1988) and established an estimated reserve of 245,106 tonnes (270,000 short tons) grading 16.8 g/t Au and 68 g/t Ag (Mining Journal, 1987). Trenching and limited percussion drilling, were also completed (Queen, 1988; Wilson and others, 1988).

This report presents the results of preliminary core logging, geologic mapping, and rock-chip geochemical sampling performed in 1987-1988 by Queen, resident geologist for Alaska Apollo Gold Mines Ltd., and during the summer of 1988 by White. Rock chip geochemical samples were collected in 10-foot intervals from the walls of Trench 169; in 10-foot intervals of unsplit drill core from drill holes 34, 42, and parts of 28; and in 10-foot intervals from the north wall of the Lucky Friday adit, beginning at the portal (appendix 1)(fig. 2). Each sample weighed about four pounds. Pulps of selected sections of previously split core from holes 34, 35, 37, 38, 39, 41, and 42 were also analyzed (fig. 2). A DC-arc emission spectrograph was used to determine 35 elements by a six-step semiquantitative method described by Grimes and Maranzino (1968). Atomic absorption spectrophotometry was used to analyze Ag, As, Au, Bi, Cu, Hg, Pb, Sb, Te, Tl, W, and Zn.

J. Whitesides collected most samples; F. Brown, Z. Brown, and E. Bailey did the analytical work, and E. Bailey provided X-ray diffraction data on johannsenite and chlorite. We thank John R. Bogert, President of Alaska Apollo Gold Mines Ltd., and Paul L. Jones, Vice President and General Manager of Operations for active encouragement, assistance, and free access to the property.

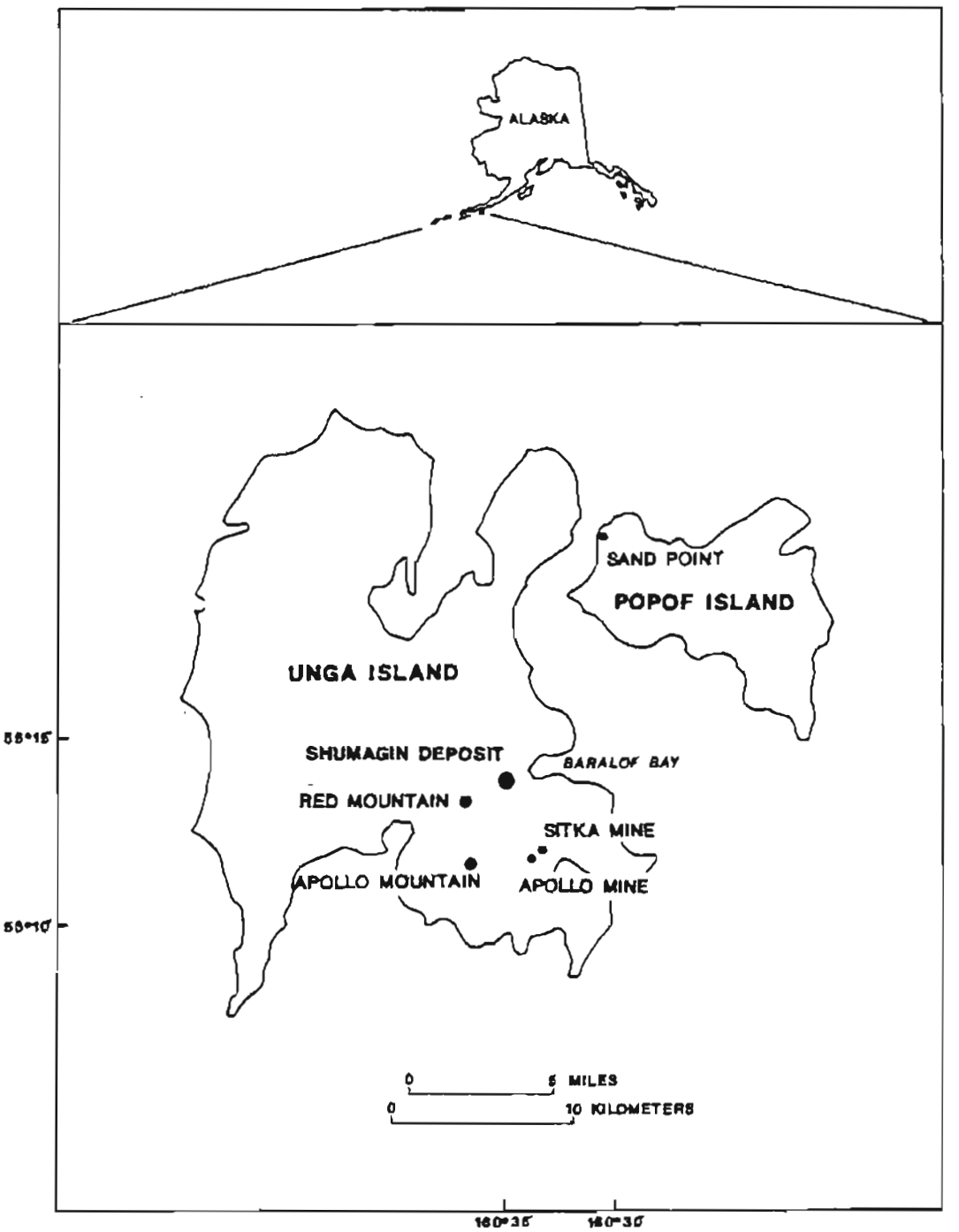


Figure 1. Map showing the location of the Shumagin deposit.

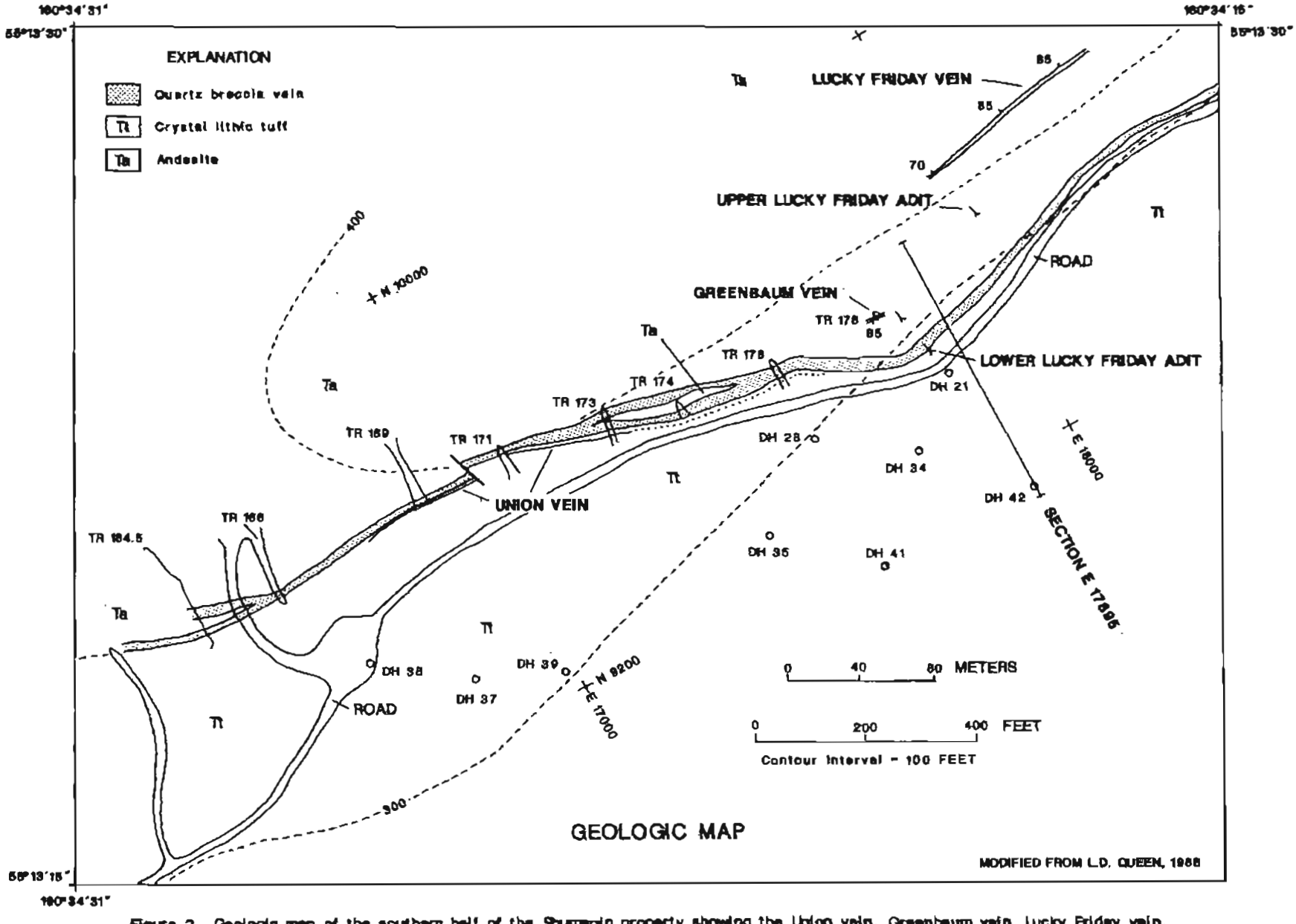


Figure 2. Geologic map of the southern half of the Shumagin property showing the Union vein, Greenbaum vein, Lucky Friday vein, and trace of the Shumagin fault marked by fault breccia and quartz breccia vein (pattern). DH = drill hole; TR = trench; N 9200 = mine coordinate system.

GEOLOGIC SETTING

The southeast half of Unga Island is underlain by the Meshik Formation, described by Wilson (1985, p. 4-6) as a sequence of Eocene and Oligocene calc-alkaline volcanic and hypabyssal rocks composed mostly of hornblende dacite, two-pyroxene andesite, basalt, and associated breccia and pyroclastic flows. Two sub-parallel northeast-trending fault zones cut the volcanic rocks. The southernmost, termed the Apollo Mountain fault zone, passes near the southern flank of Apollo Mountain and contains the Apollo and Sitka gold deposits, mined between 1891 and 1906 (fig. 1). The northernmost, called the Red Mountain fault zone, crosses the south flank of Red Mountain and contains the Shumagin gold deposit (fig. 1). The two fault zones are defined by alignments of sub-parallel fractures that localize widely separated centers of hydrothermal activity, indicated by quartz veining, pervasive silicification, and intense acid-sulfate alteration. The Apollo Mountain zone is about 11 km long, and the Red Mountain zone is about 9 km long. Average distance between the two zones is about 3.8 km.

Preliminary geologic mapping suggests that the Apollo and Red Mountain zones are high angle reverse faults with upthrown blocks on the southeast (J.R. Riehle, USGS, written commun., 1988), possibly the result of regional northwest-directed compression. No calderas or caldera-related structures are recognized on Unga Island (J.R. Riehle, USGS, written commun., 1988).

GEOLOGY OF THE SHUMAGIN DEPOSIT

Two fault-related rock units, at least four individual veins, and two vein systems occur at the Shumagin gold deposit. The fault-related units, from older to younger, are (1) pyrite-rich cataclasite, and (2) clast-supported fault breccia. The veins and vein systems, from oldest to youngest, are (3) the composite Union vein, (4) the matrix-supported quartz breccia vein, (5?) the Greenbaum vein, (6?) the Lucky Friday vein, (7) a vuggy watercourse vein system, and (8) a carbonate vein system (figs. 2, 3). Because cross-cutting relationships of the Greenbaum and Lucky Friday veins were not observed, their positions in the sequence are only tentatively assigned.

Most of the fault-related rock units, veins, and vein systems are within and near the Shumagin fault, a splay off the eastern end of the Red Mountain fault zone. The Shumagin fault strikes N 60° E for a distance of at least 1463 m and dips 80-85° SE to a depth of at least 232 m. Its surface trace is marked by outcrops of silica-cemented fault breccia and quartz-matrix breccia vein (fig. 2). Average width of the fault is 12 m. Although sense of movement on the Shumagin fault is uncertain, similar-trending faults nearby have upthrown blocks on the southeast, suggesting high-angle reverse displacement (J.R. Riehle, USGS, written commun., 1988). The hanging wall is composed of crystal lithic tuff, whereas the footwall is composed of andesite. The fault is offset as much as 15 m by northwest-trending cross faults with both left and right-lateral displacements.

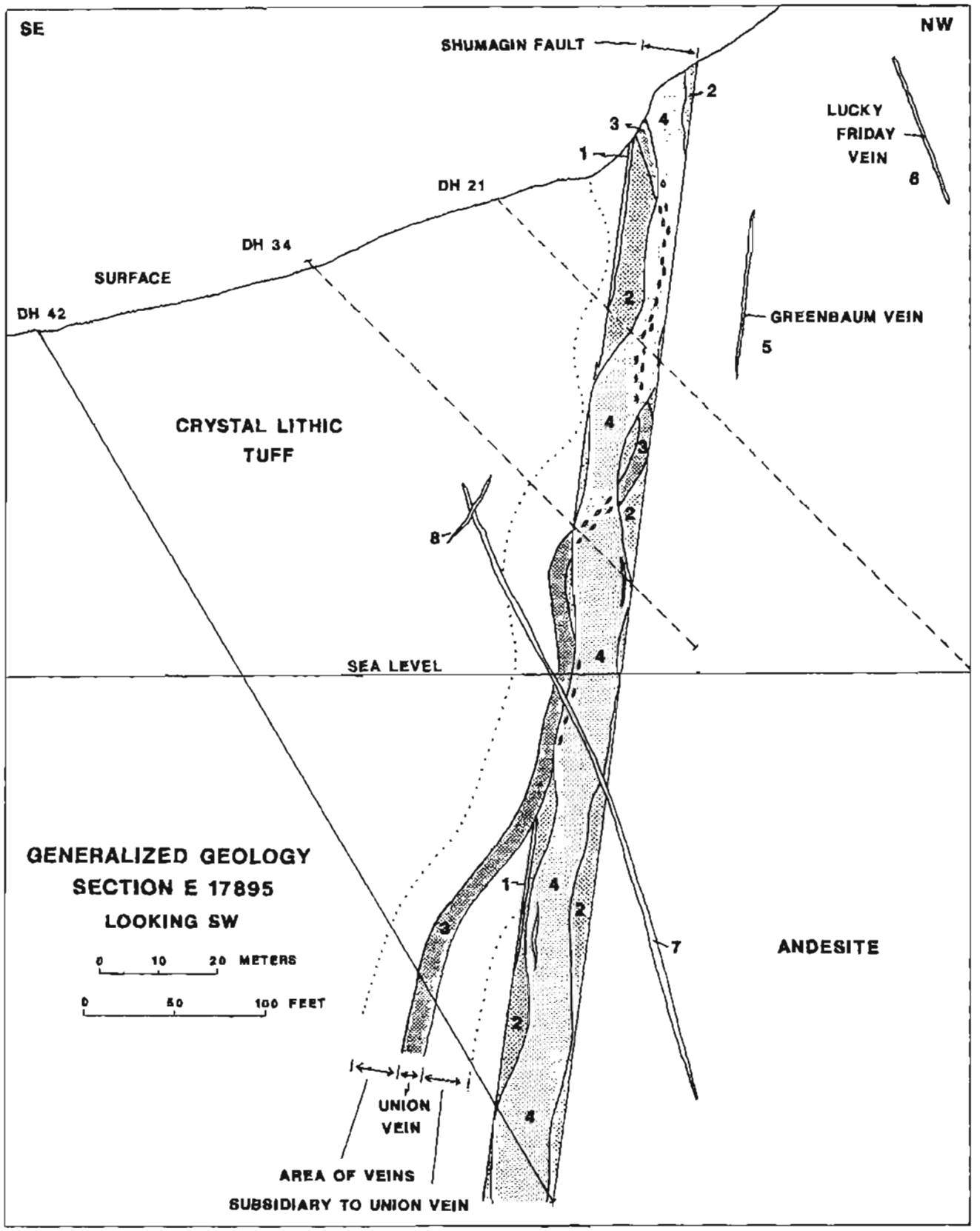
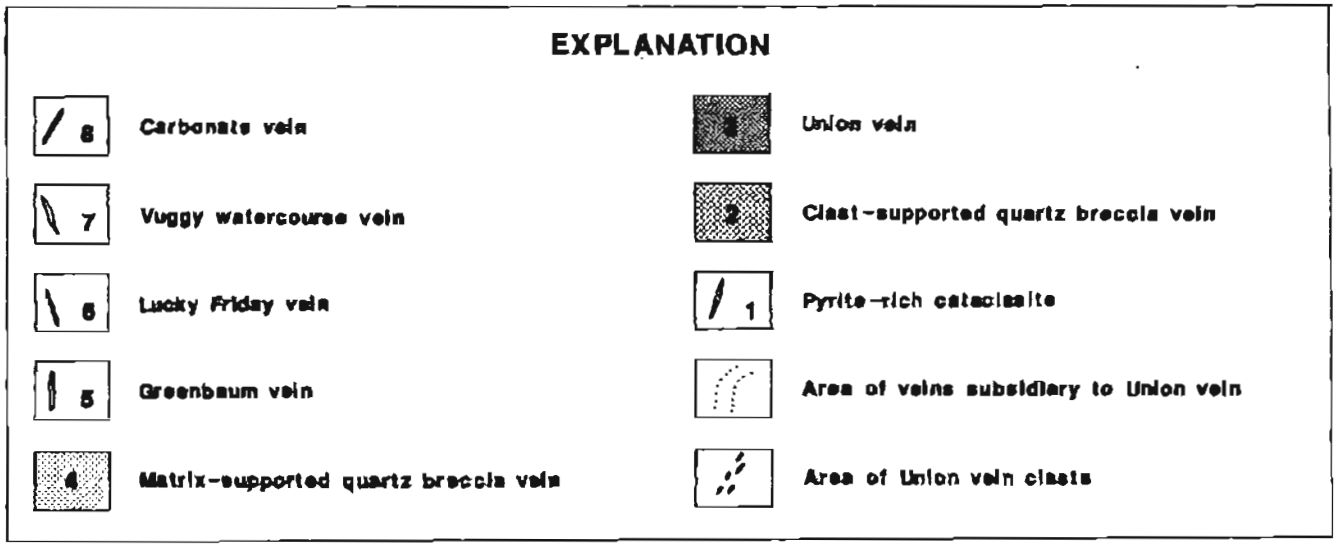


Figure 3. Generalized geology of Section E 17895, looking southwest. Drill hole 34 is projected 48 m to section and aligned with the footwall of the Shumagin fault. Numbers refer to relative ages of units described in text.


EXPLANATION
8
Carbonate vein
7
Vuggy watercourse vein
6
Lucky Friday vein
5
Greenbaum vein
4
Matrix-supported quartz breccia vein
Union vein
3
Clast-supported quartz breccia vein
1
Pyrite-rich cataclasite
Area of veins subsidiary to Union vein
Area of Union vein clasts

FAULT-RELATED ROCK UNITS

The two fault-related rock units, (1) pyrite-rich cataclasite, and (2) clast-supported fault breccia, occur within the Shumagin fault and are most likely products of fault movement (fig. 3). Pyrite-rich cataclasite forms a discontinuous 4-cm-thick zone, mostly along the hanging wall of the fault, and contains angular crystal and rock fragments as much as 1 mm in diameter in a matrix of finely crystalline quartz laced with pyrite.

Clast-supported fault breccia, the principal fault unit, contains angular clasts of andesite, crystal-lithic tuff, and pyrite-rich cataclasite as large as 5 cm in diameter. Angular quartz clasts are generally less than 5 mm in diameter; calcite occurs as individual crystals and in cavities within the breccia. Euhedral calcite crystals appear to have grown in place; others are angular and may represent breccia fragments. Clusters of calcite crystals are as much as 12 cm in diameter. The matrix, which constitutes 10 to 15 percent of the rock, is predominantly gray finely crystalline quartz with minor leucoxene and chlorite (?). Pyrite, calcite, and chlorite locally replace individual clasts.

In outcrop the fault breccia forms sharp, planar footwall contacts with country rock. Where exposed by trenching the hanging wall contact is an irregular surface with a web-like quartz matrix surrounding cavities where breccia clasts and calcite have been removed by weathering. Locally developed along the irregular hanging wall surface is a 40-cm-thick zone of crumbly black manganese oxide, probably formed from the weathering of johannsenite, a manganese-rich clinopyroxene that is observed locally at the surface, but not in drill holes.

VEINS

Union Vein

The composite Union vein (Queen, 1988), principal target of most drilling on the Shumagin property, is a 3-m-wide zone of closely spaced gold-bearing quartz veins in the hanging wall tuff of the Shumagin fault (figs 2, 3). The attitude of the vein approximates that of the fault, but both strike and dip of the Union vein vary slightly such that the vein locally intersects and crosscuts the clast-supported fault breccia. The Union vein, delineated by surface exposures and drill holes, is only about 370 m long, and does not appear to extend the entire length of the Shumagin fault (fig. 2).

Individual veins within the composite Union vein are sinuous, commonly open-growth, and generally less than 10 cm wide. Within veins, irregular alternating layers of quartz and green chlorite are bounded by inward-penetrating quartz crystals as much as 2 cm long. Open vugs are common. Gray, finely crystalline galena and pale yellow sphalerite form clots as much as 3 mm long that are generally aligned within chlorite layers, parallel to the vein contacts. Pyrite is disseminated in chlorite; microscopic native gold occurs with the galena and sphalerite. The Union vein contains the highest gold

concentrations at the Shumagin property, and essentially constitutes the Shumagin gold deposit.

Paralleling the Union vein, as far as 6 m from either contact, are sparse and thinner subsidiary quartz veins of similar character. These veins do not consititute ore in themselves, but where adjacent to the Union vein, may increase the width of the ore zone.

Quartz Breccia Vein

The matrix-supported quartz breccia vein contains angular clasts of crystal-lithic tuff, andesite, finely crystalline gray silica, and sulfide-bearing Union vein in a matrix of white quartz that constitutes at least 30 percent and commonly as much as 70 percent of the rock. Clasts of Union vein are most abundant in the breccia adjacent to areas of Union Vein in the wall rock, suggesting that clasts did not move significantly from their original pre-breccia positions. The quartz breccia vein appears restricted to the Shumagin fault, where it cuts the clast-supported fault breccia and constitutes the largest volume of material within the fault boundaries. It pinches and swells both vertically and horizontally, and where exposed, forms the most persistent outcrops of any unit on the Shumagin property (fig. 2, 3). Like the clast-supported fault breccia, outcrops of the quartz breccia vein locally have an irregular surface with cavities that contain calcite and manganese oxide.

The quartz breccia vein contains rare 1 mm crystals of galena and sphalerite entrained along the terminal edges of quartz in individual quartz growth zones within the breccia matrix. The sulfides contain only traces of gold, however, and the quartz breccia vein forms ore only in areas where it contains clasts of the Union vein. In addition, rare 3-mm-wide rims of arsenopyrite occur on andesite clasts within the breccia near the footwall of the Shumagin fault.

Greenbaum and Lucky Friday Veins

The Greenbaum vein (Queen, 1988) is 1 m wide and has a N 55° E strike and 83° SE dip in a single outcrop about 24 m northwest of the Shumagin fault (figs. 2, 3). Although it's strike length is unknown, the vein is also exposed in the underlying Lucky Friday adit and in a single drill hole, indicating that it extends at least 80 m down dip. The Greenbaum vein is composed mostly of finely crystalline "cherty"-appearing gray quartz with small amounts of more coarsely crystalline vuggy quartz. Cross-cutting relationships are not exposed; minor gold is reported with pyrite and marcasite (Queen, 1988).

The Lucky Friday vein strikes about N 50° E and dips 70° NW. Exposed at surface and in the Lucky Friday crosscut, the 1-m-wide vein extends at least 40 m along strike and 35 m down dip (figs 2, 3). The Lucky Friday is a breccia vein with clasts of andesite and a matrix of white quartz. Minor chlorite and gold are reported (Queen, 1988). Although cross-cutting relationships were not observed, the breccia character of the vein suggests that it might be equivalent to the matrix-supported quartz breccia vein event.

VEIN SYSTEMS

Vuggy Watercourse Vein System and Carbonate Vein System

Vuggy watercourse veins, so named because they commonly provide channelways for modern groundwater, are characterized by open cavities lined with iron oxide-stained crystals of quartz. Veins are white, locally include clasts of Union vein, and cut the matrix-supported quartz breccia vein (fig. 3). Rare sphalerite and galena occur on quartz in vugs; sparse entrained galena and sphalerite crystals less than 1 mm in diameter border edges of quartz crystals in areas where vugs are not present. No gold is known in this vein type. Except for the prevalence of open cavities, the watercourse veins are similar in character to the matrix-supported quartz breccia vein. Carbonate veins appear to cut all quartz veins at the Shumagin deposit (Queen, unpublished data, 1988).

ALTERATION

Wall rock alteration, based strictly on megascopic examination, consists of strong argillization that extends at least 45 m from the Shumagin deposit, and quartz-sericite-pyrite alteration, which is adjacent to the Union and matrix-supported quartz breccia veins. Although adularia has not been observed at the Shumagin deposit, its presence is suspected, as adularia is common in the Apollo vein, nearby (Becker, 1898, p. 84).

ROCK-CHIP GEOCHEMISTRY

Plots of the down-hole variations in the concentrations of elements in drill hole 42 (appendix 2) suggest that the elements can be organized into three groups based on similar variation patterns. Group 1 consists of Au, Ag, Te, Pb, Zn, and Mn; group 2 consists of Cu alone; and group 3 includes As and Hg (appendix 2).

The Au-Ag-Te-Pb-Zn-Mn group is highest in the Union vein. The relatively high gold values confirm that the Union vein is the ore-bearing event; and coincident high values for other group 1 elements indicate that group 1 is the assemblage associated with ore. In addition, the positive correlation between Au, Ag, and Te suggests that some Au may occur as a Au-Ag telluride. A lower concentration of group 1 ore-related elements occurs in the quartz breccia vein. A minor concentration of group 1 elements in the upper part of drill hole 42 may indicate minor veining undetected in drill core.

Cu is concentrated in the quartz breccia vein with minor additional concentration in the Union vein and the upper part of drill hole 42. Cu may be a distinctive indicator element of the quartz breccia vein.

The As-Hg group has highest values over a wide area in the upper part of drill hole 42, suggesting a broad aureole extending outward from the Union vein for at least 75 m. As is also concentrated in the quartz breccia vein, reflecting the presence of arsenopyrite.

SUMMARY

In summary, the Shumagin gold deposit is a fault-controlled, epithermal, volcanic-hosted quartz vein occurrence. The absence of enargite, and the presence of sericite, probable adularia, johannsenite, and chlorite suggest that the Shumagin deposit is an adularia-sericite type hydrothermal system as defined by Heald, et al (1987).

Cross-cutting relationships indicate a probable sequence of events. Formation of a permeable channelway by movement along the Shumagin fault is recorded by the (1) pyrite-rich cataclasite and (2) clast-supported fault breccia. A prolonged episode of fluid emplacement is indicated by the (3) gold-rich Union vein; (4) matrix-supported quartz breccia vein with minor sulfides; (4) Greenbaum vein with trace gold; (6) Lucky Friday vein with trace gold; (7) vuggy watercourse vein system with minor sulfides; and (8) late carbonate vein system. Only the Union vein is known to contain potentially economic concentrations of gold.

Au-Ag-Te-Pb-Zn-Mn is the trace element assemblage of the Union vein and Cu appears to be associated with the quartz breccia vein. As and Hg show a broad aureole that extends at least 75 m from the Union vein.

The separate periods of fluid emplacement may represent the continuous opening and re-sealing of alternate channelways within the fault-produced conduit. Heated ground water is the principal fluid component of most adularia-sericite type systems (Heald, et al 1987). Other occurrences of this nature are common on Unga and Popof Islands.

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Appendix 1

Rock-chip geochemical data from the Shumagin gold deposit

Appendix 1a. Rock-chip geochemical data from the Shumagin gold deposit (Ca, Fe, Mg, Na, P, Ti, Ag-Cu).

[Ca,Fe,Mg,Na,P,Ti in percent: all other elements in ppm. AA = atomic absorption; SES = semiquantitative emission spectrography. G = greater than value shown; L = element detected, but below limit of determination: N = not detected; ND = no data.]

Analytical Method			SES	SES	SES	SES	SES	SES	AA	AA	AA	SES	SES	SES	AA	SES	SES	SES	AA
Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
88-001	169	10.0- 20.0	0.3	1.0	1.5	N	L	0.05	G100.	20	200.	10	150	L	N	L	5	L	200
88-002	169	20.0- 30.0	5	0.7	0.5	L	L	0.1	4.4	20	0.25	15	300	L	N	N	7	L	15
88-003	169	30.0- 40.0	0.5	2.0	1.5	1.0	L	0.2	1.3	50	0.15	10	1000	L	N	N	20	15	50
88-004	169	40.0- 50.0	0.15	2.0	1.0	1.5	0.2	0.2	1.2	60	N	15	1000	L	N	N	10	10	30
88-005	169	50.0- 60.0	0.15	2.0	1.0	1.5	L	0.3	1.7	40	N	15	1000	N	N	N	15	20	30
88-006	169	60.0- 70.0	0.05	3.0	1.0	2.0	L	0.3	1.5	70	N	L	700	N	N	N	7	20	35
88-007	169	70.0- 80.0	0.1	2.0	0.7	1.0	L	0.2	1.6	60	N	10	500	L	N	N	7	10	30
88-008	169	80.0- 90.0	L	3.0	0.7	1.0	L	0.3	1.8	50	N	30	700	L	N	N	5	15	30
88-009	169	90.0-100.0	0.05	2.0	0.7	1.0	L	0.2	2.0	60	N	20	700	L	N	N	5	15	25
88-010	169	100.0-110.0	0.15	2.0	0.7	1.5	L	0.2	1.8	40	N	10	500	L	N	N	5	15	20
88-011	169	110.0-120.0	0.3	2.0	1.0	1.5	L	0.2	1.9	40	N	L	700	N	N	N	10	10	25
88-012	169	120.0-130.0	0.1	3.0	1.5	2.0	L	0.3	0.75	30	N	L	700	N	N	N	7	15	20
88-013	169	Zone 1	L	1.5	1.0	N	L	0.05	82.0	30	10.0	L	700	L	N	N	N	10	190
88-014	169	Zone 2	0.2	0.7	1.5	N	N	L	G100.	10	22.0	L	N	1	N	N	7	N	70
88-016	169	Zone 3	0.5	1.5	0.5	N	L	0.3	7.3	50	0.15	10	300	1.5	N	L	20	15	75
88-017	169	Zone 4	0.15	L	0.07	N	N	L	0.45	N	N	N	100	L	N	N	N	L	15
88-018	169	Zone 5	5.0	0.7	0.2	N	N	0.05	5.6	10	0.05	L	150	L	N	N	5	N	5
88-019	169	Zone 6	1.0	2.0	1.5	L	L	0.2	1.8	50	N	10	700	L	N	N	20	10	20
88-024	34	20.0- 30.0	0.05	1.5	0.2	L	N	0.2	1.5	90	N	10	150	L	N	N	10	L	20
88-025	34	30.0- 40.0	0.1	2.0	0.3	N	N	0.2	2.6	130	N	10	100	L	N	N	30	10	35
88-026	34	40.0- 50.0	0.05	2.0	0.5	N	L	0.5	1.4	110	N	15	1000	L	N	N	20	15	20
88-029	34	50.0- 60.0	0.15	2.0	0.7	N	L	0.3	0.5	90	N	15	300	L	N	N	15	10	20
88-030	34	60.0- 70.0	0.2	2.0	0.7	L	L	0.3	0.45	80	N	10	1500	L	N	N	15	L	15
88-031	34	70.0- 80.0	0.1	2.0	0.5	L	L	0.2	0.75	80	N	15	700	L	N	L	10	10	15
88-032	34	80.0- 90.0	0.05	2.0	0.5	N	L	0.3	0.85	160	0.2	10	500	L	N	N	15	20	10
88-033	34	90.0-100.0	0.3	1.5	0.07	L	L	0.3	0.5	170	N	10	1000	L	N	N	15	15	10
88-034	34	100.0-110.0	L	1.0	0.05	L	L	0.15	0.3	110	0.15	10	700	L	N	N	5	N	10
88-038	34	110.0-120.0	L	1.0	0.05	L	L	0.10	0.45	130	0.15	10	700	L	N	N	L	L	5
88-039	34	120.0-130.0	L	1.0	0.1	L	L	0.15	0.30	70	N	10	700	L	N	N	7	L	5
88-040	34	130.0-140.0	L	1.0	0.15	L	L	0.15	0.30	90	0.15	10	700	L	N	N	7	N	5
88-041	34	140.0-150.0	0.15	1.5	0.1	L	L	0.15	0.60	120	0.15	10	700	L	N	N	5	L	5
88-042	34	150.0-160.0	0.1	1.0	0.3	L	L	0.15	0.35	60	N	15	1000	L	N	N	L	N	30
88-043	34	160.0-170.0	0.07	1.0	0.3	N	L	0.20	0.40	40	N	15	500	L	N	N	7	10	10
88-048	34	170.0-180.0	0.07	2.0	0.5	N	L	0.30	0.55	40	0.40	15	500	L	N	N	10	15	10
88-049	34	180.0-190.0	0.15	1.5	0.7	N	L	0.20	1.2	30	0.05	15	700	L	N	N	7	15	20
88-050	42	17.0- 20.0	0.05	2.0	0.3	L	L	0.30	1.4	170	0.05	10	2000	N	N	N	10	15	30
88-051	42	20.0- 30.0	0.1	2.0	0.2	L	L	0.20	1.8	170	0.05	L	1000	N	2	N	15	10	25
88-052	42	30.0- 40.0	0.2	5.0	0.3	L	L	0.30	4.3	210	0.20	10	1500	L	2	N	30	15	65
88-053	42	40.0- 50.0	0.1	3.0	0.2	L	L	0.20	1.8	130	0.05	10	1500	L	N	N	20	15	20
88-054	42	50.0- 60.0	0.15	2.0	0.15	N	L	0.20	1.1	140	N	15	700	L	N	N	10	L	15
88-055	42	60.0- 70.0	0.5	7.0	0.5	N	L	0.30	0.60	170	N	10	2000	N	N	N	10	10	10
88-056	42	70.0- 80.0	0.15	7.0	0.3	N	L	0.30	0.50	140	N	L	2000	N	N	N	10	L	10

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
88-057	42	80.0- 90.0	0.20	7.0	0.5	N	N	0.50	0.50	140	N	L	2000	N	N	N	10	15	10
88-058	42	90.0-100.0	0.20	10.0	1.0	N	N	0.30	0.75	170	N	10	1000	N	N	N	10	10	40
88-059	42	100.0-110.0	0.30	10.0	0.7	N	N	0.30	0.90	240	N	10	1500	L	N	N	10	15	15
88-060	42	110.0-120.0	0.15	15.0	1.0	N	N	0.30	1.1	300	N	10	1500	L	N	N	15	15	30
88-061	42	120.0-130.0	0.15	10.0	1.5	N	L	0.30	0.25	140	N	10	2000	N	N	N	L	L	20
88-062	42	130.0-140.0	0.05	7.0	1.0	N	N	0.20	0.35	120	L	L	1500	N	N	N	L	L	10
88-063	42	140.0-150.0	0.05	7.0	1.0	N	N	0.30	0.30	95	L	L	2000	N	N	N	10	L	5
88-064	42	150.0-160.0	L	1.5	0.2	N	N	0.15	0.50	60	N	N	1000	N	N	N	N	N	10
88-065	42	160.0-170.0	L	1.0	0.05	N	N	0.15	0.40	55	L	L	1000	N	N	N	N	N	5
88-066	42	170.0-180.0	L	1.5	0.3	N	N	0.20	0.50	95	L	L	1000	N	N	N	L	N	10
88-067	42	180.0-190.0	0.05	5.0	0.5	N	N	0.30	0.65	150	L	10	500	L	N	N	L	L	10
88-068	42	190.0-200.0	L	1.5	0.3	N	N	0.20	0.40	95	N	L	1000	L	N	N	L	N	5
88-069	42	200.0-210.0	L	2.0	0.3	N	N	0.20	0.40	80	N	L	1000	N	N	N	L	L	5
88-070	42	210.0-220.0	L	3.0	0.2	N	L	0.30	0.80	120	N	L	1500	N	N	N	L	10	10
88-071	42	220.0-230.0	0.1	3.0	0.7	N	L	0.30	0.30	75	N	10	1500	1	N	N	10	N	5
88-072	42	230.0-240.0	0.1	1.5	0.7	N	N	0.20	0.35	45	N	20	300	L	N	N	L	N	5
88-073	42	240.0-250.0	0.2	2.0	1.0	N	L	0.30	0.35	45	N	30	500	L	N	N	L	N	5
88-074	42	250.0-260.0	0.3	1.5	0.7	N	L	0.20	0.30	40	N	30	500	L	N	N	L	N	5
88-075	42	260.0-270.0	0.2	1.0	0.7	N	L	0.20	0.25	40	N	30	300	L	N	N	L	L	5
88-076	42	270.0-280.0	0.3	1.5	0.7	N	L	0.20	0.30	50	N	50	300	1	N	N	L	L	5
88-077	42	280.0-290.0	0.2	1.5	0.7	N	L	0.30	0.30	40	N	30	500	1	N	N	L	L	5
88-078	42	290.0-300.0	0.2	1.5	0.5	N	L	0.20	0.35	60	N	50	300	L	N	N	10	L	5
88-079	42	300.0-310.0	0.2	1.5	0.7	N	L	0.20	0.25	50	N	50	300	L	1	N	10	L	5
88-080	42	310.0-320.0	0.1	1.0	1.0	N	L	0.30	0.30	50	N	30	300	L	1	N	L	L	5
88-081	42	320.0-330.0	0.15	1.0	1.0	N	L	0.30	0.20	40	N	50	500	L	N	N	L	L	5
88-082	42	330.0-340.0	0.1	1.5	1.0	N	L	0.30	0.25	60	N	30	700	L	N	N	L	L	5
88-083	42	340.0-350.0	0.15	1.5	0.7	N	L	0.20	0.10	40	N	50	700	L	N	N	10	L	5
88-084	42	350.0-360.0	0.15	1.5	1.0	N	L	0.20	0.15	40	N	50	700	L	N	N	L	L	5
88-085	42	360.0-370.0	0.15	1.5	0.7	N	L	0.20	0.35	40	N	50	500	L	N	N	10	L	5
88-086	42	370.0-380.0	0.3	2.0	0.7	N	L	0.20	0.25	50	N	30	700	1	1	N	L	L	5
88-087	42	380.0-390.0	0.1	1.5	0.5	N	L	0.15	0.45	90	N	15	1000	L	N	N	L	L	15
88-088	34	194.0-198.0	L	1.0	1.0	N	L	0.03	G100		40	33	10	150	L	N	L	N	N	30
88-105	34	190.0-194.0	0.07	1.5	0.5	N	L	0.20	0.30	30	N	20	700	L	N	N	L	10	5
88-106	34	198.0-200.0	0.1	1.5	0.5	N	L	0.15	0.30	80	N	20	500	1	N	N	L	10	15
88-107	34	200.0-204.5	0.07	1.5	1.0	N	L	0.15	2.5	60	.05	20	1000	L	2	N	L	10	210
88-108	34	204.5-210.0	0.07	1.5	1.0	N	L	0.15	5.0	70	.10	20	1000	L	N	N	10	10	280
88-109	34	210.0-220.0	0.05	1.5	0.7	N	L	0.15	0.5	60	N	20	300	L	1	N	15	15	610
88-110	34	220.0-224.0	0.07	2.0	0.5	N	L	0.30	0.30	40	N	20	1000	L	2	N	15	20	20
88-111	34	224.0-230.0	0.15	2.0	0.3	N	L	0.20	0.45	50	L	20	700	L	N	N	15	15	15
88-112	34	230.0-239.5	L	0.7	0.2	N	L	0.10	0.70	30	0.05	10	500	N	N	L	L	L	160
88-113	34	239.5-244.0	0.5	1.5	1.5	N	L	0.01	5.4	10	0.10	10	1000	N	1	L	L	N	210
88-114	34	244.0-257.5	L	0.2	0.5	N	L	0.002	4.7	N	0.10	10	150	L	N	L	N	15	770
88-115	34	257.5-260.0	0.05	2.0	1.0	N	L	0.15	4.3	210	0.10	15	700	L	N	L	L	10	95
88-116	34	260.0-268.0	L	0.7	1.5	N	N	0.1	29.0	30	17.0	10	500	N	N	L	L	L	95
88-117	34	268.0-273.0	0.05	2.0	0.5	N	L	0.2	1.7	110	0.15	15	700	L	N	N	10	20	220
88-118	34	273.0-277.5	L	0.2	0.5	N	L	0.1	13.0	10	2.0	L	500	N	1	N	L	N	440
88-119	34	277.5-282.0	0.05	5.0	1.5	N	L	0.3	1.9	110	L	15	1000	L	N	N	20	50	490
88-120	34	282.0-301.0	2.0	5.0	1.5	N	L	0.3	1.1	100	L	10	700	N	N	L	50	70	60
88-121	34	301.0-312.0	2.0	3.0	0.3	N	L	0.3	1.0	190	0.10	20	300	L	1	N	10	30	20
88-122	28	10.0- 20.0	L	2.0	0.7	0.5	L	0.2	1.6	60	0.10	15	1000	L	N	N	L	100	70

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
88-123	28	20.0- 30.0	0.5	2.0	1.0	0.7	L	0.3	0.30	120	N	15	700	L	1	N	L	10	35
88-124	28	30.0- 40.0	0.15	2.0	0.3	L	L	0.15	0.65	220	0.05	10	1500	N	N	N	L	L	15
88-125	28	40.0- 50.0	L	1.0	0.2	L	L	0.15	0.25	130	0.10	10	1500	N	N	N	10	L	10
88-126	28	50.0- 55.0	1.5	3.0	0.15	N	L	0.15	1.2	280	0.10	30	700	L	1	N	L	L	20
88-127	28	55.0- 60.0	L	1.5	0.15	N	L	0.15	0.45	210	N	10	1000	N	N	N	L	L	5
88-128	28	60.0- 65.0	L	1.0	0.1	N	L	0.2	0.20	80	0.05	15	1000	N	N	N	L	L	5
88-129	28	65.0- 70.0	L	1.0	0.15	N	L	0.15	0.15	70	N	10	700	N	N	N	L	L	5
88-130	28	70.0- 80.0	0.3	1.5	0.2	L	L	0.15	0.30	100	L	15	1000	L	N	N	10	L	30
88-131	28	80.0- 90.0	L	1.5	0.2	N	L	0.15	0.40	110	0.05	10	700	N	1	N	L	L	30
88-132	28	90.0-100.0	0.15	1.0	0.3	L	L	0.2	0.30	90	N	10	700	L	1	N	L	L	20
88-133	28	100.0-110.0	0.15	3.0	0.3	N	L	0.15	0.40	90	N	10	1000	N	N	N	L	L	5
88-134	28	110.0-120.0	0.2	1.5	1.0	N	L	0.2	0.40	90	N	15	1500	L	N	L	10	15	180
88-135	28	120.0-124.0	0.1	5.0	0.7	N	L	0.3	2.5	260	0.05	10	500	N	1	N	15	20	15
88-136	28	239.0-246.0	1.5	7.0	2.0	1.5	L	0.5	0.85	30	N	10	700	N	1	N	50	150	150
88-137	28	246.0-250.0	1.0	7.0	2.0	1.5	L	0.5	0.80	70	N	10	1000	N	N	N	50	150	65
88-138	28	250.0-260.0	1.5	7.0	2.0	1.5	L	0.5	0.80	80	L	10	700	L	N	L	30	100	80
88-139	28	260.0-270.0	0.7	7.0	2.0	3.0	L	0.5	0.50	60	L	10	700	N	1	N	30	100	65
88-140	28	270.0-280.0	1.0	7.0	2.0	1.0	L	0.3	0.50	110	0.25	10	1000	L	N	N	30	150	30
88-141	28	280.0-290.0	1.0	7.0	1.5	1.5	L	0.3	0.50	40	N	15	700	N	N	N	30	150	55
88-142	28	290.0-300.0	1.0	7.0	2.0	2.0	L	0.5	1.1	80	N	20	1000	N	N	N	30	150	35
88-143	28	300.0-310.0	0.7	7.0	1.5	1.5	L	0.3	0.85	100	0.20	10	1000	N	N	N	30	150	80
88-144	28	310.0-320.0	0.7	7.0	2.0	1.5	L	0.3	0.95	60	0.05	10	1000	N	N	N	30	150	75
88-145	28	320.0-330.0	0.5	7.0	2.0	2.0	L	0.3	0.95	150	N	10	700	N	N	N	30	150	55
88-146	28	330.0-340.0	0.3	7.0	2.0	1.0	L	0.3	0.95	130	N	15	1000	N	N	N	30	150	35
88-147	28	340.0-349.0	1.0	5.0	1.5	1.5	L	0.3	0.70	130	N	10	700	L	N	N	30	100	20
88-148	28	359.0-360.0	0.5	5.0	1.5	2.0	L	0.2	0.85	110	0.15	10	700	N	N	N	20	100	110
88-149	28	360.0-370.0	0.7	5.0	1.5	2.0	L	0.3	0.60	70	N	10	1000	N	N	N	20	150	35
88-150	28	370.0-377.0	1.0	5.0	1.5	1.5	L	0.3	0.65	50	N	10	700	N	N	N	30	150	45
88-151	28	385.0-390.0	1.0	7.0	2.0	2.0	L	0.3	0.30	60	N	10	1000	N	N	N	30	150	50
88-152	28	390.0-400.0	0.5	3.0	1.5	2	L	0.20	0.40	120	N	L	500	L	N	N	30	100	30
88-153	28	400.0-402.0	1.0	5.0	2.0	1.5	L	0.30	0.20	40	N	10	500	L	N	N	30	150	20
88-183	42	390.0-400.0	0.2	1.0	1.5	L	L	0.10	1.7	60	0.40	15	700	L	N	N	L	L	15
88-184	42	400.0-410.0	L	1.0	0.5	L	L	0.10	1.6	80	0.05	10	700	N	N	N	5	L	10
88-185	42	410.0-420.0	0.07	0.7	1.0	L	L	0.10	20.0	40	2.3	10	1000	L	N	N	L	L	10
88-186	42	420.0-430.0	0.10	1.5	2.0	N	N	0.07	6.6	70	8.3	15	500	L	N	N	L	L	10
88-187	42	430.0-440.0	2.0	1.0	3.0	N	N	0.02	49.0	40	55.0	15	200	N	N	L	L	N	35
88-188	42	440.0-450.0	0.2	1.0	1.5	N	L	0.05	45.0	50	23.0	15	700	L	N	15	N	10	75
88-189	42	450.0-460.0	0.15	1.5	0.3	L	L	0.15	1.5	120	0.05	15	700	L	N	N	7	L	15
88-190	42	460.0-470.0	0.10	0.7	0.3	L	L	0.15	0.95	80	0.10	15	1000	L	N	N	5	L	15
88-191	42	470.0-480.0	0.07	1.0	0.5	L	L	0.15	0.80	80	0.05	20	1000	L	N	N	5	L	15
88-192	42	480.0-490.0	0.15	0.7	0.3	L	L	0.10	0.55	80	0.05	10	1000	L	N	N	5	L	20
88-193	42	490.0-500.0	0.10	0.7	0.3	L	L	0.15	0.80	60	0.35	10	1000	L	N	N	5	L	60
88-194	42	500.0-510.0	0.15	0.5	0.7	L	L	0.20	0.45	50	0.05	10	1000	N	N	N	5	L	20
88-195	42	510.0-520.0	0.10	1.0	0.3	N	L	0.15	1.10	110	L	15	500	L	N	N	7	10	10
88-196	42	520.0-530.0	0.10	2.0	0.5	N	L	0.15	0.75	250	N	15	500	L	N	N	7	15	30
88-197	42	530.0-540.0	0.15	0.5	0.1	N	L	0.05	1.10	160	N	10	200	N	N	N	N	N	10
88-198	42	540.0-550.0	0.20	1.5	0.5	N	N	0.15	1.0	90	N	15	500	L	N	N	5	15	20
88-204	42	552.0-560.0	0.15	1.0	0.07	N	L	0.005	3.7	80	1.0	10	200	L	N	L	N	L	65
88-205	42	560.0-570.0	0.20	2.0	0.7	0.2	L	0.3	4.1	70	4.8	10	500	L	N	N	10	10	120
88-206	42	570.0-580.0	0.50	3.0	1.5	1.0	L	0.2	1.6	100	0.40	10	700	L	N	N	15	50	130

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
88-247	42	580.0-583.0	0.70	3.0	1.5	2.0	L	0.3	0.20	30	N	15	700	L	N	N	20	150	55
88-248	Friday	0.0- 10.0	L	1.0	0.2	N	L	0.10	2.5	90	N	20	500	L	N	N	N	L	290
88-249	Friday	10.0- 20.0	L	1.0	0.15	N	L	0.10	15.0	50	N	10	100	N	N	N	N	N	580
88-250	Friday	20.0- 30.0	L	1.0	0.2	N	L	0.10	25.0	40	0.50	15	300	L	N	L	L	L	1000
88-251	Friday	30.0- 36.0	L	1.0	0.15	N	L	0.05	5.6	30	0.15	15	200	N	N	N	N	N	440
88-252	Friday	36.0- 40.0	L	0.07	0.1	N	L	0.03	3.0	20	0.10	15	200	N	N	N	L	N	210
88-253	Friday	40.0- 50.0	L	1.0	0.5	N	L	0.05	5.2	40	0.10	10	500	N	N	N	N	N	150
88-254	Friday	50.0- 60.0	L	1.0	0.3	N	L	0.10	6.5	60	1.70	10	500	L	1	N	N	N	140
88-255	Friday	60.0- 70.0	L	1.5	0.2	L	L	0.15	2.8	820	0.05	15	500	L	1	N	5	10	20
88-256	Friday	70.0- 80.0	L	1.0	0.2	L	L	0.15	1.9	400	L	15	300	L	1	N	5	L	10
88-257	Friday	80.0- 90.0	1	1.5	0.2	L	L	0.15	1.8	530	0.05	10	500	L	N	N	7	10	20
88-258	Friday	90.0- 98.0	1	1.0	0.2	N	L	0.15	1.1	120	L	20	300	1	N	L	7	15	35
88-259	Friday	98.0-100.6	0.1	1.0	0.07	N	L	0.03	6.2	580	0.20	10	500	L	N	N	L	N	45
88-277	28	124.0-130.5	0.1	1.5	0.7	L	0.2	0.2	2.8	80	0.10	10	500	L	N	L	10	10	40
88-278	28	130.5-143.0	0.05	1.5	0.5	L	L	0.20	1.6	90	0.40	15	500	L	N	L	7	L	280
88-279	28	143.0-153.0	L	1.0	0.3	L	L	0.10	29.0	40	2.8	15	300	L	1	L	L	L	200
88-280	28	153.0-160.0	L	0.7	0.5	N	L	0.01	27.0	10	7.0	15	100	L	1	L	N	N	510
88-281	28	160.0-162.0	0.3	1.5	1.0	0.5	0.2	0.20	8.4	80	0.70	15	700	L	N	20	20	10	170
88-282	28	162.0-172.0	0.07	1.5	0.7	N	L	0.15	22.0	40	1.1	15	500	L	N	20	5	L	780
88-283	28	172.0-187.0	L	0.5	0.5	N	L	0.03	17.0	20	22.0	10	300	L	N	L	N	L	220
88-284	28	187.0-195.0	L	2.0	0.3	L	L	0.15	1.9	30	0.05	20	500	L	2	N	15	10	130
88-285	28	195.0-205.0	0.20	1.5	0.5	L	L	0.15	3.3	60	0.05	15	300	L	3	N	20	20	85
88-286	28	205.0-215.5	0.70	2.0	1.0	L	L	0.15	2.7	70	0.10	20	500	1	N	N	15	70	70
88-287	28	215.5-222.0	10.0	1.0	0.5	N	L	0.1	1.6	40	N	L	30	1	N	N	7	20	10
88-288	28	222.0-232.0	3.0	1.0	0.5	L	L	0.1	1.4	50	N	10	300	L	N	N	10	10	15
88-289	28	232.0-239.0	5.0	2.0	0.7	L	L	0.15	3.1	630	0.10	10	700	1	N	N	15	15	30
28555	34	194.0-198.0	0.05	1.5	1.0	N	L	0.1	G100	50	9.0	10	200	L	N	L	5	70	30
28556	34	200.0-204.5	0.05	1.0	0.5	N	0.2	0.1	15.0	60	0.75	10	500	L	N	L	5	10	110
28557	34	210.0-215.0	0.05	0.7	0.2	N	L	0.15	1.1	50	N	10	500	L	N	N	5	L	140
28558	34	215.0-220.0	0.05	1.5	0.3	N	L	0.1	0.65	50	N	15	500	L	N	N	7	L	470
28559	34	224.0-228.0	0.15	1.0	0.2	N	L	0.07	1.9	40	N	15	500	L	N	L	7	10	G1000
28560	34	228.0-230.0	0.05	1.0	0.3	N	L	0.03	0.70	20	N	10	500	L	N	L	5	N	560
28561	34	230.0-235.0	L	0.7	0.15	N	L	0.03	0.20	10	N	10	300	L	N	N	5	L	260
28562	34	235.0-240.0	L	0.7	0.15	N	L	0.03	0.95	N	N	10	300	N	N	L	5	L	330
28563	34	240.0-243.0	0.1	1.0	1.5	N	L	0.015	4.6	N	N	L	700	L	N	15	N	N	450
28564	34	243.0-247.0	L	0.7	0.2	N	L	0.02	8.4	20	0.05	10	700	L	N	15	L	N	990
28565	34	247.0-250.0	L	0.7	0.3	N	L	0.03	4.2	10	0.45	10	500	L	N	L	5	N	570
28566	34	250.0-257.5	L	0.7	0.7	N	L	0.005	23.0	N	0.60	10	150	L	N	20	N	N	G1000
28567	34	257.5-258.5	L	L	0.07	N	L	0.002	7.1	N	0.15	10	50	L	N	L	N	N	140
28568	34	258.5-260.0	L	1.0	0.2	N	L	0.15	4.6	110	0.15	10	500	L	N	L	7	L	130
28569	34	260.0-265.0	L	0.5	0.3	N	L	0.02	24.0	10	10.0	10	300	L	N	10	N	150	160
28570	34	265.0-268.0	L	0.7	0.7	N	L	0.02	28.0	N	22.0	10	300	L	N	L	5	100	200
28571	34	268.0-270.0	0.05	1.5	0.2	N	L	0.15	1.8	330	0.05	15	500	L	N	L	7	10	55
28572	34	270.0-273.0	0.05	1.0	0.2	N	L	0.15	0.85	90	N	15	300	1	N	N	7	L	170
28573	34	273.0-277.5	L	0.5	0.3	N	L	0.02	14.0	40	9.5	10	300	L	N	L	L	150	250
28574	34	280.0-282.0	L	1.0	0.3	N	L	0.1	4.5	40	0.10	10	300	L	N	L	7	15	250
28575	34	285.5-288.0	0.5	2.0	0.5	N	L	0.1	1.5	150	N	10	700	1	N	L	30	30	110
28576	34	291.0-293.0	2.0	1.0	0.15	N	L	0.1	0.70	210	N	10	200	1	N	N	5	L	15
28577	34	293.0-298.0	3.0	1.5	0.5	N	L	0.3	0.85	200	N	20	30	1	N	L	15	15	15
28578	34	298.0-300.0	5.0	1.0	0.3	N	L	0.1	1.2	140	N	15	20	1	N	L	7	10	25

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
28579	35	187.5-189.5	L	0.7	0.15	L	L	0.07	0.45	60	N	15	700	L	N	L	L	N	40
28580	35	202.0-204.0	L	0.7	0.15	N	L	0.1	0.60	90	N	15	500	L	N	N	L	N	95
28581	35	228.0-231.5	L	0.7	0.15	N	L	0.05	2.2	90	N	15	200	1	N	N	L	N	40
28582	35	246.0-249.0	0.3	0.5	0.2	N	L	0.07	5.4	60	0.45	10	500	L	N	N	L	N	45
28583	35	251.0-253.5	0.05	0.7	0.2	N	L	0.1	2.2	70	0.10	15	500	1	N	N	5	N	30
28584	35	253.5-255.5	0.5	2.0	1.5	N	L	N	G100	150	210.0	L	N	N	N	50	N	150	G1000
28585	35	255.5-256.5	L	0.5	0.3	N	L	0.1	6.7	50	0.10	15	500	1	N	N	5	N	20
28586	35	263.0-265.0	L	0.7	0.2	N	L	0.15	1.9	80	0.05	15	300	L	N	N	L	N	95
28587	35	285.0-287.0	0.05	0.7	0.3	N	L	0.05	5.4	50	0.90	15	500	L	N	L	5	N	480
28588	35	288.5-291.0	L	1.5	1.0	N	N	0.01	G100	20	8.5	10	150	N	N	30	L	150	G1000
28589	35	292.5-296.0	L	0.7	0.3	N	L	0.07	6.8	50	N	10	500	N	N	L	N	N	G1000
28590	35	296.5-302.0	L	0.7	0.3	N	L	0.1	20.0	50	0.30	15	700	L	N	N	L	N	140
28591	35	302.0-306.0	L	0.7	1.0	N	L	0.07	8.4	40	0.50	10	500	L	N	N	L	N	110
28592	35	306.0-308.5	L	0.7	0.5	N	L	0.07	16.0	60	0.30	10	700	L	N	N	L	L	80
28593	35	308.5-312.0	L	0.7	0.7	N	L	0.07	8.1	50	0.25	15	500	L	N	L	N	N	130
28594	35	312.0-317.0	L	0.7	0.3	N	L	0.05	3.6	30	0.15	10	200	L	N	15	N	N	430
28595	35	336.0-341.0	L	1.0	0.2	L	L	0.07	1.4	30	N	20	500	L	N	N	N	L	260
28596	35	347.0-348.5	L	1.0	0.2	N	L	0.05	2.6	N	0.30	15	300	1	N	10	L	L	1000
28597	35	348.5-349.0	0.05	0.7	0.3	N	L	0.02	1.9	N	N	10	300	L	N	N	N	N	390
28598	35	349.0-350.5	0.05	0.7	0.3	N	L	0.015	6.7	N	N	10	200	L	N	L	N	N	G1000
28599	35	350.5-354.0	0.5	0.5	0.5	N	L	0.02	16.0	N	3.5	10	300	1	N	10	N	N	270
28600	35	354.0-358.0	0.2	0.7	0.3	N	L	0.03	5.5	N	0.50	10	200	L	N	L	L	N	95
28601	35	358.0-362.0	0.05	0.15	0.15	N	L	0.015	5.3	N	0.40	L	150	L	1	L	N	N	90
28602	35	364.5-367.0	2.0	1.0	0.5	N	L	0.15	4.2	30	0.20	10	200	3	1	N	5	L	20
28603	35	368.0-372.0	10.0	0.5	0.15	N	L	0.03	1.1	70	N	15	L	L	3	L	N	L	5
28604	35	372.0-375.0	10.0	1.0	0.15	N	L	0.05	0.50	70	N	10	50	1	2	15	15	L	40
28605	35	343.0-347.0	L	0.5	0.2	N	L	0.03	22.0	10	0.45	10	300	L	N	L	N	N	340
28629	37	271.0-274.0	0.05	1.5	0.3	N	L	0.15	0.10	30	N	20	300	1	N	N	7	L	5
28630	37	274.0-279.0	0.1	1.0	0.2	N	0.2	0.1	0.65	30	N	15	300	1	N	N	7	L	10
28631	37	279.0-280.0	0.5	0.7	0.3	N	L	0.03	5.2	20	0.05	15	100	2	N	N	5	L	15
28632	37	280.0-284.0	0.05	0.2	0.3	N	L	0.007	5.5	N	0.90	10	70	L	1	L	N	N	20
28633	37	284.0-288.0	0.7	0.7	1.0	N	L	0.02	82.0	N	3.8	10	100	1.5	1	L	N	N	15
28634	37	288.0-290.0	0.05	0.7	0.7	N	L	0.007	14.0	N	3.8	15	100	L	2	15	L	N	530
28635	37	290.0-295.0	0.7	0.3	0.3	N	L	0.02	42.0	N	4.8	10	200	L	1	20	L	N	390
28636	37	295.0-300.0	0.5	1.5	0.5	L	0.2	0.2	2.7	40	N	20	300	L	6	N	20	10	20
28637	37	300.0-302.5	0.5	1.5	0.5	N	L	0.1	2.1	40	N	10	500	L	N	N	15	70	20
28638	37	302.5-305.0	0.5	3.0	1.0	0.5	L	0.2	1.4	50	N	10	500	L	N	N	20	N	310
28639	38	133.0-137.0	L	0.7	0.15	N	L	0.1	0.10	N	N	20	200	L	N	N	L	L	15
28640	38	137.0-138.0	L	0.5	0.2	N	L	0.07	0.05	N	N	20	150	L	N	N	N	N	5
28641	38	141.5-143.0	L	0.5	0.15	N	L	0.1	0.35	10	N	20	100	L	N	N	N	L	5
28642	38	143.0-143.5	L	0.5	0.2	N	L	0.1	0.40	40	N	15	300	L	N	N	7	L	15
28643	38	170.7-173.0	L	1.0	0.2	N	L	0.15	0.30	40	N	15	300	1	N	N	5	N	35
28644	38	179.0-182.0	L	2.0	0.2	N	L	0.15	0.40	50	N	10	200	L	N	N	L	N	30
28645	38	184.0-185.5	L	0.7	0.2	N	L	0.15	0.25	90	N	10	200	L	N	N	N	N	15
28646	38	197.0-199.0	L	0.7	0.2	N	L	0.03	0.20	60	N	20	100	1	N	10	5	N	30
28647	38	204.0-209.0	L	0.7	0.2	N	L	0.15	0.25	40	N	15	300	1	N	N	5	L	15
28650	38	214.0-217.0	L	1.5	0.2	N	L	0.15	0.60	20	N	10	300	L	N	N	5	L	20

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
28651	38	229.5-234.0	L	0.7	0.15	N	L	0.07	3.0	10	0.20	L	300	L	N	L	N	L	160
28652	38	234.0-237.0	L	0.2	0.15	N	L	0.03	5.3	N	1.5	L	200	L	N	L	N	N	65
28653	38	237.0-239.0	0.05	1.5	0.5	L	L	0.2	3.9	10	N	L	500	L	N	N	10	L	30
28654	38	243.0-245.0	0.05	1.5	0.5	N	L	0.15	1.7	N	N	L	300	N	N	L	10	L	30
28655	38	246.0-248.0	L	0.3	0.2	N	L	0.07	5.3	N	N	L	300	N	N	N	N	N	20
28656	38	257.0-259.0	L	1.5	0.5	N	L	0.15	3.0	10	N	10	500	N	N	L	15	20	25
28657	39	562.5-565.5	0.05	1.5	1.0	N	L	0.15	5.6	40	0.20	L	1000	N	3	L	7	L	20
28658	39	565.5-568.0	L	1.5	0.5	N	L	0.15	3.8	50	0.10	10	700	N	N	L	10	10	45
28659	39	568.0-570.0	L	0.7	0.2	N	L	0.05	2.0	30	0.1	10	500	L	N	L	5	L	25
28660	39	570.0-574.0	0.2	0.5	0.15	N	L	0.1	0.40	20	N	10	100	L	N	N	5	N	10
28661	39	574.0-576.5	0.7	0.7	0.2	N	L	0.1	4.6	10	N	15	150	L	N	L	5	N	10
28662	39	576.5-578.0	0.15	0.15	0.07	N	L	0.01	3.5	10	0.5	10	100	1	N	L	N	N	100
28663	39	578.0-582.0	0.5	1.0	0.2	N	L	0.15	29.0	60	1.8	10	200	1	N	L	7	150	150
28664	39	582.0-585.0	0.1	0.07	0.05	N	L	0.007	2.1	10	1.1	10	30	L	N	L	N	N	40
28665	39	585.0-587.0	0.3	0.05	0.07	N	L	0.01	2.9	10	0.15	10	150	1	N	L	N	N	260
28666	39	587.0-588.5	0.5	0.3	0.1	L	L	0.07	1.9	20	N	10	150	1	N	L	5	N	80
28667	39	588.5-593.0	0.5	1.0	0.15	0.2	L	0.1	4.2	40	0.15	10	300	1.5	N	N	7	L	220
28668	39	593.0-596.0	0.5	2.0	0.3	L	L	0.2	8.5	90	6.7	L	500	L	N	N	15	10	130
28669	39	596.0-599.0	0.2	2.0	0.5	0.5	0.2	0.2	G100	140	4.8	15	300	1.5	N	10	15	20	330
28670	39	599.0-601.0	0.2	1.5	0.3	0.7	0.2	0.3	3.4	30	L	L	500	L	N	L	10	10	40
28671	39	601.0-603.0	0.3	1.5	0.3	0.2	L	0.15	1.5	40	N	10	500	L	N	N	7	N	60
28672	39	603.0-606.0	0.2	0.15	0.1	N	L	0.015	1.7	20	N	10	100	L	N	N	N	N	30
28673	39	606.0-607.5	0.5	0.1	0.1	N	L	0.015	2.8	20	N	10	70	L	N	L	N	N	5
28674	39	607.5-611.0	1.5	1.0	0.2	N	L	0.1	2.7	40	N	15	150	L	N	L	7	10	25
28675	39	611.0-613.0	1.0	0.2	0.15	N	L	0.03	3.1	30	N	15	50	L	N	L	5	N	5
28676	39	613.0-615.0	1.0	0.3	0.15	N	L	0.03	2.7	30	N	10	200	L	N	N	5	N	5
28677	39	616.0-620.0	1.5	0.3	0.15	N	L	0.03	1.1	40	N	10	100	L	N	N	5	N	5
28707	41	38.0- 39.5	L	0.2	0.03	N	L	0.05	0.30	50	N	10	700	L	N	N	N	N	N
28708	41	39.5- 43.0	L	0.5	0.02	N	L	0.1	0.30	70	N	15	700	L	N	N	N	N	5
28709	41	43.0- 46.0	L	0.5	0.02	N	L	0.1	0.30	70	N	15	700	L	N	N	N	N	N
28710	41	46.0- 49.0	L	0.7	0.03	N	L	0.15	0.30	140	N	10	700	L	N	N	N	N	N
28711	41	495.0-496.5	0.2	0.7	0.5	N	L	0.1	0.20	20	N	10	1000	1	N	L	5	N	5
28712	41	505.5-508.5	1.0	1.0	0.2	L	0.2	0.1	0.20	30	N	20	700	1.5	N	N	7	L	5
28713	41	511.5-512.5	0.7	0.5	0.7	N	L	0.02	0.20	20	N	L	1000	L	N	L	N	N	30
28714	41	571.5-574.0	0.2	0.3	0.3	N	L	0.005	0.05	10	N	10	1000	1	N	10	5	N	10
28715	41	574.0-579.0	0.05	0.7	0.2	L	L	0.1	0.10	30	N	15	700	L	N	L	5	L	10
28716	41	579.0-581.0	L	0.7	0.1	L	0.2	0.03	0.60	20	N	10	700	L	N	N	N	L	140
28717	41	581.0-584.0	0.15	0.7	0.15	N	L	0.1	0.20	10	N	15	1000	L	N	N	5	L	35
28718	41	584.0-586.5	L	1.5	0.2	N	L	0.15	0.55	50	N	10	1000	L	N	N	10	10	50
28719	41	586.5-587.0	0.1	0.7	0.1	N	L	0.05	0.20	N	N	10	700	N	N	N	N	L	20
28720	41	587.0-588.5	L	2.0	0.1	N	L	0.1	1.2	160	N	10	700	L	N	N	5	L	15
28721	41	588.5-590.5	0.1	1.0	0.1	N	L	0.15	0.40	30	N	15	700	L	N	N	5	L	35
28722	41	590.5-594.0	0.15	1.5	0.15	L	L	0.15	0.25	20	N	10	700	L	N	N	7	10	15
28723	41	594.0-595.0	0.2	1.0	0.2	N	0.2	0.07	0.15	10	N	10	700	L	N	L	5	L	35
28724	41	595.0-598.0	0.5	0.5	0.15	N	L	0.03	0.15	N	N	10	300	N	N	N	N	N	15
28725	41	598.0-600.0	0.3	0.7	0.2	N	L	0.05	1.7	N	0.15	10	300	N	N	N	L	10	300
28726	41	600.0-603.0	0.3	1.0	0.3	N	L	0.15	0.45	10	N	10	200	N	N	L	5	10	170

Sample No.	Hole or Trench	Footage	Ca	Fe	Mg	Na	P	Ti	Ag	As	Au	B	Ba	Be	Bi	Cd	Co	Cr	Cu
28727	41	603.0-605.0	0.2	N	0.02	N	L	0.005	0.65	N	N	L	70	L	N	L	N	N	95
28728	41	605.0-607.0	0.5	0.3	0.1	N	L	0.01	1.3	10	0.15	10	150	1	N	L	N	L	110
28729	41	607.0-608.0	0.7	0.5	0.15	N	L	0.03	2.7	30	N	L	300	1	N	N	N	L	180
28730	41	608.0-610.0	0.3	2.0	0.7	0.3	L	0.15	1.9	60	N	10	500	L	N	N	15	50	30
28732	42	393.0-396.0	0.7	0.7	1.5	N	L	0.02	6.7	10	0.25	L	200	L	N	L	N	N	30
28733	42	407.5-408.0	L	0.5	0.5	N	L	0.1	25.0	100	5.6	10	700	L	N	L	N	N	15
28734	42	408.0-410.5	L	0.7	1.0	N	L	0.1	5.3	40	0.30	10	700	N	N	N	5	N	5
28735	42	410.5-414.0	0.1	0.7	1.0	N	L	0.015	G100	30	12.0	10	300	L	N	15	N	150	25
28736	42	414.0-415.0	0.15	1.0	0.3	N	L	0.07	1.1	60	N	10	700	N	N	N	5	N	15
28737	42	422.0-425.0	0.15	1.0	1.5	N	L	0.02	29.0	80	9.2	10	300	N	N	L	N	150	20
28738	42	425.0-435.0	0.1	0.7	1.5	N	L	0.03	16.0	60	18.0	L	500	N	N	L	N	200	10
28739	42	435.0-440.0	3.0	1.0	5.0	N	N	0.005	51.0	N	38.0	L	70	N	N	L	N	150	35
28740	42	440.0-445.0	0.3	1.0	1.5	N	L	0.03	30.0	N	11.0	10	300	N	N	L	7	200	60
28741	42	445.0-449.0	0.2	0.7	0.5	N	L	0.02	27.0	10	33.0	10	700	L	N	L	N	150	65
28742	42	465.5-467.0	0.15	0.5	0.2	N	L	0.1	0.80	70	N	10	700	L	N	N	N	N	10
28743	42	478.0-480.0	0.1	0.3	0.7	N	L	0.02	1.4	N	1.3	15	500	L	N	N	N	N	5
28744	42	480.0-482.0	0.15	0.1	0.3	N	L	0.007	1.5	N	0.90	10	200	L	N	N	N	N	5
28745	42	484.0-485.0	0.15	0.5	0.2	N	L	0.1	0.50	40	0.10	15	1000	L	N	N	7	N	30
28746	42	493.0-494.0	L	0.2	0.15	N	L	0.05	4.2	20	0.20	10	700	L	N	N	5	N	110
28747	42	502.5-504.5	0.1	0.3	0.2	N	L	0.05	1.4	20	0.25	10	1000	N	N	N	N	N	70
28748	42	514.7-516.0	0.07	0.5	0.15	N	N	0.05	2.0	70	3.7	10	200	L	N	N	N	N	15
28749	42	516.0-521.0	0.05	1.0	0.15	N	L	0.05	0.60	150	N	10	300	L	N	N	L	N	15
28750	42	521.0-524.5	L	0.7	0.1	N	L	0.05	0.50	100	N	10	200	L	N	N	5	N	45
28752	42	527.0-529.0	0.07	0.5	0.15	N	L	0.05	1.2	70	N	10	200	L	N	N	N	N	100
28754	42	532.0-537.0	0.1	0.5	0.1	N	L	0.02	6.0	80	L	L	100	N	N	N	N	N	25
28755	42	537.0-542.0	0.2	1.0	0.15	N	L	0.07	0.50	100	N	10	500	L	N	N	5	N	5
28756	42	542.0-545.5	0.1	1.0	0.2	N	L	0.1	1.4	60	N	10	300	N	N	N	7	L	10
28757	42	547.5-549.5	0.1	1.0	0.15	N	L	0.05	0.85	130	N	15	300	N	N	N	5	L	5
28758	42	549.5-552.0	0.1	0.3	0.1	N	L	0.02	3.1	30	N	L	150	L	N	10	N	N	180
28759	42	552.0-556.5	0.07	0.7	0.1	N	L	0.03	3.5	140	0.30	10	200	N	N	N	5	N	280
28760	42	556.5-558.0	0.15	0.5	0.07	N	L	0.005	30.0	N	40.0	10	30	N	N	L	L	200	120
28761	42	558.0-563.0	0.3	0.7	0.5	N	L	0.15	2.1	30	0.85	10	300	L	N	L	5	N	110
28762	42	563.0-565.0	0.5	0.3	0.15	N	L	0.1	3.8	20	0.90	10	200	N	N	L	L	N	320
28763	42	565.0-568.0	0.15	2.0	0.3	N	0.2	0.2	3.1	160	0.15	10	500	L	N	N	15	10	45
28764	42	568.0-570.5	0.2	0.7	0.3	0.2	L	0.15	3.8	30	1.3	10	300	L	N	L	L	N	140
28765	42	570.5-573.0	0.15	1.5	0.5	N	L	0.1	1.9	170	0.40	10	500	L	N	N	L	10	200
28766	42	573.0-576.0	0.3	2.0	0.7	0.2	L	0.15	2.6	300	1.0	10	500	L	N	N	10	15	100

Appendix 1b. Rock-chip geochemical data from the Shumagin gold deposit (Ga-Zr).

[Ca,Fe,Mg,Na,P,Ti in percent; all other elements in ppm. AA = atomic absorption; SES = semiquantitative emission spectrography. G = greater than value shown; L = element detected, but below limit of determination; N = not detected; ND = no data.]

Analytical Method			SES	AA	SES	SES	SES	AA	AA	SES	SES	SES	AA	AA	SES	AA	SES	AA	SES
Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
88-001	169	10.0- 20.0	N	0.40	G5000	N	L	G1000	12	L	N	N	ND	ND	30	ND	L	G2000	10
88-002	169	20.0- 30.0	5	0.12	5000	N	5	80	N	L	N	N	ND	ND	50	ND	L	500	15
88-003	169	30.0- 40.0	20	0.17	1500	N	10	40	N	15	N	100	ND	ND	100	ND	20	110	70
88-004	169	40.0- 50.0	20	0.15	700	N	5	15	2	15	N	150	ND	ND	100	ND	L	55	50
88-005	169	50.0- 60.0	20	0.14	500	N	7	5	2	20	N	150	ND	ND	150	ND	10	40	100
88-006	169	60.0- 70.0	30	0.28	500	N	5	5	2	20	N	100	ND	ND	150	ND	10	40	70
88-007	169	70.0- 80.0-	15	0.32	300	N	5	20	2	10	N	N	ND	ND	100	ND	L	70	50
88-008	169	80.0- 90.0	20	0.11	200	N	L	5	N	15	N	N	ND	ND	150	ND	L	20	100
88-009	169	90.0-100.0	20	0.22	300	N	L	5	N	15	N	N	ND	ND	100	ND	L	20	70
88-010	169	100.0-110.0	20	0.22	300	N	L	5	N	15	N	N	ND	ND	100	ND	L	30	70
88-011	169	110.0-120.0	20	0.23	700	N	5	20	2	15	N	100	ND	ND	100	ND	10	55	70
88-012	169	120.0-130.0	30	0.31	500	N	L	10	2	20	N	150	ND	ND	150	ND	L	35	100
88-013	169	Zone 1	5	0.16	5000	N	L	710	4	L	N	N	ND	ND	30	ND	L	190	20
88-014	169	Zone 2	N	0.09	5000	N	L	G1000	8	N	N	N	ND	ND	15	ND	L	1000	N
88-016	169	Zone 3	10	0.22	5000	N	10	300	2	10	N	N	ND	ND	100	ND	15	510	50
88-017	169	Zone 4	N	0.02	G5000	N	L	5	2	N	N	N	ND	ND	15	ND	10	170	N
88-018	169	Zone 5	L	0.11	5000	N	L	110	N	L	N	N	ND	ND	20	ND	L	170	10
88-019	169	Zone 6	15	0.14	2000	N	10	65	N	15	N	N	ND	ND	100	ND	20	170	70
88-024	34	20.0- 30.0	20	2.7	100	5	L	20	6	10	N	N	ND	ND	70	ND	10	30	70
88-025	34	30.0- 40.0	30	1.4	100	5	10	40	8	15	N	N	ND	ND	100	ND	10	110	100
88-026	34	40.0- 50.0	30	0.70	100	10	7	25	6	20	N	N	ND	ND	100	ND	20	110	70
88-029	34	50.0- 60.0	30	1.4	200	L	7	25	8	10	N	N	ND	ND	100	ND	10	100	70
88-030	34	60.0- 70.0	30	0.68	200	L	5	10	6	15	N	L	ND	ND	100	ND	15	80	70
88-031	34	70.0- 80.0	20	0.57	150	5	5	50	6	10	N	N	ND	ND	100	ND	10	400	50
88-032	34	80.0- 90.0	30	2.4	150	10	5	25	12	10	N	N	ND	ND	70	ND	L	50	100
88-033	34	90.0-100.0	15	0.56	150	10	5	15	8	10	N	N	ND	ND	50	ND	L	40	150
88-034	34	100.0-110.0	10	0.33	30	L	L	10	6	5	N	N	ND	ND	30	ND	N	20	50
88-038	34	110.0-120.0	5	0.60	150	L	L	10	10	L	N	N	ND	ND	10	ND	N	25	30
88-039	34	120.0-130.0	10	0.45	70	L	L	N	6	5	N	N	ND	ND	20	ND	L	25	50
88-040	34	130.0-140.0	10	0.39	150	N	L	N	4	L	N	N	ND	ND	30	ND	L	20	70
88-041	34	140.0-150.0	10	0.32	200	5	L	10	4	7	N	N	ND	ND	20	ND	N	20	100
88-042	34	150.0-160.0	15	0.30	100	5	L	55	4	5	N	N	ND	ND	30	ND	N	95	50
88-043	34	160.0-170.0	20	0.34	150	15	5	10	2	7	N	N	ND	ND	70	ND	L	75	70
88-048	34	170.0-180.0	30	0.40	200	20	7	10	2	10	N	N	ND	ND	100	ND	10	50	50
88-049	34	180.0-190.0	30	0.12	700	10	5	10	2	10	N	N	ND	ND	100	ND	10	45	150
88-050	42	17.0- 20.0	30	2.5	100	5	7	50	8	15	N	N	ND	ND	200	ND	15	170	100
88-051	42	20.0- 30.0	20	2.7	100	5	10	35	10	10	N	N	ND	ND	150	ND	10	170	70
88-052	42	30.0- 40.0	50	0.60	200	20	15	210	24	15	N	N	ND	ND	100	ND	15	640	100
88-053	42	40.0- 50.0	20	0.52	100	5	10	30	10	10	N	N	ND	ND	100	ND	10	150	70
88-054	42	50.0- 60.0	20	0.32	100	15	5	25	6	10	N	N	ND	ND	100	ND	10	150	100
88-055	42	60.0- 70.0	20	1.24	200	N	7	20	8	10	N	L	0.15	5.6	150	1.5	L	75	50
88-056	42	70.0- 80.0	20	1.08	150	N	5	15	8	7	N	L	0.20	5.1	70	1.0	L	40	50

Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
88-057	42	80.0- 90.0	15	0.92	200	N	5	20	8	10	N	L	0.15	5.6	100	1.0	N	50	70
88-058	42	90.0-100.0	20	1.24	500	N	5	20	10	7	N	N	0.15	3.5	200	1.5	L	60	50
88-059	42	100.0-110.0	15	2.28	300	N	5	35	14	10	N	L	0.25	4.0	150	1.5	L	55	50
88-060	42	110.0-120.0	20	3.30	1000	N	7	30	10	7	N	L	0.20	3.5	200	1.5	L	85	70
88-061	42	120.0-130.0	20	0.26	1500	N	L	10	2	10	N	L	0.05	3.8	150	1.5	L	35	100
88-062	42	130.0-140.0	10	0.16	1000	N	L	10	2	5	N	100	0.10	3.8	100	1.0	N	30	70
88-063	42	140.0-150.0	10	0.44	1000	N	L	15	2	7	N	L	0.10	3.8	100	1.0	L	35	100
88-064	42	150.0-160.0	L	0.74	150	N	N	15	10	N	N	N	0.10	1.6	20	<0.50	L	45	50
88-065	42	160.0-170.0	L	0.54	150	N	L	45	4	N	N	N	<0.05	3.1	10	<0.50	N	90	50
88-066	42	170.0-180.0	10	0.54	200	N	L	45	12	N	N	N	0.10	3.7	20	<0.50	N	90	30
88-067	42	180.0-190.0	10	2.78	150	N	L	50	8	5	N	N	0.15	3.3	50	1.0	L	30	1000
88-068	42	190.0-200.0	7	1.20	150	N	L	15	10	L	N	N	0.10	3.4	30	0.50	N	30	100
88-069	42	200.0-210.0	5	1.24	50	N	L	15	6	L	N	N	0.20	3.0	20	1.0	N	30	100
88-070	42	210.0-220.0	10	3.88	100	N	5	20	8	5	N	N	0.30	4.0	50	1.0	L	30	50
88-071	42	220.0-230.0	15	0.58	500	N	N	15	6	L	N	N	0.15	2.6	70	1.0	L	40	70
88-072	42	230.0-240.0	10	0.66	150	N	N	10	6	L	N	N	0.10	1.9	50	1.0	N	25	30
88-073	42	240.0-250.0	20	1.20	200	N	L	10	8	5	N	N	<0.05	2.7	50	0.50	L	25	70
88-074	42	250.0-260.0	20	0.9	300	N	L	10	8	5	N	N	<0.05	2.4	50	<0.50	L	25	100
88-075	42	260.0-270.0	15	0.70	200	N	L	10	8	L	N	N	<0.05	1.9	50	<0.50	L	20	70
88-076	42	270.0-280.0	20	0.86	300	N	L	10	8	5	N	N	<0.05	2.4	50	<0.50	L	50	200
88-077	42	280.0-290.0	20	0.64	300	N	L	10	6	5	N	N	<0.05	2.3	70	<0.50	L	25	150
88-078	42	290.0-300.0	15	0.70	200	5	L	10	8	5	N	N	<0.05	2.3	50	<0.50	L	35	100
88-079	42	300.0-310.0	20	0.42	200	5	5	10	6	5	N	N	<0.05	1.9	70	<0.50	L	30	100
88-080	42	310.0-320.0	20	0.54	200	L	L	10	4	L	N	N	<0.05	2.1	70	<0.50	N	30	70
88-081	42	320.0-330.0	20	0.24	300	N	L	10	4	5	N	N	<0.05	2.1	100	<0.50	L	30	200
88-082	42	330.0-340.0	20	0.16	300	N	L	10	4	5	N	N	<0.05	2.0	50	<0.50	L	30	150
88-083	42	340.0-350.0	20	0.12	200	N	L	10	2	5	N	N	<0.05	1.9	70	<0.50	L	30	50
88-084	42	350.0-360.0	15	0.24	300	N	L	10	4	5	N	N	<0.05	1.9	70	<0.50	L	30	50
88-085	42	360.0-370.0	15	0.78	200	5	L	10	8	5	N	N	<0.05	2.4	70	<0.50	L	30	150
88-086	42	370.0-380.0	20	2.30	300	10	L	10	4	5	N	N	0.05	2.9	70	<0.50	L	40	100
88-087	42	380.0-390.0	15	0.34	300	5	L	10	4	L	N	N	<0-05	2.8	50	<0.50	L	20	50
88-088	34	194.0-198.0	L	<0.2	2000	N	L	G1000	24	N	N	N	54.0	0.35	20	<0.50	N	870	15
88-105	34	190.0-194.0	15	0.10	200	L	5	5	4	5	N	N	<0.05	1.5	70	0.50	L	60	150
88-106	34	198.0-200.0	15	0.58	300	L	5	15	2	5	N	N	0.10	1.3	70	1.0	N	80	70
88-107	34	200.0-204.5	10	0.46	1000	N	5	40	2	5	N	N	0.80	1.3	100	0.50	L	220	30
88-108	34	204.5-210.0	15	0.46	1500	N	7	50	2	5	N	N	0.65	1.7	50	0.50	L	220	20
88-109	34	210.0-220.0	10	0.12	1000	5	7	230	N	7	N	N	0.30	1.3	100	0.50	L	130	150
88-110	34	220.0-224.0	20	0.16	150	5	10	35	2	7	N	N	0.25	1.9	150	1.5	L	90	70
88-111	34	224.0-230.0	15	0.10	150	20	7	15	2	7	N	N	0.35	1.4	150	1.5	L	150	100
88-112	34	230.0-239.5	L	0.10	300	N	L	350	4	N	N	N	0.15	0.50	10	0.50	N	280	10
88-113	34	239.5-244.0	5	0.20	2000	N	L	G1000	2	N	N	N	1.7	1.1	15	<0.50	N	G2000	N
88-114	34	244.0-257.5	L	0.08	500	N	N	G1000	4	N	N	N	1.4	0.25	L	<0.50	N	G2000	N
88-115	34	257.5-260.0	10	0.58	2000	N	5	340	16	5	N	N	0.25	1.9	30	<0.50	L	580	150
88-116	34	260.0-268.0	5	0.10	3000	N	L	G1000	4	N	N	N	3.5	1.0	15	<0.50	N	G2000	10
88-117	34	268.0-273.0	10	0.12	500	N	7	410	6	5	10	N	0.15	1.7	50	<0.50	L	400	50
88-118	34	237.0-277.5	L	0.06	1000	N	L	620	2	N	N	N	2.0	1.1	10	<0.50	N	920	10
88-119	34	277.5-282.0	20	0.10	1500	L	15	G1000	4	15	N	N	0.15	2.8	100	1.5	L	310	50
88-120	34	282.0-301.0	20	0.36	5000	L	30	190	6	15	N	N	0.20	3.2	200	1.5	10	1200	50
88-121	34	301.0-312.0	10	0.58	1500	7	10	30	10	7	N	N	0.15	2.6	150	3.5	L	170	30
88-122	28	10.0- 20.0	10	0.20	700	N	20	170	4	7	N	N	0.10	2.1	100	2.0	N	220	50

Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
88-123	28	20.0- 30.0	20	0.82	300	N	L	10	6	10	N	N	<0.05	2.8	150	1.0	L	130	100
88-124	28	30.0- 40.0	7	0.88	150	7	L	25	10	L	N	N	0.25	3.7	30	0.50	N	130	30
88-125	28	40.0- 50.0	10	0.42	70	N	5	25	4	L	N	N	0.20	4.4	30	<0.50	N	55	50
88-126	28	50.0- 55.0	10	0.80	700	L	L	45	10	L	N	N	0.25	3.6	100	0.50	L	370	70
88-127	28	55.0- 60.0	5	0.68	70	N	L	50	8	L	N	N	0.10	6.0	30	0.50	L	25	70
88-128	28	60.0- 65.0	10	0.46	150	N	L	25	4	L	N	N	0.05	6.3	20	<0.50	L	25	30
88-129	28	65.0- 70.0	7	0.36	150	N	L	15	4	L	N	N	<0.05	4.7	30	<0.50	N	70	50
88-130	28	70.0- 80.0	10	0.38	300	N	L	15	4	L	N	N	0.05	3.9	30	<0.50	L	370	70
88-131	28	80.0- 90.0	7	0.40	100	5	5	10	6	L	N	N	0.15	4.4	30	<0.50	N	100	30
88-132	28	90.0-100.0	15	0.36	200	10	L	5	6	L	N	N	<0.05	3.9	100	<0.50	L	165	200
88-133	28	100.0-110.0	20	2.52	150	7	L	10	4	L	N	N	0.05	3.9	70	<0.50	L	15	100
88-134	28	110.0-120.0	15	0.22	500	L	5	110	4	5	N	N	0.05	2.3	70	<0.50	L	970	70
88-135	28	120.0-124.0	15	7.6	700	7	7	15	14	10	N	N	0.25	7.1	150	1.0	L	60	30
88-136	28	239.0-246.0	30	0.02	3000	N	70	30	N	30	N	200	<0.05	1.3	300	0.50	15	130	70
88-137	28	246.0-250.0	30	<0.02	2000	N	70	10	4	20	N	200	0.15	2.4	300	1.0	10	80	50
88-138	28	250.0-260.0	30	0.06	3000	N	50	310	2	20	N	L	0.30	1.6	300	0.50	15	890	50
88-139	28	260.0-270.0	30	0.08	2000	N	50	10	2	15	N	L	<0.05	1.2	200	0.50	10	110	70
88-140	28	270.0-280.0	30	0.14	3000	N	50	25	N	15	N	100	0.15	2.4	200	0.50	10	100	50
88-141	28	280.0-290.0	30	0.06	2000	N	30	5	N	20	N	200	0.45	1.2	200	<0.50	15	110	50
88-142	28	290.0-300.0	30	0.08	3000	N	50	10	2	20	N	L	0.80	1.9	300	<0.50	15	80	50
88-143	28	300.0-310.0	30	0.16	1500	N	70	50	N	15	N	N	0.55	2.7	200	1.0	10	140	50
88-144	28	310.0-320.0	20	0.32	3000	N	50	270	4	15	N	N	0.60	2.1	200	<0.50	10	380	50
88-145	28	320.0-330.0	20	0.08	1500	N	70	20	N	20	N	N	0.60	2.5	200	<0.50	10	80	50
88-146	28	330.0-340.0	20	0.08	1000	N	30	60	4	15	N	L	0.80	2.9	200	0.50	10	110	50
88-147	28	340.0-349.0	20	0.08	1500	N	50	20	N	20	N	N	0.70	1.5	300	<0.50	15	50	50
88-148	28	359.0-360.0	15	0.06	2000	N	50	100	N	15	N	L	0.55	1.0	200	<0.50	10	70	50
88-149	28	360.0-370.0	30	0.06	2000	N	30	15	2	20	N	L	0.35	1.9	200	2.5	10	130	70
88-150	28	370.0-377.0	30	0.02	1500	N	50	60	2	20	N	L	0.30	1.4	300	<0.50	15	150	50
88-151	28	385.0-390.0	30	0.02	2000	N	50	10	2	20	N	L	0.05	1.2	300	<0.50	20	90	70
88-152	28	390.0-400.0	30	0.06	1500	N	50	95	N	20	N	100	0.40	1.4	150	<0.50	15	140	50
88-153	28	400.0-402.0	30	<0.02	2000	N	70	5	2	20	N	100	0.10	1.2	200	<0.50	20	80	70
88-183	42	390.0-400.0	10	0.06	1500	N	L	95	2	L	N	N	0.50	2.0	30	<0.50	L	190	30
88-184	42	400.0-410.0	15	0.42	700	7	L	60	2	L	N	N	0.25	3.5	20	0.50	N	50	70
88-185	42	410.0-420.0	15	0.08	1500	N	L	550	2	L	N	N	2.0	2.9	20	0.50	L	830	70
88-186	42	420.0-430.0	7	0.12	3000	N	L	700	4	N	N	N	2.1	1.1	30	<0.50	N	890	30
88-187	42	430.0-440.0	7	<0.02	5000	N	L	1000	4	N	N	N	6.0	0.70	20	<0.50	N	1600	N
88-188	42	440.0-450.0	10	0.24	1500	N	L	1000	4	N	N	N	8.4	1.4	20	<0.50	N	2000	30
88-189	42	450.0-460.0	15	0.06	500	L	5	25	4	5	N	N	0.05	3.2	30	<0.50	L	75	50
88-190	42	460.0-470.0	15	0.06	300	5	L	10	6	L	N	N	<0.05	2.5	50	0.50	N	95	70
88-191	42	470.0-480.0	10	0.06	500	5	L	20	4	5	N	N	0.10	2.0	30	1.0	L	80	50
88-192	42	480.0-490.0	7	0.10	500	7	5	10	4	L	N	N	0.15	2.7	30	0.50	L	45	30
88-193	42	490.0-500.0	7	0.10	700	5	L	20	4	L	N	N	0.15	2.5	30	<0.50	L	110	30
88-194	42	500.0-510.0	10	0.10	500	5	L	5	N	L	N	N	0.10	2.5	30	<0.50	L	45	30
88-195	42	510.0-520.0	5	0.16	200	L	5	10	4	5	N	N	0.15	1.5	50	1.0	N	50	30
88-196	42	520.0-530.0	10	0.28	300	10	5	25	14	5	N	N	0.20	2.2	70	1.5	L	55	70
88-197	42	530.0-540.0	L	0.28	150	L	L	45	10	N	N	N	0.35	1.2	10	<0.50	N	65	15
88-198	42	540.0-550.0	7	0.08	300	5	L	55	4	L	N	N	0.20	1.5	50	0.50	N	120	70
88-204	42	552.0-560.0	L	0.58	200	N	L	160	4	N	N	N	0.50	1.1	L	<0.50	N	350	N
88-205	42	560.0-570.0	10	0.34	1500	N	5	60	2	10	N	N	0.45	2.3	100	0.50	L	240	20

Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
88-206	42	570.0-580.0	15	0.18	1500	N	7	30	4	15	N	N	0.25	1.7	100	<0.50	L	75	30
88-248	Friday	0.0- 10.0	10	1.14	150	7	L	G1000	20	7	N	N	6.0	1.9	30	1.5	N	90	100
88-249	Friday	10.0- 20.0	L	1.66	100	5	L	G1000	14	L	N	N	3.0	0.80	10	<0.50	N	160	20
88-250	Friday	20.0- 30.0	5	1.20	300	N	L	G1000	4	5	N	N	3.1	0.75	30	<0.50	N	730	30
88-251	Friday	30.0- 36.0	L	0.72	150	N	L	830	N	L	N	N	0.55	0.75	20	<0.50	N	200	30
88-252	Friday	36.0- 40.0	L	0.78	70	N	L	310	N	N	N	N	0.80	0.50	10	1.0	N	190	10
88-253	Friday	40.0- 50.0	5	1.24	300	N	L	500	N	L	N	N	1.4	1.3	20	5.0	N	120	15
88-254	Friday	50.0- 60.0	5	2.18	1000	N	L	320	6	L	N	N	1.4	1.5	20	1.5	N	260	30
88-255	Friday	60.0- 70.0	7	4.50	150	N	7	30	18	7	N	N	0.10	3.4	50	1.5	L	40	30
88-256	Friday	70.0- 80.0	15	2.12	100	L	5	15	12	7	N	N	<0.05	2.9	50	1.0	N	30	100
88-257	Friday	80.0- 90.0	10	2.60	500	L	7	25	24	7	N	N	0.10	5.0	50	1.0	L	100	30
88-258	Friday	90.0- 98.0	7	0.50	700	N	7	50	4	7	N	N	0.20	2.0	50	1.0	L	240	30
88-259	Friday	98.0-100.6	L	3.95	200	N	L	300	68	N	N	N	1.4	11.8	10	<0.50	N	500	L
88-277	28	124.0-130.5	15	0.14	1000	N	5	80	2	15	N	L	0.15	5.4	70	2.0	L	370	30
88-278	28	130.5-143.0	10	0.16	300	N	5	600	N	10	N	N	0.30	2.2	50	1.5	L	590	30
88-279	28	143.0-153.0	5	0.16	300	N	5	820	2	L	N	N	1.6	0.90	30	1.0	N	400	30
88-280	28	153.0-160.0	L	<0.20	700	N	L	660	2	N	N	N	1.2	0.15	20	<0.50	N	880	N
88-281	28	160.0-162.0	20	0.42	1000	N	10	730	N	15	N	100	0.25	3.6	100	2.0	15	700	50
88-282	28	162.0-172.0	5	0.20	1000	N	5	G1000	2	7	N	N	2.3	0.70	50	0.50	L	1200	20
88-283	28	172.0-187.0	L	<0.20	700	N	L	960	2	N	N	N	2.7	1.1	15	<0.50	N	890	20
88-284	28	187.0-195.0	15	0.50	300	N	10	75	4	7	N	N	0.15	2.4	50	0.50	L	170	70
88-285	28	195.0-205.0	10	0.60	500	N	20	20	4	15	N	N	0.60	2.5	50	2.5	L	80	50
88-286	28	205.0-215.5	15	0.18	1500	N	20	20	2	15	N	N	0.50	2.2	70	2.5	L	110	50
88-287	28	215.5-222.0	10	0.08	5000	N	7	40	N	7	N	L	0.50	0.20	50	1.0	L	170	20
88-288	28	222.0-232.0	10	0.16	1500	N	7	50	2	5	N	N	0.60	1.6	50	1.0	L	290	30
88-289	28	232.0-239.0	10	4.70	2000	N	10	30	34	10	N	L	0.60	15.4	70	2.0	L	130	20
28555	34	194.0-198.0	10	0.22	1500	5	5	900	10	L	N	N	7.8	0.80	30	ND	L	680	70
28556	34	200.0-204.5	10	0.20	1000	L	7	200	N	5	N	N	1.5	1.2	50	ND	L	420	20
28557	34	210.0-215.0	7	0.12	300	L	L	80	N	L	N	N	0.05	1.1	30	ND	N	55	30
28558	34	215.0-220.0	7	0.12	300	N	5	290	N	5	N	N	0.20	1.0	30	ND	L	120	150
28559	34	224.0-228.0	7	0.14	200	L	5	340	N	L	N	N	0.15	1.1	30	ND	L	480	20
28560	34	228.0-230.0	L	0.08	300	N	L	320	N	N	N	N	<0.05	0.65	15	ND	N	460	30
28561	34	230.0-235.0	L	0.06	150	N	L	270	N	N	N	N	0.05	0.50	10	ND	N	280	15
28562	34	235.0-240.0	L	0.06	200	N	L	220	N	N	N	N	0.10	0.50	10	ND	N	580	30
28563	34	240.0-243.0	5	0.20	1000	N	L	G1000	N	N	N	N	0.95	0.60	30	ND	N	G2000	L
28564	34	243.0-247.0	5	0.18	200	N	L	900	N	N	N	N	1.4	0.75	10	ND	N	G2000	30
28565	34	247.0-250.0	5	0.26	300	N	L	900	N	N	N	N	0.50	1.0	10	ND	N	G2000	L
28566	34	250.0-257.5	5	0.16	700	N	L	G1000	N	L	N	N	3.1	0.40	10	ND	L	G2000	N
28567	34	257.5-258.5	N	<0.02	50	N	L	G1000	N	N	N	N	1.2	0.15	L	ND	N	G2000	N
28568	34	258.5-260.0	7	0.24	500	N	5	560	6	L	N	N	0.60	1.6	30	ND	L	560	50
28569	34	260.0-265.0	L	0.08	700	N	5	G1000	2	N	N	N	2.3	0.90	10	ND	N	G2000	N
28570	34	265.0-268.0	5	0.04	1500	5	5	G1000	N	N	N	N	2.5	0.80	10	ND	N	G2000	30
28571	34	268.0-270.0	7	0.14	300	N	5	230	10	5	N	N	<0.05	2.0	50	ND	L	150	50
28572	34	270.0-273.0	10	0.04	300	N	7	660	4	5	N	N	<0.05	1.6	50	ND	L	140	70
28573	34	273.0-277.5	L	0.04	500	N	5	600	N	N	N	N	1.8	1.0	10	ND	L	1100	N
28574	34	280.0-282.0	5	0.04	500	N	10	1000	N	7	N	N	1.6	1.3	50	ND	N	1100	20
28575	34	285.5-288.0	20	0.38	1000	L	30	80	N	15	N	N	0.35	2.8	70	ND	L	550	50
28576	34	291.0-293.0	10	0.38	700	N	7	20	10	7	N	N	0.10	2.0	50	ND	L	120	30
28577	34	293.0-298.0	15	0.28	5000	N	10	180	6	10	N	N	0.20	1.4	100	ND	10	1900	50

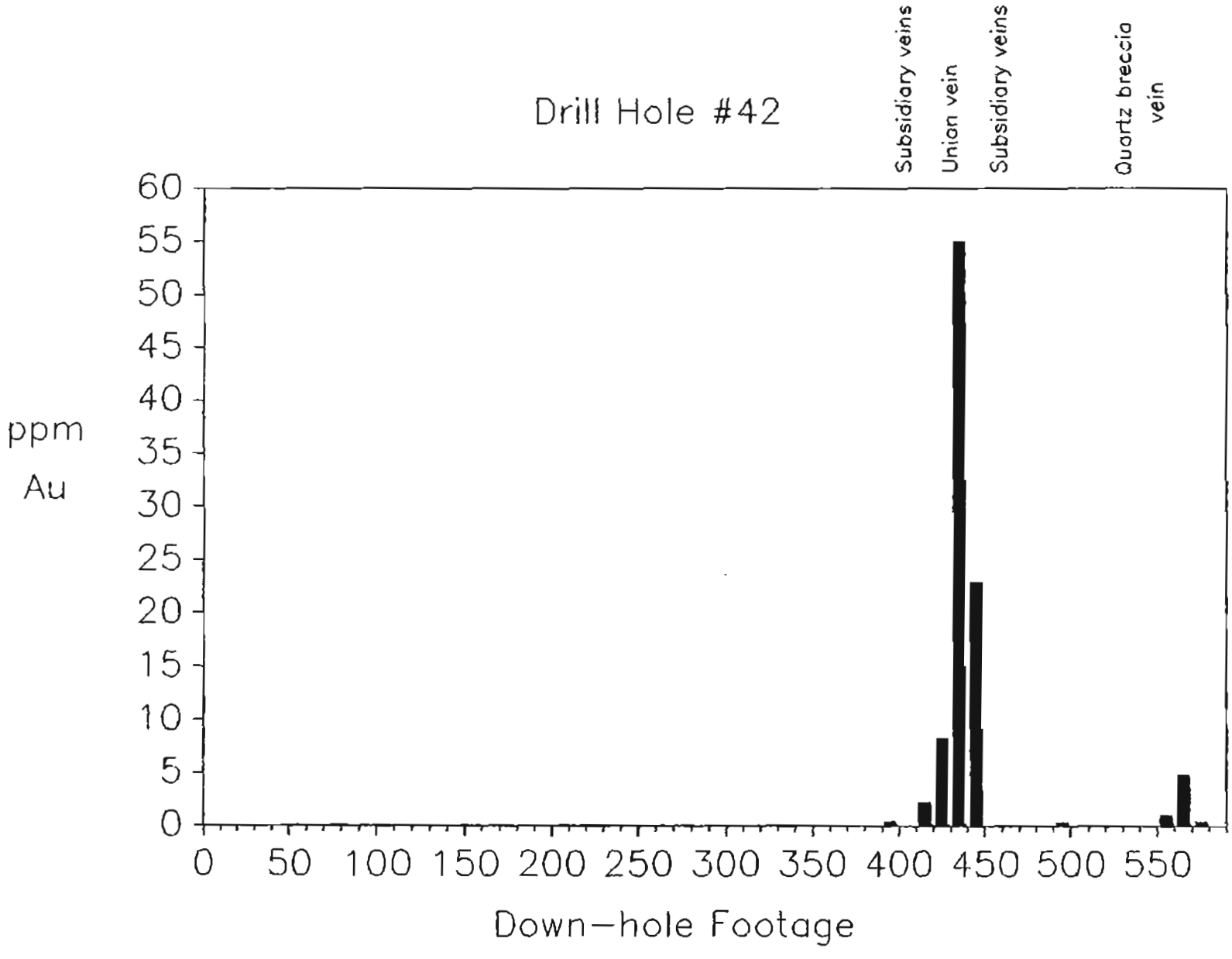
Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
28578	34	298.0-300.0	7	0.38	G5000	N	7	170	6	5	N	N	0.25	1.2	50	ND	L	820	30
28579	35	187.5-189.5	15	0.20	200	N	5	10	4	L	N	L	<0.05	3.9	30	ND	L	35	30
28580	35	202.0-204.0	10	0.34	100	N	L	15	8	L	N	N	<0.05	2.4	30	ND	L	60	100
28581	35	228.0-231.5	10	1.54	200	N	5	10	4	L	N	N	<0.05	2.0	30	ND	L	45	30
28582	35	246.0-249.0	10	0.76	500	N	L	65	6	L	N	N	0.15	2.0	30	ND	L	120	70
28583	35	251.0-253.5	10	1.22	200	N	5	45	10	5	N	N	0.20	2.2	50	ND	L	95	30
28584	35	253.5-255.5	5	0.36	1500	N	L	G1000	480	N	N	N	20.	0.20	30	ND	N	G2000	N
28585	35	255.5-256.5	15	<0.02	300	N	L	25	4	L	N	N	0.30	1.1	30	ND	L	110	50
28586	35	263.0-265.0	10	0.02	150	7	5	85	4	5	N	N	0.05	1.2	30	ND	L	130	50
28587	35	285.0-287.0	5	0.02	300	N	5	360	4	L	N	N	0.95	0.95	30	ND	N	860	30
28588	35	288.5-291.0	5	0.40	1000	N	5	G1000	10	N	N	N	3.0	0.50	30	ND	N	G2000	15
28589	35	292.5-296.0	5	0.02	700	N	L	380	2	L	N	N	1.1	1.0	30	ND	N	1400	30
28590	35	296.5-302.0	10	0.06	1000	L	5	350	4	5	N	N	0.45	1.3	30	ND	L	160	50
28591	35	302.0-306.0	5	0.08	1000	L	5	620	4	L	N	N	2.6	1.2	30	ND	L	550	70
28592	35	306.0-308.5	5	0.10	700	L	5	250	4	5	N	N	1.2	1.2	30	ND	L	170	20
28593	35	308.5-312.0	7	0.06	1000	L	5	410	2	L	N	N	1.2	1.0	50	ND	N	560	50
28594	35	312.0-317.0	L	0.16	300	N	L	740	N	N	N	N	0.80	0.60	20	ND	N	1900	15
28595	35	336.0-341.0	10	0.10	200	N	5	190	N	L	N	N	0.25	1.4	30	ND	L	170	50
28596	35	347.0-348.5	5	0.16	300	N	L	400	N	L	N	N	0.45	0.7	20	ND	L	1100	20
28597	35	348.5-349.0	5	0.08	300	N	L	200	N	L	N	N	0.50	0.75	10	ND	N	120	10
28598	35	349.0-350.5	L	0.40	500	N	L	760	N	N	N	N	0.75	0.35	L	ND	N	840	10
28599	35	350.5-354.0	L	0.40	G5000	N	5	480	N	L	N	N	3.0	0.85	15	ND	N	1200	15
28600	35	354.0-358.0	5	0.02	5000	N	L	420	N	L	N	N	1.0	1.0	20	ND	N	1700	20
28601	35	358.0-362.0	L	0.18	1000	N	L	300	N	N	N	N	1.0	1.0	L	ND	N	1100	L
28602	35	364.5-367.0	7	0.08	G5000	N	5	70	4	7	N	N	1.4	1.2	150	ND	N	200	20
28603	35	368.0-372.0	5	0.04	5000	N	L	55	N	L	N	300	0.30	0.35	15	ND	N	280	10
28604	35	372.0-375.0	5	0.08	5000	N	5	40	N	L	N	200	0.25	0.45	30	ND	L	G2000	15
28605	35	343.0-347.0	L	0.08	300	N	L	360	N	N	N	N	3.2	0.90	10	ND	15	320	15
28629	37	271.0-274.0	15	0.06	200	7	7	5	N	5	N	N	0.20	1.0	50	ND	N	30	50
28630	37	274.0-279.0	7	0.04	300	5	7	20	N	L	N	N	0.40	1.2	30	ND	L	70	30
28631	37	279.0-280.0	5	0.06	5000	N	L	85	N	L	N	N	1.1	0.50	30	ND	L	190	15
28632	37	280.0-284.0	L	0.04	1000	N	L	420	N	N	N	N	1.8	0.30	15	ND	L	620	L
28633	37	284.0-288.0	L	1.20	G5000	N	L	540	4	L	N	N	4.7	0.25	30	ND	N	890	L
28634	37	288.0-290.0	L	0.08	1000	N	L	G1000	N	N	N	N	3.1	0.20	15	ND	L	G2000	L
28635	37	290.0-295.0	L	1.20	700	N	L	G1000	N	N	N	N	5.6	0.35	15	ND	N	G2000	L
28636	37	295.0-300.0	10	0.16	500	20	10	50	N	15	N	N	1.0	2.1	100	ND	L	65	30
28637	37	300.0-302.5	15	0.18	700	L	10	140	4	10	10	N	0.15	1.8	70	ND	L	110	20
28638	37	302.5-305.0	20	0.12	1000	N	20	25	N	15	N	L	<0.05	0.75	100	ND	10	70	30
28639	38	133.0-137.0	10	1.00	100	5	L	N	N	L	N	N	<0.05	0.50	30	ND	N	10	70
28640	38	137.0-138.0	10	0.34	70	5	5	N	N	L	N	N	<0.05	0.60	30	ND	N	5	70
28641	38	141.5-143.0	7	0.80	70	15	L	N	N	L	N	N	0.15	0.65	20	ND	N	5	30
28642	38	143.0-143.5	20	0.40	70	N	5	N	N	5	N	N	<0.05	0.85	50	ND	L	20	100
28643	38	170.7-173.0	15	0.68	100	10	5	10	N	5	N	N	0.45	0.90	50	ND	L	10	100
28644	38	179.0-182.0	10	0.80	50	10	L	10	N	L	N	N	0.05	0.70	30	ND	N	10	50
28645	38	184.0-185.5	10	0.28	100	5	L	N	N	L	N	N	<0.05	0.75	30	ND	N	15	30
28646	38	197.0-199.0	15	0.36	100	5	L	260	N	N	N	N	<0.05	0.65	20	ND	N	850	20
28647	38	204.0-209.0	10	0.22	100	7	5	20	2	5	N	N	<0.05	0.90	50	ND	N	25	70
28650	38	214.0-217.0	10	0.20	150	L	5	15	N	5	N	N	0.15	0.50	50	ND	L	60	50
28651	38	229.5-234.0	5	0.14	200	L	L	320	N	L	N	N	0.55	2.4	30	ND	N	550	15

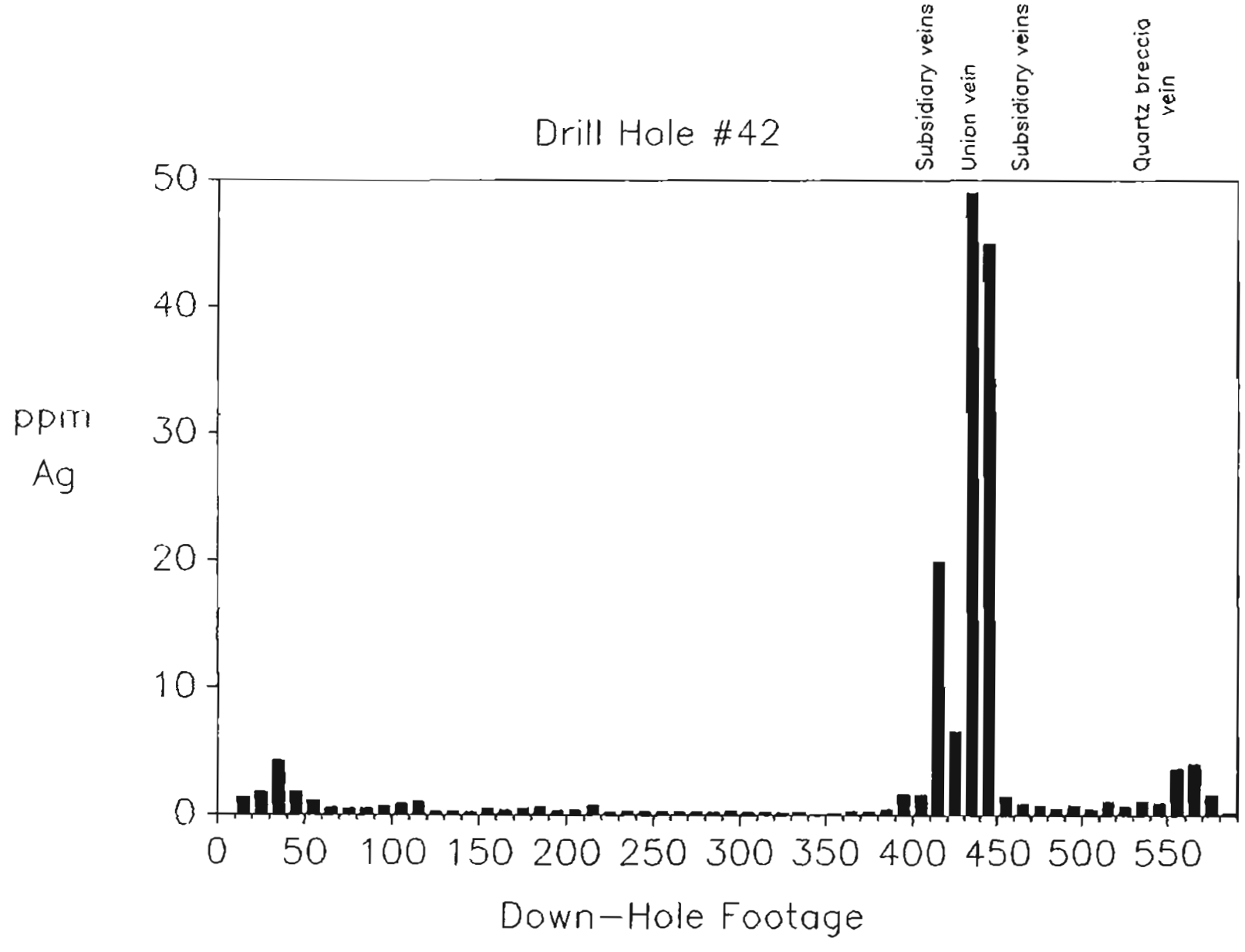
Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
28652	38	234.0-237.0	N	0.44	300	N	L	360	N	N	N	N	<0.05	3.1	10	ND	N	600	10
28653	38	237.0-239.0	7	0.08	1500	N	10	35	N	10	N	N	<0.05	4.2	30	ND	L	45	30
28654	38	243.0-245.0	7	0.12	1500	N	7	20	N	7	N	N	<0.05	4.1	70	ND	L	55	30
28655	38	246.0-248.0	L	0.12	700	N	5	410	N	L	N	N	<0.05	4.6	20	ND	N	85	20
28656	38	257.0-259.0	10	0.08	300	N	10	350	N	10	N	N	<0.05	1.8	100	ND	10	630	30
28657	39	562.5-565.5	7	0.20	1500	7	5	510	2	7	N	N	<0.05	1.4	50	ND	N	640	30
28658	39	565.5-568.0	5	0.20	500	7	7	380	2	7	N	N	<0.05	1.7	50	ND	L	640	30
28659	39	568.0-570.0	L	0.10	300	L	7	240	N	5	N	N	<0.05	1.5	30	ND	N	700	20
28660	39	570.0-574.0	5	0.06	200	5	L	45	N	L	N	N	<0.05	2.3	30	ND	L	200	20
28661	39	574.0-576.5	5	0.06	500	N	L	85	N	L	N	N	<0.05	1.5	50	ND	L	390	20
28662	39	576.5-578.0	5	0.04	200	N	L	55	N	N	N	N	0.05	2.7	10	ND	N	300	L
28663	39	578.0-582.0	5	<0.20	1500	7	7	170	4	5	N	N	<0.05	1.3	50	ND	L	520	15
28664	39	582.0-585.0	L	0.04	200	N	L	35	N	N	N	N	0.20	2.6	10	ND	N	270	L
28665	39	585.0-587.0	5	0.08	500	N	L	50	N	N	N	N	0.05	1.5	15	ND	N	560	L
28666	39	587.0-588.5	5	0.02	700	N	L	10	N	L	N	N	0.10	2.1	20	ND	L	85	10
28667	39	588.5-593.0	7	0.14	1500	N	5	65	N	7	N	N	<0.05	1.6	50	ND	L	190	30
28668	39	593.0-596.0	10	0.44	1500	N	7	45	4	15	N	N	0.05	0.70	100	ND	10	200	30
28669	39	596.0-599.0	15	N	2000	N	7	170	12	10	N	N	0.35	0.60	100	ND	10	720	30
28670	39	599.0-601.0	10	0.28	1000	N	5	15	4	10	N	N	0.15	0.50	100	ND	10	170	30
28671	39	601.0-603.0	15	0.12	700	N	5	15	N	7	N	N	<0.05	0.20	70	ND	L	150	30
28672	39	603.0-606.0	L	<0.02	200	N	L	20	N	N	N	N	0.70	0.50	10	ND	N	70	L
28673	39	606.0-607.5	N	<0.02	300	N	L	5	N	N	N	N	0.10	1.2	10	ND	N	60	L
28674	39	607.5-611.0	5	0.10	1000	N	5	35	N	5	N	N	0.20	0.75	50	ND	L	150	20
28675	39	611.0-613.0	L	0.06	700	N	L	10	N	L	N	N	0.35	0.80	30	ND	L	70	15
28676	39	613.0-615.0	5	0.04	500	N	5	5	N	L	N	N	0.80	0.35	30	ND	N	60	15
28677	39	616.0-620.0	L	0.04	700	N	L	10	2	L	N	N	3.5	0.85	30	ND	N	90	15
28707	41	38.0- 39.5	7	0.28	20	N	L	30	2	N	N	N	0.90	0.85	10	ND	N	10	30
28708	41	39.5- 43.0	10	0.48	50	N	L	5	4	L	N	N	1.2	0.90	L	ND	L	10	50
28709	41	43.0- 46.0	10	0.50	30	N	5	N	2	L	N	N	1.5	1.0	L	ND	L	5	100
28710	41	46.0- 49.0	15	0.58	20	N	L	5	4	L	N	N	0.30	0.35	10	ND	L	5	70
28711	41	495.0-496.5	10	0.18	1500	5	5	230	2	L	N	N	0.05	0.45	30	ND	L	480	30
28712	41	505.5-508.5	15	0.18	G5000	5	7	100	2	5	N	N	5.1	0.70	50	ND	L	170	50
28713	41	511.5-512.5	5	0.16	5000	N	L	210	N	N	N	N	0.15	0.75	20	ND	N	570	10
28714	41	571.5-574.0	5	0.14	5000	N	L	65	N	N	N	N	0.05	0.90	10	ND	L	1000	L
28715	41	574.0-579.0	7	0.08	500	L	5	40	N	L	N	N	1.0	0.40	30	ND	L	290	30
28716	41	579.0-581.0	5	0.96	200	5	5	110	4	L	N	N	1.4	0.10	10	ND	L	110	20
28717	41	581.0-584.0	L	0.40	200	5	5	5	4	5	N	N	4.5	0.20	20	ND	L	45	30
28718	41	584.0-586.5	7	0.26	300	5	7	5	N	5	N	N	3.4	0.10	30	ND	N	40	50
28719	41	586.5-587.0	5	0.06	150	L	L	5	N	N	N	N	5.4	0.50	10	ND	N	30	30
28720	41	587.0-588.5	7	6.10	200	10	5	15	20	5	N	N	1.1	2.0	20	ND	L	60	30
28721	41	588.5-590.5	5	0.88	200	5	5	15	4	L	N	N	1.0	1.7	30	ND	L	70	50
28722	41	590.5-594.0	5	0.44	300	5	7	10	N	L	N	N	0.20	1.4	30	ND	N	110	30
28723	41	594.0-595.0	5	0.12	1000	N	5	10	2	L	N	N	0.05	0.50	20	ND	L	260	30
28724	41	595.0-598.0	L	0.06	300	L	L	20	N	L	N	N	0.05	0.35	10	ND	L	280	30
28725	41	598.0-600.0	L	0.04	500	N	7	65	N	L	N	N	0.15	0.50	30	ND	L	300	15
28726	41	600.0-603.0	5	0.04	700	L	5	15	N	5	N	N	0.25	0.50	30	ND	L	85	20
28727	41	603.0-605.0	L	0.04	200	N	L	140	N	N	N	N	0.20	0.70	L	ND	L	320	10
28728	41	605.0-607.0	L	0.10	700	N	L	340	N	N	N	N	0.10	0.30	15	ND	L	880	10
28729	41	607.0-608.0	5	0.10	700	N	L	65	N	L	N	N	0.35	0.50	50	ND	L	130	10

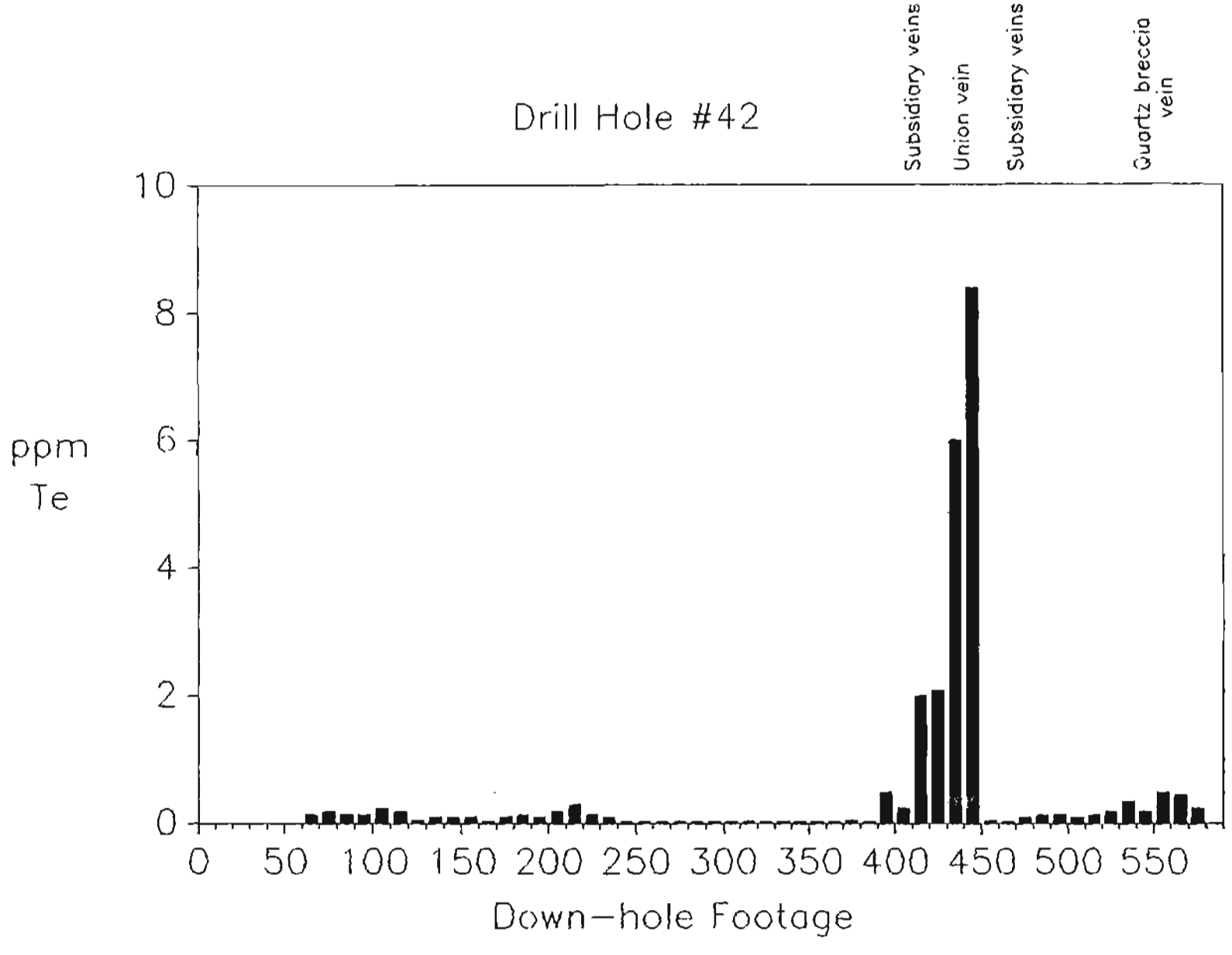
Sample No	Drill Hole	Footage	Ga	Hg	Mn	Mo	Ni	Pb	Sb	Sc	Sn	Sr	Te	Tl	V	W	Y	Zn	Zr
28730	41	608.0-610.0	15	0.12	700	N	10	65	N	10	N	N	0.75	2.4	100	ND	L	160	30
28732	42	393.0-396.0	5	0.08	3000	N	L	390	N	N	N	N	0.95	0.70	20	ND	N	630	10
28733	42	407.5-408.0	L	0.80	1000	5	L	970	6	N	N	N	2.3	1.1	20	ND	N	510	30
28734	42	408.0-410.5	10	0.16	2000	N	5	310	N	L	N	N	0.45	1.4	30	ND	L	500	30
28735	42	410.5-414.0	5	H	3000	N	5	G1000	10	N	N	N	4.8	0.65	30	ND	N	G2000	20
28736	42	414.0-415.0	10	0.12	1000	N	5	200	N	L	N	N	0.10	2.8	30	ND	L	1000	30
28737	42	422.0-425.0	5	<0.20	2000	5	L	G1000	2	N	N	N	1.9	0.60	30	ND	N	1100	L
28738	42	425.0-435.0	5	<0.20	2000	N	5	740	N	N	N	N	1.7	0.65	30	ND	N	890	50
28739	42	435.0-440.0	7	<0.20	G5000	N	N	G1000	4	N	N	N	4.5	0.20	20	ND	N	1900	N
28740	42	440.0-445.0	5	<0.20	2000	N	5	G1000	4	N	N	N	4.8	0.90	30	ND	N	G2000	10
28741	42	445.0-449.0	L	<0.20	1000	5	5	720	2	N	N	N	2.2	1.0	10	ND	N	870	10
28742	42	465.5-467.0	L	0.12	200	N	L	5	6	L	N	N	0.10	1.9	10	ND	N	60	30
28743	42	478.0-480.0	L	0.04	700	N	L	180	2	N	N	N	0.15	0.50	15	ND	N	440	15
28744	42	480.0-482.0	N	<0.02	700	N	L	150	2	N	N	N	0.35	0.35	10	ND	N	380	10
28745	42	484.0-485.0	5	0.12	200	L	5	15	4	L	N	N	0.05	2.2	30	ND	N	40	30
28746	42	493.0-494.0	L	<0.20	150	N	L	35	2	N	N	N	2.0	1.4	10	ND	N	25	20
28747	42	502.5-504.5	L	0.08	200	N	L	80	N	N	N	N	0.25	1.4	15	ND	L	140	30
28748	42	514.7-516.0	L	0.18	100	L	L	55	2	L	N	N	0.10	0.95	15	ND	N	100	30
28749	42	516.0-521.0	5	0.26	150	5	L	10	6	L	N	N	0.10	1.7	30	ND	L	45	50
28750	42	521.0-524.5	L	0.22	100	N	L	10	6	L	N	N	<0.05	1.2	20	ND	L	30	15
28752	42	527.0-529.0	L	0.18	200	N	L	360	6	N	N	N	0.15	0.90	20	ND	L	60	10
28754	42	532.0-537.0	L	0.28	100	N	L	15	6	N	N	N	1.6	0.80	L	ND	L	35	10
28755	42	537.0-542.0	5	0.14	200	L	5	30	4	L	N	N	0.10	1.4	30	ND	L	35	20
28756	42	542.0-545.5	5	0.22	300	L	5	25	4	5	N	N	0.35	1.2	50	ND	L	60	30
28757	42	547.5-549.5	5	0.20	200	10	5	10	4	L	N	N	0.15	1.7	30	ND	L	25	30
28758	42	549.5-552.0	N	0.12	200	N	L	850	2	N	N	N	0.80	0.60	20	ND	L	1500	10
28759	42	552.0-556.5	L	0.22	200	N	L	70	2	N	N	N	0.15	0.70	20	ND	N	330	L
28760	42	556.5-558.0	L	<0.20	200	N	5	100	2	N	N	N	0.60	0.15	L	ND	N	350	L
28761	42	558.0-563.0	5	0.20	1000	N	L	240	N	5	N	N	0.55	0.80	50	ND	L	890	20
28762	42	563.0-565.0	L	0.08	300	N	L	570	N	L	N	N	0.80	0.40	15	ND	L	1600	10
28763	42	565.0-568.0	7	0.06	1000	N	7	25	4	10	N	N	0.90	4.0	50	ND	L	75	30
28764	42	568.0-570.5	L	0.10	1000	N	L	470	N	L	N	N	0.85	0.95	30	ND	N	1300	15
28765	42	570.5-573.0	5	<0.20	1000	N	5	65	N	5	N	N	0.30	1.2	30	ND	N	120	15
28766	42	573.0-576.0	5	<0.20	1000	N	5	30	N	5	N	N	0.70	1.2	50	ND	L	70	20

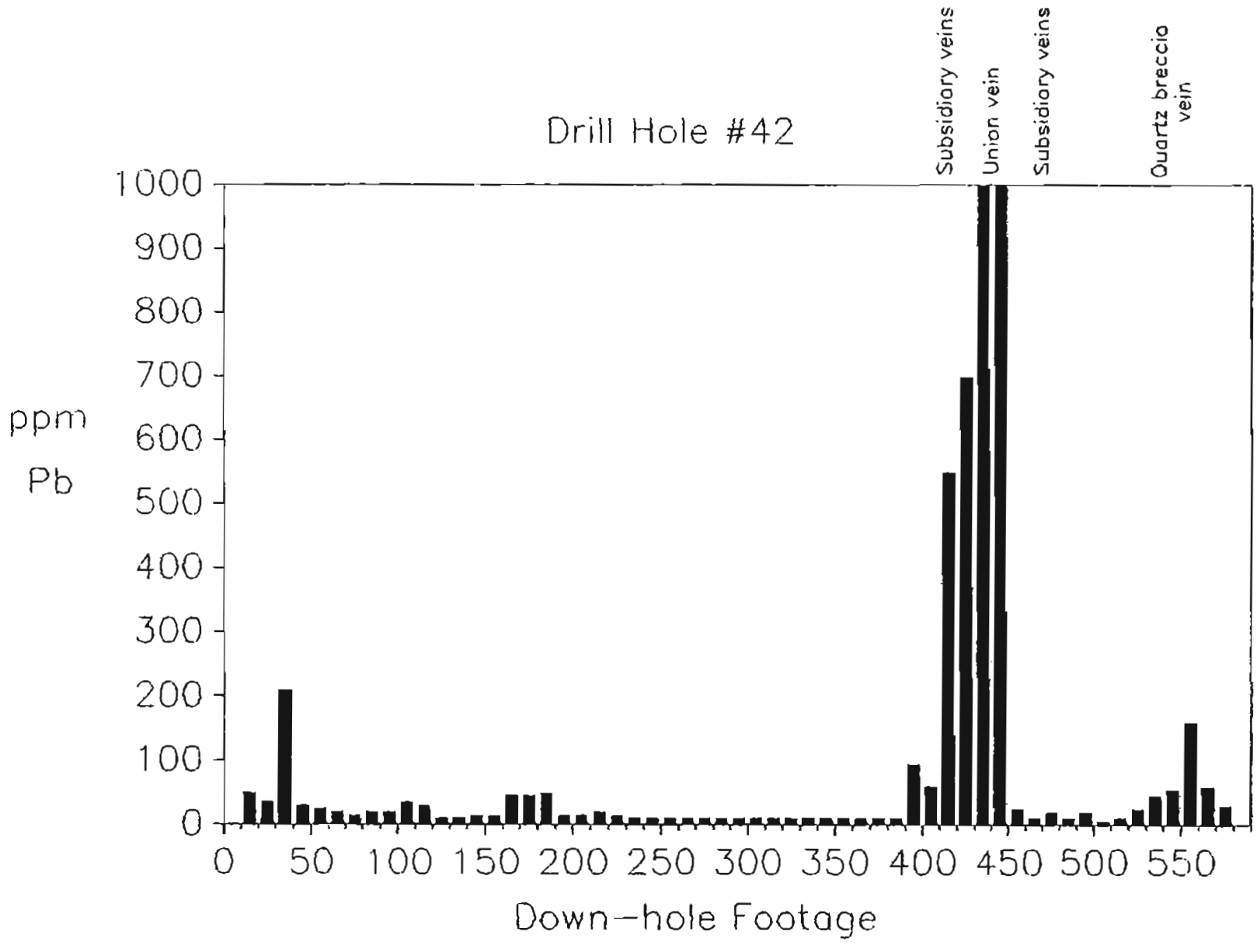
Appendix 2

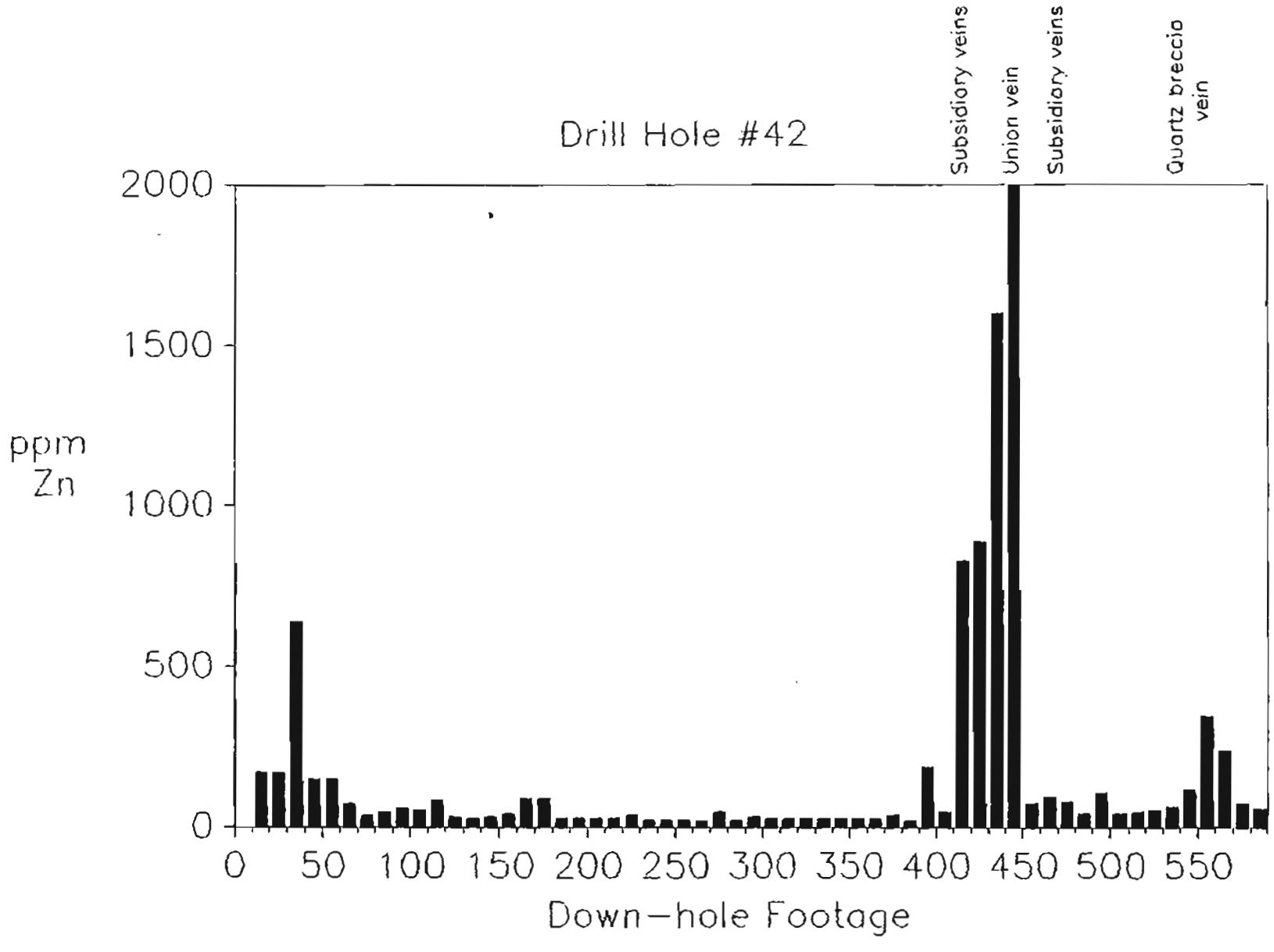
Bar diagrams showing the down-hole variations in the concentrations of elements in drill hole 42

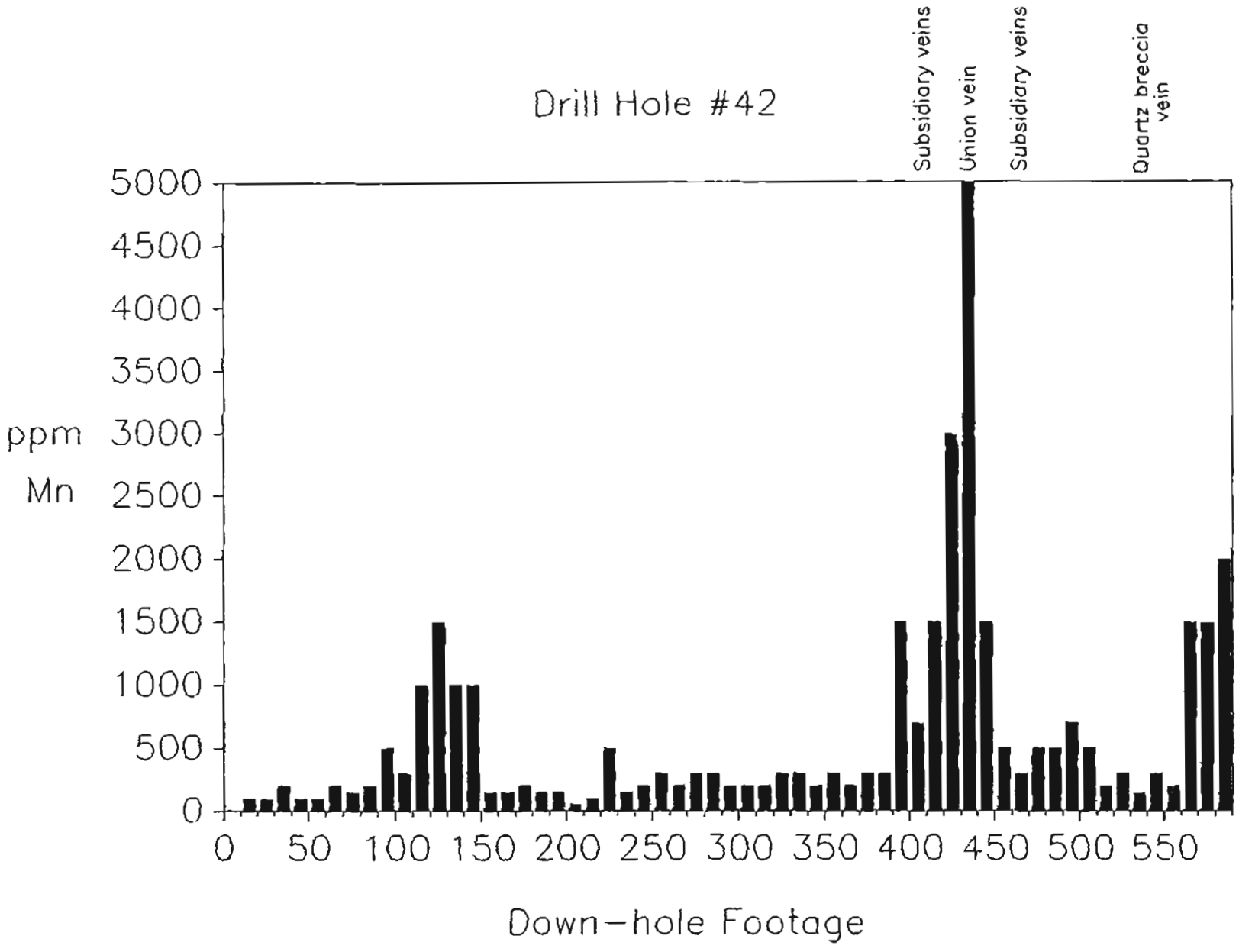

Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm
Au
60
55
50
45
40
35
30
25
20
15
10
5
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage

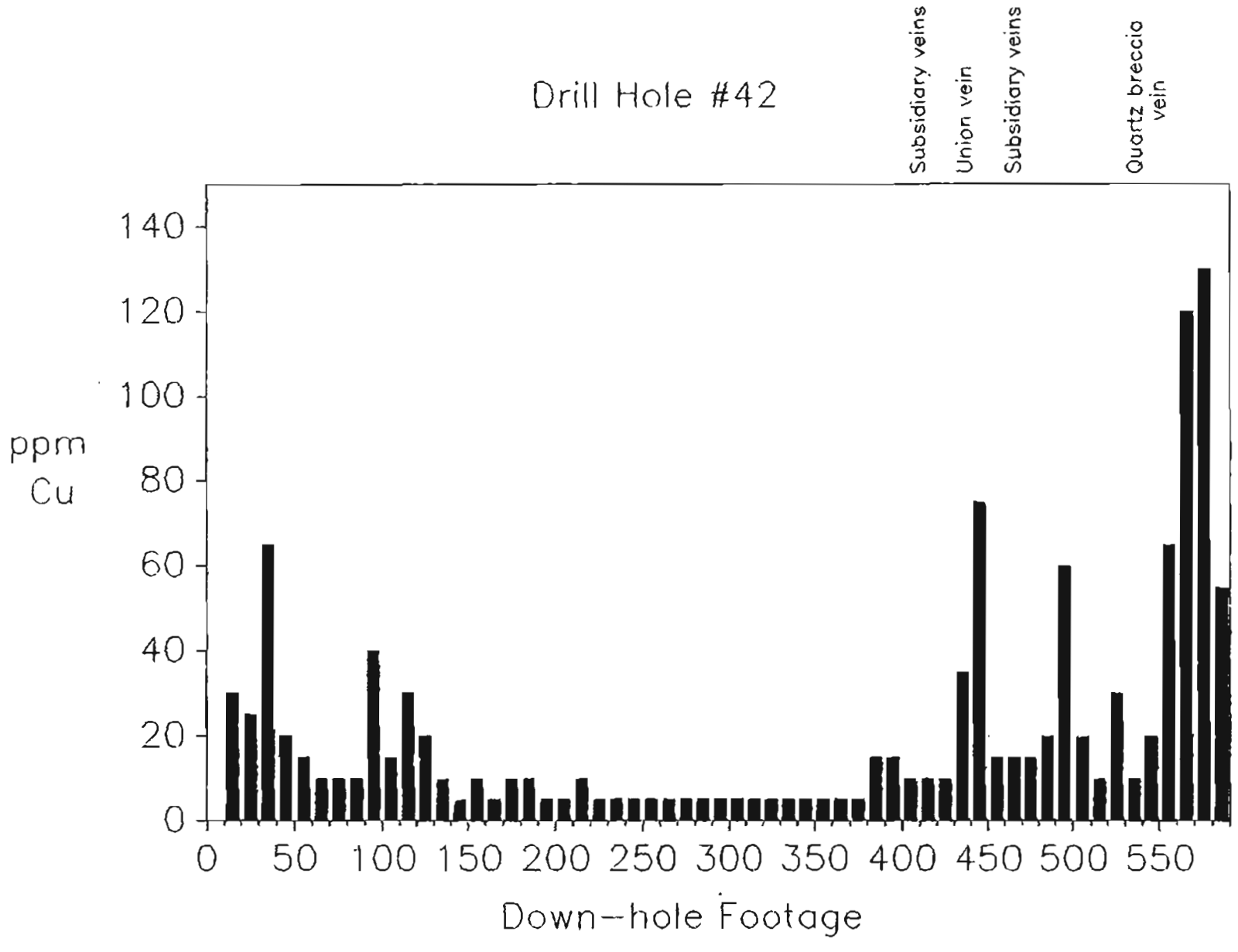

Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm
Ag
50
40
30
20
10
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-Hole Footage

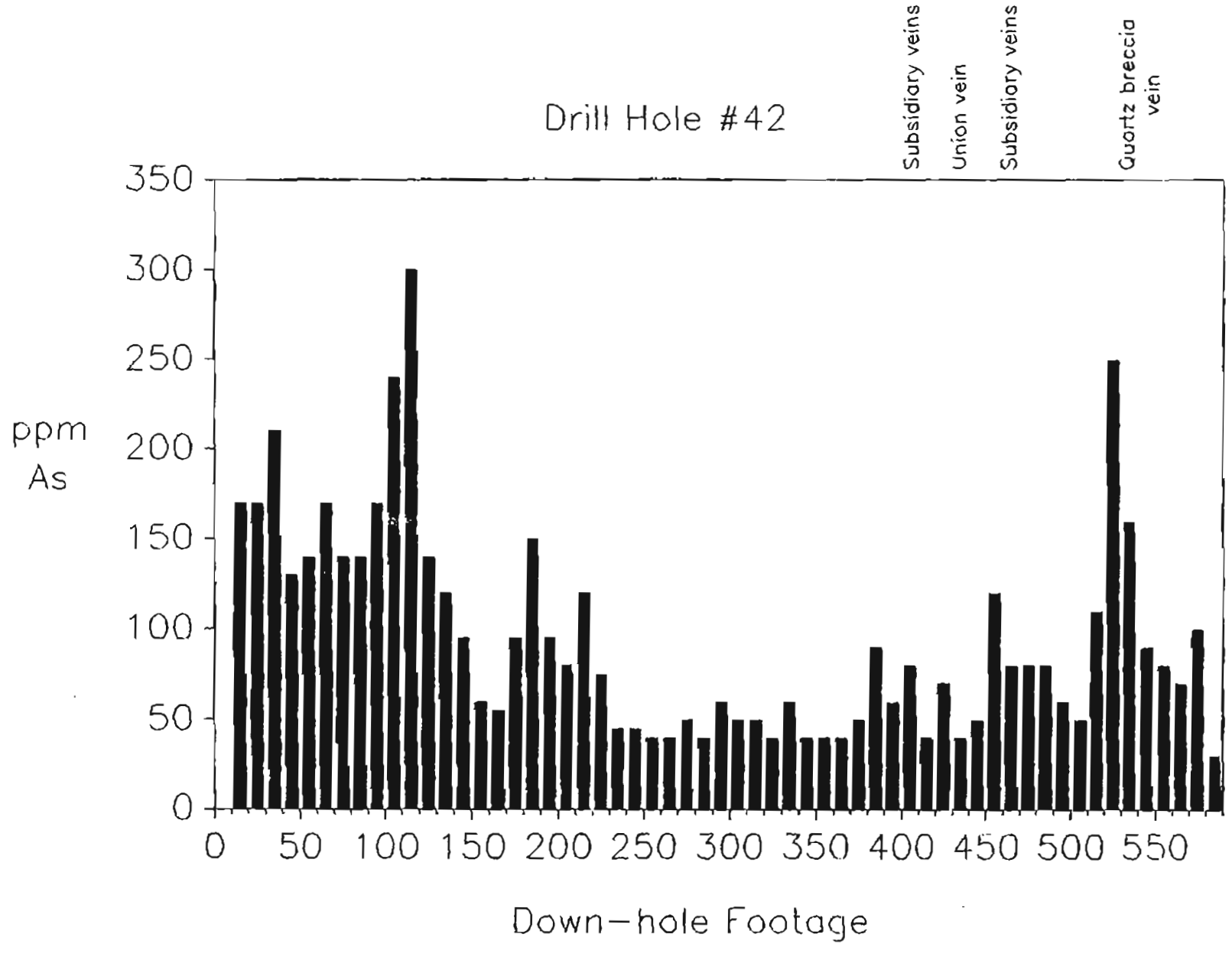

Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm
Te
10
8
6
4
2
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage

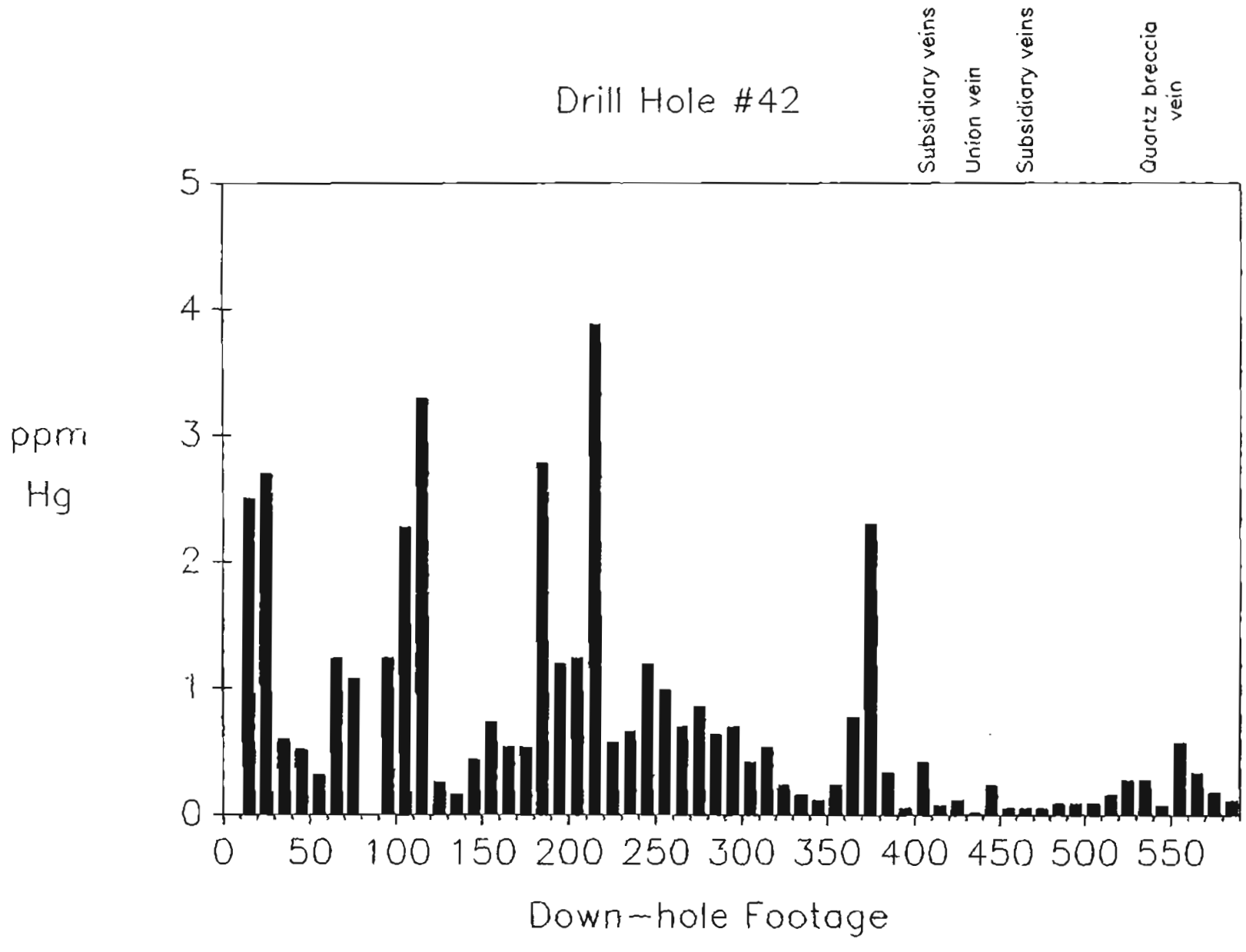

Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm
Pb
1000
900
800
700
600
500
400
300
200
100
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage


Drill Hole #42
Subsidiory veins
Union vein
Subsidiory veins
Quartz breccia vein
2000
1500
1000
500
0
ppm
Zn
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage


Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
5000
4500
4000
3500
ppm
Mn
3000
2500
2000
1500
1000
500
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage


Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm Cu
140
120
100
80
60
40
20
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage


Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm As
350
300
250
200
150
100
50
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage


Drill Hole #42
Subsidiary veins
Union vein
Subsidiary veins
Quartz breccia vein
ppm
Hg
5
4
3
2
1
0
0 50 100 150 200 250 300 350 400 450 500 550
Down-hole Footage