

DATE: March 20, 1990  
TO: A. J. Davidson  
COPIES TO: D. H. Watkins, I. D. Pirie, A. F. Reeve  
DE FROM: G. S. Wells, J. D. Kapusta  
SUJET SUBJECT: Spring 1990 Drill Proposal - Lara Project

827237

## 1. Introduction

A 20 hole, 4690 meter drill program is proposed to test massive sulphide targets on the Lara property. Specific target areas are discussed below.

## 2. Lara PN 242

### a. Introduction

Minnova's 1989 exploration program on the Lara property consisted primarily of diamond drilling and a limited amount of ground surveys (i.e. geology, geophysics: IP, VLF, Mag, lithogeochemistry). The main objectives were to find additional ore reserves in and around the Coronation Zone and to assess the massive sulphide potential of the rest of the property. The drilling, metallurgical work and open-pit assessment of the Coronation zone mineralization indicates that the near-surface high grade pods can be mined with anticipated good metal recoveries but the outlined tonnage is too small to be economic. In contrast, the reconnaissance drilling and ground surveys greatly enhanced the massive sulphide potential in other parts of the Lara property.

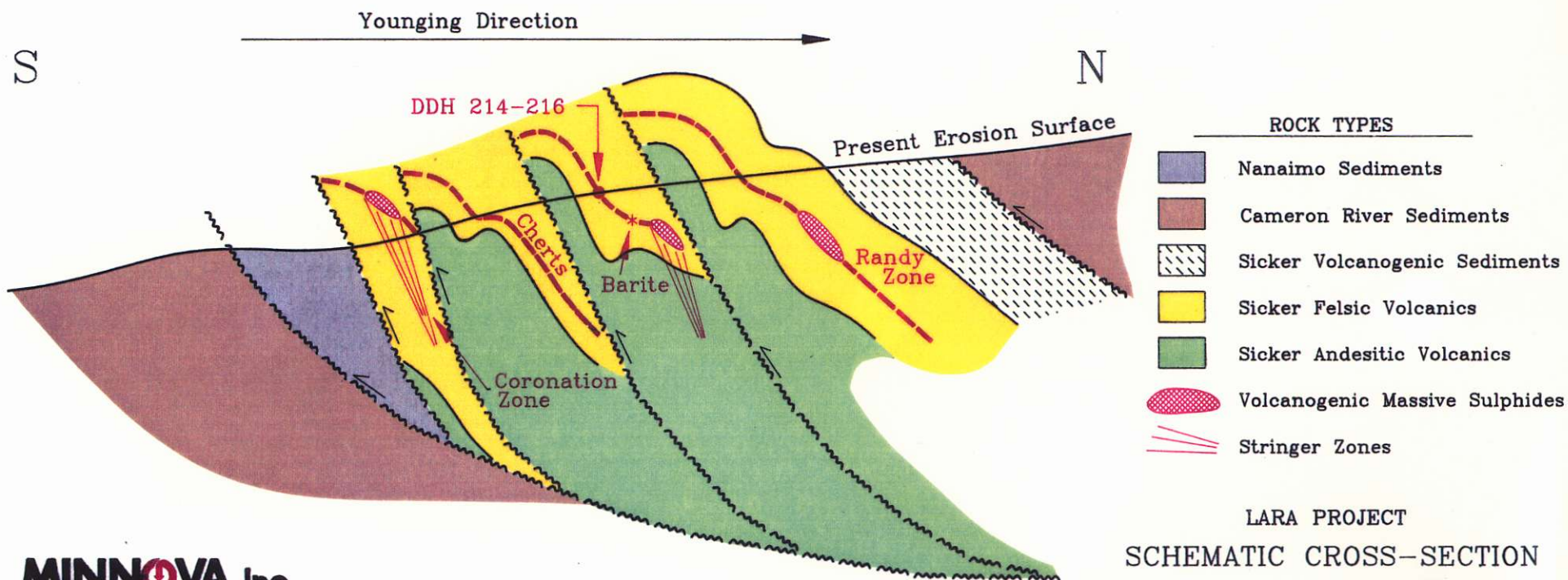
A structural study of the Sicker volcanics exposed on our Lara and Mt. Sicker properties was initiated in 1989. In spite of problems due to a lack of bedding and distinctive marker units, two major phases of deformation were recognized. An early phase I folding event produced a pervasive vertical to steeply dipping west-northwesterly trending foliation and a shallow easterly

folding event produced a pervasive vertical to steeply dipping west-northwesterly trending foliation and a shallow easterly plunging (15-20°) lineation. An intense stretching, which is believed to be in the order of at least 10:1, occurs parallel to the lineation. The second major deformation event is characterized by southwesterly directed thrust faults that dip moderately (45°) to steeply (65-70°) toward the northeast. This faulting has locally repeated both the mineralization (i.e. Coronation Zone and Hanging Wall Zone) and the stratigraphy (Figure 1).

The Coronation Zone is interpreted as a stringer zone that has been stretched parallel to the lineation during the early folding episode. At the present erosional surface, it appears that the volcanogenic massive sulphide associated with the Coronation stringer zone has been eroded away. However the easterly plunge of the mineral lineations implies that such a deposit could be preserved to the east.

The lithogeochemical surveys defined two areas of hydrothermal alteration that are characterized by Na<sub>2</sub>O depletion and Ba, Cu and Zn enrichment (Figure 2). One of these zones is associated with the Randy Zone felsic volcanics that outcrop in the northern part of the property near the transition between Sicker volcanics and sediments. This alteration appears to be stratiform and has been traced over a strike length of approximately 12 km. The other area of hydrothermal alteration is associated with felsic volcanics that are located a) in the structural hanging wall to the Coronation Zone: 262 Felsics and b) to the east of the Coronation and Coronation Extension zones: CZ Felsics.

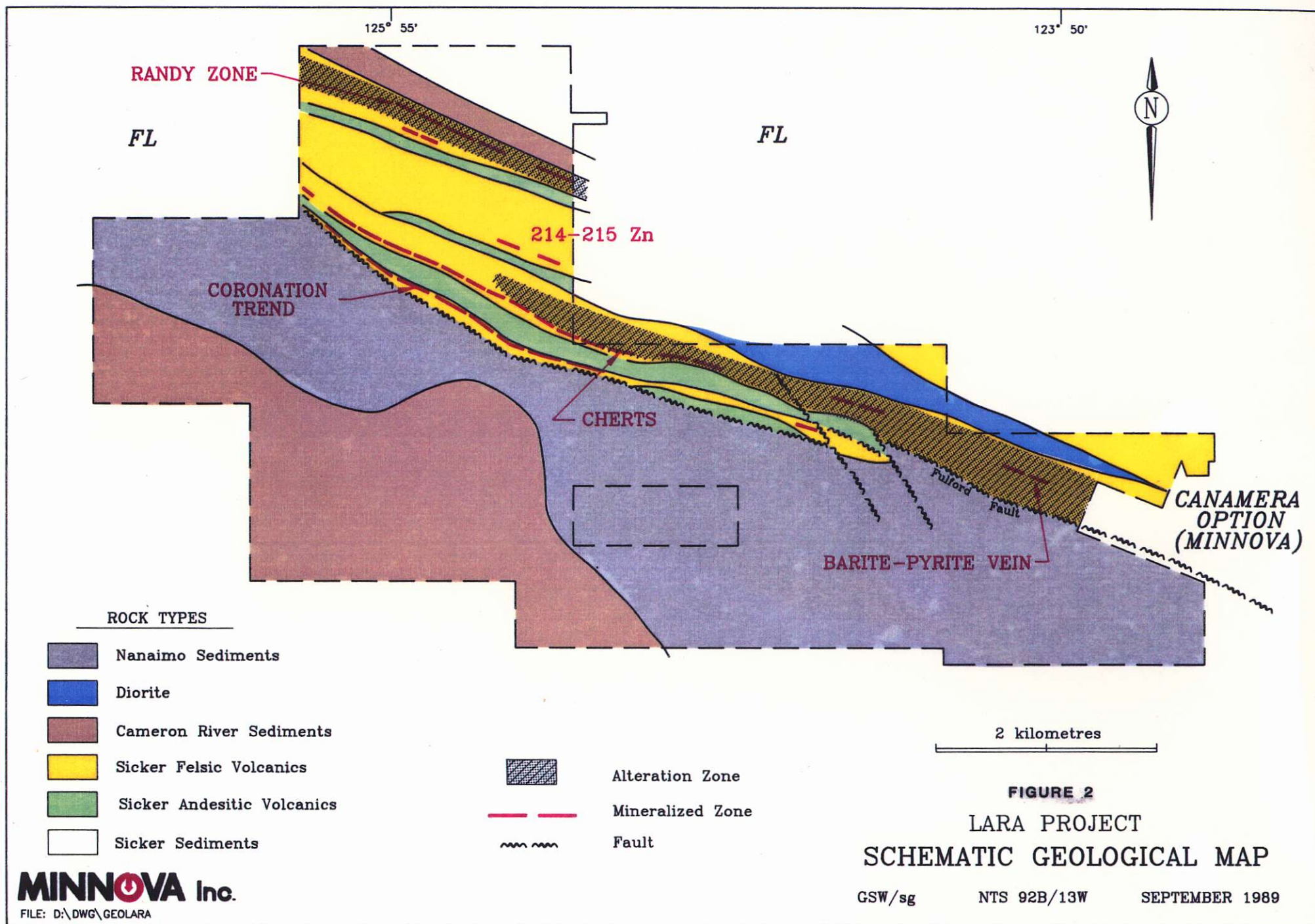
Hole 89-262 which tested an IP anomaly in the 262 Felsics intersected a 1.15 meter zone of intermediate ash, chert and semi-massive pyrite that assayed 1.42% Cu, 0.12% Zn and 5.9 g/T Ag. Pyritic cherts and intermediate ashes with anomalous zinc contents (89-269: 213 ppm Zn over 7.9 m) have been traced up to 2.1 km east of the 262 intersection. These units are interpreted as distal exhalites associated with a potentially economic VMS deposit.



LARA PROJECT  
SCHEMATIC CROSS-SECTION  
GSW/sg SEPTEMBER 1989

**MINNOVA Inc.**







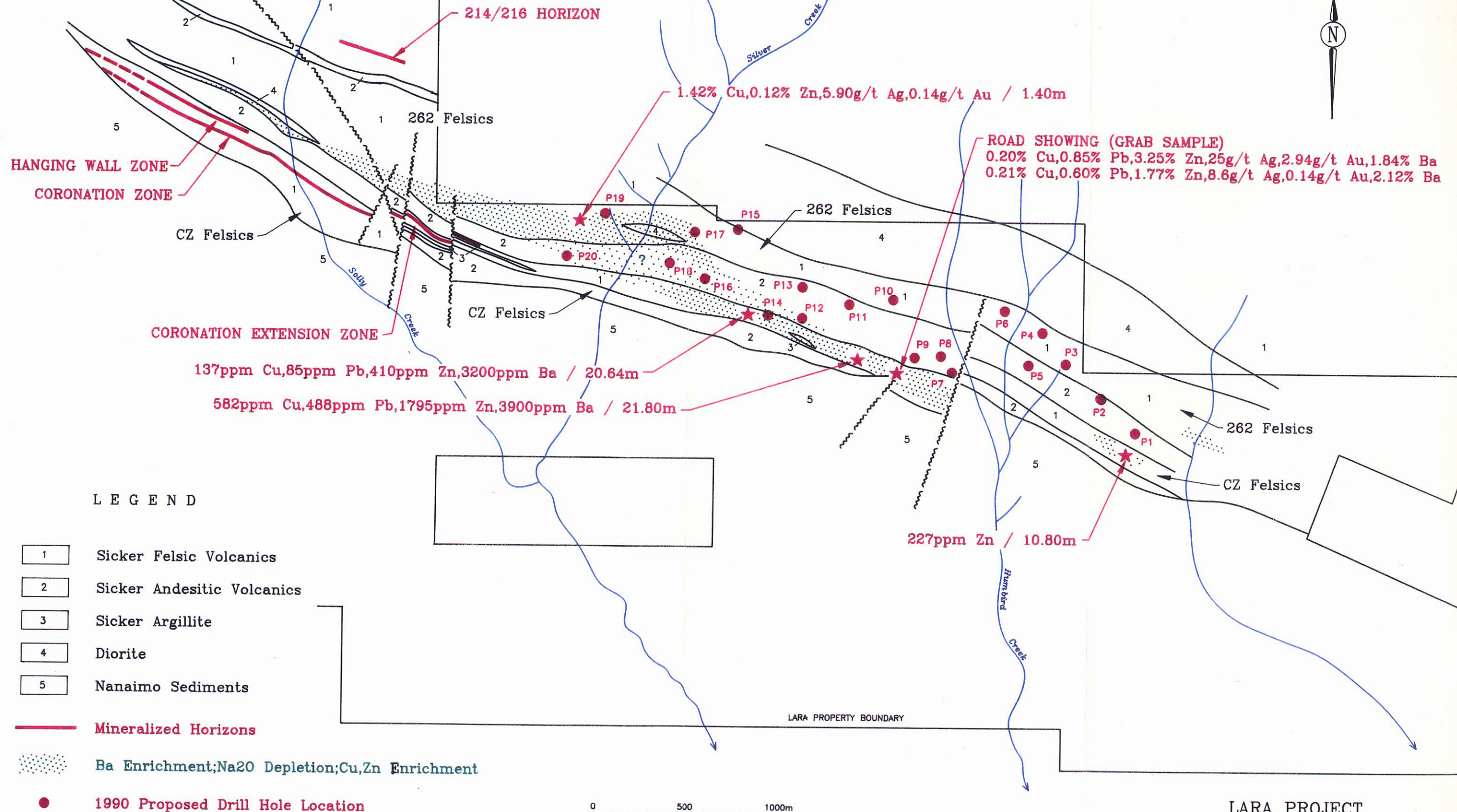
The Road showing occurs in altered CZ Felsics, 1.5 km east of the Coronation Extension zone mineralization. Sulphide stringer material from this occurrence have yielded assays as high as 0.2% Cu, 0.85% Pb, 3.25% Zn, 25 g/T Ag, 2.94 g/T Au and 1.84% Ba. Trenching 550 meters to the west of the showing has exposed a 15 meter thick argillite horizon which may be correlative with massive sulphide deposition. This and the presence of highly geochemically anomalous felsic volcanics (i.e. hole 84-1: 1795 ppm Zn, 3900 ppm Ba, 0.94% Na<sub>2</sub>O over 17.7 m) indicates that the Road showing area may be near to the easterly plunging VMS deposit thought to be associated with the Coronation stringer zone.

b. Proposed Drilling

The 1990 spring drill program on the Lara property will focus on evaluating geological and geophysical targets in the hydrothermally altered 262 and CZ felsics that outcrop to the east of the Coronation zone. Drill hole locations are shown in figure 3 and specific details are presented in Table 1.

Sixteen holes will test the CZ Felsics - a 100 meter thick sequence of interlayered ashes, crystal tuffs, cherts and argillites that dips 55° to the north. Specific targets within this unit include shallow IP/VLF anomalies, humus anomalies and the down-dip and strike extent of specific argillite horizons. Figure 4 is a vertical longitudinal of the CZ Felsic package showing the expected midpoints of the felsics in proposed holes and previously intersected mineralization.

Five holes will test the extent and significance of zinc and copper enriched pyritic ashes and cherts that have been previously intersected in the 262 felsic sequence.



**TABLE 1: PROPOSED DRILLING: LARA PROPERTY**

| Hole | Location        | Collar  |     |           | Depth | Target  | Felsic Sequence |
|------|-----------------|---------|-----|-----------|-------|---|-----------------|
|      |                 | Azimuth | Dip | Elevation |       |   |                 |
| P-1  | 57+35W; 110+99N | 208     | -53 | 703 m     | 170 m | Up dip test of hole 89-267, where both stringer mineralization (526 ppm Zn over 4.57 m) and a sequence of interbedded chert and felsic ash (227 ppm Zn over 10.80 m) were intersected | CZ              |
| P-2  | 59+45W; 111+92N | 208     | -50 | 720 m     | 250 m | 200 m step out to W from 89-267 to test the lateral extent of the interbedded sequence of chert + felsic ash  | CZ              |
| P-3  | 62+00W; 113+00N | 208     | -50 | 725 m     | 150 m | Test humus anomaly and extent of py-Zn enriched ashes intersected in 89-269 (213 ppm Zn over 7.9 m)   | 262             |
| P-4  | 64+00W; 113+32N | 208     | -73 | 733 m     | 250 m | Test a strong VLF - IP anomaly  | 262             |
| P-5  | 64+00W; 110+55N | 208     | -55 | 651 m     | 250 m | 450 m westerly step out from P2   | CZ              |
| P-6  | 66+33W; 113+40N | 208     | -50 | 710 m     | 170 m | 150 m east step out testing py-Zn enriched ashes intersected in 89-269  | 262             |
| P-7  | 67+00W; 109+08N | 208     | -45 | 661 m     | 160 m | Test IP and humus anomalies 350 m east of the Road Showing  | CZ              |
| P-8  | 68+00W; 109+25N | 208     | -60 | 675 m     | 250 m | Test two IP anomalies, 250 m east of the the Road Showing   | CZ              |
| P-9  | 69+00W; 108+40N | 208     | -48 | 684 m     | 180 m | Test an IP anomaly 150 m east of the Road Showing and downdip of zinc stringers in trench 83-23   | CZ              |
| P-10 | 72+00W; 110+90N | 208     | -61 | 716 m     | 450 m | 200 m down dip of hole 85-71 that intersected 1659 ppm Cu, 4384 ppm Zn over 2.6 m   | CZ              |



TABLE 1: PROPOSED DRILLING: LARA PROPERTY(cont.)

| Hole | Location        | Collar  |     |           | Depth  | Target  | Felsic Sequence |
|------|-----------------|---------|-----|-----------|--------|---|-----------------|
|      |                 | Azimuth | Dip | Elevation |        |   |                 |
| P-11 | 74+00W; 109+50N | 208     | -59 | 716 m     | 320 m  | 100 m down dip of hole 85-72 that intersected 1974 ppm Zn, 0.26% Ba over 9.2 m  | CZ              |
| P-12 | 76+00W; 107+59N | 208     | -70 | 699 m     | 170 m  | 100 m down dip of argillites exposed in trench 83-25  | CZ              |
| P-13 | 77+00W; 108+50N | 208     | -60 | 720 m     | 250 m  | Test western strike and down dip extent of argillites in trench 83-25   | CZ              |
| P-14 | 77+45W; 107+40N | 208     | -50 | 695 m     | 150 m  | Test strike extent of argillites in trench 83-25  | CZ              |
| P-15 | 81+00W; 109+25N | 208     | -65 | 712 m     | 350 m  | 150 m and 90 m down dip of zinc stringers in 84-6 (410 ppm Zn over 20.6 m) and 85-73 (153 ppm Zn over 7.5 m) respectively | CZ              |
| P-16 | 81+60W; 106+80N | 208     | -50 | 660 m     | 220 m  | Test coincident IP and soil geochemical anomalies   | CZ              |
| P-17 | 83+00W; 108+80N | 208     | -70 | 675 m     | 300 m  | Test area of Na <sub>2</sub> O depletion in 262 felsics and down dip extent of IP anomalies tested in hole P-16           | CZ/262          |
| P-18 | 83+50W; 107+50N | 208     | -50 | 631 m     | 220 m  | Test 110 m up dip and 50 m W of hole P-17   | CZ              |
| P-19 | 88+00W; 107+40N | 208     | -70 | 648 m     | 250 m  | Test 150 m east and down dip of 262 intersection (1.42% Cu, 0.12% Zn over 1.14 m)   | 262             |
| P-20 | 90+00W; 104+00N | 208     | -55 | 658 m     | 180 m  | Test strong VLF anomaly and Coronation Extension Zone   | CZ              |
|      |                 |         |     | Total     | 4690 m |   |                 |

### 3. Conclusions

A 20 hole, 4690 meter drill program is proposed to test shallow targets in areas of anomalous lithogeochemistry on the Lara property. This drilling will focus largely on geophysical (IP/VLF), geochemical (humus) and geological targets in a thin band of hydrothermally altered felsic volcanics that are the easterly strike equivalent of the rocks that host the Coronation Zone mineralization.

The estimated all-inclusive cost of this program is \$305,000 (\$65/m). Drilling is scheduled to start on April 16th.

*Gary Kello*



