

2004 DIAMOND DRILLING and GEOPHYSICS REPORT
SIWASH GOLD MINE AREA
ELK PROPERTY

Similkameen Mining Division
Siwash Lake Area, British Columbia
NTS: 92H/16W; Lat. 49°50'N, Long. 120°19'W

VOLUME III : PLATES 1 TO 21

This report consists of three volumes:
Volume I: Text, Tables, Figures & Appendices
Volume II: Diamond Drill Logs
Volume III: Plates 1 to 21

May, 2005

By

W.J. Jakubowski, P. Geo.
Almaden Minerals Ltd.
1103 – 750 West Pender St.
Vancouver, B.C. V6C 2T8

GEOLOGICAL SURVEY BRANCH
ASSESSMENT DIVISION

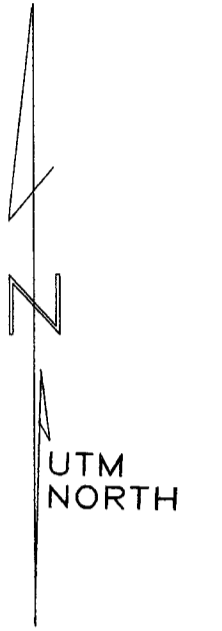
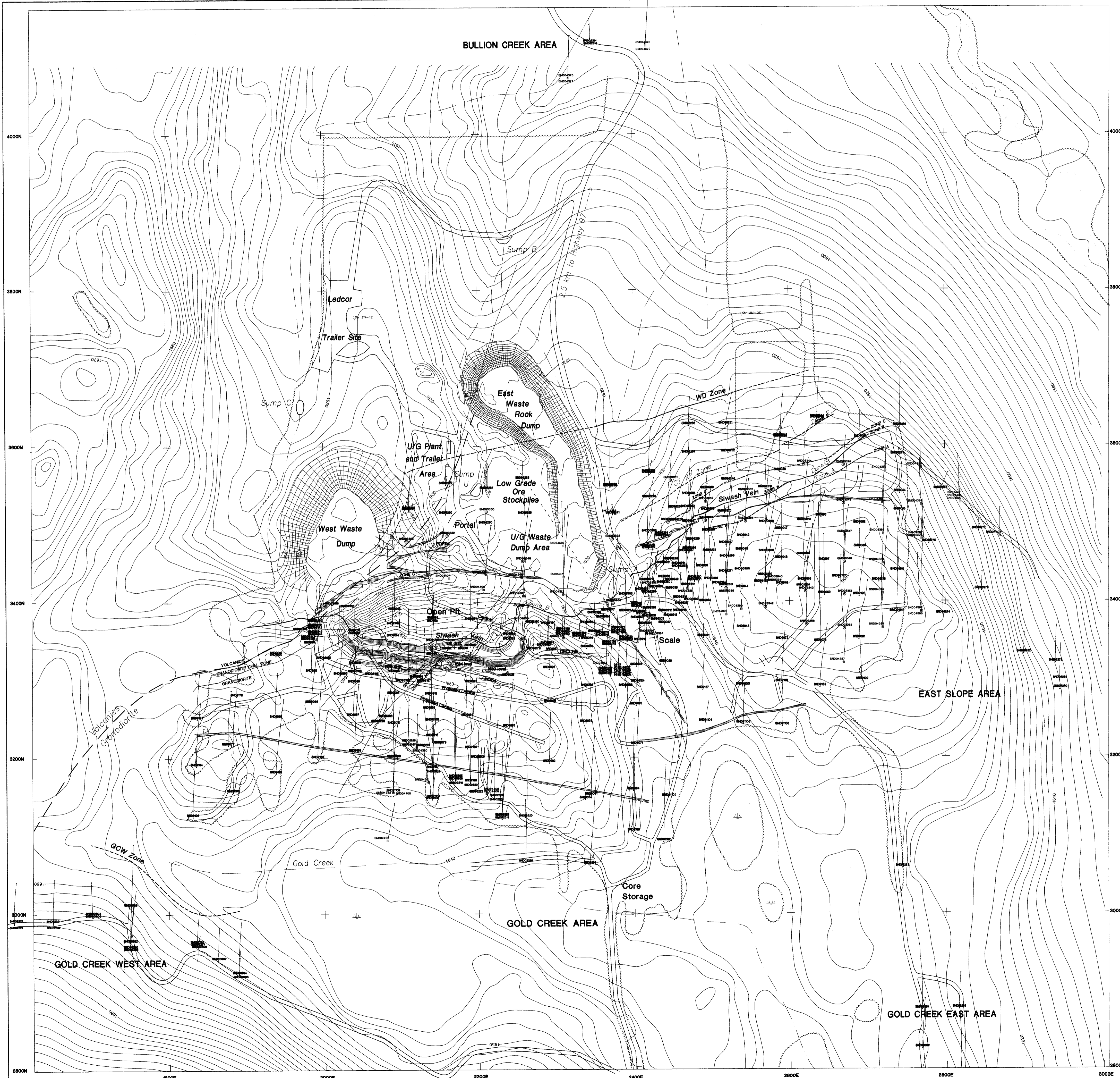
Report Preparation: Original + 4 copies

VOLUME III

PLATES (in pockets)

Scale

| | | |
|------------------|---|--------|
| <u>Plate 1:</u> | - Siwash North Mine Site Plan and Surface Drill Hole Locations | 1:2000 |
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| <u>Plate 3:</u> | - B Vein Longitudinal Section... .. | 1:1500 |
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| <u>Plate 5:</u> | - Drill Section 2120E Zone B..... | 1:500 |
| <u>Plate 6:</u> | - Drill Section 2160E Zone WD..... | 1:500 |
| <u>Plate 7:</u> | - Drill Section 2210E Zone WD..... | 1:500 |
| <u>Plate 8:</u> | - Drill Section 2210E Zone B..... | 1:500 |
| <u>Plate 9:</u> | - Drill Section 2260E Zone WD..... | 1:500 |
| <u>Plate 10:</u> | - Drill Section 2310E Zone WD..... | 1:500 |
| <u>Plate 11:</u> | - Drill Section 2320E Zone BC..... | 1:500 |
| <u>Plate 12:</u> | - Drill Section 2420E Zone BC..... | 1:500 |
| <u>Plate 13:</u> | - Drill Section 2370E Zone WD | 1:500 |
| <u>Plate 14:</u> | - Drill Section 2420E Zone WD..... | 1:500 |
| <u>Plate 15:</u> | - Drill Section 2520E Zone B | 1:500 |
| <u>Plate 16:</u> | - Drill Section 2540E Zone B | 1:500 |
| <u>Plate 17:</u> | - Drill Section 2670E Zone WD..... | 1:500 |
| <u>Plate 18:</u> | - Drill Section 2720E Zone WD..... | 1:500 |
| <u>Plate 19:</u> | - Drill Section 2770E Zone WD..... | 1:500 |
| <u>Plate 20:</u> | - Drill Section 2820E Zone WD..... | 1:500 |
| <u>Plate 21:</u> | - Drill Section 2870E Zone WD..... | 1:500 |



LEGEND

- Stream
- Swamp
- Dirt Road
- Vein Exposure
- Projected Trace of Vein
- Edge of Trees
- Drill Hole Trace

- Andesite Dyke
- Apite Dyke
- Geological Contact

GEOLOGICAL SURVEY BRANCH
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 METRES

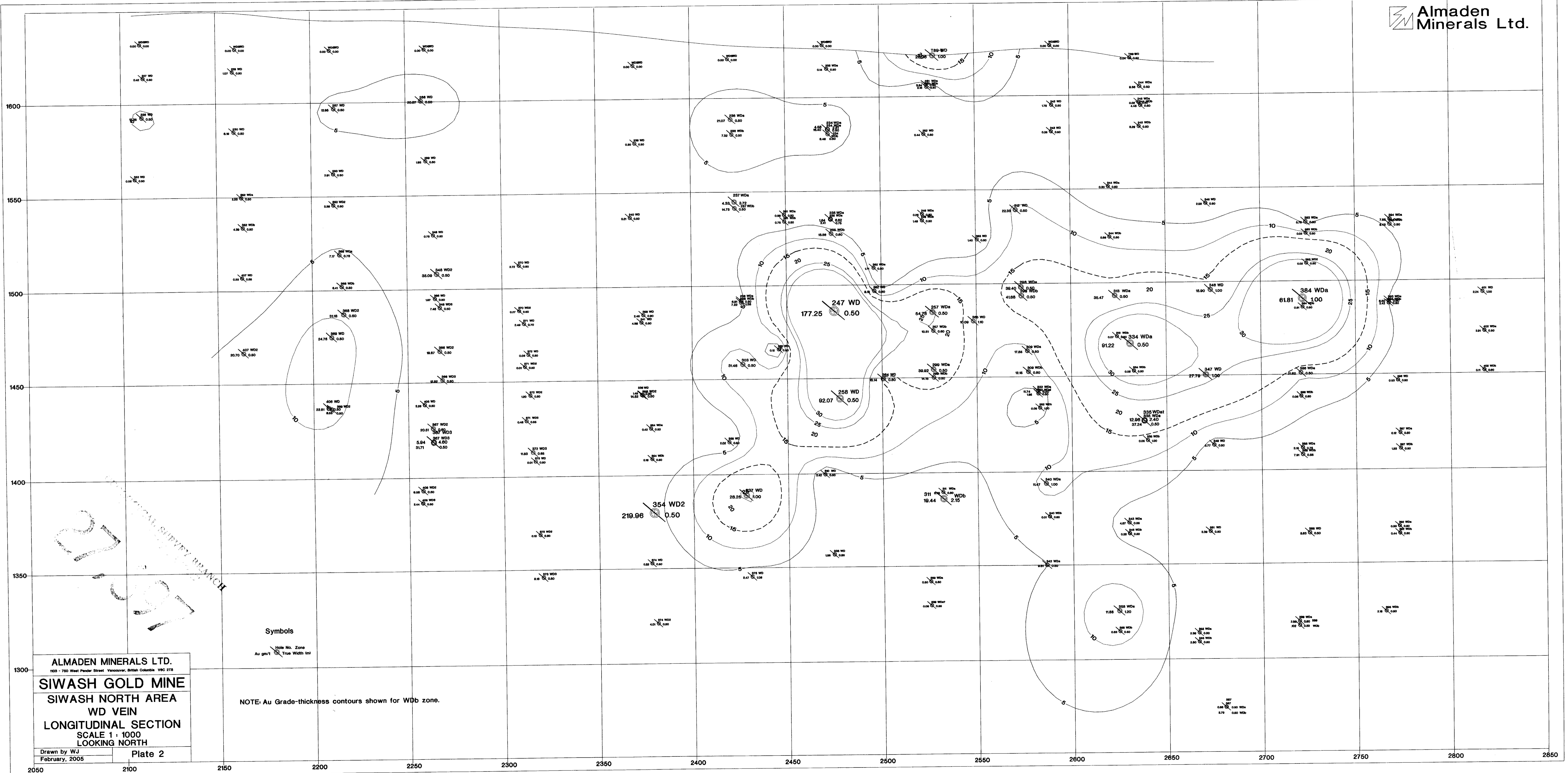
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SIWASH GOLD MINE
 Similkameen Mining Division
 NTS 92H/16W, B.C.

**MINE SITE PLAN AND DRILL
 HOLE COLLAR LOCATIONS**
 SCALE 1 : 2500

Drawn by WJ, EM
 APRIL, 2005

Plate 1



Symbols

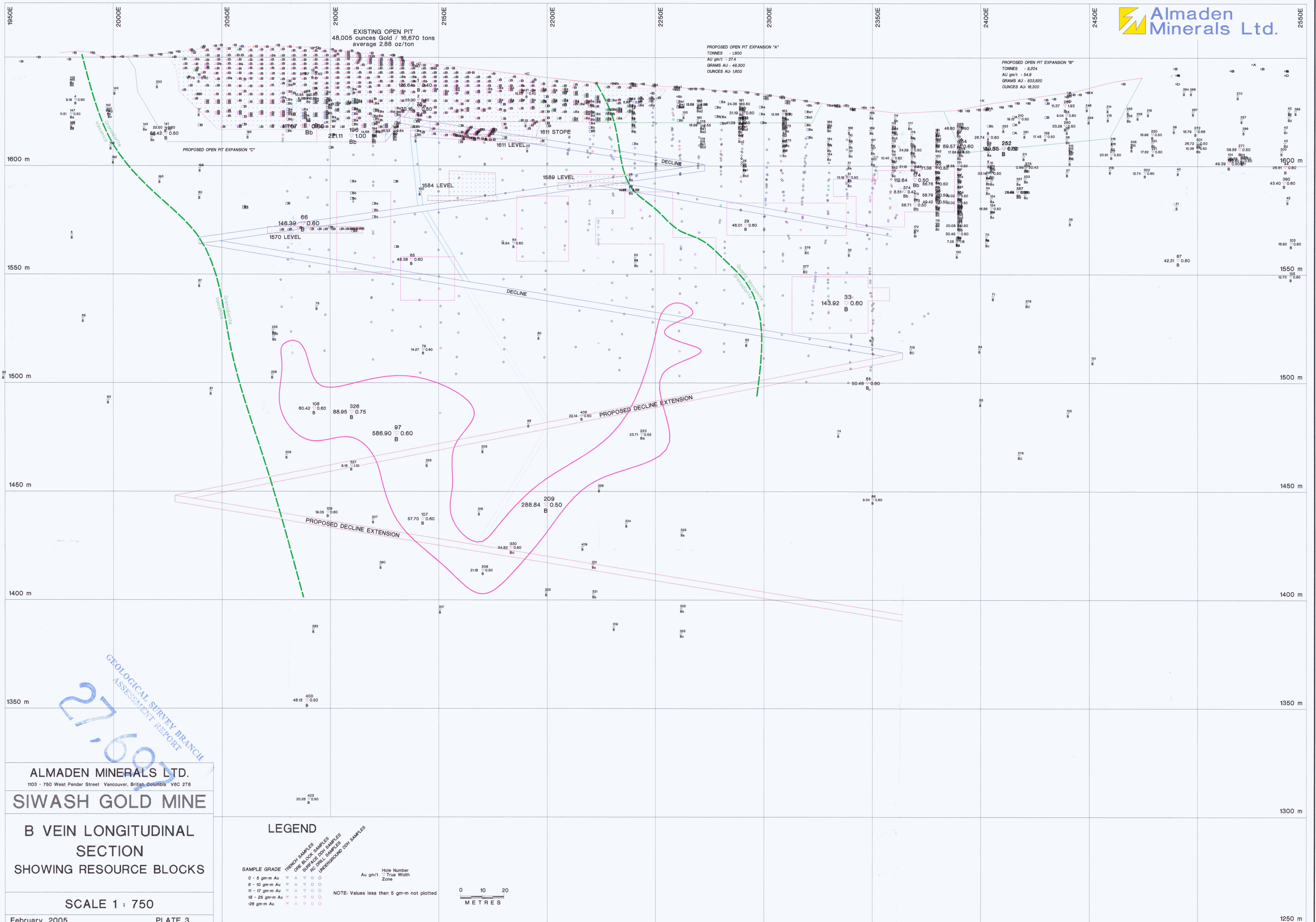
Hole No. Zone
Au g/t/ft True Width (m)

NOTE: Au Grade-thickness contours shown for WDb zone.

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SIWASH GOLD MINE
SIWASH NORTH AREA
WD VEIN
LONGITUDINAL SECTION
SCALE 1 : 1000
LOOKING NORTH

Drawn by WJ February, 2005 Plate 2



EXISTING OPEN PIT
48,005 ounces Gold / 16,670 tons
average 2.88 oz/ton

PROPOSED OPEN PIT EXPANSION 'A'
TONNES : 1,800
AU gm/t : 27.4
GRAMS AU : 49,300
OUNCES AU : 1,800

PROPOSED OPEN PIT EXPANSION 'B'
TONNES : 9,204
AU gm/t : 54.9
GRAMS AU : 503,820
OUNCES AU : 16,200

PROPOSED OPEN PIT EXPANSION 'C'

GEOLOGICAL SURVEY BRANCH
ASSESSMENT REPORT
27-60

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SIWASH GOLD MINE

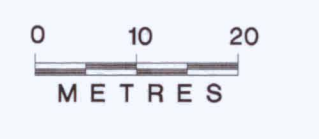
**B VEIN LONGITUDINAL SECTION
SHOWING RESOURCE BLOCKS**

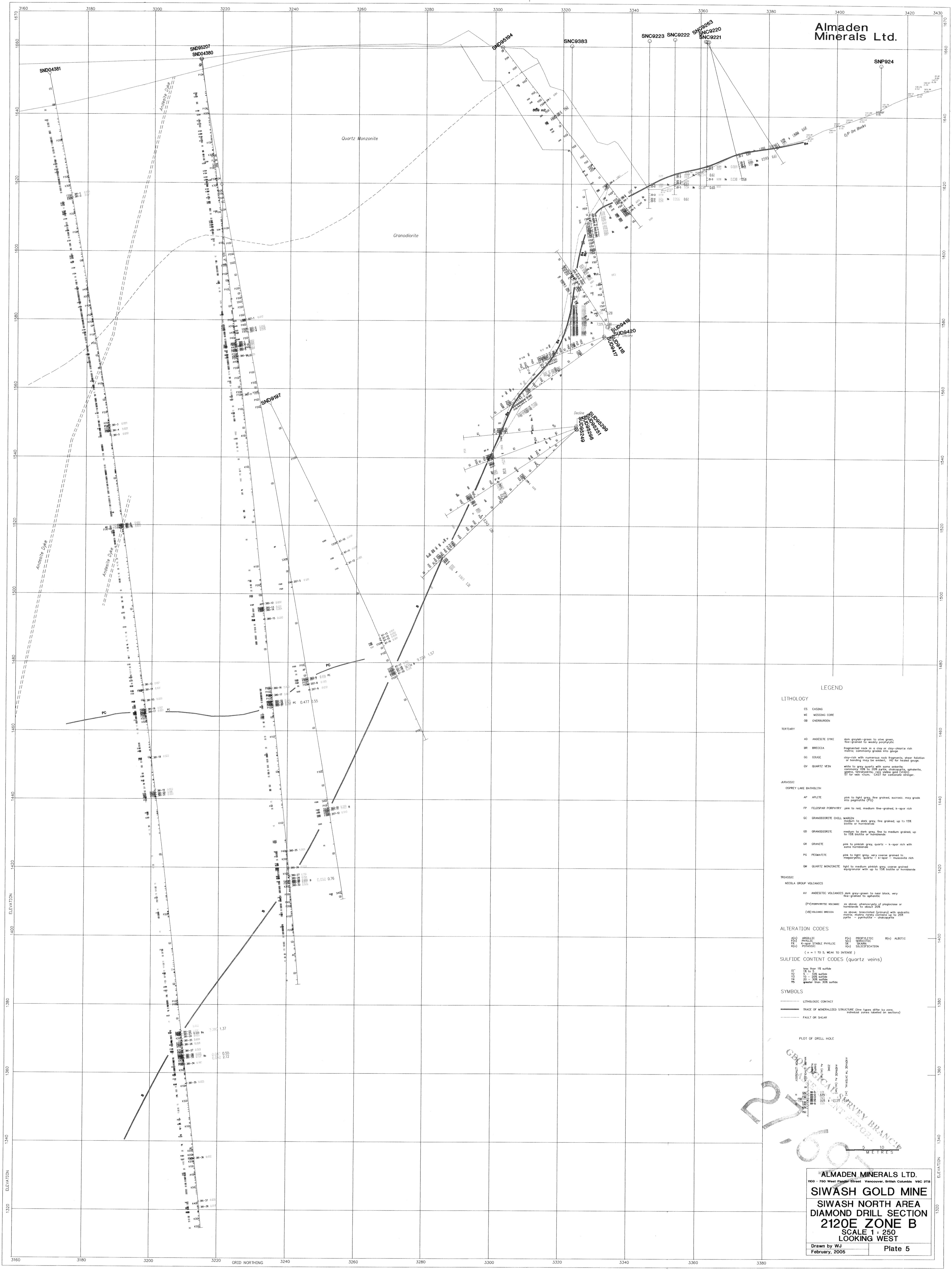
SCALE 1 : 750

February, 2005 PLATE 3

LEGEND

| | | |
|---|--|--|
| <p>SAMPLE GRADE</p> <ul style="list-style-type: none"> 0 - 5 gm-m Au 6 - 10 gm-m Au 11 - 17 gm-m Au 18 - 25 gm-m Au >26 gm-m Au | <ul style="list-style-type: none"> TRENCH SAMPLES ORE BLOCK SAMPLES SURFACE DRILL SAMPLES PIE DRILL SAMPLES UNDERGROUND DRILL SAMPLES | <p>Hole Number</p> <p>Au gm/t</p> <p>True Width</p> <p>Zone</p> <p>NOTE: Values less than 5 gm not plotted</p> |
|---|--|--|





LEGEND

LITHOLOGY

CD CASING
 MI MISSING CORE
 OB OVERBOREHOLE

TERTIARY

AD ANDESITE DYKE dark greenish-grey to olive green, fine-grained to weakly porphyritic
 BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix, commonly grades into gouge
 CG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident. HC for healed gouge
 QV QUARTZ VEIN vein of grey quartz with some inclusions, commonly 10% to 20% quartz, anhydrous, igneous, granitic, microcrystalline, calc-silicate and (rarely) SF for vein calc. CAST for carbonate stringer

JURASSIC

OPREY LAKE BATHOLITH

AP APLITE pink to light grey, fine grained, asexual, may grade into pegmatite (P)
 FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spar rich
 GC GRANODIORITE OSSL MEDIUM medium to dark grey, fine grained, up to 15% biotite or hornblende
 GD GRANODIORITE medium to dark grey, fine to medium grained, up to 15% biotite or hornblende
 GR GRANITE pink to pinkish grey, quartz - k-spar rich with some hornblende
 PG PEGMATITE pink to light grey, very coarse grained to megacrystic, quartz - k-spar - muscovite rich
 QM QUARTZ MONZONITE light to medium pinkish grey, coarse grained, equigranular with up to 15% biotite or hornblende

TRIASSIC

NEOLA GROUP VOLCANICS

AV ANDESITIC VOLCANICS dark grey-green to near black, very fine-grained to aphanitic
 (P) PORPHYRIC VOLCANIC in situ phenocrysts of plagioclase or hornblende to about 20%
 (B) VOLCANIC BRECCIA in situ brecciated (granitic) with calcic matrix, matrix commonly contains up to 25% pyrite - pyrrhotite - chalcopyrite

ALTERATION CODES

AL ARGILLIC (A)
 EP EPITHERMAL (E)
 PH PHYLIC (P)
 PR PROPYLITIC (PR)
 SK SKARN (SK)
 ST STABLE PHYLIC (ST)
 SU SULFIDATION (SU)
 ALB ALBERTIC (ALB)

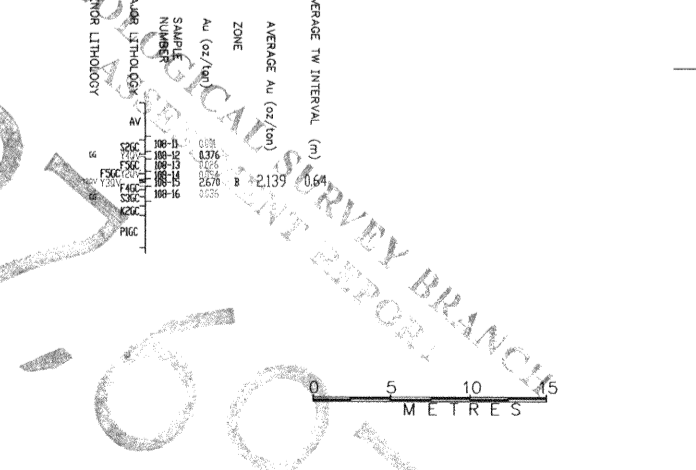
(n = 1 to 5, MEAN TO INTENSE)

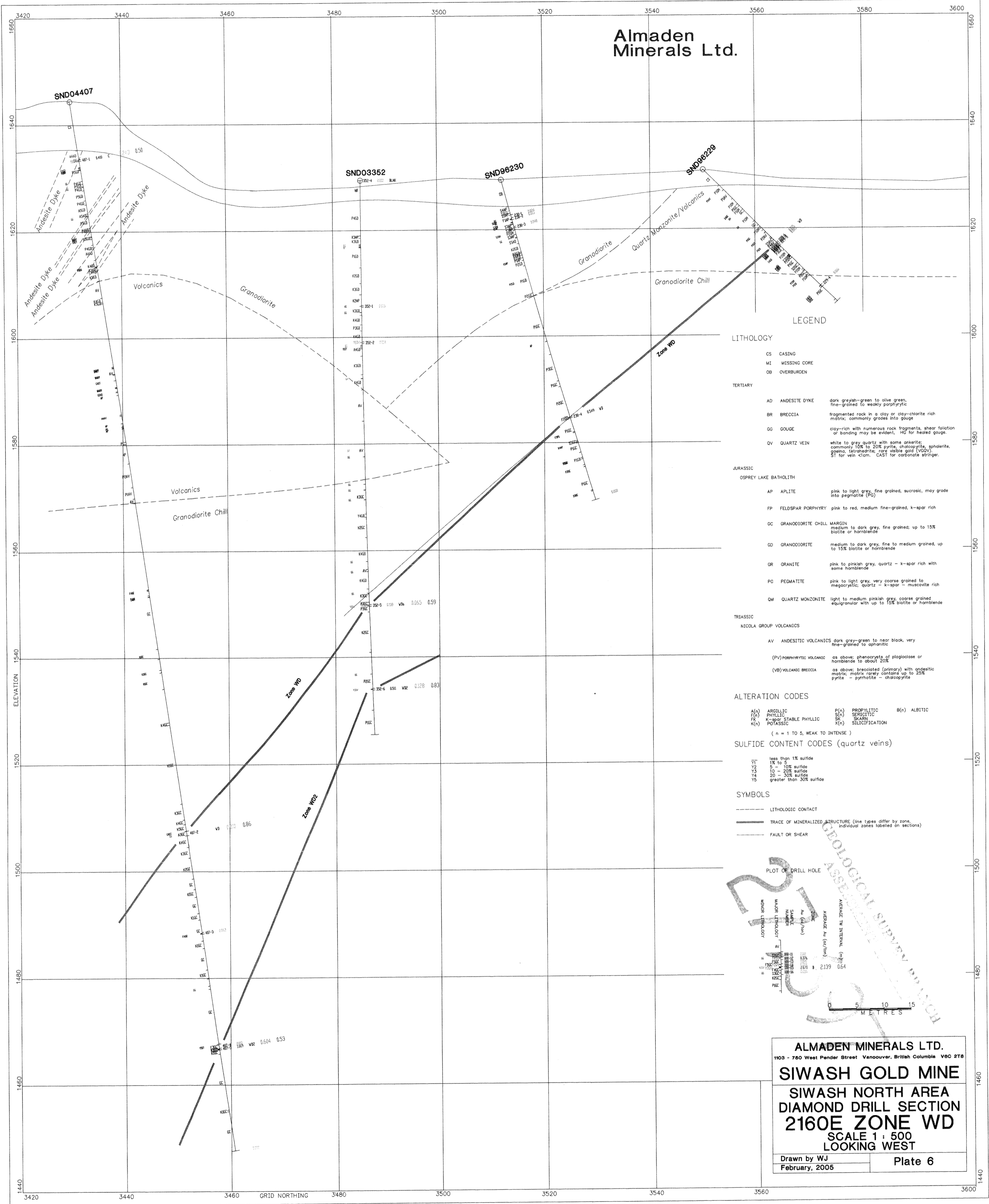
SULFIDE CONTENT CODES (quartz veins)

100% 100% sulfide
 75% 75% sulfide
 50% 50% sulfide
 25% 25% sulfide
 0% 0% sulfide

SYMBOLS

— LITHOLOGIC CONTACT
 — TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones treated on sections)
 — FAULT OR SHEAR





- LEGEND**
- LITHOLOGY**
- CS CASING
 - MI MISSING CORE
 - OB OVERBURDEN
- TERTIARY**
- AD ANDESITE DYKE dark greyish-green to olive green, fine-grained to weakly porphyritic
 - BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix; commonly grades into gouge
 - GG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident. SIC for heated gouge
 - QV QUARTZ VEIN white to grey quartz with some ankerite; commonly 10% to 20% pyrite, chalcopyrite, sphalerite, galena, tetrahedrite; rare visible gold (VGDV). SIC for vein clin. CAST for carbonate stringer.
- JURASSIC**
- OSPREY LAKE BATHOLITH**
- AP APLITE pink to light grey, fine grained, sucrosic, may grade into pegmatite (PG)
 - FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spar rich
 - GC GRANODIORITE CHILL MARGIN medium to dark grey, fine grained; up to 15% biotite or hornblende
 - GD GRANODIORITE medium to dark grey, fine to medium grained, up to 15% biotite or hornblende
 - GR GRANITE pink to pinkish grey, quartz - k-spar rich with some hornblende
 - PG PEGMATITE pink to light grey, very coarse grained to megacrystic; quartz - k-spar - muscovite rich
 - QM QUARTZ MONZONITE light to medium pinkish grey, coarse grained equigranular with up to 15% biotite or hornblende
- TRIASSIC**
- NICOLA GROUP VOLCANICS**
- AV ANDESITIC VOLCANICS dark grey-green to near black, very fine-grained to aphanitic
 - (PV) PORPHYRYTIC VOLCANIC as above; phenocrysts of plagioclase or hornblende to about 20%
 - (VB) VOLCANIC BRECCIA as above; brecciated (primary) with andesitic matrix; matrix rarely contains up to 25% pyrite - pyrrhotite - chalcopyrite
- ALTERATION CODES**
- | | | |
|---------------------------|---------------------|--------------|
| A(n) ARGILLIC | B(n) PROPYLITIC | B(n) ALBITIC |
| F(n) PHYLIC | S(n) SERPENTINIC | |
| K(n) K-SPAR STABLE PHYLIC | SK SKARN | |
| K(n) POTASSIC | X(n) SILICIFICATION | |
- (n = 1 TO 5, WEAK TO INTENSE)
- SULFIDE CONTENT CODES (quartz veins)**
- | | |
|----|--------------------------|
| Y1 | less than 1% sulfide |
| Y2 | 1% to 5% |
| Y3 | 5 - 10% sulfide |
| Y4 | 10 - 20% sulfide |
| Y5 | 20 - 30% sulfide |
| Y6 | greater than 30% sulfide |

SYMBOLS

- LITHOLOGIC CONTACT
- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones labelled on sections)
- FAULT OR SHEAR

PLOT OF DRILL HOLE

MAJOR LITHOLOGY

MINOR LITHOLOGY

AVERAGE Au (g/t) INTERVAL

AVERAGE Ag (g/t) INTERVAL

2.139 0.64

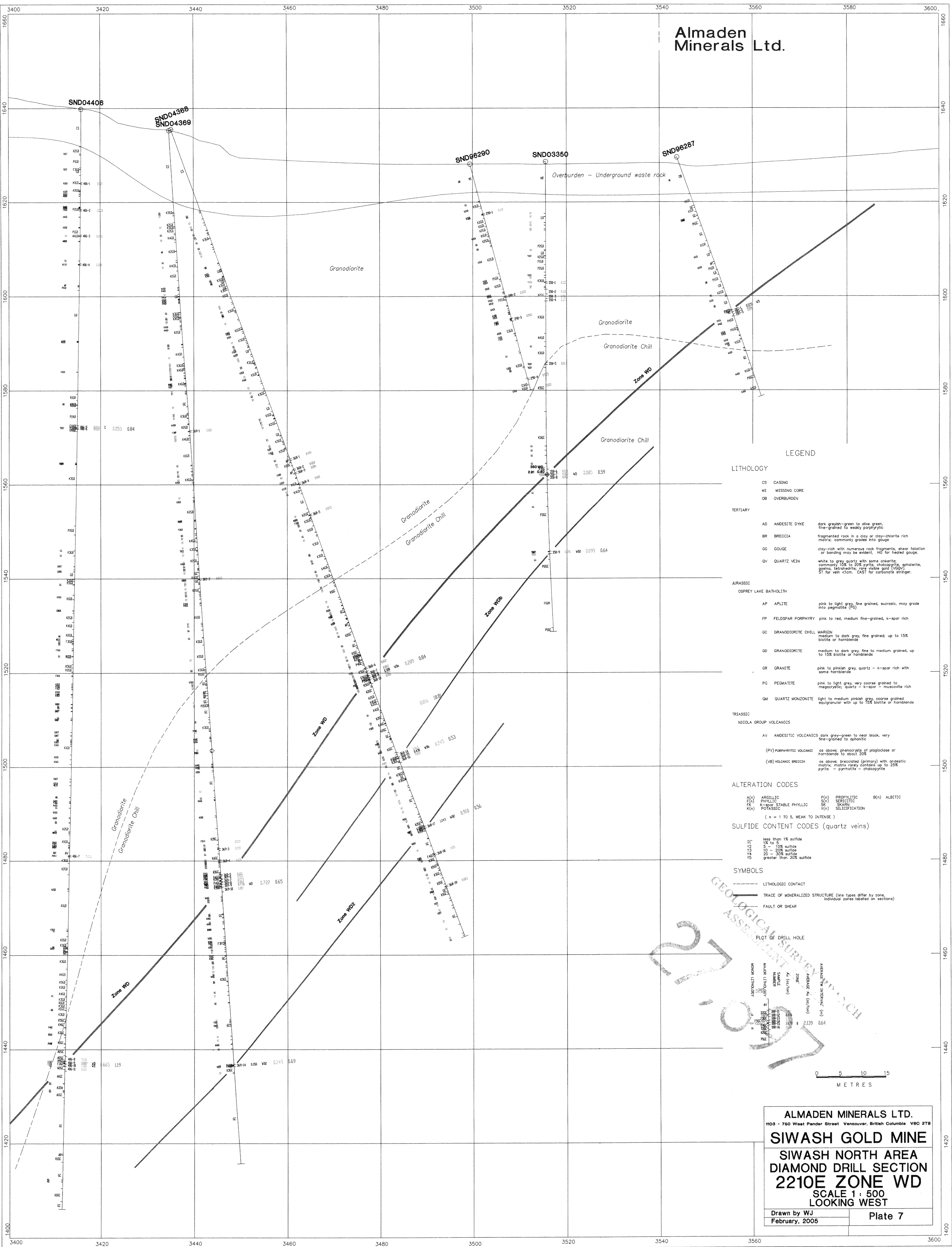
0 5 10 15 METRES

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SIWASH GOLD MINE

SIWASH NORTH AREA
DIAMOND DRILL SECTION
2160E ZONE WD
 SCALE 1 : 500
 LOOKING WEST

Drawn by WJ February, 2005 Plate 6



LEGEND

LITHOLOGY

| | | |
|-------------------------------|---------------------------|---|
| CS | CASING | |
| M1 | MISSING CORE | |
| OB | OVERBURDEN | |
| TERTIARY | | |
| AD | ANDESITE DYKE | dark grayish-green to olive green, fine-grained to waxy porphyritic |
| BR | BRECCIA | fragmented rock in a clay or clay-chlorite rich matrix; commonly grades into gouge |
| GG | GOUGE | clay-rich with numerous rock fragments, shear foliation or banding may be evident; HD for heated gouge |
| QV | QUARTZ VEIN | white to gray quartz with some chlorite, commonly 10% to 20% pyrite, chalcocite, sphalerite, galena, tetrahedrite, iron-sulfide (VGS), S1 for vein ≤ 1 cm; CAST for carbonate stringer |
| JURASSIC | | |
| OSPREY LAKE BATHOLITH | | |
| AP | APLITE | pink to light gray, fine grained, saccharic, may grade into pegmatite (PG) |
| FP | FELDSPAR PORPHYRY | pink to red, medium fine-grained, k-spar rich |
| GC | GRANODIORITE CHILL MARGIN | medium to dark gray, fine grained; up to 15% biotite or hornblende |
| GD | GRANODIORITE | medium to dark gray, fine to medium grained, up to 15% biotite or hornblende |
| GR | GRANITE | pink to pinkish gray, quartz - k-spar rich with some hornblende |
| PG | PEGMATITE | pink to light gray, very coarse grained to megacrystic; quartz - k-spar - muscovite rich |
| QM | QUARTZ MONZONITE | light to medium pinkish gray, coarse grained equigranular with up to 15% biotite or hornblende |
| TRIASSIC | | |
| NICOLA GROUP VOLCANICS | | |
| AV | ANDESITIC VOLCANICS | dark gray-green to near black, very fine-grained to aphanitic |
| (PV) | POPHYRITIC VOLCANIC | as above; phenocrysts of plagioclase or hornblende to about 20% |
| (VB) | VOLCANIC BRECCIA | as above; brecciated (primary) with granitic matrix; matrix may contain up to 25% pyrite - pyrrhotite - chalcocite |

ALTERATION CODES

| | | | | | |
|----------|----------------------|-------|----------------|------|---------|
| A(n) | ARGILLIC | P(n) | PROPYLITIC | B(n) | ALBITIC |
| PH(n) | PHYLIC | S(n) | SERICITIC | | |
| K(n) | K-SPAR STABLE PHYLIC | SK(n) | SKARN | | |
| POTASSIC | | X(n) | SILICIFICATION | | |

(n = 1 TO 5, WEAK TO INTENSE)

SULFIDE CONTENT CODES (quartz veins)

| | |
|---|--------------------------|
| 1 | less than 1% sulfide |
| 2 | 1% to 5% |
| 3 | 5% to 10% sulfide |
| 4 | 10% to 20% sulfide |
| 5 | 20% to 30% sulfide |
| 6 | greater than 30% sulfide |

SYMBOLS

- LITHOLOGIC CONTACT
- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones labeled on sections)
- FAULT OR SHEAR
- PLOT OF DRILL HOLE

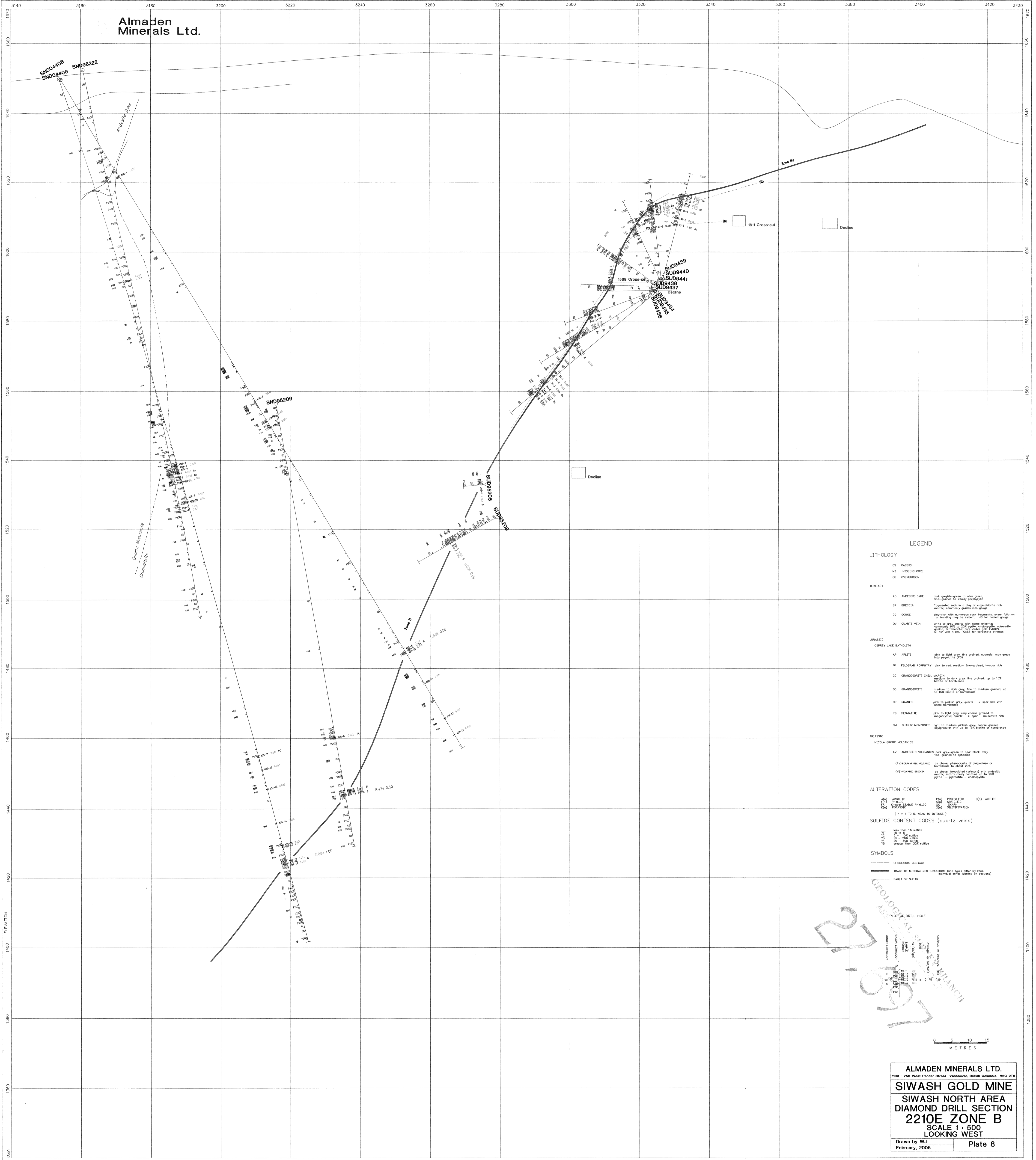
GEOLOGICAL SURVEY OF CANADA
27097

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SIWASH GOLD MINE
SIWASH NORTH AREA
DIAMOND DRILL SECTION
2210E ZONE WD
SCALE 1 : 500
LOOKING WEST

Drawn by WJ
February, 2005

Plate 7



LEGEND

LITHOLOGY

CS CASING
 MI MISSING CORE
 OB OVERBURDEN

TERTIARY

AD ANDESITE DYKE dark grey-green to olive green, fine-grained to weakly porphyritic
 BR BRECCIA fragmented rock in a clay or clay-illite rich matrix, commonly grades into gouge
 GG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident. Not for detailed mapping
 QV QUARTZ VEIN white to grey quartz with some calcite, commonly 10% to 20% pyrite, and/or siderite, galena, arsenic, copper, silver, gold (Ag), Pt for vein rock. C&ST for carbonate stringer.

JURASSIC

OSNEY LAKE BATHOLITH

AP APLITE pink to light grey, fine grained, aegiric, may grade into pegmatite (PG)
 FP FELDSPAR PORPHYRY pink to red, medium fine-grained, K-spar rich
 GC GRANDIORETE CHILL MASSON medium to dark grey, fine grained, up to 15% chlorite or hornblende
 GD GRANDIORETE medium to dark grey, fine to medium grained, up to 15% biotite or hornblende
 GR GRANITE pink to pinkish grey, quartz - K-spar rich with some hornblende
 PG PEGMATITE pink to light grey, very coarse grained to megacrystic, quartz - K-spar - muscovite rich
 QM QUARTZ MONZONITE light to medium pinkish grey coarse grained, aegiricuprous with up to 15% biotite or hornblende

TRIASSIC

NECULA GROUP VOLCANICS

AV ANDESITIC VOLCANICS dark grey-green to near black, very fine-grained to aphanitic
 (PV) PANGLOSS VOLCANIC as above, phenocrysts of plagioclase or hornblende to about 20%
 (VB) VOLCANIC BRECCIA as above, brecciated (primary) with aegiric matrix, matrix may contain up to 20% pyrite - pyrrhotite - chalcopyrite

ALTERATION CODES

AN ANDESITIC (A) PROPYLITIC (B) ALBITIC
 PH PHYLITIC (C) SERICITIC (D) ALBITIC
 ST STABLE PHYLITIC (E) SERICITIC (F) ALBITIC
 POT POTASSIC (G) SERICITIC (H) ALBITIC
 (A = 1 to 5, WEAK TO INTENSE)

SULFIDE CONTENT CODES (quartz veins)

100% 100%
 50% 50%
 25% 25%
 10% 10%
 5% 5%
 1% 1%
 0% 0%
 0.001 0.001
 0.002 0.002
 0.003 0.003
 0.004 0.004
 0.005 0.005
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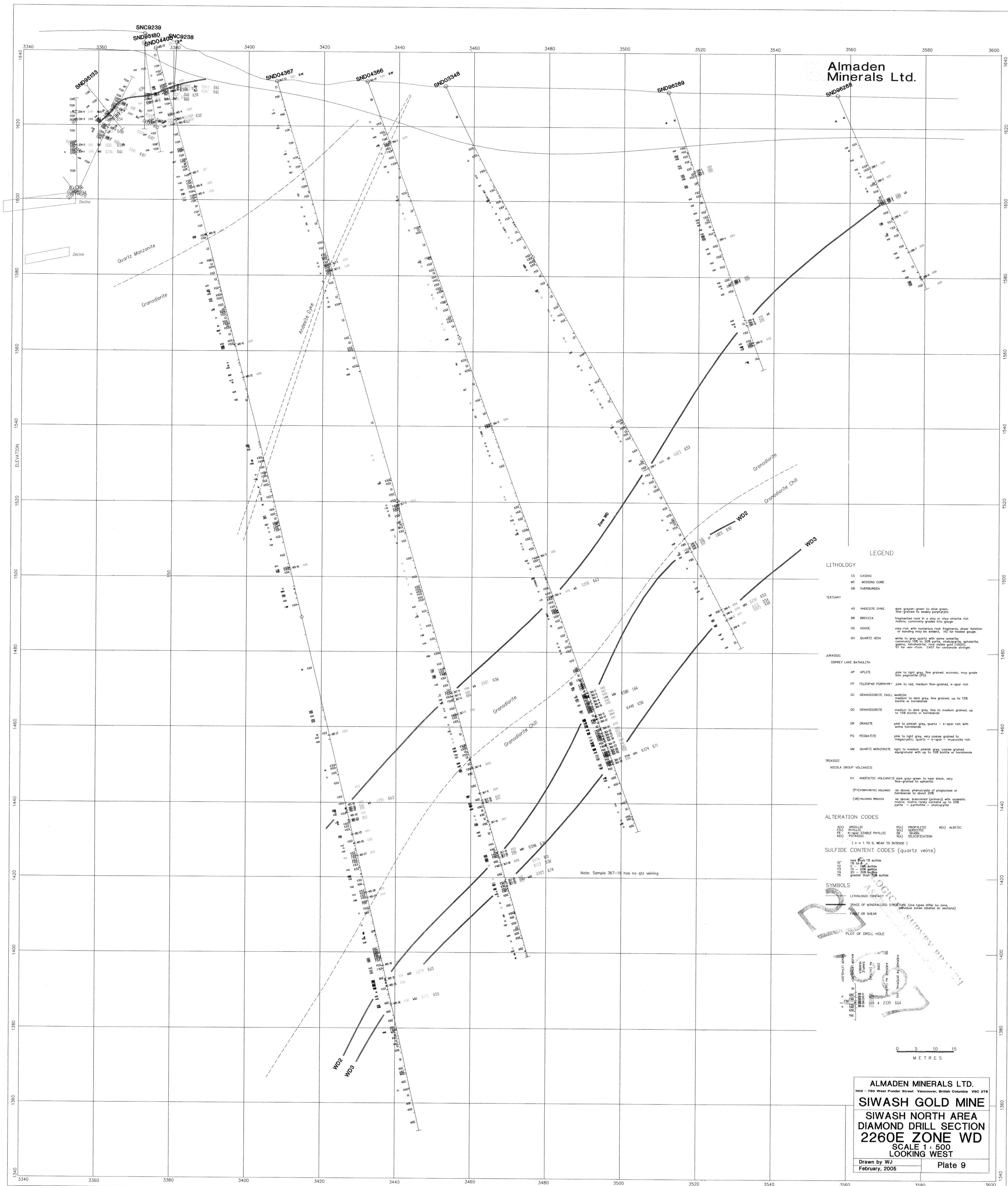
SYMBOLS

--- LITHOLOGIC CONTACT
 --- TRACE OF MINERALIZED STRUCTURE (one type differ by zone, individual zones labelled on sections)
 --- FAULT OR SHEAR
 PLOT OR DRILL HOLE

GEOLOGICAL BRANCH
 27
 1997



ALMADEN MINERALS LTD.
 103 - 750 West Pender Street Vancouver, British Columbia V6C 2T6
SIWASH GOLD MINE
 SIWASH NORTH AREA
 DIAMOND DRILL SECTION
2210E ZONE B
 SCALE 1 : 500
 LOOKING WEST
 Drawn by WJ
 February, 2005



Almaden Minerals Ltd.

LEGEND

LITHOLOGY

- CS CASING
 - MT MISSING CORE
 - GB OVERBURDEN
- TERTIARY
- AD ANDESITE DYKE dark grey-green to olive green, fine-grained to medium porphyritic
 - BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix; secondary grades into gouge
 - GG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident, HQ for headed gouge
 - QV QUARTZ VEIN white to grey quartz with some arsenic, commonly 10% to 20% pyrite, microcline, epidote, garnet, hematite, rutile, ilmenite, zircon, staurolite, etc. for vein; CAS for carbonate stringer
- JURASSIC
- OSPREY LAKE BATHOLITH
- AP APLITE pink to light grey, fine grained, euhedral, may grade into pegmatite (PQ)
 - FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spar rich
 - GC GRANDIORITE CHILL MARGIN medium to dark grey, fine grained, up to 10% biotite or hornblende
 - GD GRANDIORITE medium to dark grey, fine to medium grained, up to 10% biotite or hornblende
 - GR GRANITE pink to pinkish grey, quartz - k-spar rich with some hornblende
 - PQ PEGMATITE pink to light grey, very coarse grained to megacrystic quartz - k-spar - muscovite rich
 - QM QUARTZ MONZONITE light to medium pinkish grey, coarse grained pegmatite with up to 10% biotite or hornblende
- TRASSIC
- NECOLA GROUP VOLCANICS
- AV ANDESITIC VOLCANIC dark grey-green to near black, very fine-grained to aphanitic
 - (P) PORPHYRY VOLCANIC as above, phenocrysts of oligoclase or hornblende to about 200µ
 - (V) VOLCANIC BRECCIA as above, brecciated (clastic) with arsenic matrix; matrix rarely contains up to 20% pyrite - symplectite - chlorite

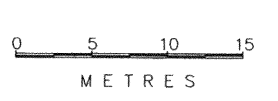
ALTERATION CODES

- AR ARGILLIC (R)
 - PH PHYLIC (P)
 - ST STABLE PHYLIC (S)
 - PO POTASSIC (K)
 - PR PROPYLITIC (R)
 - SP SPALITIC (S)
 - SI SILICIFICATION (S)
 - AL ALBITIC (A)
- (n = 1 to 5, WEAK TO INTENSE)

- SULFIDE CONTENT CODES (quartz veins)
- Q1 less than 1% sulfide
 - Q2 1% to 5% sulfide
 - Q3 5% to 10% sulfide
 - Q4 10% to 20% sulfide
 - Q5 greater than 20% sulfide

SYMBOLS

- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, sub-parallel zones labelled on sections)
- FOLD OR SHEAR
- PLOT OF DRILL HOLE



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 103 - 750 West Pender Street Vancouver, British Columbia V6C 2T8

SIWASH GOLD MINE

SIWASH NORTH AREA

DIAMOND DRILL SECTION

2260E ZONE WD

SCALE 1 : 500
 LOOKING WEST

Drawn by WJ
 February, 2005

Plate 9

Note: Sample 367-16 has no qtz veining

Almaden Minerals Ltd.

LEGEND

LITHOLOGY

- CS CASING
 - MI MISSING CORE
 - OB OVERBURDEN
- TERTIARY
- AD ANDESITE DYKE dark greyish-green to olive green, fine-grained to weakly porphyritic
 - BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix; commonly grades into gouge
 - GG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident, HG for healed gouge.
 - QV QUARTZ VEIN white to grey quartz with some enkerite; commonly 10% to 20% pyrite, chalcopyrite, sphalerite, galena, tetrahedrite; rare visible gold (VGQV). ST for vein <1cm. CAST for carbonate stringer.
- JURASSIC
- OSPREY LAKE BATHOLITH
- AP APLITE pink to light grey, fine grained, sucrosic, may grade into pegmatite (PG)
 - FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spar rich
 - GC GRANODIORITE CHILL MARGIN medium to dark grey, fine grained; up to 15% biotite or hornblende
 - GD GRANODIORITE medium to dark grey, fine to medium grained, up to 15% biotite or hornblende
 - GR GRANITE pink to pinkish grey, quartz - k-spar rich with some hornblende
 - PG PEGMATITE pink to light grey, very coarse grained to megacrystic; quartz - k-spar - muscovite rich
 - QM QUARTZ MONZONITE light to medium pinkish grey, coarse grained equigranular with up to 15% biotite or hornblende
- TRIASSIC
- NICOLA GROUP VOLCANICS
- AV ANDESITIC VOLCANICS dark grey-green to near black, very fine-grained to aphanitic
 - (PV) PORPHYRYTIC VOLCANIC as above; phenocrysts of plagioclase or hornblende to about 20%
 - (VB) VOLCANIC BRECCIA as above; brecciated (primary) with andesitic matrix; matrix rarely contains up to 25% pyrite - pyrrhotite - chalcopyrite

ALTERATION CODES

- A(n) ARGILLIC
- F(n) PHYLIC
- FK K-spar STABLE PHYLIC
- K(n) POTASSIC
- P(n) PROPYLITIC
- S(n) SERICITIC
- SK SKARN
- X(n) SILICIFICATION
- B(n) ALBITIC

(n = 1 TO 5, WEAK TO INTENSE)

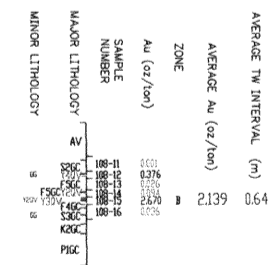
SULFIDE CONTENT CODES (quartz veins)

- Y1 less than 1% sulfide
- Y2 1% to 5%
- Y3 5 - 10% sulfide
- Y4 10 - 20% sulfide
- Y5 20 - 30% sulfide
- Y6 greater than 30% sulfide

SYMBOLS

- LITHOLOGIC CONTACT
- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones labelled on sections)
- FAULT OR SHEAR

PLOT OF DRILL HOLE



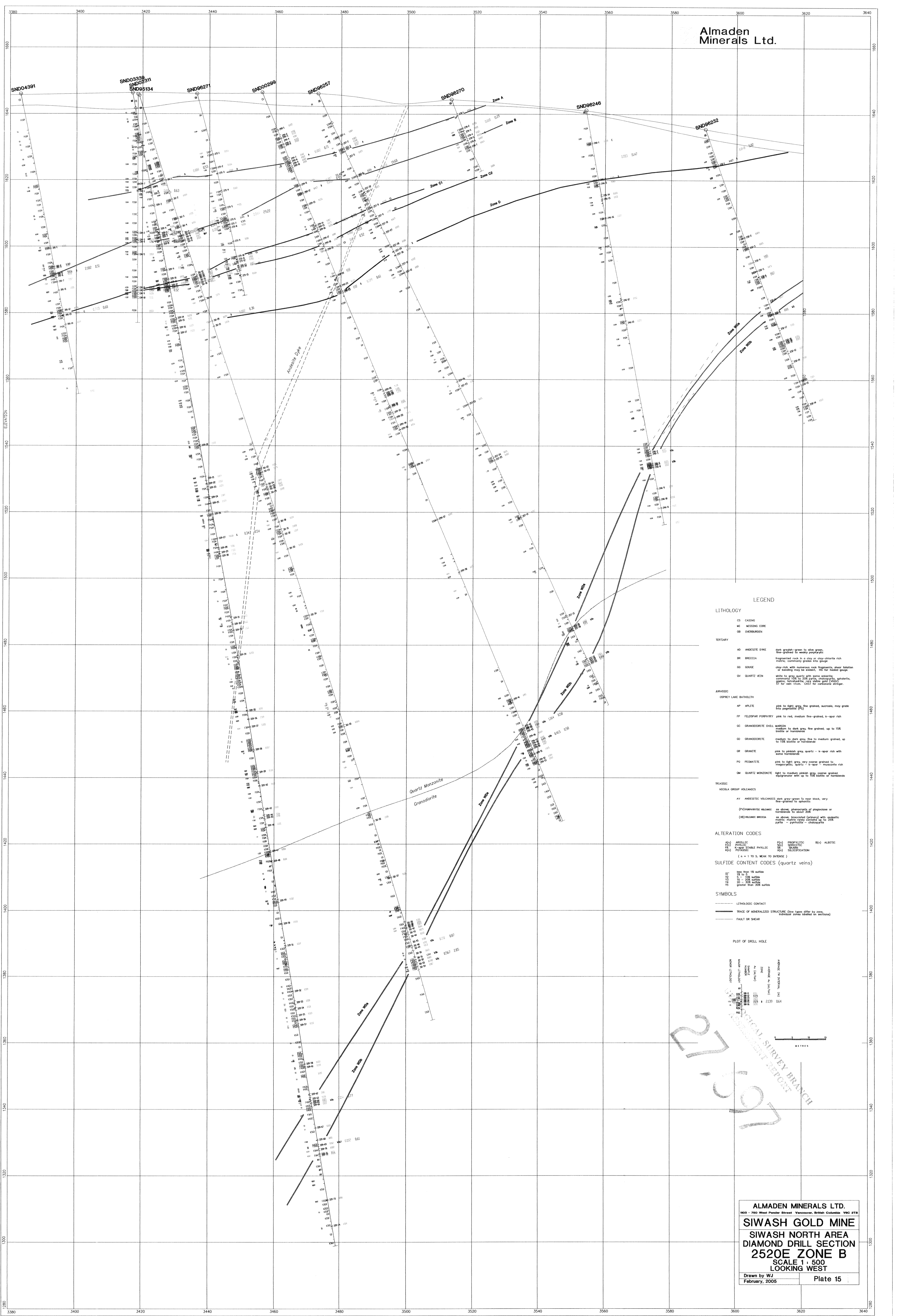
ALMADEN MINERALS LTD.
 1103 - 750 West Pender Street Vancouver, British Columbia V6C 2T8

SIWASH GOLD MINE
SIWASH NORTH AREA
DIAMOND DRILL SECTION
2420E ZONE BC
 SCALE 1 : 500
 LOOKING WEST

Drawn by WJ
 February, 2005

Plate 12

GEOLOGICAL SURVEY OF CANADA
 ASSOCIATED WITH THE UNIVERSITY OF TORONTO



LEGEND

LITHOLOGY

CS CASING
 MI MISSING CORE
 OB OVERBURDEN

TERTIARY

AD ANDESITE DYKE dark gray-green to olive green, fine-grained to weakly porphyritic
 BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix, commonly grades into gouge
 GG GOUGE clay-rich with numerous small fragments, near bottom of blasting may be evident. HG for leaded gouge
 QV QUARTZ VEIN white to gray quartz with some arsenic, commonly contains pyrite, arsenopyrite, galena, stibnite, magnetite, hematite, and/or hematite. HG for hematite veins. CGT for carbonate stringer.

JURASSIC

OSPREY LAKE BATHOLITH

AP AMPHIBOLITE pink to light gray, fine grained, mafic, may grade into amphibolite (FV)
 FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spor rich
 GC GRANDIORITE CHILL MARGIN medium to dark gray, fine grained, up to 15% biotite or hornblende
 GD GRANDIORITE medium to dark gray, fine to medium grained, up to 15% biotite or hornblende
 GR GRANITE pink to pinkish gray, quartz - k-spor rich with some hornblende
 PR PEGMATITE pink to light gray, very coarse grained to megacrystic; quartz - k-spor - muscovite rich
 QM QUARTZ MONZONITE light to medium pinkish gray, coarse grained megacrystic with up to 15% biotite or hornblende

TRIASSIC

NIXOLA GROUP VOLCANICS

AV ANDESITIC VOLCANICS dark gray-green to near black, very fine-grained to aphanitic
 (FV) PORPHYRY VOLCANIC as above, phenocrysts of plagioclase or hornblende to about 0.5 mm
 (B) VOLCANIC BRECCIA as above, brecciated (primary) with, secondary matrix matrix may contain up to 25% pyrite - pyrrhotite - chalcopyrite

ALTERATION CODES

AN ANDESITIC
 PH PHENOCRYSTIC
 ST STIBNITIC
 PR PEGMATITIC
 PY PYRRHOTIC
 CH CHALCOPHYRIC
 AL ALBITIC
 SO SERPENTINIC
 SP SPHALERITIC
 (n = 1 to 5, WEAK TO INTENSE)

SULFIDE CONTENT CODES (quartz veins)

100%+ more than 100 sulfide
 75% 75% to 100% sulfide
 50% 50% to 75% sulfide
 25% 25% to 50% sulfide
 0-25% less than 25% sulfide

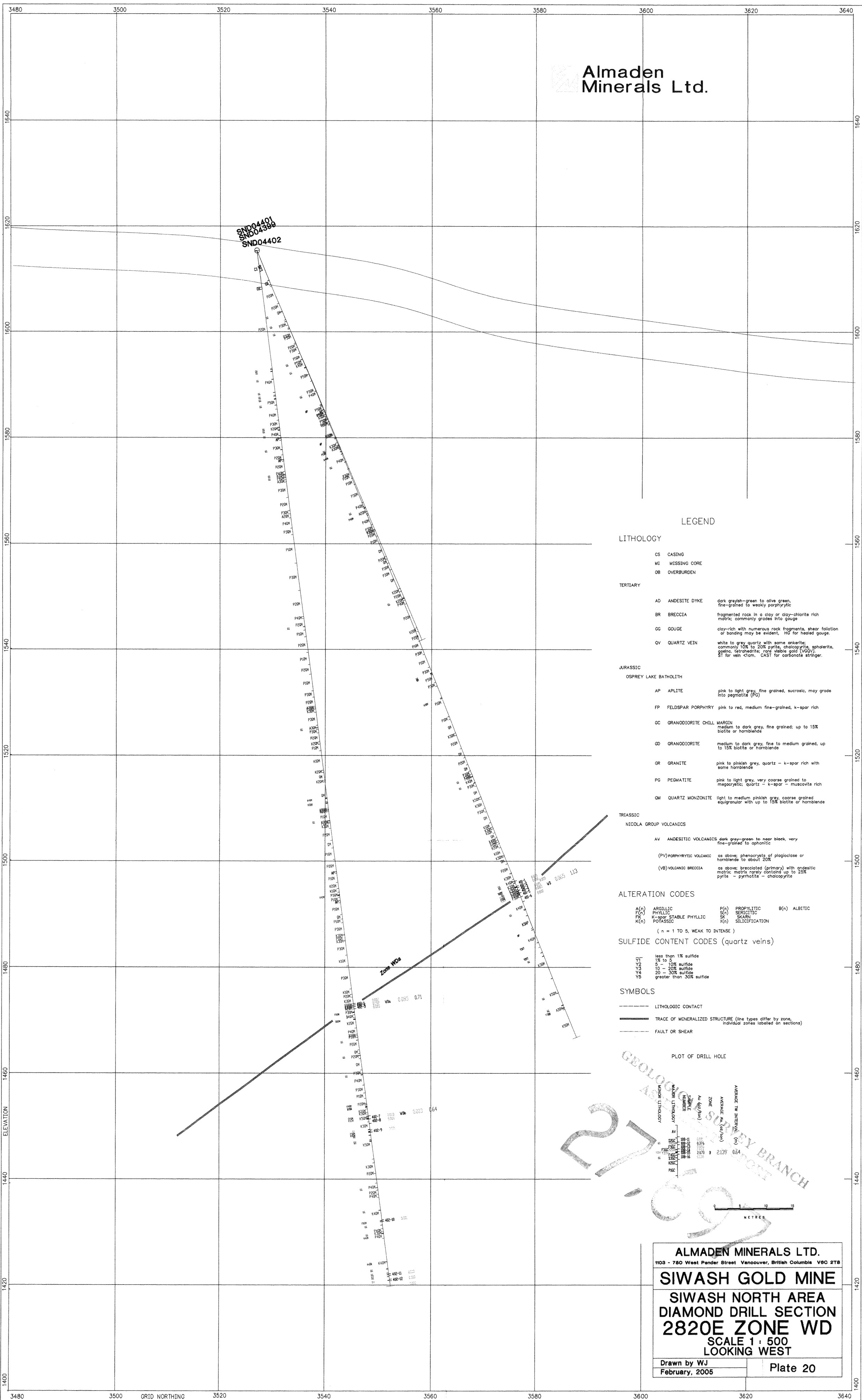
SYMBOLS

--- LITHOLOGIC CONTACT
 --- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones coded as follows)
 --- FAULT OR SHEAR

PLOT OF DRILL HOLE

ADJUSTED SHOW
 ADJUSTED DOWN
 ADJUSTED TOP
 ADJUSTED BOTTOM
 ADJUSTED LENGTH
 ADJUSTED DIAMETER
 ADJUSTED AREA
 ADJUSTED PERIMETER
 ADJUSTED VOLUME
 ADJUSTED WEIGHT
 ADJUSTED DENSITY
 ADJUSTED GRAVITY
 ADJUSTED MAGNETIC
 ADJUSTED RESISTIVITY
 ADJUSTED TEMPERATURE
 ADJUSTED PRESSURE
 ADJUSTED HUMIDITY
 ADJUSTED WIND
 ADJUSTED RAIN
 ADJUSTED SUN
 ADJUSTED MOON
 ADJUSTED STARS
 ADJUSTED PLANETS
 ADJUSTED METEORS
 ADJUSTED COMETS
 ADJUSTED NEBULAE
 ADJUSTED GALAXIES
 ADJUSTED UNIVERSE

2727507



LEGEND

LITHOLOGY

- CS CASING
- MI MISSING CORE
- OB OVERBURDEN
- TERTIARY**
 - AD ANDESITE DYKE dark greyish-green to olive green, fine-grained to weakly porphyritic
 - BR BRECCIA fragmented rock in a clay or clay-chlorite rich matrix; commonly grades into gouge
 - GG GOUGE clay-rich with numerous rock fragments, shear foliation or banding may be evident, HG for headed gouge.
 - QV QUARTZ VEIN white to grey quartz with some ankerite; commonly 10% to 20% pyrite, chalcopyrite, sphalerite, galena, laurochalcite, rare visible gold (VGG); ST for vein κ tm. CAST for carbonate stringer.
- JURASSIC**
 - OSPREY LAKE BATHOLITH
 - AP APLITE pink to light grey, fine grained, sucrosic, may grade into pegmatite (Pg)
 - FP FELDSPAR PORPHYRY pink to red, medium fine-grained, k-spar rich
 - GC GRANODIORITE CHILL MARGIN medium to dark grey, fine grained; up to 15% biotite or hornblende
 - GD GRANODIORITE medium to dark grey, fine to medium grained, up to 15% biotite or hornblende
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ALTERATION CODES

- A(n) ARGILLIC
 - F(n) PHYLLIC
 - FR K-spar STABLE PHYLLIC
 - K(n) POTASSIC
 - P(n) PROPYLITIC
 - S(n) SERICITIC
 - SK SKARN
 - X(n) SILICIFICATION
- (n = 1 to 5, WEAK TO INTENSE)

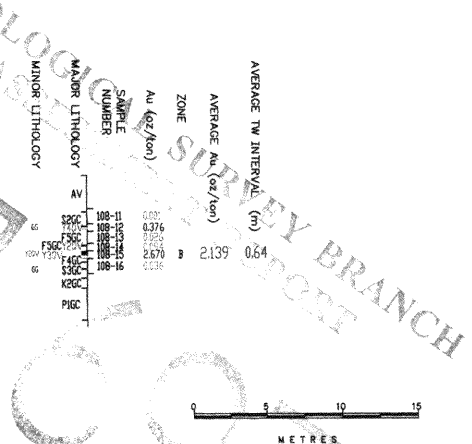
SULFIDE CONTENT CODES (quartz veins)

- S1 less than 1% sulfide
- S2 1% to 5%
- S3 5 - 10% sulfide
- S4 10 - 20% sulfide
- S5 20 - 30% sulfide
- YS greater than 30% sulfide

SYMBOLS

- LITHOLOGIC CONTACT
- TRACE OF MINERALIZED STRUCTURE (line types differ by zone, individual zones labelled on sections)
- FAULT OR SHEAR

PLOT OF DRILL HOLE



ALMADEN MINERALS LTD.
 1103 - 780 West Pender Street Vancouver, British Columbia V6C 2T8

SIWASH GOLD MINE
SIWASH NORTH AREA
DIAMOND DRILL SECTION
2820E ZONE WD
 SCALE 1 : 500
 LOOKING WEST

| | |
|-------------------------------|----------|
| Drawn by WJ February, 2005 | Plate 20 |
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