

Mr. Dave Jennings,
Cypress Anvil Mining,
#330-355 Burrard
Vancouver, B.C.

017768

John Kuhne,
626 Kemsley Ave.,
Coquitlam, B.C.
V3J 3Z3

Oct. 14/79.

Dear: Mr. Jennings.

As to the best of my knowledge the field observations & calculations of the Vangorda Diamond Drill Holes are correct.

Some of the DDH. names are incorrectly logged in my fieldbook & calculation sheets. The ones that I suspect are 'DPH 71, 92 & 96. So when Stan is cross checking my drill hole locations with the old Kerr Addison DPH map, he should also correct my drill hole names in the fieldbooks & calculation sheets.

I would strongly advise Stan to have the 77 & 78 DY D.D.H.s resurveyed. Since, the quality of Dan P's field & calculation techniques are very poor.

Yours truly
John Kuhne

John Kuhne.
RR #4
Barrie Ont.

Father = Fred
Kuhne

Vangorda Station Co-ords

Station No.	Station Name	Northings	Eastings	Elevation
1451	JK2	6,902,570.6279	594,330.7248	1,163.684
1459	JK3	6,903,173.6496	594,227.7697	1,166.250
1454	JK4	6,903,609.9506	593,942.7947	1,172.733
1458	IN1	6,903,257.2663	594,503.8211	1,186.171
1456	IN2	6,903,005.0408	594,446.1982	1,161.167
1455	IN3	6,902,680.5766	594,581.7129	1,162.699
1460	IN4	6,903,311.1683	594,063.7791	1,150.298
1452	HIW#2	6,903,299.0921	593,904.0829	1,142.274

* Note - all vangorda drill hole calculations are based on these co-ords.

NOTE: These co-ords seem to be in error in northing by - 0.60 Easting and Elev. agrees very close to final published values from 1979 control.

L. Aucoin Nov 12, 1990

CYPRUS ANVIL MINING CORP.

PLACE

D4 claims

PARTY

DP & SB

DATE

May 13/78

B.S.

756

STA.

DP (1)

F.S.

NAIK B.S. FOR CYFO-?

H.A.

① 215°-15'-20"

① 215°-14'-40"

215-14-50

215-15-30

H.A.

① 70°-30'-40"

① 70°-30'-40"

70-31-15

✓

H.D.

① 73.848

M.D. or S.I.

~~6-80~~

① 73.850

②

73.850

V.A.

① 79°-47'-48"

① 79°-47'-30"

79-47-18

V.A.

② 280°-13'-00"

① 280°-13'-05"

V.D.

H.I.

+ 146.7 cms.

H.P.

- 153.0 cms.

S.E.

EL.

REMARKS

CYPRUS ANVIL MINING CORP.

PLACE

D4

PARTY

DP SB

DATE

June 25

B.S.

DP

STA.

DP₂

F.S.

784-06

H.A.

① 302°-50'-10"

① 302°-50'-15" ✓

H.A.

② 245°-40'-30"

H.D.

M.D. or S.I.

① 289.751

② 289.752

③

289.752

V.A.

① 96°-29'-30"

① 96°-29'-25" ✓

V.A.

② 263°-30'-40"

V.D.

H.I.

+ 148.0 cm

H.P.

- 113.0 cm

S.E.

EL.

REMARKS

DDH 78X-02

.....
.....

6,901,038.59 -
597,503.27 -

6,900,919.00 -
597,573.84 -
1,082.01 -

1.50 -

.....
.....

17.3950 -
106.9900 -
89.1430 -

0.00 D
45.00 M
30.00 S

106.38 A

0.26

1,084.67 ELEV A

347.00 D

7.00 M

8.59 S

6,901,023.29 N A

597,549.99 K A

.....

NAIL @ BX-01
for by BS.

.....
.....

6,901,876.52 ✓
597,475.01 ✓

6,901,211.17 ✓
597,287.93 ✓
1,132.98 ✓

1.47 ✓

.....
.....

215.1538 ✓
73.8500 ✓
79.4718 ✓

10.00 D
12.00 M
42.00 S

72.58 A

1.53 ✓

1,146.01 A

230.00 D

57.00 M

54.32 S

6,901,165.40 A

597,231.47 A

.....

78X-04 ✓

.....
.....

6,901,211.17
5,97,287.93

6,901,181.31
598,004.82
1,041.51

1.48

.....
.....

347.4620
284.8770
90.1530

0.00 D
-15.00 M
-30.00 S

284.37 A

1.60

1,040.11 A

260.00 D
9.00 M
26.40 S

6,901,132.61 ✓ A
597,724.14 ✓ A

.....

70X-03 ✓

.....

6,901,211.17
597,287.93

6,901,181.31
598,004.82
1,041.51

1.48

.....
.....

16.5842
406.4330
87.3500

2.00 D
25.00 M
0.00000001 S

406.08 A

1.47

1,053.55 A

289.00 D
21.00 M
48.40 S

6,901,315.95 ✓ A
597,621.71 ✓ A

.....

CYPRUS ANVIL MINING CORP.

PLACE	DY		PARTY	DP SB	DATE	June 25
B.S.	DP1					
STA.	DP2					
F.S.	78X-03					
H.A.	① 16-58-40	} 16-58-42 ✓				
H.A.	② 33-57-24					
H.D.						
M.D. or S.I.	① 406.439	② 406.439	③ 406.440			
V.A.	① 87-35-05	} 87-35-00 ✓				
V.A.	② 272-25-05					
V.D.						
H.I.	+198.0 cm					
H.P.	-147.0 cm					
S.E.						
EL.						
REMARKS						

CYPRUS ANVIL MINING CORP.

PLACE	DY		PARTY	KDP DP 16L	DATE	AP 27/78
B.S.	751					
STA.	752					
F.S.	78-X02					
H.A.	① 17-39-50	} 17-39-50 ✓				
H.A.	② 35-19-40					
H.D.						
M.D. or S.I.	① 351-04	② 351-03	③ 351-03			
V.A.	① 89-14-40	} 89-14-20 ✓				
V.A.	② 270-45-40					
V.D.						
H.I.	+4.91	+1.50				
H.P.	-0.84	-1.26				
S.E.						
EL.						
REMARKS	35-19-40 35-14-20					

CYPRUS ANVIL MINING CORP.

PLACE D4

PARTY DP SB

DATE June 25

B.S. DP₁
 STA. DP₂
 F.S. 78X-04
 H.A. ① 347-46-22 } 347-46-20 ✓
 H.A. ② 335-32-40 }

M.D. or S.I. ① 284-876 ② 284-877 ③ 284-877
 V.A. ① 90-15-40 } 90-15-30 ✓
 V.A. ② 269-44-40 }
 V.D.
 H.I. +148.0 cm
 H.P. -160.0 cm
 S.E.
 EL.

REMARKS

CYPRUS ANVIL MINING CORP.

PLACE D4

PARTY DP SB

DATE Apr 26 27/78

B.S. 751
 STA. 752
 F.S. NAIL
 H.A. ① 02-25-33 } 02-25-33
 H.A. ② 04-51-05 }

3.281 ft = 1 metre.

M.D. or S.I. ① 336-37 } 336-36 } 336-37 } 336-38
 V.A. ① 85-10-25 } 85-10-13
 V.A. ② 274-50
 V.D. +1.50
 H.I. 4.91 +/- 49.65
 H.P. 3.15 - 96.33
 S.E.
 EL.

REMARKS

85-10-25

NAIL FOR GYRO

levelling

.....
.....

6,901,038.52
597,503.27

6,900,919.00
597,573.84
1,082.01

1.50

.....
.....

2.2533
102.5200
85.1013

4.00 D
49.00 M
47.00 S

102.16 A

0.96

1,091.18 *Elev.* A

331.00 D

51.00 M

58.73 S

6,901,009.09 *N* A
597,525.67 *E* A

.....
.....

78x-06

.....
.....

6,901,211.17
597,287.93

6,901,181.31
598,004.82
1,041.51

1.48

.....
.....

302.5015
289.7520
95.2925

-6.00 D
-29.00 M
-25.00 S

287.39 A

1.13

1,009.11 A

215.00 D

13.00 M

21.40 S

6,900,346.12 ✓ A
597,338.78 ✓ A

.....

DDH - 79X03

Field Data

Zenith Angle = $90^{\circ}28'31''$

SD = 879.021

$\Delta H = -7.374$

Horizontal Angle = $338^{\circ}37'02''$

HD = 878.990

HI @ 756 = 1.470 m

HI @ 79X03 = 1.560 m

* Note: All formula's used are from Wild D135 booklet

Difference in Height

$$\Delta H = SD \cdot \cos z + (1-k) \frac{(SD)^2 \sin^2 z}{2 \cdot R} + i - z$$

$k_m = 0.13$

$R = 6370000 \text{ m}$

$$= 879.021 \cdot \cos 90^{\circ}28'31'' + (1-0.13) \frac{(879.021)^2 \sin^2 90^{\circ}28'31''}{2 \cdot (6370000)} + 1.47 - 1.56$$

$\Delta H = -7.329 \text{ m}$

Reduction to Horizontal

$D_H = SD \cdot \sin z$

$= 879.021 \cdot \sin 90^{\circ}28'31''$

$D_H = 878.9908 \text{ m} \approx 878.991 \text{ m}$

Elevation of 79X03

Hr = Height of reflector

Elev. @ 756 = 1149.04

$\Delta H = 7.329$

$H_r = 1141.71 + 1.56 \text{ m}$

$= 1143.266 \text{ m}$

Elev @ 79X03 = 1141.706 \approx 1141.71 m.

Reduction to MSL

$D_o = D_H - D_H \frac{H_r}{R}$

$$= 878.991 - 878.991 \cdot \frac{1143.27}{6370000}$$

$D_o = 878.833 \text{ m} \times 0.9996$

DDH - 79X03.

Field Data

* Note: All formula's used are my own.

Zenith Angle = $90^{\circ} 28' 31''$

SD = 879.021 m $\Delta H = -7.374$

Horizontal Angle = $338^{\circ} 37' 02''$

HD = 878.990

HI @ 756 = 1.469 m

HI @ 79X03 = 1.560 m

Zenith Correction for 756-79X03.

$$Z_{AB} = \left(\frac{T_B - I_A}{SD} \right) \cdot \frac{180}{\pi}$$

$$= \left(\frac{1.560 - 1.469}{879.021} \right) \cdot \frac{180}{\pi}$$

$$Z_{AB} = 0^{\circ} 00' 21''$$

$$Z_{756-79X03} = 90^{\circ} 28' 31'' + 0^{\circ} 00' 21'' = 90^{\circ} 28' 52''$$

C-Factor

$$C = \left(\frac{SD}{R} \right) \cdot \frac{180}{\pi} = \left(\frac{879.021}{6385769.076} \right) \frac{180}{\pi} = 0^{\circ} 00' 28''$$

Mean Radius of the Earth @ Grum

$$\phi_m = \frac{62^{\circ} 14' + 62^{\circ} 19'}{2} = 62^{\circ} 16' 30''$$

$$R_{\phi_m} = \frac{a(1-e^2)}{(1-e^2 \sin^2 \phi_m)^{3/2}}$$

$$e^2 = 0.006768658$$

$$a = 6378206.4$$

$$= \frac{6378206.4(1-0.006768)}{(1-0.006768 \sin^2 62^{\circ} 16' 30'')^{3/2}}$$

$$R = 6385769.076 \approx 6385769 \text{ m}$$

Difference in Height 756-79x03

$$h_B - h_A = SD \sin(90^\circ - Z_B + C(95 - K)) \sec \frac{C}{2}$$

* Note: Since no coefficient of Refraction was obtained a mean k is used.

$$\Delta H = 879.021 \sin(90^\circ - 90^\circ 08' 02'' + 28''(0.13)) \sec \frac{28''}{2} \quad K = 0.13$$

$$\Delta H = -7.3655 \text{ m}$$

$$\approx -7.366 \text{ m}$$

$$\therefore \text{Elev. @ 79x03} = 1149.04 - 7366$$

$$= 1141.670 \text{ m}$$

Reduction to MSL

$$MN = \sqrt{(SD)^2 - (H_2 - H_1)^2}$$

$$= ((879.021)^2 - (1143.230 - 1150.504)^2)^{1/2}$$

$$\text{Elev. of } H_r = 1143.230 \text{ m}$$

$$\text{Elev. of } H_I = 1150.504 \text{ m}$$

$$MN = 878.991 \text{ m}$$

$$H_{AV} = \frac{1143.23 + 1150.504}{2}$$

$$= 1146.867 \text{ m}$$

$$K = \frac{MN \times R}{R + H_{AV}}$$

$$= \frac{878.991 \times 6385769}{6385769 + 1146.867}$$

$$K = 878.8331$$

$$S = K + \frac{K^3}{24 \cdot R^2} = 878.833 + \frac{(878.833)^3}{24 \cdot (6385769)^2}$$

$$S = 878.8331 \text{ m}$$

$$\approx 878.833 \text{ m}$$

Zenith Correction

$$Z_{AB} = \left(\frac{I_B - I_A}{SD} \right) \cdot \frac{180}{\pi}$$

I_B = height of target
@ station B.

I_A = height of Instr.
@ station A

SD = slope Distance

Diff in Elevation (Reciprocal)

$$H_B - H_A = SD \cdot \sin \frac{Z_B - Z_A}{2}$$

$$\Delta H = H_B - H_A$$

C - Factor

$$C = \left(\frac{SD}{R} \right) \cdot \frac{180}{\pi}$$

$$R \phi_m = \frac{a(1-e^2)}{(1-e^2 \sin^2 \phi_m)^{3/2}}$$

R = Radius of
earth.

$$\text{Mean } R = 6385000 \text{ m.}$$

$$e^2 = .006768658$$

$$a = 6378206.4$$

$$R = 6385760.76$$

$$\phi_m = 60^\circ 16' 30''$$

Coefficient of Refraction

$$0.5 - m = \left[\frac{Z_A + Z_B}{2} - 90^\circ \right]$$

C = Deg.

New - Reciprocal Case

$$h_C - h_A = SD \sin \left(90^\circ - Z_C + C \left(0.5 - m \right) \right) \sec \frac{C}{2}$$

* Calculated c-factor for
line A-C

Reduction to Mean Sea level.

$$MN = \sqrt{(SD)^2 - (H_B - H_A)^2}$$

$$H_{av} = \frac{H_A + H_B}{2}$$

$$K = \frac{MN \times R}{R + H(av)}$$

$$S = K + \frac{K^3}{24R^2}$$

$$S = \text{MSL Distance}$$

OR

$$\cos C = \frac{(R + H_A)^2 + (R + H_B)^2 - (SD)^2}{2(R + H_A)(R + H_B)}$$

$$S = R \cdot C$$

