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**NEVILLE CROSBY INC.**

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MINING & FORESTRY SUPPLIES

**Waterproof  
Cruiser's Metric Field Book**

**NCI 341**

TULAMEEN

6, 7, 22 Sept, 19 Oct, 8 Nov 78,

7 Feb 79, 4 April 79, 16, 17 May  
17 July 79

6 Sept

Drove Nham → Tulameen.

Worked on wier.

Water flow at 4: PM :

rev/60sec

87  
83  
85

} 85 average  
(at 0.6 depth)

water depth 36 cm

width 37 cm

$$\text{Velocity: } \frac{85}{60} \times 2.170 + 0.30$$

$$= 3.104 \text{ Ft/sec}$$

$$= 94.610 \text{ cm/sec}$$

$$= 7.561 \text{ m}^3/\text{min}$$

$$\times 219.9694 = 1663.19 \text{ gal/min}$$

7 Sept

Finished wier.

Water flow at 12 Noon :

rev/60sec

70  
71  
71

} 71 (at 0.6)

water depth: 24 cm

width: 37 cm

$$\text{velocity: } \frac{71}{60} \times 2.170 + 0.30 = 2.598 \text{ Ft/sec}$$

$$= 79.182 \text{ cm/sec}$$

$$= 4.219 \text{ m}^3/\text{min}$$

$$\times 219.9694 = 928.05 \text{ gal/min}$$

- downstream top edge ~~is at~~  
of top brick is 86 cm

top of dam is at 44 cm

## PROFILE:



59  
44  
—  
103

3.7 m	48 cm
3.8	53
3.9	55
4.0	56
4.1	60 cm
4.2	103 cm

22 Sept:  
1:30 PM

Depth of water: 17 cm  
width: 37 cm

current speed (rev./60 sec):

48 } av 49 rev/60 sec  
49 }  
50 } at 0.6 depth

$$\frac{49}{60} \times 2.180 + 0.03 = 1.81 \text{ Feet/sec}$$

$$12 \times 1.81 \times 2.54 = 55.1688 \text{ cm/sec}$$

volume / min =

$$.551688 \times .37 \times .17 \times 60$$

$$= 2.082 \text{ m}^3/\text{min}$$

$$2.082 \text{ m}^3/\text{min} \times 219.9694 \\ = 457.98 \text{ gal/min}$$

19 October

2:00 PM

DEPTH 13 cm

WIDTH 37 cm

current speed (rev/60 sec)

$\left. \begin{matrix} 61 \\ 61 \\ 62 \end{matrix} \right\} 61 / 60 \text{ sec}$   
at 0.06  
depth

$$\frac{61}{60} \times 2.170 + 0.030 = 2.236$$

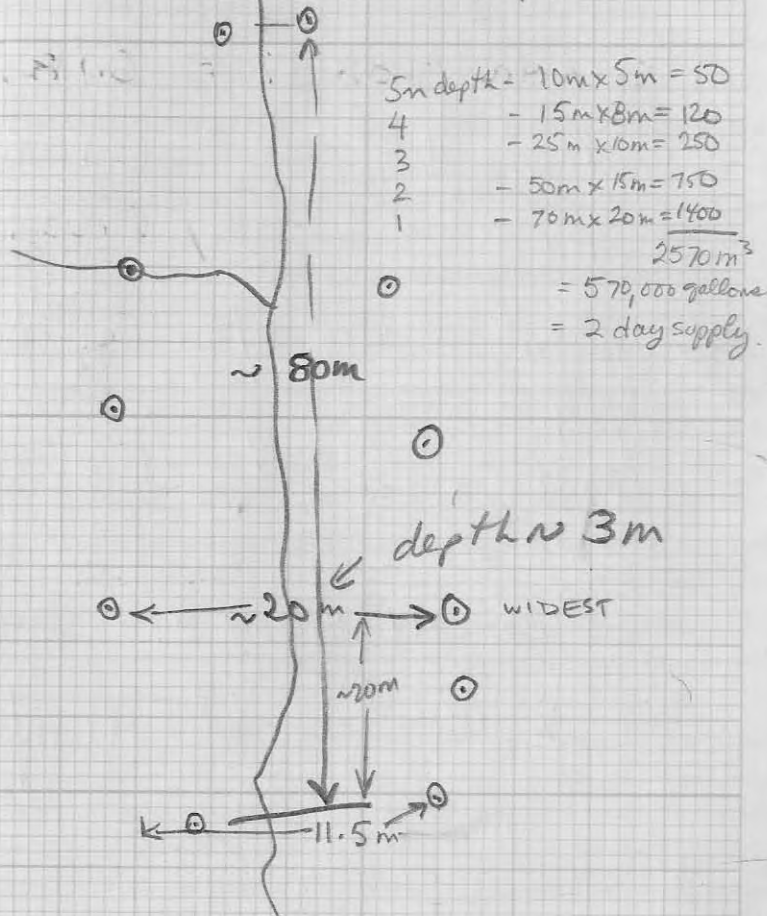
Feet/sec

$$= 40.76 \text{ m/min}$$

$$40.76 \times .13 \times .37 = 1.96 \text{ m}^3/\text{min}$$

$$= 431 \text{ Imp gal/min}$$

reservoir  
dam 5 m high  
assuming a  
dam would be 11.5 m  
wide at the water line of  
15 m.



8 November 1978

1.00 PM

DEPTH: 48 cm  
(4 cm above dam)

$$\begin{aligned} \text{XS Area } 48 \times 37 &= 0.178 \text{ m}^2 \\ + \quad 4 \times 325 &= 0.13 \text{ m}^2 \\ \hline &0.308 \text{ m}^2 \end{aligned}$$

current speed (rev/60 sec)

$$\left. \begin{array}{l} 89 \\ 93 \\ 95 \end{array} \right\} \text{ av } 92 / 60 \text{ sec}$$

$$\frac{92}{60} \times 2.170 + .030 = 3.358 \text{ ft/sec}$$

$$\times 18.288 = 61.41 \text{ m/min}$$

$$61.41 \text{ m/min} \times 0.308 \text{ m}^2$$

$$= 18.91 \text{ m}^3/\text{min}$$

$$\times 219.9694 = 4160 \text{ Imp gal} \\ \text{/minute}$$

7 FEB, 1979:

- depth to water surface 70cm

∴ water x section 16cm x 37cm

est. water velocity 55 cm/sec  
(as at 22 Sept)

volume = 1.95 m<sup>3</sup>/min

1.95 m<sup>3</sup>/min x 219.9694

= 428.9

≈ 430 g p m

- lotsa ice & ∴ water flow may not be absolutely accurate.

- ~ 12-18" ice on pools in creek, + ~ 2-3FT snow

- open pool ~ 10FT x 10FT below dam

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### WILDLIFE:

Squirrels, 1 deer track, a few rabbit tracks, + nothing else

- ~ 30-36" snow in area from Tower clearing to mile 5.5 + down to creek

4 April 1979:

10:00 AM:

depth to water 67cm  
(water depth 19cm)

- creek still mostly snowed  
in

- Northwood Mills have  
ploughed out road to Mi 10.

- ~ 2-3 feet of snow  
remain on hillside  
east of Blakeburn Creek -  
~ 98% ground cover.

- no tracks of deer or  
other big beasts.

estimated water velocity 60cm/sec  
(based on previous measurements)

water X section  $19\text{cm} \times 37\text{cm} = 703\text{cm}^2$

$$0.19 \times 0.37 \times .60 \text{ m/sec} = 0.042 \text{ m}^3/\text{sec}$$

$$\times 60 = 2.53 \text{ m}^3/\text{min}$$

$$\times 219.9694 \approx \underline{\underline{557 \text{ gpm}}}$$



25 April 1979

1:00 PM

Count in 60 sec.:

85  
84  
85 } 85/60 sec  
at 0.6 depth

depth to water 50 cm

(water depth  $86 - 50 = 36$  cm)

width 37 cm

$$\text{Velocity: } \frac{85}{60} \times 2.170 + 0.30 =$$

$$3.104 \text{ ft/sec}$$

$$= 94.610 \text{ cm/sec}$$

$$= 7.561 \text{ m}^3/\text{min}$$

$$\times 219.9694 = \underline{\underline{1663.19 \text{ gal/min}}}$$

Snow: ~ 50% gone between road and intake site, still complete coverage at trenches.

Claytonia & Rorivaculus in bloom

16 May 1979

3 PM

depth: 20 cm above  
dam (66 cm)

counts in 60 sec:

(a) 1 m from east bank -

av. 64

av. 77

(b) 1 m from west bank -

av 90

(c) in notch of weir -

av 112

XS - (a) 37 cm x 66 cm  
(weir)

$$\frac{112}{60} \times 2.170 + 0.30 = 4.35 \text{ ft/sec}$$

(b) 350 cm x 20 cm  
(above dam)

$$\frac{77}{60} \times 2.170 + 0.30 = 3.08 \text{ ft/sec}$$

$$4.35 \text{ ft/sec} \times 30.48 = 132.59 \text{ cm/sec}$$

$$132.59 (.37) (.66) (60) = 19.43 \text{ m}^3/\text{min}$$

$$3.08 \text{ ft/sec} \times 30.48 = 94.03 \text{ cm/sec}$$

$$(.9403) (3.5) (.20) (60) = 39.49 \text{ m}^3/\text{min}$$

$$19.43 + 39.49 = 58.92 \text{ m}^3/\text{min}$$

$$\times 219.9694 = \underline{12961 \text{ gal/min}}$$

- collected water quality  
samples at sites A  
and C

Site B inaccessible  
due to depth of Blackburn  
Creek at road crossing

17 May

Water quality samples at  
sites F, E, and D.

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wildlife - 2 black bear,  
deer at various spots  
along road above Graniteck  
& in Tulameen valley.

17 July 1979

Blakeburn Flow

1:00 PM

water depth 19 cm

width 37 cm

Rev / 60 sec:

54 / 53 / 54

Average 54

$$\frac{54}{60} \times 2.170 + 0.03 = 1.983$$

$$1.983 \text{ ft/sec} \times 18.288 = 36.265 \text{ m/min}$$

$$36.265 \text{ m} \times 0.19 \text{ m} \times 0.37 \text{ m} = 2.55 \text{ m}^3/\text{min}$$

$$2.55 \text{ m}^3/\text{min} \times 219.9694 = 561 \text{ Imp gal/min}$$

Revegetation

Roads

& trenches in main area of deposit growing well except where trampled by cattle. (Gross ~3-4" Fall + ground well covered)

In area of 1979 rotary drilling there is no sign of growth, & where seeding was on pulverized rock rather than soil, growth is poor to non-existent.

Temp 35°

16 August

Site T-1 (Tul below Granite Cle)

Temp  $15.5^{\circ}\text{C}$  10:45 AM

Site T-9 (Tul above Collins Gulch)

Temp  $16^{\circ}\text{C}$  11: AM

Site T-2 (Gran at Tul)

Temp  $13.5^{\circ}\text{C}$  11:20 AM

Site T-8 - (Collins Gulch)

Temp  $10.5^{\circ}\text{C}$  12:30 PM

Site T-3 - (upper Gran)

2:30 PM Temp  $15^{\circ}\text{C}$

Site T4 - (intake)

3:45 PM Temp  $11^{\circ}\text{C}$

water depth 10 cm

width 37 cm

speed 47, 46, 49 rev in 60 sec

$$\frac{47}{60} \times 2.170 + 0.03 = 1.730 \text{ FT/SEC}$$

$$1.730 \times 18.288 = 31.635 \text{ m/min}$$

$$31.635 \text{ m/min} \times .37 \times .10 =$$

$$1.1705 \text{ m}^3/\text{min}$$

$$1.1705 \text{ m}^3/\text{min} \times 219.9694$$

$$= \underline{\underline{257.47 \text{ gal/min.}}}$$

25 Sept 79

2:00 PM

water depth 7.5 cm

width 37 cm

average of 3 counts in

60 sec = 37

$$\frac{37}{60} \times 2.180 + 0.02 = 1.364 \text{ ft/sec}$$

$$\times 18.288 = 24.95 \text{ m/min}$$

$$\text{volume } .075 \times .37 \times 24.95$$

$$= 0.692 \text{ m}^3/\text{min}$$

$$\times 219.9694 = 152.3$$

gallons/minute

24 October      1979

1:00 PM

counts in 60 sec

48/48/48

depth 11 cm

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$$\frac{48}{60} \times 2.180 + 0.02 = 1.764$$

$$\times 18.288 = 32.26 \text{ m/min}$$

$$\text{volume } .11 \times .37 \times 32.26$$

$$= 1.31 \text{ m}^3/\text{min}$$

$$\times 219.9694 = \underline{289.5 \text{ gpm}}$$

Had snowed one or two days earlier but mostly melted now. Raining. No ice on creek.

13 Nov : 1979

10 AM

depth 9 cm

est velocity  $\sphericalangle$  30 m/min

Volume

$$0.09 \times 0.37 \times 30 = 0.999 \text{ m}^3/\text{min}$$

$$0.999 \times 219.9694 = \underline{\underline{220 \text{ gpm}}}$$

Temp (air)  $\sim -4^\circ\text{C}$

Creek partly frozen at  
wier  $\therefore$  flow measurement  
not perfectly accurate ( $\pm 10\%$ ).



## CONVERSIONS

$$\text{cu m.} \times 219.9694 = \text{Imp gallons}$$

$$\text{Ft/sec} \times 18.288 = \text{m/min}$$

$$\times 30.48 = \text{cm/sec}$$