

## Manning Equation - Data Collection

### A GENERAL INFORMATION

1. Person conducting measurement: CISCO
2. Purpose of measurement: BU
3. Water Right or Claim No. (if known): 69-40008
4. Name of stream: BEAR CREEK
5. Location of diversion:
  - i) Twp \_\_\_\_\_, Rng \_\_\_\_\_, Sec \_\_\_\_\_,  $\frac{1}{4}$  \_\_\_\_\_  $\frac{1}{4}$
  - ii) POD name (if known): BEAR COMMUNITY DITCH
  - iii) GPS file name: 126-130
  - iv) GPS site tag number: A0016818 RIVER LEFT OF DAM WING WALL

### B CROSS SECTION DATA

1. Basis: ☐ high water mark ☒ ditch capacity
2. Location Notes: 2.18" GALVANIZED PIPES w/ JET. 36" PIPE INTO DITCH.

| No. | Reading | Distance | No. | Reading | Distance | No. | Reading | Distance |
|-----|---------|----------|-----|---------|----------|-----|---------|----------|
| 1   |         | 0        | 8   | 2.1     | 7        | 15  | 1       | 5        |
| 2   | 1.3     | 1        | 9   | 0       | 8        | 16  | 0       | 6        |
| 3   | 1.9     | 2        | 10  |         | 0        | 17  |         |          |
| 4   | 2.1     | 3        | 11  | 1       | 1        | 18  |         |          |
| 5   | 2.1     | 4        | 12  | 1       | 2        | 19  |         |          |
| 6   | 2.1     | 5        | 13  | 0.9     | 3        | 20  |         |          |
| 7   | 2.2     | 6        | 14  | 0.9     | 4        |     |         |          |

### C SLOPE DATA

1. Basis: ☐ high water mark ☒ channel bottom ☐ land surface
2. Level Readings: upstream downstream

Upper stadia  
 1-9 Center 8.20 90' 8.67 102' @ BEAR CR. RD Xing  
 10-16 Lower stadia center 5.83 75' 6.63 66' @ COACHE-CHURCH RD Xing  
 Stadia difference (\_\_\_\_ + \_\_\_\_ ) x 100 = \_\_\_\_\_

10-6-05

Date

Signature of person conducting measurement

| BASIC "n"<br>CHANNEL MATERIAL                    |      |   |     | CHANNEL OBSTRUCTIONS |      |   |      |
|--------------------------------------------------|------|---|-----|----------------------|------|---|------|
| earth                                            | .020 | / | (1) | negligible           | .000 |   | (1)  |
| rock                                             | .025 |   | (2) | minor                | .010 | / | (2)  |
| fine gravel                                      | .024 |   | (3) |                      | .015 |   | (3)  |
| coarse gravel                                    | .028 |   | (4) | appreciable          | .020 |   | (4)  |
|                                                  |      |   |     |                      | .030 |   | (5)  |
|                                                  |      |   |     | severe               | .040 |   | (6)  |
|                                                  |      |   |     |                      | .050 |   | (7)  |
|                                                  |      |   |     |                      | .060 |   | (8)  |
|                                                  |      |   |     |                      |      |   |      |
|                                                  |      |   |     |                      |      |   |      |
| SURFACE IRREGULARITY                             |      |   |     | VEGETATION           |      |   |      |
| smooth                                           | .000 |   | (1) | low                  | .005 |   | (1)  |
| minor                                            | .005 | / | (2) |                      | .010 |   | (2)  |
| moderate                                         | .010 |   | (3) | medium               | .015 | / | (3)  |
| severe                                           | .020 |   | (4) |                      | .020 |   | (4)  |
|                                                  |      |   |     |                      | .025 |   | (5)  |
|                                                  |      |   |     | high                 | .030 |   | (6)  |
|                                                  |      |   |     |                      | .040 |   | (7)  |
|                                                  |      |   |     |                      | .050 |   | (8)  |
|                                                  |      |   |     | very high            | .060 |   | (9)  |
|                                                  |      |   |     |                      | .075 |   | (10) |
|                                                  |      |   |     |                      | .100 |   | (11) |
|                                                  |      |   |     |                      |      |   |      |
| VARIATIONS IN SIZE AND<br>SHAPE OF CROSS-SECTION |      |   |     | DEGREE OF MEANDERING |      |   |      |
| gradual                                          | .000 |   | (1) | minor                | 1.00 | / | (1)  |
| occasional                                       | .005 | / | (2) | appreciable          | 1.15 |   | (2)  |
| frequent                                         | .010 |   | (3) | severe               | 1.30 |   | (3)  |
|                                                  | .015 |   | (4) |                      |      |   |      |

MANNING EQUATION CHANNEL CAPACITY RESULTS

12-07-2005

File Number: BEAR CREEK DITCH CLAIMS

Claimant:

Channel measured: BEAR CREEK DITCH

Date of measurement: 10/16/05

Measurement location:

Calculation prepared by: MIKE CISCELL

Comments about the measurement:

The results of the calculation are:

The length of the channel measured is 165 feet.

The upstream and downstream rod readings are 8.00 and 8.75 feet.

The channel cross section is 9.30 ft-sq.

The wetted perimeter is 8.50 feet.

The hydraulic radius is 1.09 feet.

The slope is 0.0045

The roughness coefficient is 0.0550

The flow velocity is 1.939 ft/sec.

The rate of flow is 18.04 cfs.

CROSS SECTION NUMBER 2

For File Number BEAR CREEK DITCH CLAIMS for the BEAR CREEK DITCH

| Number | Rod<br>Reading | Water<br>Depth | Distance |
|--------|----------------|----------------|----------|
| 1      | 0.00           | 0.00           | 0.00     |
| 2      | 1.00           | 1.00           | 1.00     |
| 3      | 1.00           | 1.00           | 2.00     |
| 4      | 0.90           | 0.90           | 3.00     |
| 5      | 0.90           | 0.90           | 4.00     |
| 6      | 1.00           | 1.00           | 5.00     |
| 7      | 0.00           | 0.00           | 6.00     |

The area for this cross section is 4.80 square feet  
and the wetted perimeter is 6.84 feet.

CROSS SECTION NUMBER 1

For File Number BEAR CREEK DITCH CLAIMS for the BEAR CREEK DITCH

| Number | Rod<br>Reading | Water<br>Depth | Distance |
|--------|----------------|----------------|----------|
| 1      | 0.00           | 0.00           | 0.00     |
| 2      | 1.30           | 1.30           | 1.00     |
| 3      | 1.90           | 1.90           | 2.00     |
| 4      | 2.10           | 2.10           | 3.00     |
| 5      | 2.10           | 2.10           | 4.00     |
| 6      | 2.10           | 2.10           | 5.00     |
| 7      | 2.20           | 2.20           | 6.00     |
| 8      | 2.10           | 2.10           | 7.00     |
| 9      | 0.00           | 0.00           | 8.00     |

The area for this cross section is 13.80 square feet  
and the wetted perimeter is 10.16 feet.