Culvert #6

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        1140.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
         42.1

W.S. LAG TIME =
 .0631545581     HRS.
TIME CONC. =
 .1052575968     HRS.
```

Culvert #7

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        1260.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
         39.7

W.S. LAG TIME =
 0.070456822     HRS.
TIME CONC. =
 .1174280366     HRS.
```

Culvert #2

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        9400.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
         14.8

W.S. LAG TIME =
 .5759612858     HRS.
TIME CONC. =
 .9599354763     HRS.
```

Culvert #3

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        2500.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
         16.8

W.S. LAG TIME =
 .1873782737     HRS.
TIME CONC. =
 .3122971228     HRS.
```

Culvert #4

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
         500.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
          10.

W.S. LAG TIME =
 .0670189888     HRS.
TIME CONC. =
 .1116983147     HRS.
```

Culvert #5

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        2100.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
         31.4

W.S. LAG TIME =
 .1192154326     HRS.
TIME CONC. =
 .1986923877     HRS.
```

Sed. Pond 'A'

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        1280.
CURVE NUMBER ?
          90.
AVERAGE SLOPE (%) ?
          0.78


W.S. LAG TIME =
 .3076981163     HRS.
TIME CONC. =
 .5128301938     HRS.
```

Culvert #1

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        2750.
CURVE NUMBER ?
          75.
AVERAGE SLOPE (%) ?
          33.1


W.S. LAG TIME =
 .1440701557     HRS.
TIME CONC. =
 .2401169262     HRS.
```

Sed. Pond 'C'

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
         500.
CURVE NUMBER ?
          90.
AVERAGE SLOPE (%) ?
          10.


W.S. LAG TIME =
 .0405116719     HRS.
TIME CONC. =
 .0675194531     HRS.
```

SED. Pond 'B'

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        1000.
CURVE NUMBER ?
          90.
AVERAGE SLOPE (%) ?
           9.


W.S. LAG TIME =
 .0743503314     HRS.
TIME CONC. =
 .1239172189     HRS.
```

FORM III

TIME OF CONCENTRATION DETERMINATION
* *

MINE: Price River Coal

PERMIT: Sow belly Canyon

STRUCTURE:

DATE: 9/12/80

STRUCTURE	CURVE NUMBER	S	l(ft)	H(ft)	y(%)	L(hrs)	Tc(hrs)
Sed. Pond "A"	90	1.111	1280'	10'	0.78	0.307	0.513
Sed. Pond "B"	90	1.111	1000'	90'	9.0	0.074	0.124
Sed. Pond "C"	90	1.111	500'	50'	10.0	0.041	0.068
Culvert #1	75	3.33	2750'	910'	33.1	0.144	0.240
Culvert #2	75	3.33	9400'	1400'	14.8	0.575	0.9599
Culvert #3	75	3.33	2500'	420'	16.8	0.187	0.312
Culvert #4	75	3.33	500'	50'	10.0	0.067	0.112

KENT'S FORMULA

Tc = L/0.6, hours

L = watershed lag, hours

$$L = \frac{l^{0.8}\,(S + 1)^{0.7}}{1900\,y^{0.5}}$$

l = length of the longest stream channel (ft)

S = (1000/CN) - 10, inches

y = average watershed slope in percent

Reference: Kent, K. M. 1973. A method of Estimating Volume and Rate of Runoff in Small Watersheds. U.S.D.A., SCS-TP-149 (Revised April 1973). ca. 80 pp.

TIME OF CONCENTRATION DETERMINATION

* *

MINE: Price River Coal Company

PERMIT: Sowbelly Canyon

STRUCTURE:

DATE: 9/16/80

STRUCTURE	CURVE NUMBER	S	l(ft)	H(ft)	y(%)	L(hrs)	Tc(hrs)
Culvert #5	75	3.33	2100'	660'	31.4	0.119	0.198
Culvert #6	75	3.33	1140'	480'	42.1	0.063	0.105
Culvert #7	75	3.33	1260'	500'	39.7	0.070	0.117

KENT'S FORMULA

Tc = L/0.6, hours

L = watershed lag, hours

$$L = \frac{l^{0.8}\,(S + 1)^{0.7}}{1900\,y^{0.5}}$$

l = length of the longest stream channel (ft)

S = (1000/CN) - 10, inches

y = average watershed slope in percent

Reference: Kent, K. M. 1973. A method of Estimating Volume and Rate of Runoff in Small Watersheds. U.S.D.A., SCS-TP-149 (Revised April 1973). ca. 80 pp.

```
      ENTER
PRECIP.?
          1.93        IN.
AREA UNDISTURBED?
            0.        AC.
AREA DISTURBED?
        5.829         AC.
POND AREA?
        0.009         AC.
 C N UNDISTURBED?
          100.
 C N DISTURBED?
           90.


DISCHARGE (DIST.):
 .5025711683        ACFT
DISCHARGE (UNDIST.):
            0.      ACFT
SEDIMENT STORAGE:
       0.5829       ACFT
DIRECT PRECIP.:
   0.0014475        ACFT
TOTAL STORAGE:
 1.08691865         ACFT
```

LOCATION: Price River Coal - ACT/007/ (Sowbelly)
Upper Sed. Pond - "A" or I

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-24 hour 2.35 inch

AREA:

Disturbed Area 5.829 acres 0635 v.u.

Undisturbed Area 0 acres

Pond Area 0.009 acres 1 v.u.

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area 0.5025 acre-feet

Discharge Undisturbed Area 0 acre-feet

Direct Precipitation 0.0014 acre-feet

Sediment Storage 0.5829 acre-feet

Total Storage 1.087 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
            5.43        AC.
POND AREA?
          0.193         AC.
 C N UNDISTURBED?
            100.
 C N DISTURBED?
             90.


DISCHARGE (DIST.):
 .4681697423        ACFT
DISCHARGE (UNDIST.):
              0.      ACFT
SEDIMENT STORAGE:
          0.543       ACFT
DIRECT PRECIP.:
 .0310408333        ACFT
TOTAL STORAGE:
 1.04221057 6       ACFT
```

LOCATION: Price River Coal (Sowbelly) - ACT/007/
Middle Sed. Pond - "B" or II

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-24 hour 2.35 inch

AREA:

Disturbed Area 5.43 acres 0592 v.u.

Undisturbed Area 0 acres

Pond Area 0.193 acres 200' x 42'

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area 0.4682 acre-feet

Discharge Undisturbed Area 0 acre-feet

Direct Precipitation 0.031 acre-feet

Sediment Storage 0.543 acre-feet

Total Storage 1.0422 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
          1.93        IN.
AREA UNDISTURBED?
            0.        AC.
AREA DISTURBED?
         3.057        AC.
POND AREA?
         0.106        AC.
 C N UNDISTURBED?
         100.
 C N DISTURBED?
          90.

DISCHARGE (DIST.):
 .2635718052         ACFT
DISCHARGE (UNDIST.):
            0.       ACFT
SEDIMENT STORAGE:
       0.3057        ACFT
DIRECT PRECIP.:
 .0170483333         ACFT
TOTAL STORAGE:
 .5863201385         ACFT
```

LOCATION: Price River Coal - (Sowbelly) - ACT/007/
lower Sed. Pond - "C" or III

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-24 hour 2.35 inch

AREA:

Disturbed Area 3.057 acres 0333 v.u

Undisturbed Area 0 acres

Pond Area 0.106 acres 33'x140'

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area 0.2636 acre-feet

Discharge Undisturbed Area 0 acre-feet

Direct Precipitation 0.017 acre-feet

Sediment Storage 0.3057 acre-feet

Total Storage 0.5863 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
          1.93        IN.
AREA UNDISTURBED?
            0.        AC.
AREA DISTURBED?
          7.79        AC.
POND AREA?
           1.2        AC.
 C N UNDISTURBED?
          100.
 C N DISTURBED?
           90.


DISCHARGE (DIST.)=
 0.671646831        ACFT
DISCHARGE (UNDIST.)=
            0.      ACFT
SEDIMENT STORAGE=
         0.779      ACFT
DIRECT PRECIP.=
         0.193      ACFT
TOTAL STORAGE=
 1.643646831        ACFT
```

LOCATION: Price River Coal Company (Castle Gate)
Sed. Pond "A" or I

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 7.79 acres

Undisturbed Area 0 acres

Pond Area 1.20 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage .779 acre-feet

Total Storage 1.6437 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
            3.41        AC.
POND AREA?
            1.26        AC.
 C N UNDISTURBED?
            100.
 C N DISTURBED?
              85.


DISCHARGE (DIST.):
 .2114915647      ACFT
DISCHARGE (UNDIST.):
              0.    ACFT
SEDIMENT STORAGE:
          0.341    ACFT
DIRECT PRECIP.:
      0.20265      ACFT
TOTAL STORAGE:
 .7551415647       ACFT
```

LOCATION: Price River Coal Company (Castle Gate)
Sed. Pond "B"

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 3.40578 acres

Undisturbed Area 0 acres ?

Pond Area 1.26 acres

CN: Disturbed 85

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Total Storage 0.75514 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
        ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
            7.876       AC.
POND AREA?
            0.25        AC.
  C N UNDISTURBED?
            100.
  C N DISTURBED?
              90.


DISCHARGE (DIST.)=
  0.679061674       ACFT
DISCHARGE (UNDIST.)=
              0.      ACFT
SEDIMENT STORAGE=
          0.7876      ACFT
DIRECT PRECIP.=
  .040208333        ACFT
TOTAL STORAGE=
  1.506870007       ACFT
```

LOCATION: PRICE RIVER Coal Company (CASTLE Gate)
SED. POND "C"

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 7.876 acres

Undisturbed Area 0 acres

Pond Area 0.25 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Total Storage 1.507 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
            3.51        AC.
POND AREA?
            0.11        AC.
 C N UNDISTURBED?
            100.
 C N DISTURBED?
              90.


DISCHARGE (DIST.):
 .3026290599      ACFT
DISCHARGE (UNDIST.):
              0.      ACFT
SEDIMENT STORAGE:
          0.351      ACFT
DIRECT PRECIP.:
 .0176916667      ACFT
TOTAL STORAGE:
 .6713207266      ACFT
```

LOCATION: PRICE RIVER Coal Company (CASTLE GATE)
SED. POND "D"

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 3.5068 acres

Undisturbed Area 0 acres

Pond Area 0.11 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Total Storage 0.6713 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
          1.93        IN.
AREA UNDISTURBED?
            0.        AC.
AREA DISTURBED?
          4.352       AC.
POND AREA?
          0.04        AC.
 C N UNDISTURBED?
          100.
 C N DISTURBED?
            90.


DISCHARGE (DIST.):
 .3752255466      ACFT
DISCHARGE (UNDIST.):
            0.      ACFT
SEDIMENT STORAGE:
        0.4352      ACFT
DIRECT PRECIP.:
 .0064333333      ACFT
TOTAL STORAGE:
  0.81685888      ACFT
```

LOCATION: Price River Coal Company (Hardscrabble)
Sed. Pond "A" or IV

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 4.352 acres

Undisturbed Area 0 acres

Pond Area 0.04 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Operator 0.53 Ac/ft proposed

Total Storage 0.8168 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
          1.93        IN.
AREA UNDISTURBED?
            0.        AC.
AREA DISTURBED?
          6.21        AC.
POND AREA?
          0.19        AC.
 C N UNDISTURBED?
          100.
 C N DISTURBED?
            90.


DISCHARGE (DIST.)?
 .5354206445        ACFT
DISCHARGE (UNDIST.)?
            0.      ACFT
SEDIMENT STORAGE?
        0.621       ACFT
DIRECT PRECIP.?
 .0305583333        ACFT
TOTAL STORAGE?
 1.186978978        ACFT
```

FORM I

SEDIMENT POND SIZING DETERMINATION
* * * * * * * * * * * * * * * * * * * *

LOCATION: Price River Coal (HARDSCRABBLE)
Sed. Pond "B" or III

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 6.21 acres

Undisturbed Area 0 acres

Pond Area 0.19 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Operator 2.2 (actual)

Total Storage 1.1869 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW - EMERGENCY SPILLWAY:

Farmer Fletcher _____ cfs; Sizing _____ inches

SCS _____ cfs

```
        ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
          10.816        AC.
POND AREA?
            0.07        AC.
 C N UNDISTURBED?
            100.
 C N DISTURBED?
              90.


DISCHARGE (DIST.):
 .9325458439        ACFT
DISCHARGE (UNDIST.):
              0.     ACFT
SEDIMENT STORAGE:
          1.0816      ACFT
DIRECT PRECIP.:
 .0112583333        ACFT
TOTAL STORAGE:
 2.025404177        ACFT
```

LOCATION: Price River Coal (HARDSCRABBLE)
Sed. Pond "C" or II

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 10.816 acres

Undisturbed Area 0 acres

Pond Area 0.07 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Sediment Storage _____ acre-feet

Total Storage 2.0254 acre-feet

Operator
1.15 Actual
1.59 Required

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
      ENTER
PRECIP.?
            1.93        IN.
AREA UNDISTURBED?
              0.        AC.
AREA DISTURBED?
            9.6         AC.
POND AREA?
            0.1         AC.
 C N UNDISTURBED?
            100.
 C N DISTURBED?
            90.


DISCHARGE (DIST.):
 .827703411 7      ACFT
DISCHARGE (UNDIST.):
              0.      ACFT
SEDIMENT STORAGE:
            0.96      ACFT
DIRECT PRECIP.:
 .016083333        ACFT
TOTAL STORAGE:
 1.803786745       ACFT
```

LOCATION: Price River Coal (HARDSCRABBLE)
Sed. Pond "D" or I

PRECIPITATION:

10 year-24 hour 1.93 inch; 25 year-6 hour 2.35 inch

AREA:

Disturbed Area 9.6 acres

Undisturbed Area 0 acres

Pond Area 0.10 acres

CN: Disturbed 90

Undisturbed 100

POND SIZE:

Discharge Disturbed Area _____ acre-feet

Discharge Undisturbed Area _____ acre-feet

Direct Precipitation _____ acre-feet

Operator 2.6 (actual) 1.5 (required) ~~Sediment Storage~~ _____ acre-feet

Total Storage 1.8037 acre-feet

TIME OF CONCENTRATION: _____ hours

PEAK FLOW:

Farmer Fletcher _____ cfs

SCS _____ cfs

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          2800.
CURVE NUMBER ?
            75.
AVERAGE SLOPE (%)
           32.1


W.S. LAG TIME =
 .1484211445      HRS.
TIME CONC. =
 .2473685742      HRS.
```

HARD SCRABBLE

→ How will diversion ditches (undisturbed) work?

Where are ditch, culvert + spillway sizing calculations??

Price River gives methods but no calculations.

To _____

Date _____ Time _____

WHILE YOU WERE OUT

Mr. _____

of _____

Phone _____

- ☐ RETURNED CALL
- ☐ CALLED TO SEE YOU
- ☐ WANTS TO SEE YOU
- ☐ PLEASE CALL HIM
- ☐ PLEASE CALL HER
- ☐ WILL CALL AGAIN

Message _____

_____

_____

_____

_____
Operator

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (HARD SCRABBLE)

WATERSHED: Culvert # 1

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.247

Y= 92.1%

S= 3.33

L= 2,800'

AREA (square mile): 0.112

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 23.681 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1500.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
           9.33


W.S. LAG TIME =
 .1010034826      HRS.
TIME CONC. =
 .1683391377      HRS.
```

FORM II

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (HARDSCRABBLE)

WATERSHED: Sed pond #2

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.168

Y= 9.33

S= 1.11

L= 1500'

AREA (square mile): 0.0068

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.441 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1300.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
           7.69


W.S. LAG TIME =
 .0992191895      HRS.
TIME CONC. =
 .1653653158      HRS.
```

FORM II

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (HARD SCRABBLE)

WATERSHED: Sed. Pond "B"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.165

Y= 7.69

S= 1.11

L= 1300

AREA (square mile): 0.0097

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 2.055 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1650.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
          15.15


W.S. LAG TIME =
 .0855431034      HRS.
TIME CONC. =
 .1425718391      HRS.
```

FORM II

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (HARDSCRABBLE)

WATERSHED: Sed. Pond "C"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.1425

Y= 15.15

S= .111

L= 1650'

AREA (square mile): 0.0169

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 3.592 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1250.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
            8.8


W.S. LAG TIME =
 .0898857481      HRS.
TIME CONC. =
 .1498095802      HRS.
```

FORM II

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (HARDSCRABBLE)

WATERSHED: Sed. Pond "D"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.1498

Y= 8.8

S= 1.11

L= 1250'

AREA (square mile): 0.01547

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 3.288 cfs

VOLUME:

Q= _____ inches

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (HARDSCRABBLE) - CULVERT #1
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.11 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=   0.247 HRS
NUMBER OF LINES  745
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW      23.681CFS (    0.32764 IPH)
 AT TIME       9.981 HRS
 HYDROGRAPH VOLUME CHECK     0.34790INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (HARDSCRABBLE) - SED. POND 'A'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=   0.168 HRS
NUMBER OF LINES 1088
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.441CFS (    0.32837 IPH)
 AT TIME       9.984 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (HARDSCRABBLE) - SED. POND 'B'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=   0.165 HRS
NUMBER OF LINES 1107
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       2.055CFS (    0.32837 IPH)
 AT TIME       9.985 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
-----------------------------------------------
```

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (HARDSCRABBLE) - SED. POND 'C'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.02 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.142 HRS
NUMBER OF LINES 1280
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       3.592CFS (    0.32935 IPH)
 AT TIME       9.987 HRS
 HYDROGRAPH VOLUME CHECK     1.40051INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (HARDSCRABBLE) - SED. POND 'D'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.02 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.150 HRS
NUMBER OF LINES 1218
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       3.288CFS (    0.32935 IPH)
 AT TIME       9.986 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
-----------------------------------------------
```

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
        14200.
CURVE NUMBER ?
           75.
AVERAGE SLOPE (%) ?
         15.79


W.S. LAG TIME =
 .7756422864      HRS.
TIME CONC. =
 1.292737144      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Castle Gate)

WATERSHED: Culverts #1 (Barn Canyon)

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 1.29

Y= 15.79

S= 3.33

L= 14,200'

AREA (square mile): 1.556

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 90.644 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
      KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          8000.
CURVE NUMBER ?
           75.
AVERAGE SLOPE (%) ?
          24.62


W.S. LAG TIME =
 .3925091928      HRS.
TIME CONC. =
 0.654181988      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Castle Gate)

WATERSHED: School house Canyon

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.65

Y= 24.62

S= 3.33

L= 8000

AREA (square mile): 0.389

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 28.545 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          2450.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
            1.6


W.S. LAG TIME =
 .3611412021      HRS.
TIME CONC. =
 .6019020034      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Castle Gate)

WATERSHED: SED. Pond "A"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.60

Y= 1.6

S= 1.11

L= 2450

AREA (square mile): 0.0122

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 2.466 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
      KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1300.
CURVE NUMBER ?
            85.
AVERAGE SLOPE (%) ?
          15.38


W.S. LAG TIME =
 .0847377969      HRS.
TIME CONC. =
 .1412296616      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * * *

MINE NAME: PRICE RIVER Coal Company (CASTLE GATE)

WATERSHED: SED. Pond "B"

CURVE NUMBER: 85

TIME OF CONCENTRATION (hour): 0.14

Y= 15.38

S= 1.76

L= 900

AREA (square mile): 0.0072

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.454 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          1100.
CURVE NUMBER ?
            90.
AVERAGE SLOPE (%) ?
            3.63


W.S. LAG TIME =
 .1263470187      HRS.
TIME CONC. =
 .2105783645      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: PRICE RIVER COAL (CASTLE GATE)

WATERSHED: SED. POND "C"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.21

Y= 3.63

S= 1.11

L= 1100

AREA (square mile): 0.0129

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 2.723 cfs

VOLUME:

Q= _____ inches

```
TIME CONCENTRATION
     KENT'S FORMULA
ENTER:
CHANNEL LENGTH(FT) ?
          825.
CURVE NUMBER ?
           90.
AVERAGE SLOPE (%) ?
           2.3


W.S. LAG TIME =
 .1260966079      HRS.
TIME CONC. =
 .2101610132      HRS.
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Castle Gate)

WATERSHED: Sed. Pond "D"

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.21

Y= 2.3

S= 1.11

L= 825

AREA (square mile): 0.00565

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.193 cfs

VOLUME:

Q= _____ inches

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMP.  (CASTLE GATE) - CULVERTS #1 (BARN CANYON)
-------------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  1.56 SQ MI
DEPTH=  2.35 INCHES            CN= 75.00
DURATION= 24.00 HRS   TIME CONC=  1.290 HRS
NUMBER OF LINES  156
-------------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-------------------------------------------------
 RUNOFF DEPTH     0.56484INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW      90.644CFS (    0.09027 IPH)
 AT TIME      10.509 HRS
 HYDROGRAPH VOLUME CHECK     0.56596INCHES
-------------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (CASTLE GATE) - SCHOOLHOUSE CANYON
-------------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.39 SQ MI
DEPTH=  2.35 INCHES            CN= 75.00
DURATION= 24.00 HRS   TIME CONC=  0.650 HRS
NUMBER OF LINES  293
-------------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-------------------------------------------------
 RUNOFF DEPTH     0.56484INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW      28.545CFS (    0.11371 IPH)
 AT TIME      10.117 HRS
 HYDROGRAPH VOLUME CHECK     0.56596INCHES
-------------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (CASTLE GATE) - SED. POND 'A'
-------------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS   TIME CONC=  0.600 HRS
NUMBER OF LINES  317
-------------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-------------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       2.466CFS (    0.31326 IPH)
 AT TIME      10.004 HRS
 HYDROGRAPH VOLUME CHECK     1.40060INCHES
-------------------------------------------------
```

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (CASTLE GATE)- SED. POND 'B'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 85.00
DURATION= 24.00 HRS    TIME CONC=  0.140 HRS
NUMBER OF LINES 1302
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.06021INCHES
 INITIAL ABSTR     0.35294INCHES
PEAK FLOW       1.454CFS (    0.31299 IPH)
 AT TIME      10.062 HRS
 HYDROGRAPH VOLUME CHECK     1.06221INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (CASTLE GATE) - SED. POND 'C'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.210 HRS
NUMBER OF LINES  874
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       2.723CFS (    0.32715 IPH)
 AT TIME       9.987 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (CASTLE GATE) - SED. POND 'D'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.210 HRS
NUMBER OF LINES  874
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.193CFS (    0.32715 IPH)
 AT TIME       9.987 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
-----------------------------------------------
```

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Right Fork Sowbelly Canyon (Culvert #1)

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.24

Y= 33.1

S= 1.11

L= 2750'

AREA (square mile): 0.1973

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 41.99 cfs Culvert Sizing: _____ inches

VOLUME:

Q= 0.3479 inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Sowbelly Gulch (Culvert #2)

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.9599

Y= 14.8

S= 3.33

L= 9400

AREA (square mile): 1.598

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 339.853 cfs Culvert Sizing: 84 ?? inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Culvert #3 - Undisturbed area drainage

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.312

Y= 16.8%

S= 3.33

L= 2500'

AREA (square mile): 0.0069

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.469 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Culvert # 4.

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.112

Y= 10

S= 3.33

L= 500'

AREA (square mile): 0.0031

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 0.659 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company

WATERSHED: Culvert # 5

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.198

Y= 31.4

S= 3.33

L= 2100'

AREA (square mile): 0.0604

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 12.837 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Culvert #6

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.105

Y= 42.1

S= 338

L= 1140'

AREA (square mile): 0.0037

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 0.787 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Rice River Coal Company

WATERSHED: Culvert #7

CURVE NUMBER: 75

TIME OF CONCENTRATION (hour): 0.117

Y= 39.7%

S= 3.33

L= 1260'

AREA (square mile): 0.0261

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 1.93

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 5.551 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Price River Coal Company

WATERSHED: Sed. pond 'A' - Spillway

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.513

Y= 0.78

S= 1.111

L= 1280

AREA (square mile): 0.00912

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.940 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * *

MINE NAME: Rice River Coal Company (Sowbelly)

WATERSHED: Sed. Pond 'B' - Spillway

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.124

Y= 9.0

S= 1.1111

L= 1000'

AREA (square mile): 0.00878

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.868 cfs Culvert Sizing: _____ inches

VOLUME:

Q= _____ inches

CULVERT PROGRAM FORMATS
* * * * * * * * * * * * * * *

MINE NAME: Price River Coal Company (Sowbelly)

WATERSHED: Sed. Pond 'C' - Spillway

CURVE NUMBER: 90

TIME OF CONCENTRATION (hour): 0.067

Y= 10.0

S= 1.111

L= 500'

AREA (square mile): 0.00494

DURATION OF STORM (hour): 24

RAINFALL DEPTH (inch): 2.35

DISTRIBUTION TYPE (1=SCS, 2=Farmer-Fletcher):

1

PEAK DISCHARGE:

qp= 1.062 cfs

VOLUME:

Q= _____ inches

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - RIGHT FORK SOWBELLY CANYON (CULVE
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.20 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.240 HRS
NUMBER OF LINES  767
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW      41.994CFS (    0.32982 IPH)
 AT TIME       9.970 HRS
 HYDROGRAPH VOLUME CHECK     0.34790INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - SOWBELLY GULCH (CULVERT #2)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  1.60 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.960 HRS
NUMBER OF LINES  204
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW     339.853CFS (    0.32956 IPH)  ?
 AT TIME       9.841 HRS
 HYDROGRAPH VOLUME CHECK     0.34790INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #3 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=  0.01 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.312 HRS
NUMBER OF LINES  593
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW       1.469CFS (    0.32985 IPH)
 AT TIME       9.957 HRS
 HYDROGRAPH VOLUME CHECK     0.34790INCHES
-----------------------------------------------
```

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #4 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.00 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.112 HRS
NUMBER OF LINES 1624
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW       0.659CFS (    0.32935 IPH)
 AT TIME       9.993 HRS
 HYDROGRAPH VOLUME CHECK     0.34785INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #5 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.06 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.198 HRS
NUMBER OF LINES  926
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW      12.837CFS (    0.32935 IPH)
 AT TIME       9.977 HRS
 HYDROGRAPH VOLUME CHECK     0.34790INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #6 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.00 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.105 HRS
NUMBER OF LINES 1731
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW       0.787CFS (    0.32959 IPH)
 AT TIME       9.994 HRS
 HYDROGRAPH VOLUME CHECK     0.34785INCHES
-----------------------------------------------
```

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #7 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.03 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.117 HRS
NUMBER OF LINES 1555
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW       5.551CFS (    0.32959 IPH)
 AT TIME       9.992 HRS
 HYDROGRAPH VOLUME CHECK     0.34786INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - SED. POND 'A'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.513 HRS
NUMBER OF LINES  367
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.940CFS (    0.32956 IPH)
 AT TIME       9.921 HRS
 HYDROGRAPH VOLUME CHECK     1.40057INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - SED. POND 'B'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.124 HRS
NUMBER OF LINES 1468
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.868CFS (    0.32976 IPH)
 AT TIME       9.988 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
```

put in 5 velocity + solve for Area

$q = A \times V$

```
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - CULVERT #7 - (UAD)
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.03 SQ MI
DEPTH=  1.93 INCHES            CN= 75.00
DURATION= 24.00 HRS    TIME CONC=  0.117 HRS
NUMBER OF LINES 1555
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     0.34721INCHES
 INITIAL ABSTR     0.66667INCHES
PEAK FLOW       5.551CFS (    0.32959 IPH)
 AT TIME       9.992 HRS
 HYDROGRAPH VOLUME CHECK     0.34786INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - SED. POND 'A'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.513 HRS
NUMBER OF LINES  367
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.940CFS (    0.32956 IPH)
 AT TIME       9.921 HRS
 HYDROGRAPH VOLUME CHECK     1.40057INCHES
-----------------------------------------------
WS IDENTIFICATION
CURVE,CONC, AREA, DURATION, RAINFALL, DISTR
INPUT FOR : PRICE RIVER COAL COMPANY (SOWBELLY) - SED. POND 'B'
-----------------------------------------------
   STORM :       WATERSHED :
DIST= SCS TYPE B              AREA=   0.01 SQ MI
DEPTH=  2.35 INCHES            CN= 90.00
DURATION= 24.00 HRS    TIME CONC=  0.124 HRS
NUMBER OF LINES 1468
-----------------------------------------------
INPUT FORMAT : 1=SHORT, 2=LONG
OUTPUT SUMMARY
-----------------------------------------------
 RUNOFF DEPTH     1.39784INCHES
 INITIAL ABSTR     0.22222INCHES
PEAK FLOW       1.868CFS (    0.32976 IPH)
 AT TIME       9.988 HRS
 HYDROGRAPH VOLUME CHECK     1.40052INCHES
```

put in 5 velocity + solve for Area

$q = A \times V$