

Geologic map



LIETZ

SINCE 1882

FIELD BOOK

No. 8152-60

Lost River Cave

1 lb Rhodamine WT

6:46 p 6/27/89

to Lost River Rise

auto-
dumped

1 bag at Lost River Cave
(2 gumdrops) 2 cotton /
2 charcoal

Lost River Blue hole

2 gumdrops / 2 cotton

2 charcoal

dye dumped

State Trooper Cave

4 lbs direct yellow 76
in slurry. 6/27/89

7:10 Traced to Lost
River Blue hole,

3/4 mi anticipated
trace

Church Window 7:36 p 6/27

2 lbs Fluorine

autl. 2 mi trace

to Lost River Blue hole

Wilkinson guallet

4 lbs Optical brightener

9:15 P. 6/22/59

Trace to Lost River

Blue Hole

1 mi anticipated
trace.

6/28

Well D7-3

Total Depth 56100

Run to Water 32.

water 24'

Well D7-7 (at 1701)

Grate to W.L. 30.6

DY-5

Total Depth 20,50

DY-5

Grate to W.L. 019.65'

85

Rodamine

Bugs

Fluorescing

Use (Direct Yellow ^{on Cotton} ^{Wool} ^(UV))
Optical Brightener

Bugs

4 Blue Holes along lost River

Bugs from rise

Blue Holes (Injection at
Wilkinson run)

Faint positives for all
4 blue holes.

Blue hole #4 strongest
⊕.

Injection point at
St Trooper Cave.

Direct yellow hasn't
come through

Lost River Rise rise
from St Trooper

Saint ⊕ for Direct
Yellow (Tim says doubt sul)

Lost River Rise Saint $\oplus$
for optical brightener

Charcoal Bugs for Fluorine

① $\oplus$ Very Saint $\oplus$

② $\oplus$

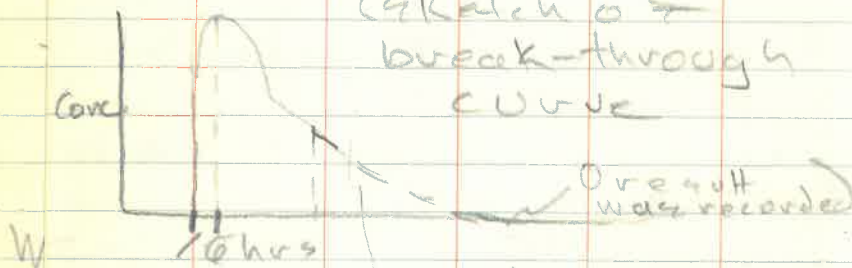
③ $\ominus$

④ $\oplus$

There are the four blue-holes. The $\ominus$ for #3 may be due to the position of the bug.

Rhodamine Results

(Sketch of break-through curve)



Dashed portion indicates time during which automatic sampler didn't function.

discharge $100 \text{ ft}^3/\text{sec} =$ using previously prepared curve relating break-through time to discharge (102 ft^3/sec) field determination of

discharge.

Attempted to calibrate the Fluorimeter for Fluorine

residence time estimate
16 hrs at $100 \text{ ft}^3/\text{sec}$

Q. + 1000 60

16

6000 60

1000 60

16000 3600 sec/hr

5,760,000 ft^3

$100 \text{ ft}^3/\text{sec} \times 16 \text{ hrs} \times \frac{60 \text{ sec}}{1 \text{ hr}} \times \frac{60 \text{ min}}{1 \text{ hr}}$

5,760,000 ft^3

conduit area calculation
length of lost River sink

$5,760,000 \text{ ft}^3 \times \frac{1 \text{ mi}}{5280 \text{ ft}} \times \frac{1 \text{ mi}}{3.7 \text{ mi}} = 295 \text{ ft}^2$
(Approximation)
area of X-sec of water filled conduit

$295 \text{ } \mu\text{m}^2 = \text{area of}$
circular conduit

$$\pi r^2 = 295 \text{ } \mu\text{m}^2$$

$$r^2 = \frac{295}{\pi}$$

$$r = \sqrt{\frac{295}{\pi}}$$

$$r = 9.7'$$

Note that passage is
not fluid filled so
this radius estimate is a minimum.

W Velocity = 0.1 m/sec.

radius $\approx 10' \approx 3 \text{ meters}$

Reynolds
No. Vel. $\frac{10}{1 \times 10^{-6}} = 10^6$
Time spent to
convert feet to
meters, 6

$V \times R$

Kinematic Viscosity

$$\frac{0.1 \text{ m/sec} \times 3 \text{ m}}{1.14 \times 10^{-6} \text{ m}^2/\text{sec}}$$

At a certain $R \approx 1000$ laminar
 $\rightarrow$ turbulent

$$\frac{.3}{1.14 \times 10^{-6}}$$

Reynolds = 260,000 (dimensionless)
no

Highly turbulent slow.

Auto sampler ~~slow~~ (4 hrs)
lost tail.

Peaked at 16 hrs,

~

Beth, my notes for
the fluorometer (probably
misspelled) are missing
here because they
never got it working
at the Friday afternoon
lab session.

Equipment list

- 1) Watch
- 2) Graduated cylinder (Big)
- 3) Accurate Computation
of tube volume
- 4) Calculator
- 5) Field Book
- 6) Metric Ruler

11:25 started 11/13/89

Little Dismal (1cm ID tube)

$$180' \times .4 \text{ in.}$$

$$60 \times 6$$

$$\pi r^2 \times h$$

$$3.14 \times .2^2 \times 600 \text{ cm} = 1884 \text{ cm}^3$$

$$1884 \text{ cm}^3 \times \frac{1 \text{ liter}}{1000 \text{ cm}^3} = 1.884$$

LD = Little Dismal

1 L $\rightarrow$ purged + 11 min

pump started 11:25

11:36 a (1)

11:38 a (2)

11:43 a (3)

11:45 a (4)

11:47 a (5)

12:58 p (6)

Stopped pump 12:59

T₁ for LD ^{begin} 8:25 p

T₂ 8 hr 5/min

1 L / 4 min

3:25
Wakulla (at pump house)

2:01 ① p

2:34 ② p

2:40 ④ p

2:44 ⑤ p

2:45 ⑥ p

3:21 ⑦ p

Rate ~ 4 mil / 500 mb

T₁ for Wakulla

354 min
360 "
360 "
734 min

W1 734 $\frac{12 \times 20}{1234} + 120 + 120 = 480$

W2 751 + 500 = 1251

W4 765 + 520 1285

W5 781 + 540 1321

W6 800 + 560 1360

W7 784 + 580 1364

Time is calculated
Wrong / see tape

Time from end of sampling to
beginning of counting.
11:36 a 2025 8 hrs + 25 + 24

480 529

Little Dismal quite

529 min

240* min *not counted*

769 LD1

$19 \times 20 + 120 = 500$

1269

787 LD2

1307 520

802 LD3

1342 540

820 LD4

1380 560

838 LD5

1418 580

787 LD6

1387 600

807 LD6

Time is calculated
Wrong / see
tape

Times for 2nd run:

LD 1

LD

11:50 } L.D.

12:50 }

1:50 }

2:50 } Wakulla

Count at 5:50

5:50

Lower left OFF

Flip power switch down

Count 1000 min

1.3 cups/kg

Wakulla

left

1.3 cups = 6kg

L.D

right (FIPR)
counted

3 0 4

0 0 0

0 2 0

0 3 5

0 0 5

0 2 0

3 0 7

11/14/89

1345

0 0 0 0 5 1 2 0

0 1 0 0 0

0 2 0 0 0

3 0 5

0 0 0 0 3 2 6 5

0 1 0 0 0

0 2 0 0 0

3 0 2

1234 0 0 0 0 3 6 0 0

0 1 0 0 0

0 2 0 0 0

W7

3 2 5

1300 0 0 0 0 3 5 0 5

0 1 0 0 0

0 2 0 0 0

W6

3 2 4

W5-1234 0 0 0 0 3 4 2 0

0 1 0 0 0

0 2 0 0 0

W5

3 2 5

W4-1234 0 0 0 0 3 4 0 5

0 1 0 0 0

0 2 0 0 0

W4

3 2 2

1234 0 0 0 0 3

0 2 0 0 0
 3 0 6
 0 0 0 0 0 0 0 0

3 0 7
 0 0 0 0 8 5 2 2
 0 0 0 0 2 0 0 0

3 0 6
 0 0 0 0 8 7 7 2
 0 0 0 0 2 0 0 0

3 0 5
 0 0 0 0 3 5 7 2
 0 0 0 0 1 0 0 0

3 0 4
 0 0 0 0 5 2 0 0
 0 0 0 0 1 0 0 0

3 0 3
 0 0 0 0 5 5 6 5
 0 0 0 0 1 0 0 0

~~3 0 2~~
~~0 0 0 0 0 8 2 0~~
~~0 0 0 0 2 0 0 0~~

3 0 1
 0 0 0 0 5 5 7 0
 0 0 0 0 1 0 0 0

3 2 5
 0 0 0 0 5 4 0 0
 0 0 0 0 1 0 0 0

3 2 4
 0 0 0 0 5 5 4 0
 0 0 0 0 1 0 0 0

3 2 2
 0 0 0 0 5 2 7 0
 0 0 0 0 1 0 0 0

500

3000

w-7

w-2

w-5

w-4

g

1251	3	0	0	0	3	4	0	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
1251	3	2	2					
	0	0	0	0	5	1	0	0
	0	0	0	0	1	0	0	0
1251	3	2	1					
	0	0	0	0	5	2	0	0
	0	0	0	0	1	0	0	0
1251	3	2	0					
	0	0	0	0	5	3	0	0
	0	0	0	0	0	7	0	0
1251	3	1	9					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	0	0	0
1251	3	1	8					
	0	0	0	0	0	7	0	0
	0	0	0	0	2	0	0	0
1251	3	1	7					
	0	0	0	0	3	9	0	0
	0	0	0	0	1	0	0	0
1251	3	1	6					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	4	0	0
1251	3	1	5					
	0	0	0	0	4	4	0	0
	0	0	0	0	0	7	0	0
1251	3	1	4					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	1	0	0
1251	3	1	3					
	0	0	0	0	2	0	0	0
	0	0	0	0	6	8	0	0
1251	3	1	2					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	9	0	0
1251	3	1	1					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	5	0	0
1251	3	1	0					
	0	0	0	0	2	0	0	0
	0	0	0	0	5	6	0	0
1251	3	0	9					
	0	0	0	0	2	0	0	0
	0	0	0	0	4	2	0	0
1251	3	0	8					
	0	0	0	0	2	0	0	0
	0	0	0	0	8	5	0	0

5000	0	0	0	5	6	8	7	5
				0	0	2	0	0
				0	2	0	0	0
	3	1	2					
	0	0	0	5	4	9	4	5
				0	0	2	0	0
				0	2	0	0	0

	3	1	1					
	0	0	0	1	4	5	0	0
				0	0	5	0	0
				0	2	0	0	0
	3	1	0					
	0	0	0	1	5	6	5	0
				0	0	5	0	0
				0	2	0	0	0

1000	3	0	9					
	0	0	0	1	4			
				0	0			
				0	2	0		

	3	0	8					
	0	0	0	0	8	5	8	0
				0	0	2	0	0
				0	2	0	0	0

	3	0	7					
	0	0	0	0	8	6	4	5
				0	0	5	0	0
				0	2	0	0	0

500	3	0	6					
	0	0	0	0	8	7	7	5
				0	0	5	0	0
				0	2	0	0	0

	3	0	5					
	0	0	0	0	5	5	4	5
				0	1	0	0	0
				0	2	0	0	0

	3	0	4					
	0	0	0	0	5	5	6	0
				0	1	0	0	0
				0	2	0	0	0

Blank	3	0	5					
	0	0	0	0	5	5	6	5
				0	1	0	0	0
				0	2	0	0	0

	3	0	2					
	0	0	0	0	0	8	2	0
				0	2	0	0	0
				0	2	0	0	0

	3	0	1					
	0	0	0	0	5	6	7	0
				0	1	0	0	0
				0	2	0	0	0

1-7	3	2	5					
	0	0	0	0	5	4	8	0
				0	1	0	0	0
				0	2	0	0	0

2-7	3	2	4					
	0	0	0	0	5	5	5	0
				0	1	0	0	0
				0	2	0	0	0

3-7	3	2	3					
	0	0	0	0	5	4	4	5
				0	1	0	0	0
				0	2	0	0	0

4-7	3	2	2					
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3-6	3	0	3	0	1	0	0	0
	0	0	0	0	2	0	0	0
	0	0	0	0	0	0	0	0
3-6	3	0	2	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
3-7	3	0	1	0	3	6	7	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-7	3	2	5	0	3	4	8	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-6	3	2	4	0	3	5	5	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-5	3	2	3	0	3	4	4	5
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-4	3	2	2	0	3	2	7	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-3	3	2	1	0	3	3	5	5
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
W-2	3	2	0	0	4	6	1	5
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	3	9
W-1	3	1	9	0	5	4	5	5
	0	0	0	0	0	7	0	0
	0	0	0	0	2	0	0	0
LO-6	3	1	9	0	4	0	5	5
	0	0	0	0	0	7	0	0
	0	0	0	0	2	0	0	0
LO-5	3	1	8	0	4	1	5	0
	0	0	0	0	0	7	0	0
	0	0	0	0	2	0	0	0
LO-4	3	1	7	0	4	0	1	0
	0	0	0	0	0	7	0	0
	0	0	0	0	2	0	0	0
LO-3	3	1	6	0	3	0	5	5
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
LO-2	3	1	5	0	3	7	1	0
	0	0	0	0	1	0	0	0
	0	0	0	0	2	0	0	0
LO-1	3	1	4	5	5	0	6	0
	0	0	0	5	5	0	6	0
	0	0	0	5	5	0	6	0

LD-3	3	2	0	0	0	0	0	0
LD-3	0	0	0	0	4	6	1	5
LD-3	0	0	0	0	0	0	0	0
LD-3	0	0	0	0	0	0	5	0
LD-3	3	1	9	0	5	4	5	5
LD-3	0	0	0	0	0	7	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	9	0	4	0	5	5
LD-3	0	0	0	0	0	7	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	8	0	4	1	5	0
LD-3	0	0	0	0	0	7	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	7	0	4	0	1	0
LD-3	0	0	0	0	0	7	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	6	0	5	8	5	5
LD-3	0	0	0	0	1	0	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	5	0	5	7	1	0
LD-3	0	0	0	0	1	0	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	4	0	5	0	6	0
LD-3	0	0	0	0	0	2	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	3	0	5	1	1	0
LD-3	0	0	0	0	0	2	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	2	0	5	7	2	0
LD-3	0	0	0	0	0	2	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	1	0	5	0	0	0
LD-3	0	0	0	1	4	2	0	5
LD-3	0	0	0	0	1	5	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	1	0	1	4	0	3	0
LD-3	0	0	0	0	0	5	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	0	9	1	4	6	1	2
LD-3	0	0	0	0	0	5	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	0	8	0	8	4	7	0
LD-3	0	0	0	0	0	5	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	0	7	0	8	1	9	0
LD-3	0	0	0	0	0	5	0	0
LD-3	0	0	0	0	2	0	0	0
LD-3	3	0	6	0	8	2	2	0
LD-3	0	0	0	0	0	5	0	0

5000	3 0	1 0	4 0	5 0	5 0	0 2	6 0	0 0
	3 0	1 0	3 0	5 0	5 0	1 2	1 0	0 0
	3 0	1 0	2 0	5 0	4 0	1 2	2 0	0 0
	3 0	1 0	1 0	1 0	4 0	2 0	0 0	5 0
1000	3 0	1 0	0 0	1 0	4 0	0 5	3 0	0 0
	3 0	0 0	9 0	1 0	4 0	6 5	1 0	5 0
	3 0	0 0	8 0	0 0	8 0	4 5	7 0	0 0
	3 0	0 0	7 0	0 0	8 0	1 5	9 0	0 0
500	3 0	0 0	6 0	0 0	8 0	2 5	2 0	0 0
	3 0	0 0	5 0	0 0	3 1	1 0	3 0	0 0
	3 0	0 0	4 0	0 0	3 1	2 0	7 0	0 0
	3 0	0 0	3 0	0 0	3 1	1 0	4 0	5 0
Blank	3 0	0 0	2 0	0 0	2 1	0 0	0 0	0 0

11/13

2025

Paullette

