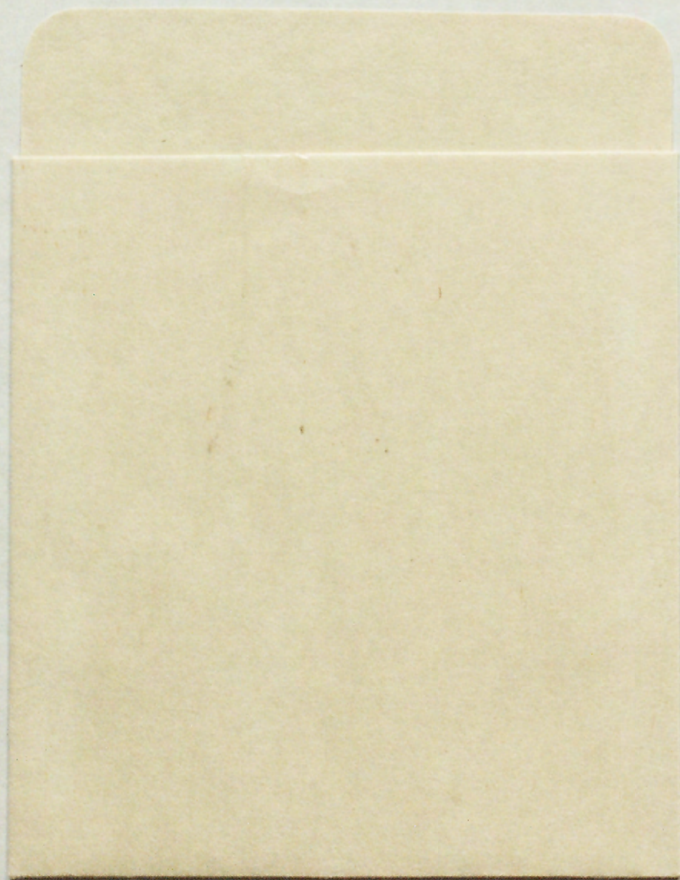
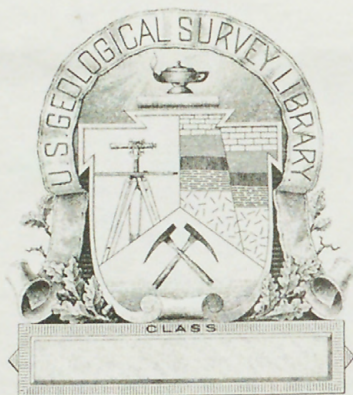






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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WASHINGTON, D. C. 20242

TIME-OF-TRAVEL OF SOLUTES FOR NEW RIVER
NEAR GEISMAR, LOUISIANA

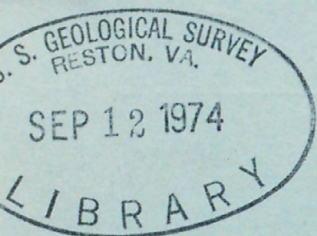
by
A. J. Calandro

U.S. Geological Survey
Baton Rouge, Louisiana

Prepared in cooperation with the
Louisiana Department of Public Works

Open-file report 74-94

July 1974



TIME-OF-TRAVEL OF SOLUTES FOR NEW RIVER

NEAR GEISMAR, LOUISIANA

By A. J. Calandro

A water tracer (2.0 liters of Rhodamine WT, 20 percent) was injected into New River about 1 mile northwest of Geismar (river mile 26.1) at 0900 hours on April 3, 1974. Figure 1 is a location map showing the stream and sampling sites.

As the water tracer moved downstream and dispersed, its concentration was measured periodically at State Highway 30 (river mile 24.5) and near Gonzales (river mile 17.7). Time-concentration curves developed for these two sites are shown in figures 2 and 3, respectively.

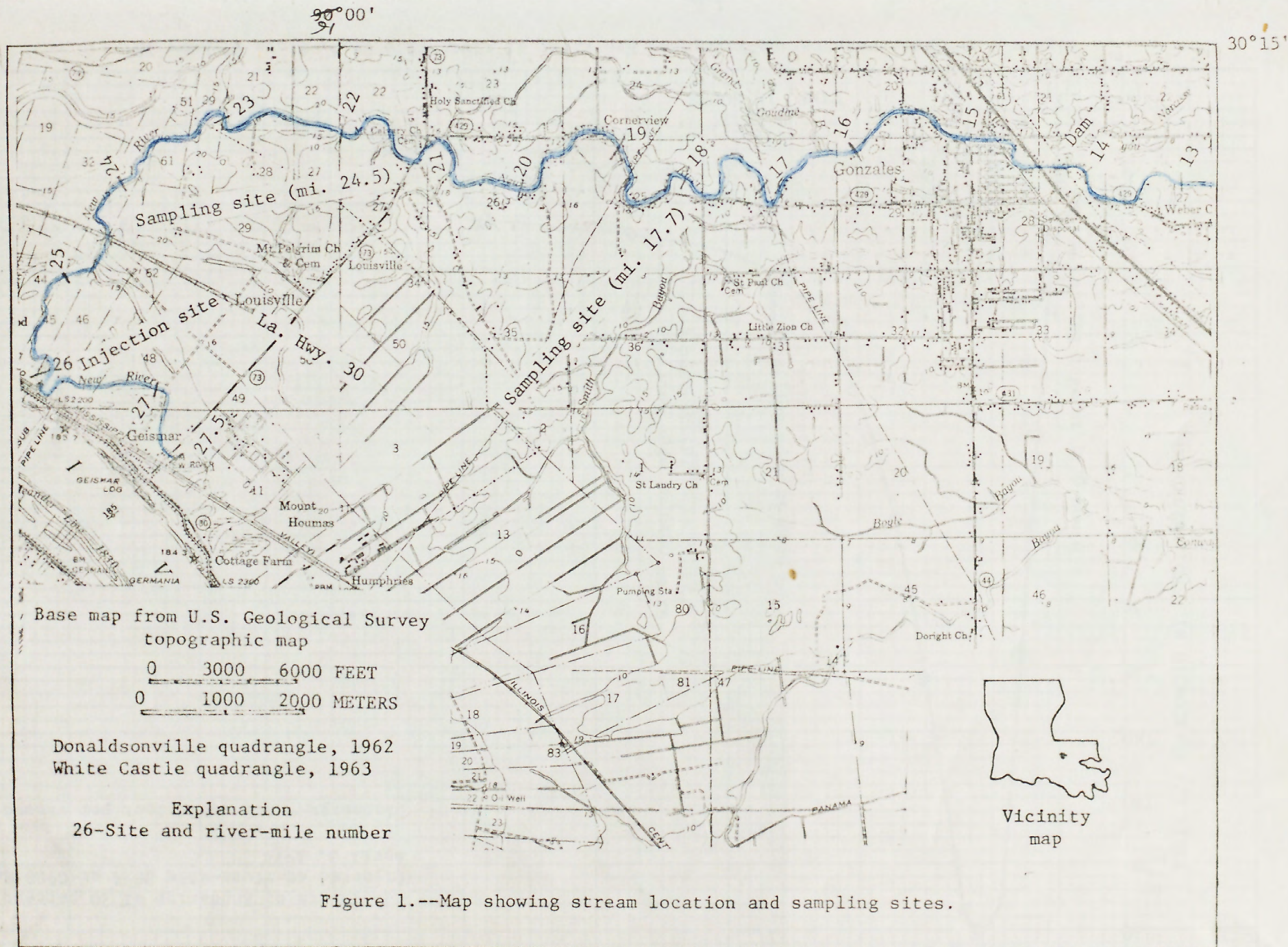
This study was intended to include observations of the travel at the dam at river mile 14.2; but high rainfall on April 12 disrupted New River and the tracer, and the study was terminated. However, the leading edge of the dispersed tracer was observed at river mile 14.7 before the study was stopped. The lapsed time and the location of the leading edge of the tracer from time of injection are given in table 1.

A discharge of $4.9 \text{ ft}^3/\text{s}$ (cubic feet per second) was measured on April 3 at State Highway 30, and $3.7 \text{ ft}^3/\text{s}$ was measured on April 6 at river mile 17.7 near Gonzales. Each measurement was made during the peak concentration.

Table 1.--Summary of time-of-travel study, New River

Location	River mile	Dis- tance (mi)	Lapsed time leading edge (hrs)	Lapsed time peak (hrs)	Dis- charge peak (ft ³ /s)	Dura- tion (hrs)	Peak observation concentra- tion ^{1/} (µg/l)
La. Hwy. 30----	24.5	1.6	10.5	13.5	4.9	9.0	220
Near Gonzales--	17.7	8.4	36.5	60.5	3.7	41.5	47.5
-----	16.4	9.7	126	----	---	----	-----
-----	16.0	10.1	148	----	---	----	-----
-----	15.6	10.5	169	----	---	----	-----
-----	15.3	10.8	193.5	----	---	----	-----
-----	15.0	11.1	217	----	---	----	-----
KCS RR-----	14.7	11.4	241	----	---	----	-----

^{1/}Micrograms per liter.



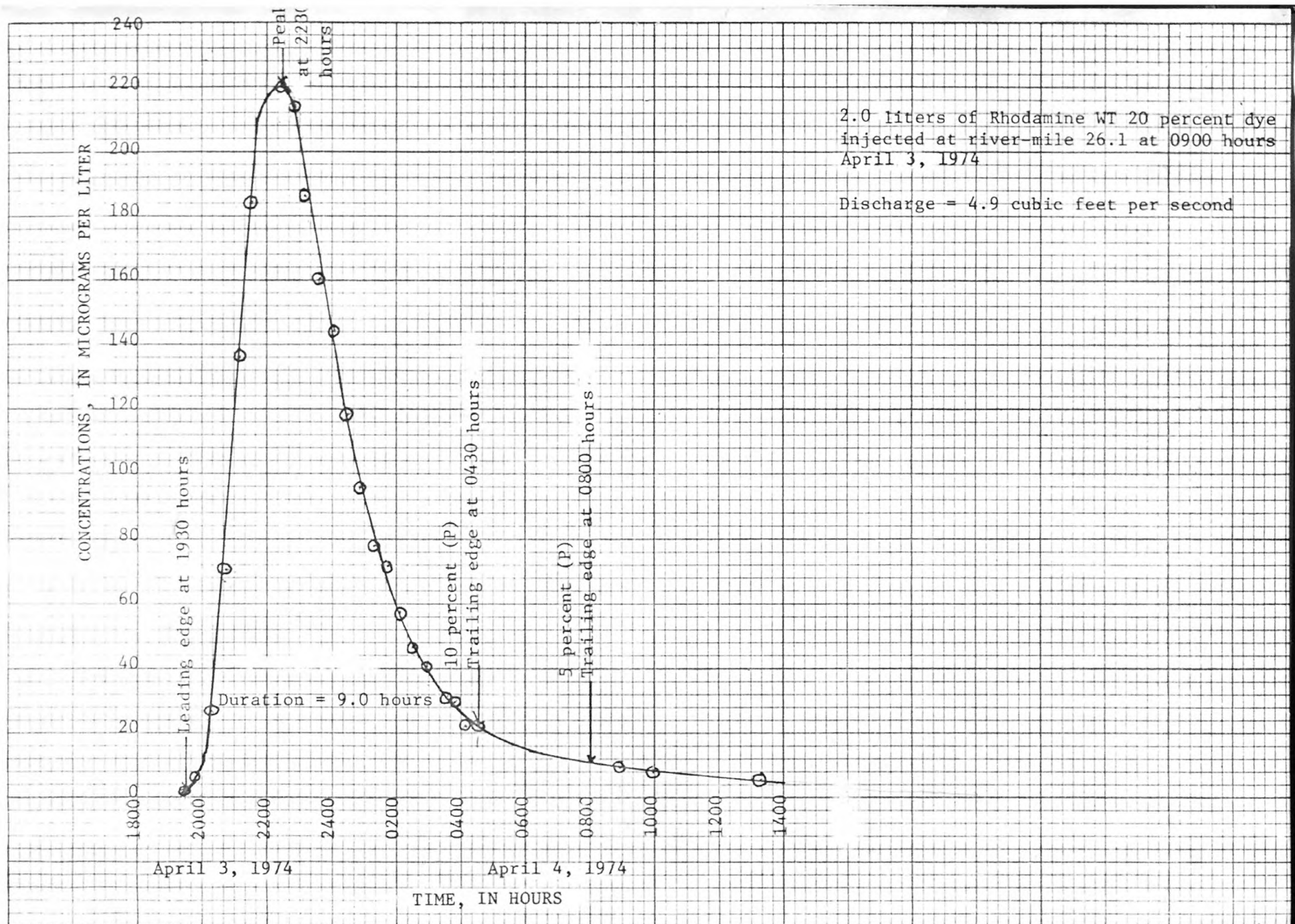
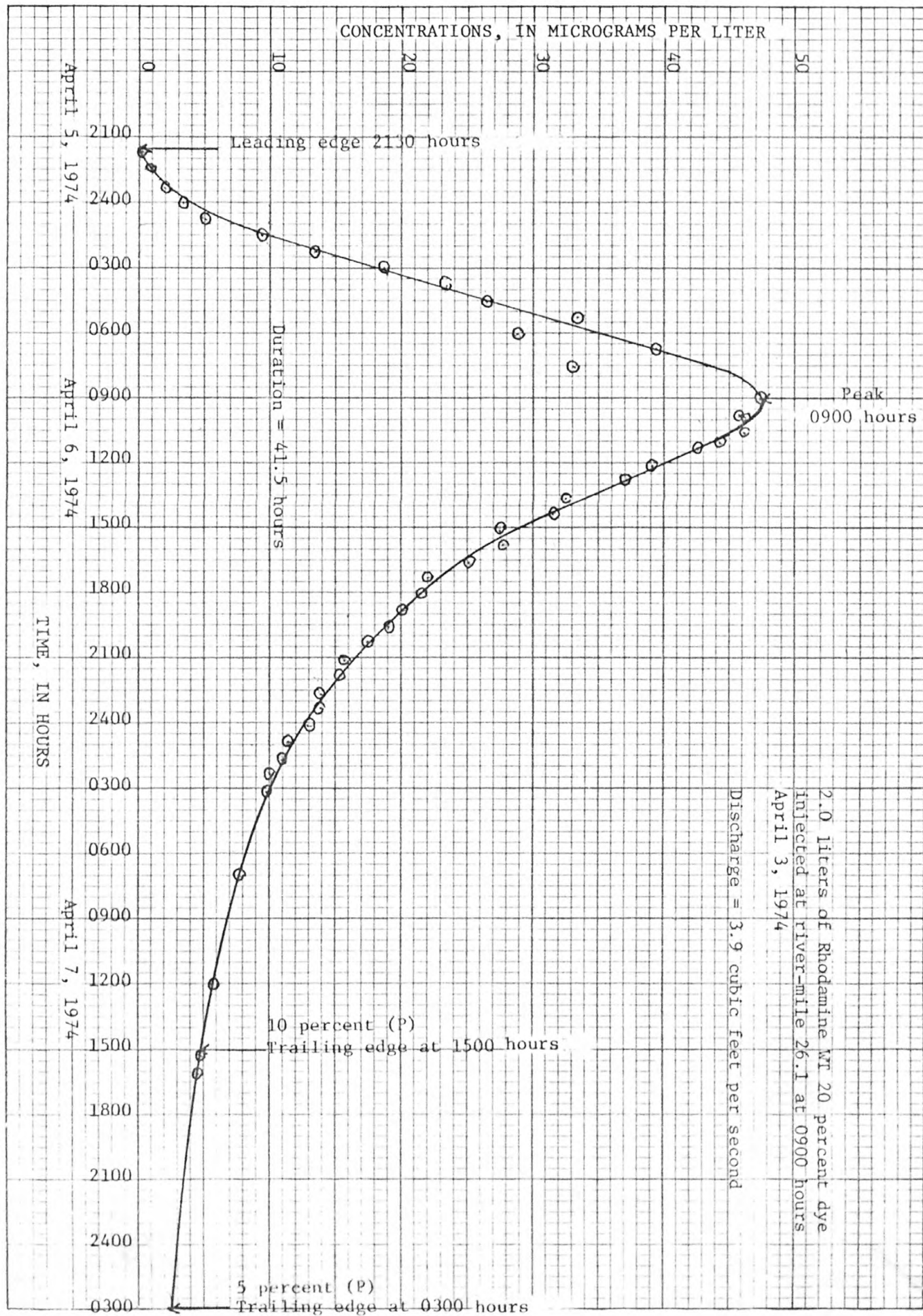


Figure 2.--Time-concentration relation, New River at river-mile 24.5, State Highway 30





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