

Internal Only**01589300 GWYNNS FALLS AT VILLA
NOVA, MD****Responsible Office**

U.S. Geological Survey
BALTIMORE
 8987 Yellow Brick Road
 Baltimore, MD 21237
 410-238-4200

Station Description**Most recent revision:** 3/22/2007**Revised by:** rwsaffer

LOCATION.--Lat 39°20'45.2", long 76°43'59.5" referenced to North American Datum of 1983, Baltimore County, MD, Hydrologic Unit 02060003, on right bank 300 ft downstream from bridge on Essex Road, 300 ft north of State Highway 26 (Liberty Road), in Villa Nova, 1.1 mi west of Baltimore City limits, and 11.5 mi upstream from mouth.

ROAD LOG.--Station can be reached from interchange of Md. 26 (Liberty Rd.) and I-695 (Baltimore Beltway). Proceed eastbound on Md. 26, 0.7 mile. Turn left 300 ft beyond the traffic light at the intersection of Md. 26 and Essex Rd. into liquor store parking lot and proceed 200 ft to rear of property. Gage is at rear of adjacent body shop property.

DRAINAGE AREA.--32.5 mi².

ESTABLISHMENT AND HISTORY.--February 7, 1957 by MD-DE-DC District, at site of old Essex Road bridge; at present site from Aug. 27, 1963 to June 22, 1972, when gage was destroyed by flood. Reestablished as permanent gage at present site Sept. 24, 1973. Gage discontinued in October 1988. Re-established in October 1996.

1. Recording gage at old bridge on Essex Road 300 ft upstream at same datum Feb. 7, 1957 to Aug. 27, 1963.
2. Recording gage at present site and same datum, Aug. 27, 1963 to June 22, 1972 (gage destroyed by flood of June 22, 1972).
3. No recording gage (R.P.) June 27, 1972 to Oct. 25, 1972 (Steel tape read twice daily by local observer).
4. Temporary recording gage installed on new Essex Road Bridge 300 ft upstream at same datum. Oct. 25, 1972 to Sept. 21, 1973.
5. New permanent recording gage installed at site 300 ft. downstream from Essex Rd. bridge at same datum. Sept. 21, 1973 to September 30, 1988. Gage re-established in same location October, 1996.

GAGE.--361.32 feet (from U.S.G.S. topographic maps). Sutron 8200 digital data recorder (15 min. log interval), attached to shaft encoder with stage kit. Telemeter via telephone line; power also available. Located in 5 ft steel pre-fab house set on a concrete collar on top of a 42-inch diameter corrugated metal pipe set in concrete. Intake is two 2-inch galvanized steel pipe, equipped with gate valve. Upper intake destroyed.

No well door. Well accessible by 14 ft. ladder bolted to inside of corrugated metal pipe section.

Outside staff (0.0 - 4.4 ft) is attached to a 4" x 6" treated post set in reinforced concrete 20 ft streamward from gage.

Pertinent elevations of the structures are: Gage Height (feet)

Floor of well	-1.0
Top of lower intake	-0.4
Top of upper intake	2.0
Top of instrument shelf	15.0
Maximum recordable stage	14.7
Top of house	20.0

CONTROL.--Channel is improved and straight for 150' below and 500 ft above gage and is 50 to 60 ft wide. At Essex Rd. a second bridge opening, also of about 60 ft, is effective only at stages over 4.5 ft. In vicinity of gage, left bank overflows at 6 ft and right bank overflows extensively at 11 ft. Bed of stream is composed mainly of sand and gravel with some rocks and is fairly uniform and fairly permanent. Low water control 60 ft below the gage is a gravel and one-man stone riffle overlying a sewer line. Channel control at medium and high stages. The present channel configuration dates to channel improvements in 1973, and the control to 1979.

DISCHARGE MEASUREMENTS.--For stages up to about 3.0 ft, good wading measurements can be made in vicinity of the gage or at the downstream side of the Essex Road bridge. At higher stages measurements may be made from the Essex Rd. bridge. Extremely high stages may be measured from the Liberty Rd. bridge downstream.

FLOODS.--Flood of June 22, 1972 reached a peak stage of 21.50 feet, gage datum, discharge 16,200 cfs.

WINTER RECORDS Stage-discharge relation affected by ice at times during winter months.

POINT OF ZERO FLOW.--Varies due to shifting rocks and boulders in control riffle.

REGULATION AND DIVERSIONS.--Slight diurnal fluctuation at times from unknown source.

Diversion - None known.

ACCURACY.--Good records should be obtained.

COOPERATION.--Baltimore County Department of Environmental Protection and Resource Management.

REFERENCE MARKS.--

RM = Reference Mark RP = Reference Point

RM-8 (1969, Basic) Top of bolt, the southwestern-most of four bolts in base plate of light pole near Liberty Rd. at entrance to service driveway of body shop. Elevation 13.287 ft. gage datum.

RM-9 (1970) Chiseled square on right end of downstream handrail of bridge on Essex Rd. above construction template stamped 1963 and 1.8 ft above sidewalk. Elevation 16.011 ft, gage datum.

RM-10 (1979, Basic) Brass tablet set in top of new OG pier. Elevation 4.426 ft, gage datum.

RM-11 (1979) Chiseled square on upstream streamward corner of gage house footer. May not be stable. Most recent elevation, 11.440 ft, gage datum; established at 11.458 ft.

RM-12 (1997) Bolt set in telephone pole on south side of gage. Has moved. Most recent elevation 13.517 ft, gage datum; established at 13.574 ft.

RP-2 (1972) Horizontal (---) chisel mark in downstream face of aluminum handrail strut near left center portion of left bridge opening. Elevation 16.435 ft, gage datum.

RP-3 (1973) Top of 1/2" bolt head set horizontally in front facing of instrument shelf. Elevation 14.728 ft, gage datum.

PHOTOGRAPHS.--See station files.

DATE OF LAST LEVELS.--

Last run: Jun 23, 2004; Next run: Jun 23, 2007; Frequency: 3 years

RM-10 used as basic in latest set of levels.

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Page Last Modified: June 8, 2004