

**NATIONAL WEATHER SERVICE INSTRUCTION 10-924  
AUGUST 2, 2011**

**Operations and Services  
Hydrologic Services Program, NWSPD 10-9**

**WEATHER FORECAST OFFICE HYDROLOGIC REPORTING**

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>

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**OPR:** W/OS31 (D. Matusiewicz)

**Certified by:** W/OS3 (T. Graziano)

**Type of Issuance:** Routine.

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**SUMMARY OF REVISIONS:** This directive supersedes NWS Instruction 10-924, “Weather Forecast Office Hydrologic Reporting,” dated December 8, 2008. The following revisions were made to this instruction:

- 1) Adds a new section 3 describing the relationship between the WFO IHFS-DB and the National River Location Database (NRLDB). Renumbers subsequent sections accordingly.
- 2) In section 4, clarifies the requirement for all WFOs to set the flood retention parameter for the Flood-TS table to 30 months.
- 3) Revises the fourth sentence of section 4 to provide HPMS with two options for hydrologic reporting of crests above flood stage.
- 4) In section 5.1.2, expands bullet “c” to more clearly describe the type of impact information that should be included in the monthly report of hydrologic conditions and to describe how the Hydrologic Information Center (HIC) uses this information.
- 5) Adds sources for supporting information on the IHFS-DB at the end of the first paragraph of Appendix A.
- 6) Revises the last sentence of the Site Information paragraph of Appendix A to accurately describe the new table format.
- 7) Expands the column descriptions in the tables in Appendix A to more clearly describe what should be stored under many of the column names. Adds a screen capture of the HydroBase interface used to enter information described in the corresponding table.

(Signed)

July 19, 2011

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David B. Caldwell  
Director, Office of Climate,  
Water, and Weather Services

Date

**Weather Forecast Office Hydrologic Reporting**

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1. Introduction. Centralized collection of river station descriptions and recent hydrologic activity is required to support operations and management of the National Weather Service (NWS) Hydrologic Services Program. Historically, this reporting has been accomplished through hard copy forms such as Weather Service (WS) Forms E-19, E-19a, E-5 and E-3. This directive provides instructions to Weather Forecast Offices (WFO) on the population and maintenance of the Integrated Hydrologic Forecasting System Database (IHFS-DB) and the hydrologic reports required from WFOs. WFO hydrology program managers (HPM) are responsible for ensuring the required IHFS-DB fields are current and accurately populated and for preparing the forms and reports described below.

2. River Gage Station Description and History. The database fields identified in Appendix A provide a complete description and history of all gages that have been used for public forecasts since establishment of the station. The data and information within these database fields provide an operational reference and serve as a quick review of the public service needs within a particular river reach at the onset of and during a flood. The HPM should review the data stored for each gage in these fields a minimum of once every 5 years and within 30 days of a significant event which necessitates an update to the database such as when a river stage reporting station is discontinued.

Database fields for river gage station information and history should be maintained for all river gage stations used by the NWS in any part of the Hydrologic Services Program regardless of ownership. These locations are sometimes separated into two categories – forecast points and data points, which are specifically defined in [NWS Instruction 10-950, Definitions and General Terminology](#) as:

- a. Forecast Points – locations along a river or stream for which hydrologic forecast and/or warning services are provided by a WFO.
- b. Data Points – locations along a river or stream for which observed data is input to RFC or WFO hydrologic forecast procedures, or included in public hydrologic products. Flood forecasts and warnings are not issued for data points.

For a new river forecast point, the HPM should populate the appropriate IHFS-DB fields identified in Appendix A and distribute the information to NWS offices which use the data before river forecast service for the site is added to the Hydrologic Services Program. For a new data point, the appropriate IHFS-DB fields identified in Appendix A should be populated no more than 60 days after data from the site are incorporated into the NWS program.

River gage station description and history information stored in IHFS-DB may be printed and filed in traditional WS Form E-19 and WS Form E-19a formats from HydroBase to serve as a local reference document and to be distributed as appropriate.

3. Relationship to National River Location Database. The National River Location Database (NRLDB) is populated when an automatically executed script accesses (1) river gage station description and history tables from each WFO's IHFS-DB and (2) forecast services tables from each RFC's IHFS-DB. The combined information is then stored as a national database. Procedures on the forecast services tables at RFCs may be found in [NWS Instruction 10-914, River Forecast Center Reporting](#). NWS employees can obtain more information on the NRLDB at <https://osip.nws.noaa.gov/osip/processDocsStatus.php> (scroll down to "08-007 National River Location Database (NRLDB)."

4. Flood Stage Reports. After a flood event, the HPM will ensure the crest stages and duration above flood stage data posted to the IHFS-DB are accurate. Hydrologic reporting of crests above flood stage can be accomplished by maintaining an extended Flood-TS table in the IHFS-DB and providing a completed template of Weather Service Form E-3 (shown in Appendix B). To maintain flood stage reports within IHFS-DB, the retention parameter on the Flood-TS table will be 30 months. Whenever a river crests at or above flood stage, HPMs will prepare a WS Form E-3 (shown in Appendix B) or provide the equivalent information through a regionally-developed mechanism. Rivers and stations in flood are listed in a downstream order. Provide inclusive dates for the duration of flooding for each station. Days with flood stage or higher will be considered in determining the duration of the flood. Submit the completed WS Form E-3 template with WS Form E-5 as described in Section 5.

5. Monthly Report of Hydrologic Conditions. By the 15<sup>th</sup> of each month, a report will be prepared summarizing hydrologic conditions in the Hydrologic Service Area (HSA) during the previous calendar month. The report will follow the format of WS Form E-5 (shown in Appendix C). The general content and dissemination of this report is specified below.

5.1 Content. Include one or more of the following sections in the monthly report of hydrologic conditions:

- a. Summary
- b. Flood Conditions
- c. River Conditions
- d. Drought
- e. Water Supply
- f. General Hydrologic Conditions

Include the summary section each month. Include the other sections if local conditions warrant.

5.1.1 Summary. The text of the summary will include a general overview of hydrologic conditions. If there was no significant hydrologic activity, a simple statement to that effect is sufficient.

5.1.2 Flood Conditions. When a flood occurs, prepare a descriptive summary of the flooding. The report should be comprehensive but concise and should include the following:

- a. A statement as to the rivers, areas, and states in which the floods occurred; the period of flooding, its magnitude, and interesting or unusual features; if floods were of unusual severity; and a tabular comparison with past floods.
- b. A summary relative to the rainfall or other conditions causing the floods, indicating the approximate average precipitation over the basins.
- c. A summary of impacts during significant flood events that produced one or more fatalities and/or large scale property damage. This section should include location and extent of the impacts, number of deaths by state, and total property damage figures (if available). The HPM should coordinate with the local Warning Coordination Meteorologist, who is responsible for gathering this information and writing impact summaries of major flood events for the NWS Storm Data Program. This information is useful to the Hydrologic Information Center (National Weather Service Headquarters), which is tasked with providing flood damage reports and flood loss statistics to the U.S. Army Corps of Engineers and upper-level NWS leadership.
- d. A general statement as to hydrologic warnings and forecasts issued and effectiveness of hydrologic services provided by the WFO. In the discussion of lead time, include flood mitigation actions taken and monetary savings realized, if known.

5.1.3 River Conditions. When no floods have occurred, describe miscellaneous hydrologic conditions such as significant rises, record low stages, ice conditions, and opening and closing of the river to navigation.

5.1.4 Drought. When drought conditions affect the HSA, a drought section will be included in the monthly hydrologic summary. Topics may include information on precipitation deficits,

stream conditions, ground water levels, soil moisture conditions, impacts on water supply, agriculture and fire danger, drought declarations issued by civil or water management authorities, as well as long-term outlooks. A copy of a recently issued Drought Information Statement (DGT) for the WFO area may be used for this section (see [NWS Instruction 10-1201, WFO Drought Products Specification](#)).

5.1.5 Water Supply. In areas where water supply conditions are of particular interest, the summary may include information on past precipitation, snow conditions, water supply forecasts, reservoir and ground water levels, and anticipated problems.

5.1.6 General Hydrologic Information. This section may include general information on hydrology in the HSA that is not included in the sections above. It may also include topics of local interest.

6. Distribution of Reports. E-mail copies of the Monthly Report of Hydrologic Conditions and, if required, the Flood Stage Report to the Hydrologic Information Center ([hic@noaa.gov](mailto:hic@noaa.gov)) as an attachment by the 15<sup>th</sup> of the following month. Also send copies to the appropriate river forecast center and hydrologic services division, hydrologic and climate services division, or hydrologic services branch (within a climate, water, and weather division) at regional headquarters. Additional copies of the report may be sent to other offices based on local agreements.

The file format may be either MS Word (.doc, .docx) or Portable Document Format (.pdf). File name will adhere to the following format:

*E5\_SID\_YYYY-MM.ext* and  
*E3\_SID\_YYYY-MM.ext*,

where,

*SID* is the 3-letter WFO site identification,  
*YYYY* is the 4-digit year,  
*MM* is the 2-digit representation of the month, and  
*ext* is the three letter file format extension (doc or pdf).

## APPENDIX A – Required IHFS-DB Fields of River Gage Station Description and History

The HPM is responsible for overall quality of the information stored in the IHFS-DB. Information in the database fields identified below summarizes a river/stream location's description and history. Filling in these fields is required for all river/stream locations used in any part of the NWS Hydrologic Services Program regardless of who operates the gaging station. If it is impossible to obtain information for a field, it may be left unpopulated. Sources for supporting information on the IHFS-DB are listed below.

- Guidance on the content and format of information to be entered in each field, which was developed by the 2007 Database Standardization Team, can be found at: [https://ocwww.weather.gov/intranet/whfs/documentation/Guidelines\\_and\\_Standards\\_for\\_Selected\\_Reference\\_Tables\\_in\\_the\\_IHFS\\_and\\_RAX\\_Databases.doc](https://ocwww.weather.gov/intranet/whfs/documentation/Guidelines_and_Standards_for_Selected_Reference_Tables_in_the_IHFS_and_RAX_Databases.doc)
- Documentation on the IHFS-DB can be found at: <http://www.nws.noaa.gov/oh/hrl/ihfs/database/html/databases.php>
- Various data codes for SHEF are referenced in *NWS Manual 10-944, Standard Hydrometeorological Exchange Format (SHEF) Manual*.
- Definitions of key terms used in these database field names can be found in *NWS Instruction 10-950, Definitions and General Terminology*.

**Site Information.** Tables 1-19 contain a list of fields required in the IHFS-DB. The contents of each table include tablename.column.name (where the data value can be found in the database), the type of database value, and a description of the field. Asterisks indicate foreign key constraints. IHFS-DB is a relational database. In the context of relational databases, foreign key constraints refer to field values that have to be previously defined in other tables. Figures 1-19 show Hydrobase windows that depict the database fields that are required to be maintained.

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19. Reservoir menu/Reservoir window in HydroBase

Table 1. Location information found in the HydroBase Location menu/Modify Location window.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
location.lid	char(8)	Unique identifier
location.name	char(20)	Name (Location)
location.county	char(20)	*County name
location.state	char(2)	*State
location.rb	char(30)	River basin name
location.lat	float	Latitude
location.lon	float	Longitude
location.sn	char(10)	Station Number (NWS Index Number) (NCDC station number)
location.rfc	char(5)	*RFC
location.hsa	char (3)	*HAS
location.sbd	date	Station begin date
location.lremark	char(255)	Directions to gage station/other remarks
location.tzone	char(8)	Time zone
location.elev	float	Elevation of the normal ground surface where the station is located
location.network	char(3)	Network
location.wfo	char(3)	*WFO
location.detail	char(10)	The direction and distance (in whole miles) from a location to the nearest U.S. Post Office



Figure 1. Location menu/Modify Location window in HydroBase.

Modify Location - BRKM2 - LITTLE FALLS

Page **Geophysical** Copy to New Location

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**Geographic/Physical**

Location:   Inactive  Revise:

Name:

Basin:  Detail:

Lat/Lon:   Network:

Elevation:  RFC:

Station Num:  HSA:  WFO:

County/State:

Time Zone:

---

**Remarks**

FRM BELTWAY/I495, CLARA BARTON PARKWAY E TOWARDS GLEN ECHO TO PUMPING STATION/DALECARLIA RESERVOIR. ALL VISITORS MUST STOP AT U.S.E. OFFICE TO BE ESCORTED FRM GATE TO DAM. 1.8 SE P.O.

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**Station Characteristics (View-Only)**

**Station Type:**

Forecast Point  Reservoir  Snow  Other

River Data  Precipitation  Temp  Undefined

**Data Sources:**

Dcp  Observer

Telenetry

Table 2. Observer information found in the HydroBase Location menu/Data Sources window/Observer Page.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
observer.firstname, observer.lastname	char(12), char(28)	Observer's Name
observer.a1, observer.a2, observer.a3, observer.city, observer.state, observer.zip	char(30), char(30), char(30), char(30), char(2), char(10)	Address: Number and Street 2 <sup>nd</sup> line for location, if needed 3 <sup>rd</sup> line for location, if needed City State Zip Code
observer.dos	date	Start date of service
observer.spons	char(7)	*Sponsor
observer.onnr	char(4)	Order number found on form CD-404
observer.hphone	char(12)	Home phone number
observer.phone	char(18)	Work phone number
observer.rate	float	Rate
observer.email	char(60)	E-Mail address of contact
observer.rprt	char(60)	Duties or reporting criteria
observer.recip	char(15)	*Recipient
observer.comm	char(10)	*Comms type
observer.tsk	char(13)	Task
observer.ssn	char(11)	Social security number
observer.gn	char(1)	Gender

Figure 2. Location menu/Data Sources window/Observer Page in HydroBase.

The screenshot shows a software window titled "Data Sources - BRKM2 - LITTLE FALLS". The window is divided into two main sections: "Observer" and "Administration".

**Observer Section:**

- Type:** Observer (dropdown menu)
- First Name:** [Empty text box]
- I/Last Name:** [Empty text box]
- Address1:** NWS
- Address2:** 1325 e-west
- Address3:** sno
- City:** STERLING
- St:** VA (dropdown menu with options VA, Vi, VI)
- Zip:** [Empty text box]
- E-Mail:** [Empty text box]
- DoS:** 10/01/1966 (checkbox and date)
- Home:** [Empty text box]
- Work:** 703-260-0909
- SSN:** [Empty text box]
- Gender:** M (selected), F, I (radio buttons)

**Administration Section:**

- Comms:** Phone-out (dropdown menu)
- Task No:** [Empty text box]
- Sponsor:** S&E (selected), S&E(A), SEE RMK, S&E/FC1 (dropdown menu)
- Rate:** 0.00
- CD-404:** [Empty text box]
- Recip:** LWK (selected), LZK, MEG, MFL (dropdown menu)
- Report:** CALL TWICE DAILY,POLLED 6 HRLY, MORE IF HIGH WATER

**Buttons:** Apply, Close, Delete

Table 3. Telemetry information found in the HydroBase Location menu/Data Sources window Telemetry Page.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
telem.type	char(10)	*Telemetry Type
telem.owner	char(10)	*Telemetry Owner
telem.payor	char(10)	*The organization that pays for the telemetry services costs
telem.rptfreq	char(4)	Reporting Frequency
telem.obsvfreq	char(10)	Observation Frequency
telem.cost	float	Monthly telemetry pay or cost of line
telem.phone	char(18)	Phone number
telem.sensorid	char(10)	Device sensor id

Figure 3. Location menu/Data Sources window Telemetry Page in HydroBase.

Data Sources - BRKM2 - LITTLE FALLS

Type **Telemetry**

**General**

**Telemetry:** **handr550**  
handr550a  
handr555  
handr555es

**Owner:** **NWS**  
Obsvr  
OCS  
Other

**Payor:** **NWS**  
Obsvr  
OCS  
Other

**Phone:** 301-320-7325

**Cost:**

**Sensor Id:**

**Reporting Frequency:**

**Observation Frequency:**

**Criteria**

Apply Close Delete

Table 4. DCP information found in the HydroBase Location menu/Data Sources window DCP Page.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
dcp.goes	char(8)	DCP (GOES) ID
dcp.owner	char(10)	*DCP Owner
dcp.rptime	char(8)	DCP Report Time
dcp.rptfreq	char(4)	DCP Report Interval/Frequency
dcp.obsfreq	char(10)	DCP Observation Frequency
dcp.randrept	char(1)	T/F column which defines whether or not the DCP provides random reports at intervals less than the published reporting frequency for the platform
dcp.criteria	char(512)	Statement of the criteria for reporting observations that is assigned to each automated telemetry or GOES DCP platform

Figure 4. Location menu/Data Sources window DCP Page in HydroBase.

The screenshot shows a software window titled "Data Sources - BRKM2 - LITTLE FALLS". At the top, there is a "Type" dropdown menu set to "DCP". Below this is a "General" section containing several fields: "Owner:" with a list box showing "COE", "COEBMI", and "NOS"; "GOES ID:" with a text box containing "CE7B223A"; "Reporting Time:" with a text box containing "0329"; "Reporting Frequency:" with a text box containing "240"; and "Observation Frequency:" with an empty text box. There is also a checkbox labeled "Random Report" which is currently unchecked. Below the "General" section is a "Criteria" section with a text box containing the text "HG 15 min, MC 60 transmitted every 4 hours". At the bottom of the window are three buttons: "Apply", "Close", and "Delete".

Table 5. River location information found in the HydroBase RiverGage menu/RiverGage window.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
riverstat.stream	char(32)	Official name of river or stream
riverstat.da	float	Drainage area
riverstat.mile	float	River Mile
riverstat.zd	float	Zero Datum (Elevation of the gage zero)
riverstat.lat	float	Latitude
riverstat.lon	float	Longitude
riverstat.fs	float	Official flood stage of a river, stream, or lake
riverstat.wstg	float	Official action stage of a river, stream, or lake
riverstat.fq	integer	Flood Flow
riverstat.action_flow	float	Action Flow
riverstat.remark	char(255)	Directions to gage station/other remarks
riverstat.threshold_runoff	float	Threshold runoff value for a site
riverstat.rrevise	date	The date when E-19 data was last updated for a river station
riverstat.use_latest_fcst	char(1)	A true/false flag indicating whether RiverPro should use the latest (as in basis time) forecast data when computing the mofo (maximum observation/forecast)
riverstat.primary_pe	char(2)	Primary stage or discharge physical element (SHEF PE code) for a river station
riverstat.group_id	char(8)	A short form identifier for a group of forecast points as used by the RiverPro application



Figure 5. RiverGage menu/RiverGage window in HydroBase.

River Gage - BRKM2 - LITTLE FALLS

Page **Geophysical**

**Geographic/Physical**

Stream: POTOMAC RIVER  Revise Date: 02/28/1997

Lat/Lon: 38 56 58 77 07 40 Forecast Point Group Assignment: POTbloHF

Drainage Area: 11560.0

River Mile: 117.4

Flood Stage: 10.00 Flow: 134000

Action Stage: 5.00 Flow: 22000

Zero Datum: 37.950

Threshold Runoff:

Primary Stage/Flow Physical Element

- HG River Stage**
- HH Reading Height - MSL
- HI Stage Trnd Indicator
- HJ Spillway Gate Height
- HK Lake Elev Abv Datum
- HL Lake Elevation

Use Latest Forecast When Computing Maximum Forecast Value

Remarks

Ok Apply Cancel Delete

Table 6. River location information found in the HydroBase RiverGage menu/RiverGage window Additional Info page.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
riverstat.vdatum	char(20)	Vertical Datum
riverstat.cb	float	Checkbar Stage
riverstat.bf	float	Bankfull Stage
riverstat.tide	char(8)	Tidal Effects
riverstat.gsno	char(10)	USGS Gage Number
riverstat.por	char(30)	Period of Record
riverstat.level	char(20)	Leveling Agency and Leveling Date (Level)
riverstat.rated	char(20)	Rating Agency (Rated)
riverstat.ratedat	date	Date that the current rating curve for a river station became effective
riverstat.rsource	char(20)	Agency that determined the latitude and longitude for a river station
riverstat.usgs_ratenum	char(5)	USGS rating number
riverstat.backwater	char(8)	Indication of any backwater effects at a river gage site
riverstat.pool	float	Normal pool elevation, measured in feet above mean sea level, at a river station

Figure 6. RiverGage menu/RiverGage window Additional Info page in HydroBase.

River Gage - BRKM2 - LITTLE FALLS

Page **Additional Info**

**Information**

Period of Record:	03/1930-	USGS No:	01646500
Lat/Lon Source:	USGS Water Resources	Bankfull:	10.0
Level:	Level	Check Bar:	0.000
Vertical Datum:	NGVD 1929	Pool:	0.0
Rated:	USGS		
Date of Rating:	01/27/2009		
USGS Rating No.:			
Tidal Effect:	None		
Backwater:	None		

Ok      Apply      Cancel      Delete

Table 7. Flood Impact Statement Information found in the Hydrobase Rivergage menu/Impact Statement window.

Table Name Column Name	Type	Column Description
floodstmt.impact_value	float	Impact Value
floodstmt.impact_pe	char(2)	Impact PE
floodstmt.datestart	char(5)	Seasonal start date
floodstmt.dateend	char(5)	Seasonal end date
floodstmt.statement	char(512)	Impact
floodstmt.rf	char(1)	Code that indicates a rising or falling condition exists in relation to river stage

Figure 7. Rivergage menu/Impact Statement window in HydroBase.

Impact Statement - BRKM2 - LITTLE FALLS

Impact Value	Impact PE	Begin:	End:	Tendency:
20.00	HG	01/01	12/31	FALLING

**Characteristics**

Impact Value: 20.00    Impact PE: HG    Begin (Seasonal): January    01

Tendency:  Rising     Falling    End (Seasonal): December    31

**Impact**

Road submerged

Ok    Apply    Cancel    New    Delete    Print All    Save to File

Table 8. Fields found in the HydroBase RiverGage menu/Flood Category window.

Table Name Column Name	Type	Column Description
floodcat.major_stage	float	Major flood stage
floodcat.major_flow	float	Major flood flow
floodcat.moderate_stage	float	Moderate flood stage
floodcat.moderate_flow	float	Moderate flood flow
floodcat.minor_stage	float	Minor flood stage
floodcat.minor_flow	float	Minor flood flow

Figure 8. RiverGage menu/Flood Category window in HydroBase.

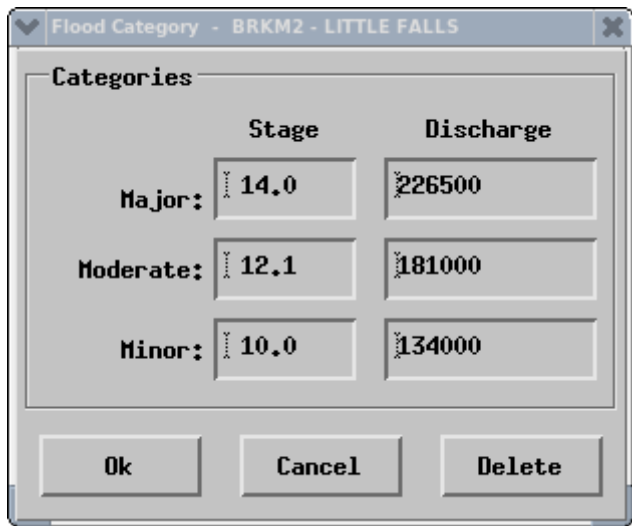


Table 9. Crest information found in the HydroBase RiverGage menu/Crest History window.

Table Name Column Name	Type	Column Description
crest.datcrst	date	Date of Crest
crest.timcrst	char(5)	Time (LST)
crest.stage	float	Crest (ft)
crest.q	float	Flow (cfs)
crest.hw	char(1)	True/false flag that indicates whether an observer determined a crest event by visually examining high water marks on a staff gage or not
crest.olddatum	char(1)	True/false flag indicator of whether an old datum was in effect when the associated crest was recorded or observed
crest.jam	char(1)	True/false flag indicating if the crest was caused by an ice jam
crest.suppress	char(1)	True/false flag that indicates whether a crest event should be suppressed or displayed on output depictions
crest.prelim	char(1)	Indicates if the associated crest is a preliminary reading, observation subject to adjustment upon receipt of official records from the rating agency, or a record
crest.cremark	char(80)	Remarks

Figure 9. RiverGage menu/Crest History window in HydroBase.

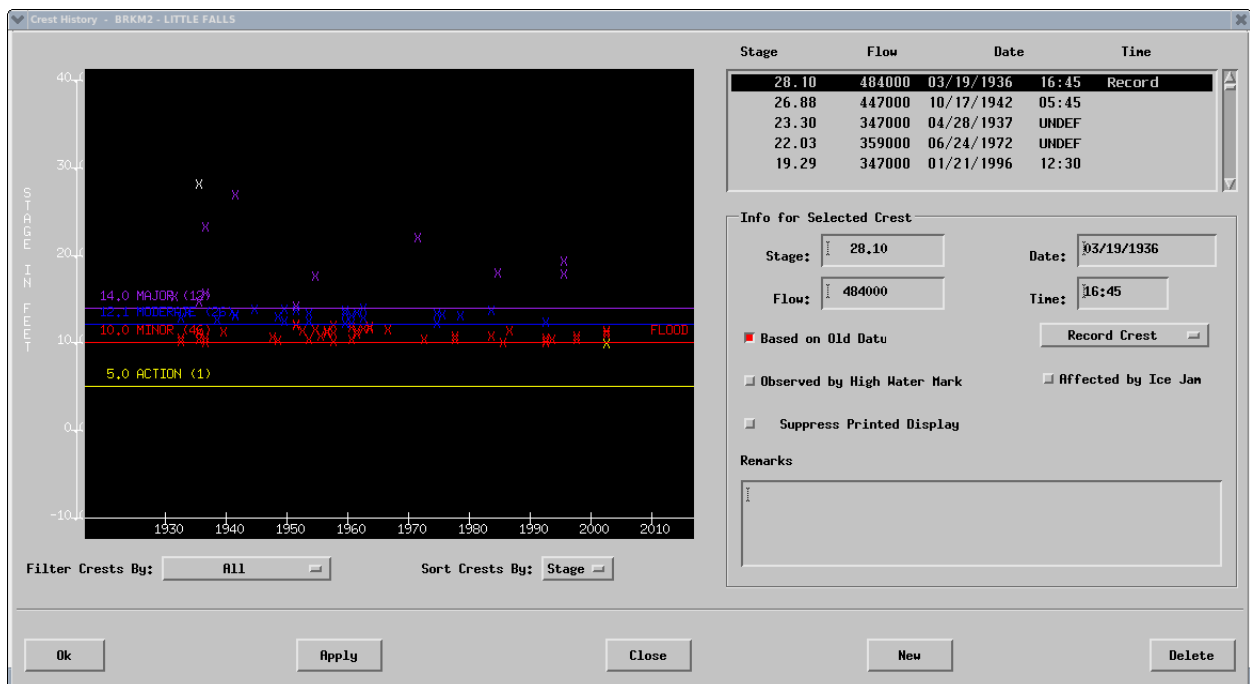


Table 10. Reference information found in the HydroBase RiverGage menu/References window.

Table Name Column Name	Type	Column Description
refer.reference	char(70)	References

Figure 10. RiverGage menu/References window in HydroBase.

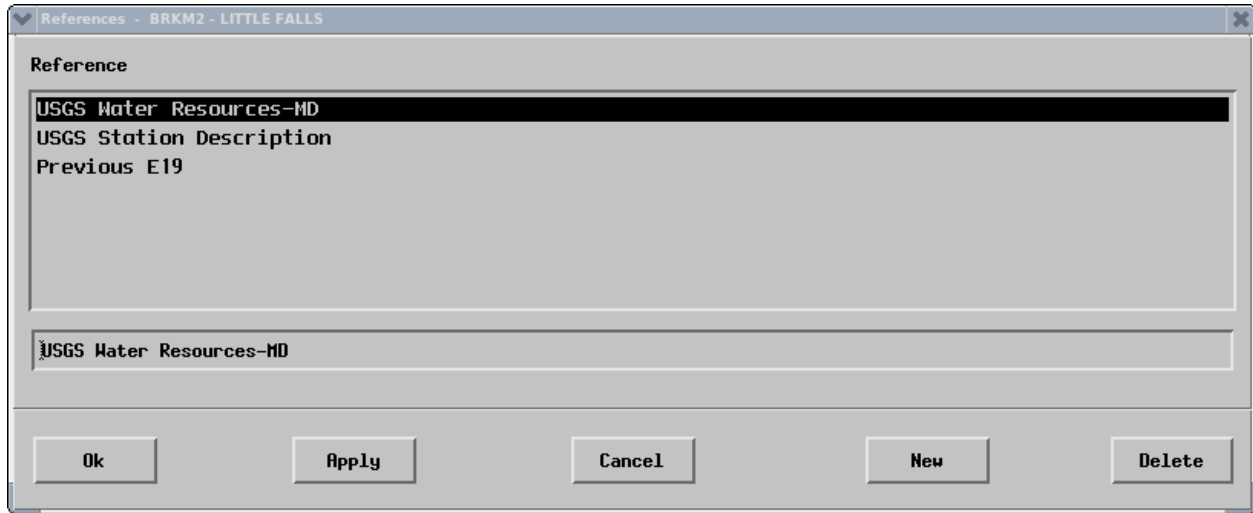


Table 11. Datum information found in the HydroBase RiverGage menu/Datum window.

Table Name Column Name	Type	Column Description
datum.elev	float	Zero Datum (Elevation at Gage Zero) (Elevation of the normal ground surface where the station is located (ie. NGVD 1929))
datum.ddate	char(10)	Date of the last update of this record in the Datum or DamCat tables

Figure 11. RiverGage menu/Datum window in HydroBase.

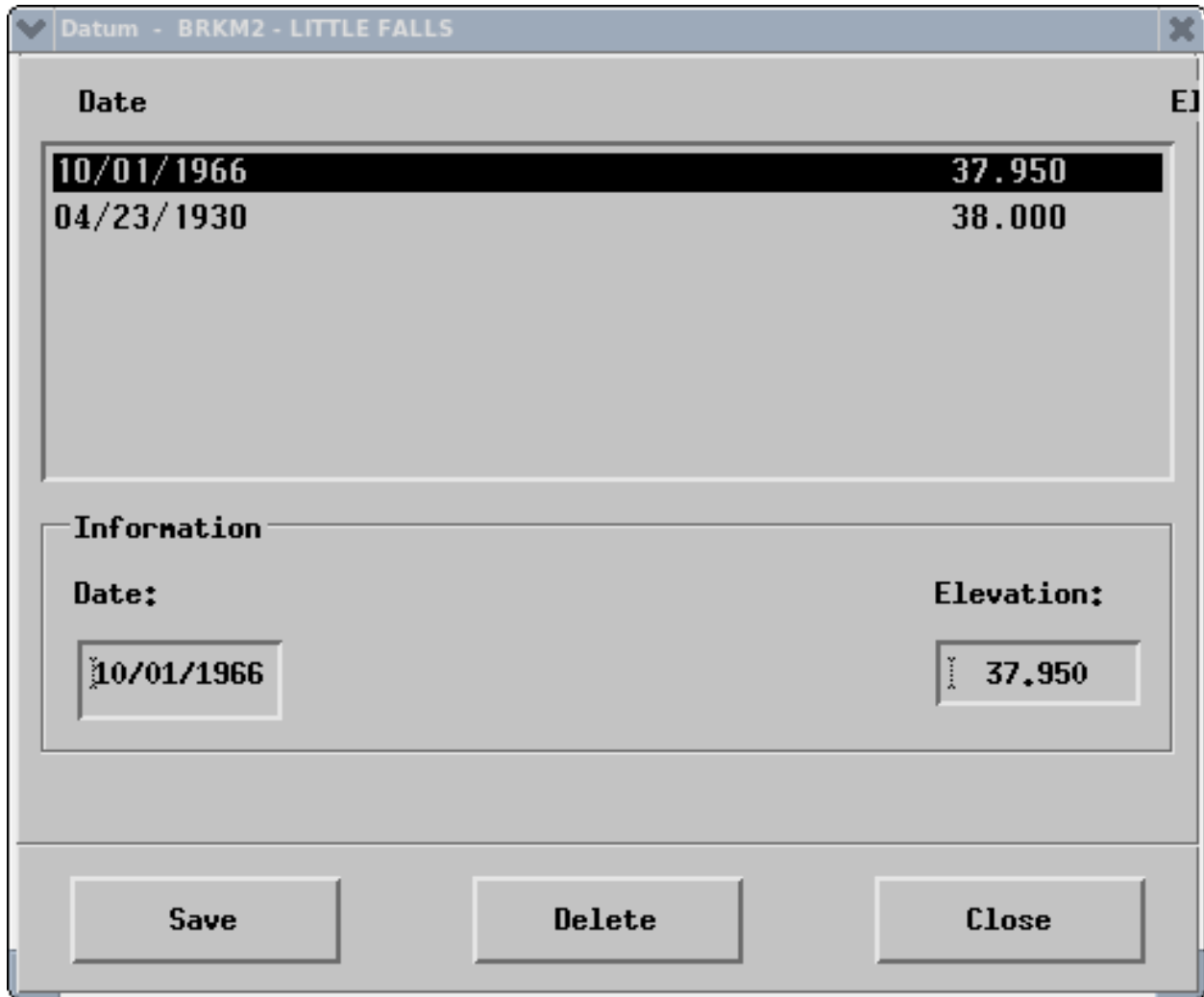




Table 12. Benchmark information found in the HydroBase RiverGage menu/Benchmark window.

Table Name Column Name	Type	Column Description
benchmark.bnum	char(6)	Benchmark number
benchmark.remark	char(255)	Description
benchmark.elev	float	Elevation of the normal ground surface where the station is located

Figure 12. RiverGage menu/Benchmark window in HydroBase.

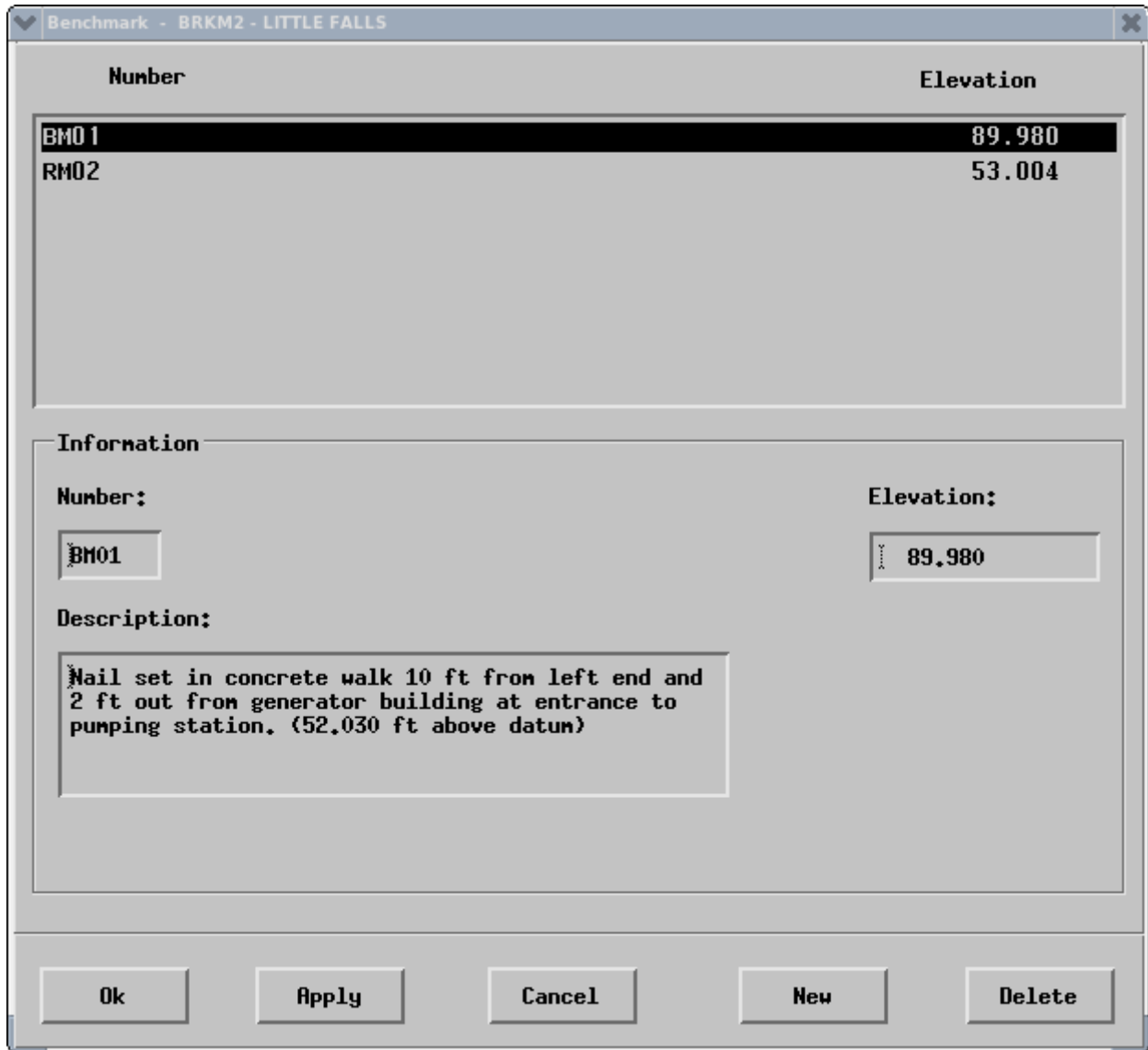


Table 13. Gage information found in the HydroBase RiverGage menu/Publications window.

Table Name Column Name	Type	Column Description
pub.ppub	char(25)	Publication/Location of Records
pub.pbegin	date	Starting date of records
pub.pend	date	Ending date of records

Figure 13. RiverGage menu/Publications window in HydroBase.

The screenshot shows a window titled "Publications - BRKM2 - LITTLE FALLS". The window is divided into several sections:

- Begin/End Section:** A large text area at the top contains the date "03/01/1930" on the left and the label "End" on the right.
- Information Section:** A section below with the title "Information" containing three input fields:
  - Begin:** A text box containing "03/01/1930".
  - End:** An empty text box.
  - Location:** A text box containing "USGS Water Resources-MD".
- Buttons:** A row of five buttons at the bottom: "Ok", "Apply", "Cancel", "New", and "Delete".

Table 14. Gage information found in the HydroBase RiverGage menu/Gage History window.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
gage.type	char(10)	*Gage Type
gage.owner	char(10)	*Owner
gage.maint	char(10)	*Maintaining agency
gage.gbegin	date	Begin service date
gage.gend	date	End service date
gage.remark	char(255)	Gage Location/Remarks

Figure 14. RiverGage menu/Gage History window in HydroBase.

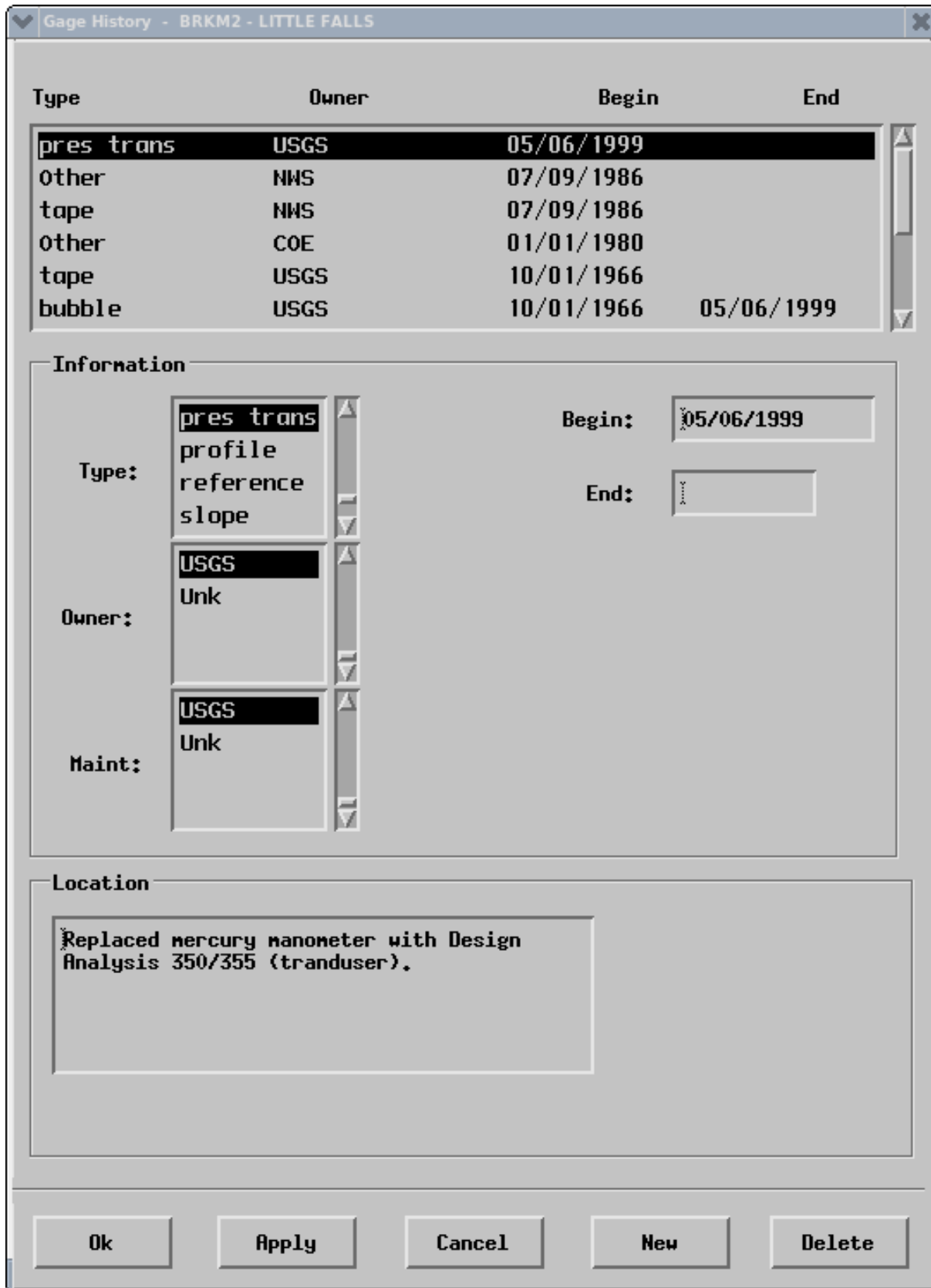


Table 15. Low Water information found in the HydroBase RiverGage menu/Low Water window.

Table Name Column Name	Type	Column Description
lowwater.lwdat	date	Date of low water
lowwater.stage	float	Stage (ft)
lowwater.q	float	Flow (cfs)
lowwater.lwrem	char(80)	Remarks

Figure 15. RiverGage menu/Low Water window in HydroBase.

The screenshot shows a software window titled "Low Water - BRKM2 - LITTLE FALLS". At the top, there is a table with three columns: "Stage", "Flow", and "Date". The first row of data shows a flow of "66" and a date of "09/09/1966". Below the table is an "Information" section containing three input fields labeled "Stage:", "Flow:", and "Date:". The "Flow:" field contains the value "66" and the "Date:" field contains "09/09/1966". Below these is a "Notes:" section with a text area containing the text "Gage height not determined.". At the bottom of the window are five buttons: "Ok", "Apply", "Cancel", "New", and "Delete".

Table 16. Drought/Low Water Impact Information found in the Hydrobase Rivergage menu/Low Water Statement window.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
lwstmt.pe	char(2)	SHEF physical element code value
lwstmt.lower_value	float8	Lower value defining the range for which the low water impact information applies
lwstmt.upper_value	float8	Upper value defining the range for which the low water impact information applies
lwstmt.lw_criteria	varchar(512)	Criteria of low water statement table
lwstmt.lw_source	varchar(512)	Source of low water statement
lwstmt.statement	char(512)	Text statement describing the low water conditions
lwstmt.criteria_rank	integer	If multiple criteria for a given range exist, then this column specifies the order in which the criterion are listed and uniquely identifies each

Figure 16. RiverGage menu/Low Water Statement window in HydroBase.

Low Water Statement - BRKM2 - LITTLE FALLS

Lower Limit	Upper Limit	Physical Element	Order
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**Information**

Lower Limit:  Upper Limit:  Physical Element:  Order:

Criteria:

Source:

Statement:

Ok Apply Close New Delete

Table 17. Descriptive conditions for a location found in the HydroBase RiverGage menu/Description window.

Table Name Column Name	Type	Column Description
descrip.bed	char(60)	Stream Bed
descrip.reach	char(80)	Reach (limits, width, length)
descrip.res	char(255)	Regulation of upstream reservoir
descrip.divert	char(60)	Diversion (Effect that streamflow diversion has on a river station)
descrip.ice	char(160)	Winter (Freezing)
descrip.topo	char(255)	Topography
descrip.remark	char(255)	Remarks
descrip.proximity	char(6)	*Proximity
locarea.area	Float	The area of a two-dimensional planar figure such as a county, a forecast zone, or a river basin

Figure 17. RiverGage menu/Description window in HydroBase.

Proximity: near

Stream Bed: Edge rock, gravel and sand.

Divert:

Remarks: USGS also operates a gage 1.2 mi downstream at Chain Bridge. Prior to 1996, readings were taken at the Leiter Mansion estate, 1 mile upstream of present site.

Freezing: Possible during extended cold periods.

Reach:

Regulation: Large dams located in Western MD. Jennings Randolph and Savage River affect levels, especially during low flow.

Topography: Both banks are high within the reach of the gage and are heavily wooded. Surrounding areas are not generally subject ot overflows.

Affected Area:

Delete Save

Delete Save

Exit



Table 18. Flood damage information found in the HydroBase RiverGage menu/Flood Damage window.

Table Name Column Name	Type	Column Description
flood.stage	float	Stage
flood.damage	char(512)	Areas Affected (Damage)
flood.dispstmt	char(60)	Displayable statement to summarize flood damage

Figure 18. RiverGage menu/Flood Damage window in HydroBase.

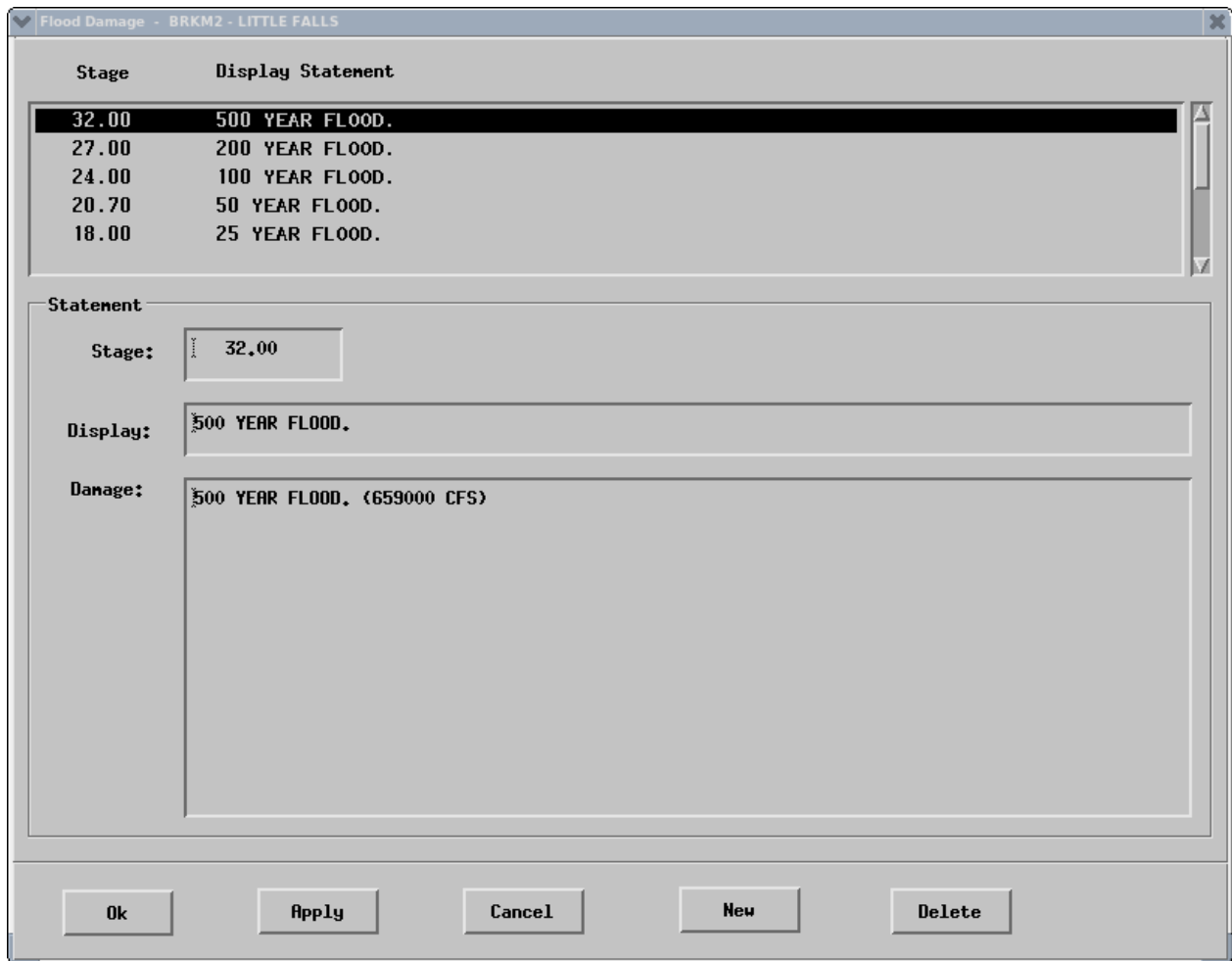


Table 19. Reservoir information found in the HydroBase Reservoir menu/Reservoir window.

<b>Table Name Column Name</b>	<b>Type</b>	<b>Column Description</b>
reservoir.name	char(20)	Reservoir name
reservoir.impounded	date	Impound date (Start date for the reservoir)
reservoir.type	char(10)	*Reservoir type
reservoir.owner	char(10)	*Reservoir owner and/or operator
reservoir.surchg	float	Max surcharge elevation (Maximum elevation at which water will be stored in a reservoir before release is required)
reservoir.top	float	Top elevation (Elevation of the top of the dam that holds a reservoir)
reservoir.sill	float	Sill elevation (Elevation of the sill structure of the dam that holds a reservoir)
reservoir.elev	float	Reservoir elevation
reservoir.floodpool	float	Flood pool height (Capacity of a reservoir) (Water releases occur at this level)
reservoir.spillway	float	Spillway pool height (Elevation of the spillway structure of the dam that holds a reservoir)
reservoir.conserpool	float	Conservation pool height (Water level of a reservoir that is desired to be conserved in order to serve the needs of downstream water users during non-rainy times of the year)
reservoir.deadpool	float	Dead pool height (Lowest water level allowed for a reservoir through normal operations)
reservoir.damidn	char(5)	National Inventory of Dams ID (NIDID)
reservoir.damids	char(2)	National Inventory of Dams State
reservoir.uses	char(8)	Designator of the uses made of a reservoir
reservoir.gates	integer	Number of output gates that a reservoir has

Figure 19. Reservoir menu/Reservoir window in HydroBase.

**Reservoir - 0002C - Funkstown 2.3 SW**

**Information**

Name:

Impound Date:

Gates:

Type:

Owner:

**National Inventory of Dams**

State:  Id:

Uses:

- Flood Control
- Hydroelectric
- Low Flow Augmentation
- Navigation
- Recreation
- Water Supply

**Elevations**

Max Surcharge:

Top:

Sill:

Reservoir:

**Pools**

Flood:

Spillway:

Conservation:

Dead:

Ok Cancel Delete

**APPENDIX B – Template of WS Form E3: Flood Stage Report**

<b>NWS Form E-3</b> (04-2006) (PRES. BY NWS Instruction 10-924)		U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE		Hydrologic Service Area (HSA)	
				REPORT FOR: MONTH                      YEAR	
<b>FLOOD STAGE REPORT</b>					
RIVER AND STATION	FLOOD STAGE <i>(Feet)</i>	ABOVE FLOOD STAGES <i>(Date)</i>		CREST	
		FROM	TO	STAGE <i>(Feet)</i>	DATE

**APPENDIX C – Template of WS Form E5: Monthly Report of Hydrologic Conditions**

<p><b>NWS Form E-5</b> (04-2006) (PRES. BY NWS Instruction 10-924)</p> <p><b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</b> <b>NATIONAL WEATHER SERVICE</b></p>	<p>HYDROLOGIC SERVICE AREA (HSA)</p>
<p><b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b></p>	<p>REPORT FOR: MONTH                  YEAR</p>
<p>TO: Hydrologic Information Center, W/OS31 NOAA's National Weather Service 1325 East West Highway Silver Spring, MD 20910-3283</p>	<p>SIGNATURE</p> <hr/> <p>DATE</p>

*When no flooding occurs, include miscellaneous river conditions below the small box, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924).*

An X inside this box indicates that no flooding occurred within this hydrologic service area.