

Days at lake outlet?
sold ~~to~~ ~~by~~?

Uncontrollable impairment to -

RECEIVED

MAY 29 2008

BUREAU OF WATERSHED MGNT

CASH

THE BANK OF AMERICA

6/14/05 draft

(Attach supporting data sheets)

Use Designation Information - Required

Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Region: <input type="checkbox"/> NER <input checked="" type="checkbox"/> NOR <input type="checkbox"/> SCR <input type="checkbox"/> SER <input type="checkbox"/> WCR	Basin Chippewa	County Barron
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Quad Map Where Segment is Shown
Cumberland and Almena Quads
Reference Site(s) (Attach use designation form for reference site/cond.)

Segment Description for Segment 1 of 3 (headwater = segment 1)

From:
Beaver Dam Lake outflow under CTH P

upstream _____ mi., km., ft., M.

Latitude: DEG MIN SEC _____ N
Longitude: DEG MIN SEC _____ W
Township Range <input type="checkbox"/> E <input type="checkbox"/> W Section 1/4-Section 1/4, 1/4-Section

To:
21st Ave

Latitude: DEG MIN SEC _____ N
Longitude: DEG MIN SEC _____ W
Township Range <input type="checkbox"/> E <input type="checkbox"/> W Section 1/4-Section 1/4, 1/4-Section

Attach site map and photos (prefer digital) showing stream segment and discharge point.

Date Fieldwork Conducted/Completed
08/05/2003

Use Designation Status:

New Use Designation (First Field Assessment)
 Standards Review (Updating Previous Field Assessment)
 Reference Site

Current Codified Fish and Aquatic Life Use Designation: <input type="checkbox"/> Coldwater Community <input type="checkbox"/> Warmwater Sport Fish Community <input type="checkbox"/> Warmwater Forage Fish Community <input type="checkbox"/> Tolerant Fish and Aquatic Life Community (LFF) <input checked="" type="checkbox"/> Very Tolerant Aquatic Life Community (LAL)	<input type="checkbox"/> Default <input checked="" type="checkbox"/> Field Assessment - Date (mm/dd/yyyy): 08/26/1975	Existing FAL Use Based on Current Data: <input type="checkbox"/> Coldwater Community <input checked="" type="checkbox"/> Warmwater Sport Fish Community <input type="checkbox"/> Warmwater Forage Fish Community <input type="checkbox"/> Tolerant Fish and Aquatic Life Community (LFF) <input type="checkbox"/> Very Tolerant Aquatic Life Community (LAL)
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Recommended Attainable Use Designation: <input type="checkbox"/> Coldwater A (Coldwater) <input type="checkbox"/> Coldwater B (Coldwater) <input checked="" type="checkbox"/> Diverse Fish and Aquatic Life <input type="checkbox"/> Tolerant Fish and Aquatic Life (LFF) <input type="checkbox"/> Very Tolerant Aquatic Life (LAL)	Recommended Seasonal Use Designation(s): <input type="checkbox"/> Coldwater A (Coldwater) <input checked="" type="checkbox"/> Coldwater B (Coldwater) <input type="checkbox"/> Diverse Fish and Aquatic Life <input type="checkbox"/> Tolerant Fish and Aquatic Life (LFF) <input type="checkbox"/> Very Tolerant Aquatic Life (LAL)	Effective Date: (mm/dd/yyyy) _____ to _____ 10/01/2005 to 05/01/2006 _____ to _____ _____ to _____
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Other Applicable Uses (as recognized by existing administrative rule):

Outstanding Resource Water
 Exceptional Resource Water
 Great Lakes System
 Public Drinking Water Supply
 Recreational Use
 Wildlife

Community Types:

Class I Trout
 Class II Trout
 Class III Trout
 Coldwater A
 Coldwater B
 Game Fish
 Non-Game Fish

Macroinvertebrates
 Endangered/Threatened Species
 Intolerant Species
 Coolwater
 Tolerant Fish
 Tolerant Macroinvertebrates

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name	WBIC #	Date
Hay River	2068600	03/14/2005

Use Designation Information (continued)

Basis for Use Designation Decision (List and briefly discuss key elements for the decision) – Use Attachment A, if necessary

Heath Benike's Fish survey conducted in Aug 5-7, 2003 documented the presence of Largemouth Bass, Northern Pike, Yellow Perch and Bluegill between 21st Ave and CTH P stream crossing.

Discharger Information – Required

Municipality/Company	WPDES Permit Number	Date Permit Issue	Permit Renewal
Cumberland	0020354		

Outfall Location *design. 0.4 mgd 0.68 mgd avg. 1996-2002*

Discharge channel joins with the Hay River approximately 30 meters upstream of the lower CTH P stream crossing

Contact Person	Contact Date(s)

Did a Representative Observe Field Assessment? Yes No

Representative	Telephone Number (include area code)

Comments about facility representative's observations, etc.

Literature Review – Use Attachment B, if necessary

1. Previous classification reports and use designations – cite here and attach

Terry Moe's August 26, 1975 evaluation of proper stream classification (drought years 1975&1976?). Heath Benike's March 19th, 2004 news release titled "Barron County Streams classified or Reclassified as Trout Water.

2. All previous studies and data associated with the water body that are applicable to use designation – cite here and attach

Areas immediately downstream of 21st Avenue should be viewed as Coldwater A as increased spring flow is currently supporting a diverse Brook and Brown Trout fishery which may migrate back into this segment when temperatures and Diurnal Dissolved Oxygen levels are no longer a limiting factor (Oct 1st to May 1st). Heath Benike's August 5-7th, 2003 fish survey documenting Largemouth Bass, Northern Pike, Yellow Perch, and Bluegill between 21st Ave and Upper CTH P crossing just below outfall from Beaver Dam Lake.

3. Is stream listed as trout water in Wisconsin Trout Streams? Yes No If yes, cite here and attach a copy

Need to confirm past segments that have been documented as trout water. Stream is not listed in 2003 version of Wisconsin Trout Streams Maps. Heath Benike's press release paved the way for final listing in the next update of the Wisconsin Trout Streams Book.

4. Any other literature applicable to the fish and aquatic life use designation – cite here and attach

5. Summarize and interpret the literature available and how it relates to and supports the recommended use designation

Segments of the Hay River where increased spring flow and stronger groundwater influences occur trout appear to be surviving year round. The segment of stream from 21st Avenue downstream towards Prairie Farm had adequate groundwater inflow to support trout during mid summer. Trout from these lower segments may move upstream above 21st Avenue to CTH P to utilize habitat when Diurnal Dissolved Oxygen and thermal regimes are not a limiting factor (Oct 1st to May 1st).

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Field Assessment Data and Observations – Use Attachment C, if necessary

Assessment Date (mm/dd/yyyy) 08/05/2003	Additional Assessment Date(s): 08/07/2003
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<p>Stream Segment Physical/Chemical Data:</p> <p>Length <u>94.9</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters <input type="checkbox"/> miles</p> <p>Avg. Width <u>7</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters</p> <p>Max. Width _____ <input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p>Avg. Depth <u>0.23</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters</p> <p>Max. Depth _____ <input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p>Gradient _____ Velocity _____</p>	<p>Substrate Material:</p> <p>Silt <u>5.6</u> % Organic <u>2.1</u> %</p> <p>Rubble <u>30.8</u> % Gravel <u>36.3</u> %</p> <p>Sand <u>19.6</u> % Other <u>5.6</u> %</p> <hr/> <p>Stream Flow _____ cfs <input type="checkbox"/> Measured <input type="checkbox"/> Estimated</p> <p>At time of assessment, flow was: <input type="checkbox"/> High <input type="checkbox"/> Low <input type="checkbox"/> Very Low</p> <p>7Q2 Flow _____ cfs</p> <p>7Q10 Flow _____ cfs</p>
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Stream Temperature _____ °C Instantaneous 24-Hr. Maximum 24-hr. Avg.

Dissolved Oxygen (Instantaneous) _____ mg/L Time of Day ____:____ am pm

Minimum Dissolved Oxygen Recorded _____ mg/L Time of Day ____:____ am pm

Maximum Dissolved Oxygen Recorded _____ mg/L Time of Day ____:____ am pm

Method of Analysis: Meter Modified Winkler Method

<p>Effluent Flow:</p> <p>Daily Average _____ cfs <input type="checkbox"/> Measured <input type="checkbox"/> Estimated</p> <p>Design Flow _____ cfs (Convert MGD to cfs by multiplying by 1.55)</p>	<p>Chemical Data Collected: (STORET # _____)</p> <p><input type="checkbox"/> Ammonia <input type="checkbox"/> Pesticides <input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Atrazine <input type="checkbox"/> Phosphorus <input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Bacteria <input type="checkbox"/> Metals <input type="checkbox"/> Other: _____</p>
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Brief Interpretation/Comments:

Channelized flow from the outflow of Beaver dam Lake until the stream crosses CTH P reduces habitat diversity and quality which is reflected in the size structure within the fish sampled.

Habitat – Use Attachment D, if necessary

Procedure: Guidelines For Evaluating Fish Habitat in Wisconsin Streams (Simonson, Lyons and Kanehl, 1994)

Development and Evaluation of a Habitat Rating System For Low Gradient Wisconsin Streams

Other – Describe: _____

Habitat Rating – Attach Habitat Rating Forms: Excellent Good Fair Poor

Significant Problems Affecting Use Attainment:

Low-flow Sedimentation Bank Erosion Ditching Fish Cover Depth

Other – Describe: _____

Observations About Habitat Quality:

Channelized flow from the outflow of Beaver Dam Lake until the stream crosses CTH Produces habitat diversity and quality which is reflected in the overall size structure of the fishery.

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Biological Data – Fish data is required

Fish:

Sampling Date (mm/dd/yyyy) 08/05/2003

Species List and IBI Forms: Attached to Report Not Applicable

Survey Location(s) 21st Ave to CTH P

Distance Sampled 94.9 feet meters miles

Sampling Gear: Backpack Shocker Other – Describe: _____

Number of Species Collected 11 Total Number of Fish Collected 85

Number of Intolerant Species _____ % Intolerant Species _____

Endangered or Other Special Category Species Collected:

Species _____	No. of Individuals Collected _____
Species _____	No. of Individuals Collected _____
Species _____	No. of Individuals Collected _____

IBI Score _____ Rating _____

Macroinvertebrates:

Sampling Date (mm/dd/yyyy) _____ HBI FBI

Survey Location(s) _____

Sampling Procedure _____

Less than 100 organisms were found – List Dominant Genera, etc.:

Genus _____	Number Found _____	HBI Score _____
Genus _____	Number Found _____	HBI Score _____
Genus _____	Number Found _____	HBI Score _____

More than 100 organisms found – Attach taxonomy bench sheet or other analyses

Other Biological Data/Observations – Use Attachment E, if necessary

Interpretations Based on Existing Fish and Aquatic Life Community – Use Attachment F, if necessary

WATERSHED DATA AND OBSERVATIONS – Optional (Please answer to the best of your ability. Estimates are acceptable.)

Approximate Area 30 Acres Square Miles

Land Use: Crop Land 20 % Pasture 10 % Forest 30 %

Grass Land 20 % Urban 10 % Wetland 10 %

Number of Feedlots/Barn Yards Near Stream _____

Other Nonpoint Sources _____

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name	WBIC #	Date
Hay River	2068600	03/14/2005

WATERSHED DATA AND OBSERVATIONS (continued) - Use Attachment G, if necessary

Is this watershed currently or proposed to receive nonpoint source management under a State, Federal or local organization?

No Yes List Date(s) (mm/dd/yyyy) _____

Explain is a completed priority watershed project (Years 1979-1988)

Discuss nonpoint source impacts and controllability, and nonpoint relationship to fish and aquatic life existing and attainable uses. Include factors such as bank erosion, land cover/use near stream, gully erosion, barnyards, etc. (attach additional sheets if required):

Headwaters segment from Beaver Dam Lake to 21st Avenue is limited in allochthonous inputs which directly limits the availability of leaf litter the primary energy source for stream food webs. As leaf litter accumulation begins to increase from the second CTH P crossing to near 21st Avenue a more natural stream macroinvertebrate community structure can be expected. This segment does not have the opportunity to receive significant sediment loads from agricultural drainageways when compared to stream segments downstream of 21st Avenue.

VTAL/TFAL Justification - Required - Use Attachment H, if necessary

Note: This section must be completed when the use designation is tolerant fish and aquatic life (formerly LFF) or very tolerant aquatic life (formerly LAL)

Recommended Attainable Use Designation: TFAL VTAL

Tolerant Fish and Aquatic Life and Very Tolerant Aquatic Life use designations (LFF & LAL) are not defined as full fish and aquatic life uses. However, these uses are in most cases the best use that can be attained by these resources due to habitat or water quality limitations. A designated use recommendation into one of these sub-categories must be based on one or more of the following factors (sec. 283.15, Stats.). Check all that apply to this use designation and provide a brief description of the situation:

- a. Naturally occurring pollutant concentrations prevent the attainment of a full fish and aquatic life community.
- b. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of a full fish and aquatic life community, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating water conservation requirements.
- c. Human caused conditions or sources of pollution prevent the attainment of a full fish and aquatic life community and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- d. Dams, diversions or other types of hydrologic modifications preclude the attainment of a full fish and aquatic life community, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a full fish and aquatic life community.
- e. Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of a full fish and aquatic life community.

Description:

During low water years stream may become intermittent until near 21st Avenue; but, most years adequate flow exists Sept to June.

Prepared By		
Preparer Signature	Printed Name	Date Prepared
	Jim Cahow	05/11/2005

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

Page 6 of 6

Water Body Name	WBIC #	Date
Hay River	2068600	03/14/2005

Author and Peer Review

The author should submit a peer-reviewed report to Watershed Program Coordinator for review and approval.

Submitted By	Date
Jim Cahow - St Croix Basin Water Quality Biologist	05/13/2005
Peer Reviewed By	Date
Bill Jaeger, Craig Roesler, and Dan Helsel	

Approval Signatures

Review, approval, and signature by the Watershed Program Coordinator (Expert), Regional Water Leader (or designee) as well as the Water Quality Standards Section Chief (or designee) is required.

Printed Name of Watershed Program Coordinator (Expert)	Watershed Program Coordinator (Expert) Signature	Date
Dale Lang <i>Dale Lang</i>		
Printed Name of Regional Water Leader (or designee)	Regional Water Leader (or designee) Signature	Date
Tom Jerow		
Printed Name of Water Quality Standards Section Chief (or designee)	Water Quality Standards Section Chief (or designee) Signature	Date
Duane Schuetz <i>Robert Machado</i>		

Final Report Distribution List

Once the Use Designation Report has been approved by the Water Quality Standards Section Chief (or designee), the report can be distributed to the appropriate individuals, as listed below. Please indicate below individuals who should be copied on final report distribution. It should be noted that the classification recommendation in the report does not become official until it is approved by the Natural Resources Board and adopted into Wisconsin Administrative Code.

Facility Contact _____

Basin Engineer Pete Prusak

Basin Planner Susan Watson - point source/ Ruth King - Non-point Source

Effluent Limits Calculator Lonn Franson

Endangered Resources _____
(when T&E Species Present)

Other Interested Parties:

Midwest Environmental

Trout Unlimited

River Alliance

Cumberland 6/22/05 Draft

(Attach supporting data sheets)

Use Designation Information - Required

Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
Region: <input type="checkbox"/> NER <input checked="" type="checkbox"/> NOR <input type="checkbox"/> SCR <input type="checkbox"/> SER <input type="checkbox"/> WCR	Basin Chippewa	County Barron

Quad Map Where Segment is Shown
Cumberland and Almena Quads
Reference Site(s) (Attach use designation form for reference site/cond.)

Segment Description for Segment 1 of 3 (headwater = segment 1)
From: Beaver Dam Lake outflow under CTH P *water are after 2?*
Latitude: DEG MIN SEC
45 31 28.3000 N
Longitude: DEG MIN SEC Datum Used
092 00 59.4000 W WGS-84
Township Range E Section 1/4-Section 1/4, 1/4-Section
35 N 13 W 07 SE SE
upstream _____ mi., km., ft., M.

To: 21st Ave or CTH T
Latitude: DEG MIN SEC
45 30 35.6000 N
Longitude: DEG MIN SEC Datum Used
092 00 47.8000 W WGS-84
Township Range E Section 1/4-Section 1/4, 1/4-Section
35 N 13 W 18 SE SE

Attach site map and photos (prefer digital) showing stream segment and discharge point.
Date Fieldwork Conducted/Completed
08/07/2003

Use Designation Status:
 New Use Designation (First Field Assessment)
 Standards Review (Updating Previous Field Assessment)
 Reference Site

Current Codified Fish and Aquatic Life Use Designation:
 Coldwater Community
 Warmwater Sport Fish Community
 Warmwater Forage Fish Community
 Tolerant Fish and Aquatic Life Community (LFF)
 Very Tolerant Aquatic Life Community (LAL)
 Default
 Field Assessment - Date (mm/dd/yyyy):
08/26/1975

Existing FAL Use Based on Current Data:
 Coldwater Community
 Warmwater Sport Fish Community
 Warmwater Forage Fish Community
 Tolerant Fish and Aquatic Life Community (LFF)
 Very Tolerant Aquatic Life Community (LAL)

Recommended Attainable Use Designation:
 Coldwater A (Coldwater)
 Coldwater B (Coldwater)
 Diverse Fish and Aquatic Life
 Tolerant Fish and Aquatic Life (LFF)
 Very Tolerant Aquatic Life (LAL)

Recommended Seasonal Use Designation(s):
 Coldwater A (Coldwater) _____ to _____
 Coldwater B (Coldwater) _____ to _____
 Diverse Fish and Aquatic Life _____ to _____
 Tolerant Fish and Aquatic Life (LFF) _____ to _____
 Very Tolerant Aquatic Life (LAL) _____ to _____
Effective Date: (mm/dd/yyyy)

Other Applicable Uses (as recognized by existing administrative rule):
 Outstanding Resource Water
 Exceptional Resource Water
 Great Lakes System
 Public Drinking Water Supply
 Recreational Use
 Wildlife

Community Types:
 Class I Trout
 Class II Trout
 Class III Trout
 Coldwater A
 Coldwater B
 Game Fish
 Non-Game Fish
 Macroinvertebrates
 Endangered/Threatened Species
 Intolerant Species
 Coolwater
 Tolerant Fish
 Tolerant Macroinvertebrates

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04) Page 2 of 6

Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Use Designation Information (continued)

Basis for Use Designation Decision (List and briefly discuss key elements for the decision) – Use Attachment A, if necessary

Heath Benike's Fish survey conducted in Aug 5-7, 2003 documented the presence of Largemouth Bass, Northern Pike, Yellow Perch and Bluegill between 21st Ave and CTH P stream crossing. Increased spring flow starts just downstream of the bottom end of this segment and 21st Ave or CTH T which helps support a year round naturally reproducing brook and brown trout fishery immediately downstream.

Discharger Information – Required

Municipality/Company Cumberland	WPDES Permit Number 0020354	Date Permit Issue	Permit Renewal
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Outfall Location
Discharge channel confluence with Hay River = N45 30' 51.7" W92 01' 00.5"; approx 30 meters upstream of 2nd CTH P cross

Contact Person	Contact Date(s)
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Did a Representative Observe Field Assessment? Yes No

Representative	Telephone Number (include area code)
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Comments about facility representative's observations, etc.

Literature Review – Use Attachment B, if necessary

1. Previous classification reports and use designations – cite here and attach
Terry Moe's August 26, 1975 evaluation of proper stream classification (drought years 1975&1976?). Heath Benike's March 19th, 2004 news release titled "Barron County Streams classified or Reclassified as Trout Water.

2. All previous studies and data associated with the water body that are applicable to use designation – cite here and attach
Areas immediately downstream of 21st Avenue should be viewed as Coldwater A as increased spring flow is currently supporting a diverse Brook and Brown Trout fishery which may migrate back into this segment when temperatures and Diurnal Dissolved Oxygen levels are no longer a limiting factor (Oct 1st to May 1st). Heath Benike's August 5-7th, 2003 fish survey documenting Largemouth Bass, Northern Pike, Yellow Perch, and Bluegill between 21st Ave and Upper CTH P crossing just below outfall from Beaver Dam Lake.

3. Is stream listed as trout water in Wisconsin Trout Streams? Yes No If yes, cite here and attach a copy
Need to confirm past segments that have been documented as trout water. Stream is not listed in 2003 version of Wisconsin Trout Streams Maps. Heath Benike's press release paved the way for final listing in the next update of the Wisconsin Trout Streams Book.

4. Any other literature applicable to the fish and aquatic life use designation – cite here and attach

5. Summarize and interpret the literature available and how it relates to and supports the recommended use designation
Segments of the Hay River where increased spring flow and stronger groundwater influences occur trout appear to be surviving year round. The segment of stream from 21st Avenue downstream towards Prairie Farm had adequate groundwater inflow to support trout during mid summer. Trout from these lower segments may move upstream above 21st Avenue to CTH P to utilize habitat when Diurnal Dissolved Oxygen and thermal regimes are not a limiting factor (Oct 1st to May 1st).

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Field Assessment Data and Observations – Use Attachment C, if necessary

Assessment Date (mm/dd/yyyy) 08/07/2003	Additional Assessment Date(s):
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<p>Stream Segment Physical/Chemical Data:</p> <p>Length <u>94.9</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters <input type="checkbox"/> miles</p> <p>Avg. Width <u>7</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters</p> <p>Max. Width _____ <input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p>Avg. Depth <u>0.23</u> <input type="checkbox"/> feet <input checked="" type="checkbox"/> meters</p> <p>Max. Depth _____ <input type="checkbox"/> feet <input type="checkbox"/> meters</p> <p>Gradient _____ Velocity _____</p>	<p>Substrate Material:</p> <p>Silt <u>5.6</u> % Organic <u>2.1</u> %</p> <p>Rubble <u>30.8</u> % Gravel <u>36.3</u> %</p> <p>Sand <u>19.6</u> % Other <u>5.6</u> %</p> <hr/> <p>Stream Flow _____ cfs <input type="checkbox"/> Measured <input type="checkbox"/> Estimated</p> <p>At time of assessment, flow was: <input type="checkbox"/> High <input type="checkbox"/> Low <input type="checkbox"/> Very Low</p> <p>7Q2 Flow _____ cfs</p> <p>7Q10 Flow _____ cfs</p>
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Stream Temperature _____ °C Instantaneous 24-Hr. Maximum 24-hr. Avg.

Dissolved Oxygen (Instantaneous) _____ mg/L Time of Day ____:____ am pm

Minimum Dissolved Oxygen Recorded _____ mg/L Time of Day ____:____ am pm

Maximum Dissolved Oxygen Recorded _____ mg/L Time of Day ____:____ am pm

Method of Analysis: Meter Modified Winkler Method

<p>Effluent Flow:</p> <p>Daily Average _____ cfs <input type="checkbox"/> Measured <input type="checkbox"/> Estimated</p> <p>Design Flow _____ cfs (Convert MGD to cfs by multiplying by 1.55)</p>	<p>Chemical Data Collected: (STORET # _____)</p> <p><input type="checkbox"/> Ammonia <input type="checkbox"/> Pesticides <input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Atrazine <input type="checkbox"/> Phosphorus <input type="checkbox"/> Other: _____</p> <p><input type="checkbox"/> Bacteria <input type="checkbox"/> Metals <input type="checkbox"/> Other: _____</p>
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Brief Interpretation/Comments:

A seasonal use designation may be warranted for this upper segment; but, is not being recommended at this time. The presence of trout in the Hay River immediately downstream from CTH P year round increases the likelihood that trout could be migrating upstream and utilizing these upper segments when temperature and dissolved oxygen levels are not likely to be a limiting factor (Oct 1st to May 1st). Ditching within this segment reduces habitat quality and holding capacity which is reflected in fish size structure and density. A warm water sport fishery or Diverse FAL use designation is recommended. Fish surveys could be conducted to determine seasonal use patterns.

Habitat – Use Attachment D, if necessary

Procedure: Guidelines For Evaluating Fish Habitat in Wisconsin Streams (Simonson, Lyons and Kanehl, 1994)

Development and Evaluation of a Habitat Rating System For Low Gradient Wisconsin Streams

Other – Describe: _____

Habitat Rating – Attach Habitat Rating Forms: Excellent Good Fair Poor

Significant Problems Affecting Use Attainment:

Low-flow Sedimentation Bank Erosion Ditching Fish Cover Depth

Other – Describe: _____

Observations About Habitat Quality:

Channelized flow from the outflow of Beaver Dam Lake until the stream crosses CTH Produces habitat diversity and quality which is reflected in the overall size structure of the fishery.

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name Hay River	WBIC # 2068600	Date 03/14/2005
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Biological Data - Fish data is required

Fish:

Sampling Date (mm/dd/yyyy) 08/07/2003

Species List and IBI Forms: Attached to Report Not Applicable

Survey Location(s) 21st Ave to CTH P

Distance Sampled 94.9 feet meters miles

Sampling Gear: Backpack Shocker Other - Describe: _____

Number of Species Collected 11 Total Number of Fish Collected 85

Number of Intolerant Species _____ % Intolerant Species _____

Endangered or Other Special Category Species Collected:

Species _____	No. of Individuals Collected _____
Species _____	No. of Individuals Collected _____
Species _____	No. of Individuals Collected _____

IBI Score 32 Rating Fair

Macroinvertebrates:

Sampling Date (mm/dd/yyyy) _____ HBI FBI

Survey Location(s) _____

Sampling Procedure _____

Less than 100 organisms were found - List Dominant Genera, etc.:

Genus _____	Number Found _____	HBI Score _____
Genus _____	Number Found _____	HBI Score _____
Genus _____	Number Found _____	HBI Score _____

More than 100 organisms found - Attach taxonomy bench sheet or other analyses

Other Biological Data/Observations - Use Attachment E, if necessary

Fish surveys conducted in 2003 documented the presence of brook and brown trout immediately downstream of this segment. Trout could be moving upstream to utilize this habitat when temperature and dissolved oxygen levels are not likely to be an influencing or limiting factor (Oct 1st to May 1st).

Interpretations Based on Existing Fish and Aquatic Life Community - Use Attachment F, if necessary

August 7th, 2003 fish surveys documented the presence of Largemouth Bass, Northern Pike, Yellow Perch, and Bluegill between the outflow from Beaver Dam Lake and the second CTH P crossing which would justify a "Warmwater Sport Fish Community" fish and aquatic life use designation which would merit the protective limits associated with a "Diverse Fish and Aquatic Life" Attainable Use Designation. The presence of trout immediately downstream of this segment could justify a seasonal cold water A or B use designation when temperature and dissolved oxygen levels are not likely to be a limiting factor (Oct 1st to May 1st).

WATERSHED DATA AND OBSERVATIONS - Optional (Please answer to the best of your ability. Estimates are acceptable.)

Approximate Area 30 Acres Square Miles

Land Use:	Crop Land <u>20</u> %	Pasture <u>10</u> %	Forest <u>30</u> %
	Grass Land <u>20</u> %	Urban <u>10</u> %	Wetland <u>10</u> %

Number of Feedlots/Barn Yards Near Stream _____

Other Nonpoint Sources _____

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

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Water Body Name	WBIC #	Date
Hay River	2068600	03/14/2005

WATERSHED DATA AND OBSERVATIONS (continued) – Use Attachment G, if necessary

Is this watershed currently or proposed to receive nonpoint source management under a State, Federal or local organization?

No Yes List Date(s) (mm/dd/yyyy) _____

Explain is a completed priority watershed project (Years 1979-1988)

Discuss nonpoint source impacts and controllability, and nonpoint relationship to fish and aquatic life existing and attainable uses. Include factors such as bank erosion, land cover/use near stream, gully erosion, barnyards, etc. (attach additional sheets if required):

Headwaters segment from Beaver Dam Lake to 21st Avenue is limited in allochthonous inputs which directly limits the availability of leaf litter the primary energy source for stream food webs. As leaf litter accumulation begins to increase from the second CTH P crossing to near 21st Avenue a more natural stream macroinvertebrate community structure can be expected. This segment does not have the opportunity to receive significant sediment loads from agricultural drainageways when compared to stream segments downstream of 21st Avenue.

VTAL/TFAL Justification – Required – Use Attachment H, if necessary

Note: This section must be completed when the use designation is tolerant fish and aquatic life (formerly LFF) or very tolerant aquatic life (formerly LAL)

Recommended Attainable Use Designation: TFAL VTAL

Tolerant Fish and Aquatic Life and Very Tolerant Aquatic Life use designations (LFF & LAL) are not defined as full fish and aquatic life uses. However, these uses are in most cases the best use that can be attained by these resources due to habitat or water quality limitations. A designated use recommendation into one of these sub-categories must be based on one or more of the following factors (sec. 283.15, Stats.). Check all that apply to this use designation and provide a brief description of the situation:

- a. Naturally occurring pollutant concentrations prevent the attainment of a full fish and aquatic life community.
- b. Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of a full fish and aquatic life community, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating water conservation requirements.
- c. Human caused conditions or sources of pollution prevent the attainment of a full fish and aquatic life community and cannot be remedied or would cause more environmental damage to correct than to leave in place.
- d. Dams, diversions or other types of hydrologic modifications preclude the attainment of a full fish and aquatic life community, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of a full fish and aquatic life community.
- e. Physical conditions related to the natural features of the water body, such as the lack of proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of a full fish and aquatic life community.

Description:

During low water years stream may become intermittent until near 21st Avenue; but, most years adequate flow exists Sept to June.

Prepared By		
Preparer Signature	Printed Name	Date Prepared
	Jim Cahow	05/11/2005

Fish and Aquatic Life Use Designation Summary

Form 3200-121 (12/04)

Page 6 of 6

Water Body Name	WBIC #	Date
Hay River	2068600	03/14/2005

Author and Peer Review

The author should submit a peer-reviewed report to Watershed Program Coordinator for review and approval.

Submitted By	Date
Jim Cahow - St Croix Basin Water Quality Biologist	05/13/2005
Peer Reviewed By	Date
Bill Jaeger and Dan Helsel	

Approval Signatures

Review, approval, and signature by the Watershed Program Coordinator (Expert), Regional Water Leader (or designee) as well as the Water Quality Standards Section Chief (or designee) is required.

Printed Name of Watershed Program Coordinator (Expert)	Watershed Program Coordinator (Expert) Signature	Date
Dale Lang		
Printed Name of Regional Water Leader (or designee)	Regional Water Leader (or designee) Signature	Date
Tom Jerow		
Printed Name of Water Quality Standards Section Chief (or designee)	Water Quality Standards Section Chief (or designee) Signature	Date
Duane Schuettpelz		

Final Report Distribution List

Once the Use Designation Report has been approved by the Water Quality Standards Section Chief (or designee), the report can be distributed to the appropriate individuals, as listed below. Please indicate below individuals who should be copied on final report distribution. It should be noted that the classification recommendation in the report does not become official until it is approved by the Natural Resources Board and adopted into Wisconsin Administrative Code.

Facility Contact _____

Basin Engineer Pete Prusak

Basin Planner Susan Watson - point source/ Ruth King - Non-point Source

Effluent Limits Calculator Lonn Franson

Endangered Resources _____
(when T&E Species Present)

Other Interested Parties:

Midwest Environmental

Trout Unlimited

River Alliance

Cambridge

~~Probably~~

Could be impact to STP w seasonal cold classification

Reluctant to classify as cold without data?

IBI Calculator for Central and Southern WI

(REV. 3/12/2002)

Sample Date	08/05/2003
SITE	Hay River @ CTH P near Cumberland WWTP discharge
PERSONNEL	Mark Stanley, Liebich, Pitts

MATRIX	VALUE	SCORE	Equipment Type =	Back Pack
total # of fish	85	n/a	Stream width (m) =	2.7
total # of native spp.	11	5	Ln stream width (m) =	0.99
total # of darter spp.	0	0	Distance shocked (m)=	94.9
total # of sucker spp.	1	2	Is your sample site greater than 8 km from a lake?	n
total # of sunfish spp. < 8km from lake	2	5		
total # of sunfish spp. >8km from lake	0	0		
total # of intolerant spp.	0	0		
total # of tolerant fish	55	0		
total # of omnivores	29	5	% of tolerant spp.	65
total # of insectivores	44	5	% of omnivorous spp.	34
total # of top carnivores	5	0	% of insectivores	52
total # of simple lithophils	46	10	% of carnivores	6
	subtotal	32	% of simple lithophilous	54
Correction Factors		32	Correction Factors	
total # of DELT fish	0	32	# of nontolerant fish per 300m	95
Total after correction factors =		32	% DELT	0
IBI SCORE =		32		

Biotic Integrity Rating

FAIR

Notes

of fish Fish species

Total # of DO tolerant fish 19
 % of forage fish belonging to spp. that are tolerant to low DO 26 %

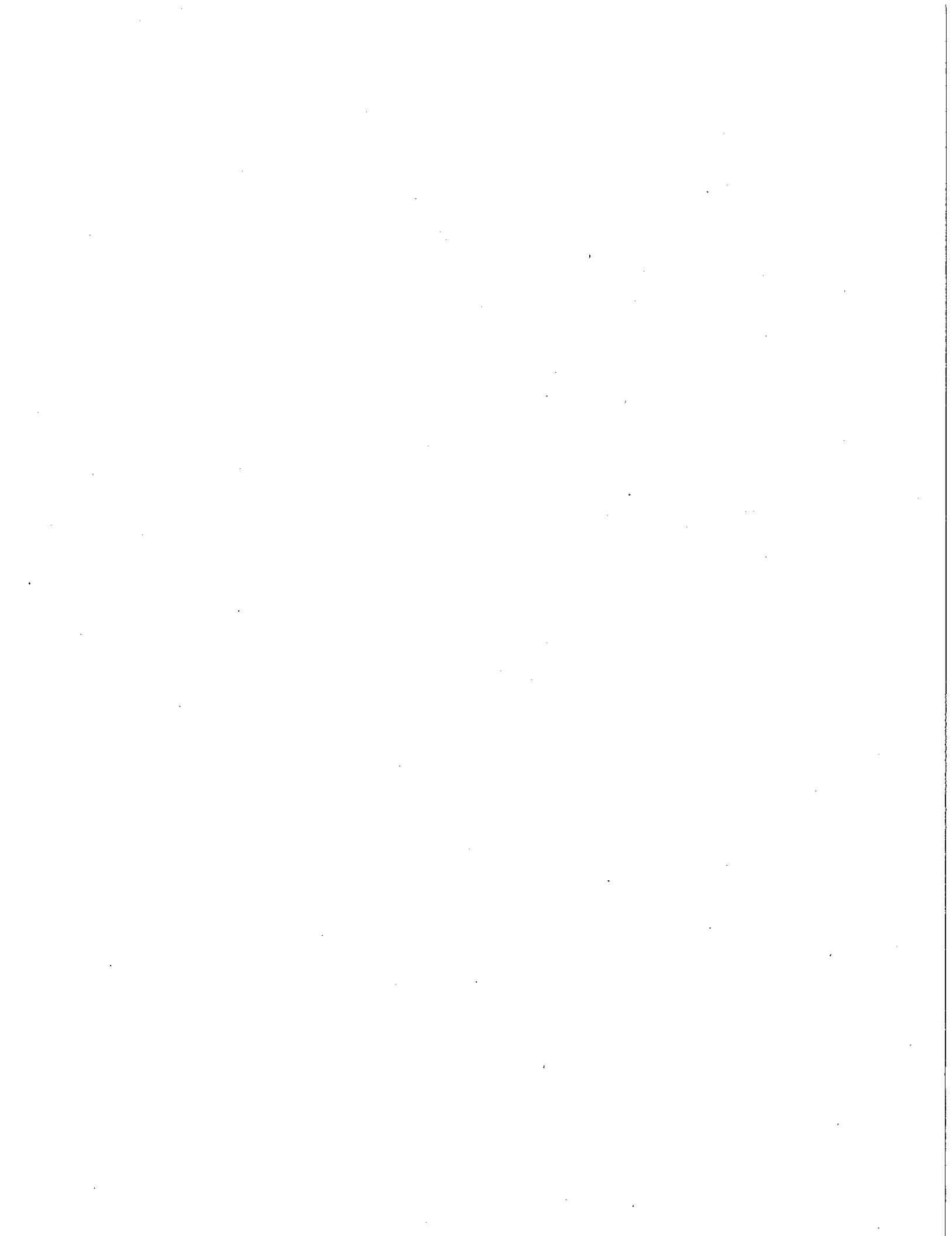


Table 4. Lower Chippewa River low-flow characteristics.

Station Number	Stream Name	Station Location	Drainage Area (mi ²)	$7Q_2$ (cfs)	$7Q_{10}$ (cfs)	Accuracy Level	$30Q_5$ (cfs)	Qave (cfs)	Other Flows (cfs)	Date Estimated
LC69	Lower Pine Creek tributary (S. Fork L. Pine Creek)	NE 1/4, NE 1/4, SEC. 6, T31N-R12W, Dunn County, at sewage-treatment plant, at Ridgeland, Wis.	7.93	0.60	0.30	c				
	Lower Pine Creek	near mouth, at hwy. V, SE 1/4, SW 1/4, sec. 14, T31N-R11W	51	16	7.5	b				
	18 Mile Creek	SW 1/4, SW 1/4, sec. 11, T29N-R11W	21.5	7.3	4.2	b				
	Red Cedar River	Above Colfax POTW outfall	1111		260					11-20-92
	Hay River	Cumberland	-	0	0		0			1-20-92
LC71	Hay River	SE 1/4, SE 1/4, SEC. 7, T35N-R13W, Barron County, at culvert on County Trunk P, 0.6 mi south of Cumberland, Wis.	12.0	6	6					
	Hay River	SW 1/4, NW 1/4, SEC. 20, T35N-R13W, Barron County, at culvert on county road, 2.1 mi south of Cumberland, Wis.	13.2	6	6					
LC74	Lightning Creek	NW 1/4, SEC. 19, T34N-R13W, Barron County, at bridge on County Trunk P, in Almena, Wis.	19.0	1.0	0.40	c				
	Lightning Creek	NW 1/4, SW 1/4, SEC. 19, T34N-R13W, Barron County, at sewage-treatment plant at Almena, Wis.	19.2							
	Hay River	NE 1/4, NE 1/4, SEC. 19, T34N-R13W, At Almena.	app. 31		7.0					

MMQ10:
 Mar. = 16, Apr. = 22,
 May = 16, Sep. = 11
 Oct. = 7.1, Nov. = 7.0,
 Dec. = 6.6

Table 4. Lower Chippewa River low-flow characteristics.

Station Number	Stream Name	Station Location	Drainage Area (mi ²) (cfs)	⁷ Q ₂ (cfs)	⁷ Q ₁₀ (cfs)	Accuracy Level (cfs)	³⁰ Q ₅ (cfs)	Qave (cfs)	Other Flows (cfs)	Date Estimated
LC90	Eau Galle River	SW 1/4, NW 1/4, SEC. 31, T26N-R13W, Dunn County, at County Trunk D, in Eau Galle, Wis.	181	44	36	c				
LC93	Arkansasaw Creek	SW 1/4, NW 1/4, SEC. 24, T25N-R14W, Pepin County, at bridge on County Trunk D and O, at Arkansasaw, Wis.	22.0	3.8	3.2	c				

¹ Based on 1971 report by Wisconsin Department of Natural Resources (DNR). Site lettered "A" was not included in 1971 DNR report.

⁵ No estimate possible—discharge is primarily effluent.

⁶ No estimate possible due to regulation upstream.