HAZEN PAPER COMPANY

240 South Water Street
P.O.Box 189
Holyoke, MA 01041-0189

Phone: (413)538-8204
FAX: (413)533-1420

www.hazen.com

June 13, 2024

US EPA New England
5 Post Office Square, Suite 100
Boston, Ma 02109-3912
Attn: Marian Spahn

Dear Marian,

Enclosed is our NOI for the NPDES General Permit Renewal # MAG250872. If you have any questions please contact me at the phone number below.

Regards,

Gail M. Calvanese
Corporate Environmental Manager
Hazen Paper Company
240 South Water Street
Holyoke, Ma. 01040
413-538-8204 X335

APPENDIX 5
Suggested Notice of Intent (NOI) Form

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY - REGION 1

Request for General Permit Authorization to Discharge Noncontact Cooling Water to be covered by the Noncontact Cooling Water General Permit (NCCWGP) NPDES General Permits No. MAG250000 and NHG250000

A. Facility Information

1. Indicate applicable General Permit:

MAG250000 ☑
NHG250000 ☐

2. Facility Information/Location:

Facility Name Hazen Paper Company
Street/PO Box 240 South Water St City Holyoke
State Massachusetts Zip Code 01040
Latitude 42.192309 Longitude 72.609880

Type of Business Manufacturing - Paper Converter
SIC Code(s) 2672, 2671

3. Facility Mailing address (if different from Location Address):

Facility Name Hazen Paper Company
Street/PO Box P.O Box 189 City Holyoke
State Massachusetts Zip Code 01040

4. Facility Owner:

Name John H. Hazen
E-mail jhh@hazen.com
Street/PO Box P.O Box 189 City Holyoke
State Massachusetts Zip Code 01040

Contact Person Gail Calvanese Tel 413-535-8204 x335
Owner is (check one): Federal ____ State ____ Tribal ____ Private ✓
Other (describe) ____

5. Facility Operator (if different from above):

Legal Name ____
E-mail ____
Street/PO Box ____ City ____ Zip Code ____
State ____ Contact ____ Telephone ____

6. Current permit coverage: yes☒ no☐

a) Has a prior NPDES permit (individual or general permit coverage) been granted for the discharge that is listed on the NOI? yes☒ no☐ If Yes, permit number MAG250872

b) Is the facility covered by an individual NPDES permit for other discharges? yes☐ no☒
If yes, Permit Number: _____

c) Is there a pending NPDES application on file with EPA for this discharge? yes☐ no☒
If yes, date of submittal: _____ and permit number, if available _____

7. Attach a topographic map indicating the location of the facility and the outfall(s) to the receiving water.

B. Map attached? ☒ **Discharge Information** (attach additional sheets as needed):

1. Name of receiving water into which discharge will occur: Connecticut River
Freshwater ☒ Marine Water ☐; State Water Quality Classification Class 5
Type of Receiving Water Body (e.g., stream, river, lake, reservoir, estuary, etc.) River

2. Attach a line drawing or flow schematic showing water flow through the facility including sources of intake water, operations contributing to flow, treatment units, outfalls, and receiving water(s).
Line drawing or flow diagram attached? ☒

3. Describe the discharge activities for which the owner/applicant is seeking coverage (e.g., building cooling, process line cooling, etc.) process non-contact cooling water

4. Number of Outfalls 2 Latitude and Longitude to the nearest second for each Outfall. See EPA's siting tool at https://www.epa.gov/toxics-release-inventory-tri-program/tri-data-and-tools. Attach additional pages if necessary.

Outfall # 1 Latitude 42° 11' 30.58" N Longitude 72° 36' 29.62" W
Outfall # 2 Latitude 42° 11' 34.31" N Longitude 72° 36' 23.52" W
Outfall # Latitude _____ Longitude _____

5. For each Outfall provide the following discharge information:

Outfall # 1
a) Maximum Daily Flow .6 MGD Average Monthly Flow 0.1012 MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
b) Maximum Daily Temperature 80.4 °F Average Monthly Temperature 64.9 °F
c) Maximum Monthly pH 8.0 s.u. Minimum Monthly pH 6.51 s.u.
d) Outfall's discharge is: continuous ☐ intermittent ☒ seasonal ☐

Outfall # 2
a) Maximum Daily Flow .6 MGD Average Monthly Flow 0.04 MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
b) Maximum Daily Temperature 82.76 °F Average Monthly Temperature 66.7 °F
c) Maximum Monthly pH 8.08 s.u. Minimum Monthly pH 6.55 s.u.
d) Outfall's discharge is: continuous ☐ intermittent ☒ seasonal ☐

Outfall # _____

a) Maximum Daily Flow _____MGD Average Monthly Flow _____MGD
NOTE: EPA will use the flow reported here as the facility's permitted effluent flow limit.
b) Maximum Daily Temperature _____°F Average Monthly Temperature _____°F
c) Maximum Monthly pH _____s.u. Minimum Monthly pH _____s.u.
d) Outfall's discharge is: continuous ☐ intermittent ☐ seasonal ☐

6. Is the source of the NCCW potable water? yes☐ no☒
If yes, EPA will calculate a Total Residual Chlorine effluent limit for your facility.

7. Provide the reported or calculated seven day-ten year low flow (7Q10) of the receiving water 1147MGD
Attach any calculation sheets used to support stream flow and/or dilution calculations.

8. **For facilities that discharge to Massachusetts surface waters:**

a) Submit the completed engineering calculation of the surface water temperature rise as shown in Attachment B of the General Permit. Calculation attached? ☒
b) Does the discharge occur in an Area of Critical Environmental Concern (ACEC)? yes☐ no☒
If yes, provide the name of ACEC _____
c) Does the discharge occur to an Outstanding Resource Water (ORW)? yes☐ no☒
If yes, enclose antidegradation waiver approval provided by MassDEP.

Note: See Appendix 1 of the General Permit for more information on ACEC.

C. Chemical Additives

1. Are any non-toxic neutralization and/or dechlorination chemicals used in the discharge(s)? yes☐ no☒

2. If yes, attach a list of each chemical used and include the chemical name and manufacturer; maximum and average daily quantity used on a monthly basis, as well as the maximum and average daily expected concentrations (mg/L) in the discharge, and the vendor's reported aquatic toxicity (NOAEL and/or LC_{50} in percent for typically acceptable aquatic organism).

3. Was this list submitted with the facility's 2014 NCCWGP NOI? yes☐ no☒

D. NCCW Source Water Information

1. State the source of the NCCW (e.g., municipal water supply, private well, surface water withdrawal, etc.).
Source Private wells Name of Source Water Well #1, #2, #3, #4

2. Is the source water registered/permitted under MA Water Management Act or NHDES User Registration Rule (ENV WQ 2202)? yes☒ no☐ If yes, registration number 10613701

3. If the source water is groundwater (non-municipal well water), see Appendix 9 of the General Permit and submit effluent (and receiving water hardness) test results, as required in Part 5.4 of the General Permit.
Test results attached? ☒

4. Does the facility use both a primary and backup source of NCCW? yes☐ no☒ If yes, **attach information** that identifies and describes the primary and backup sources of NCCW and how often any backup supply was used in the past five years.

E. Best Technology Available for Cooling Water Intake Structures (CWISs)

If the facility's non-contact cooling water discharge is covered by this General Permit and the facility **withdraws water from a surface water**, it is subject to the BTA requirements at Part 4.2 of the General Permit.

1. Are you subject to the BTA requirements of the General Permit? yes☐ no☒
   a) If no, explain no CWISs, well as water source and skip to F.
   b) If yes, submit a facility-specific BTA description that accurately describes the facility's operations and practices, including, but not limited to, the measures described in Part 5.5 of the General Permit. For additional information and guidance, see Section IV of the Fact Sheet.

Include in your description:

a) Measures to meet the General Permit Part 4.2.1 general BTA requirements, including documentation that describes the facility's monitoring program for impinged fish and/or invertebrates; or the required alternative monitoring plan frequency and/or protocol.
b) The attributes of the current CWIS.
c) The design measures of the CWIS.
d) The operational measures of the CWIS.
e) The historical occurrence of impinged fish for the past five years.
f) If applicable, a demonstration that the facility's intake rate is commensurate with a closed-cycle recirculation system.
g) Other components to reduce impingement and/or entrainment of aquatic life.

2. Provide the following information for each CWIS to support your attached facility-specific BTA description:
   a) The design capacity of the of the CWIS _____MGD
   b) Maximum monthly average intake of the CWIS during the previous five years _____MGD
   c) The month and year in which this flow reported in 2.b. occurred _____
   d) The maximum through-screen design intake velocity _____feet/second (fps)

3. For facilities where the CWIS is located on a freshwater river or stream, provide the following information:
   a) The source water's annual mean flow in MGD as available from USGS or other appropriate source _____MGD
   b) The design intake flow as a % of the source water's annual mean flow _____% Attach calculations if equal to or less than 5% of annual mean flow.
   c) The source water's 7Q10 _____MGD
   d) The design intake flow as a percent of the source water's 7Q10 _____%

4. Provide a map showing the location of each cooling water intake structure; NCCW Outfall(s) and CWIS features referred to in the BTA description. **Map attached?** ☐

F. Endangered Species Act Eligibility Information

If your facility is listed in Table A as one of the 37 facilities covered under the 2014 NCCW GP, check this box. ☒
Your ESA consultation responsibilities have been satisfied by EPA. Proceed to Part G.

If your facility is not included as one of the 37 facilities covered under the 2014 NCCW GP, complete this Part.

Using the instructions in Appendix 2, Parts B(1) and B(2) of the NCCW GP, which of the following criteria apply to your facility?

United States Fish and Wildlife Service (USFWS) Criteria: A ☐ B ☐ C ☐

National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) Criteria: A☐ B☐ C☐

1. If you selected USFWS criterion B, has consultation with the USFWS been completed? yes☐ no☐
   If you selected NOAA Fisheries criterion B, has consultation with NOAA Fisheries been completed?
   yes☐ no☐

2. If consultation with USFWS and/or NOAA Fisheries Service was completed, was a written concurrence finding that the discharge is "not likely to adversely affect" listed species or critical habitat received?
   USFWS yes☐ no☐ N/A☐ NOAA Fisheries yes☐ no☐ N/A☐

3. Attach documentation of ESA eligibility for USFWS and NOAA Fisheries as required at Appendix 2, Part C. of the General Permit. **Documentation attached?** USFWS☐ NOAA Fisheries ☐

4. Please indicate if your facility **directly intakes water for non-contact cooling from, or discharges any NCCW effluent to,** any of the following waterbodies:

   ☐ Merrimack River
   ☐ Connecticut River
   ☐ Westfield River
   ☐ Deerfield River
   ☐ Piscataqua River
   ☐ Salmon Falls River
   ☐ Cocheco River
   ☐ Taunton River

   EPA will consult with NOAA Fisheries on any cooling water intakes or discharges covered under this permit in areas (in the above waterbodies) that overlap with the presence of shortnose sturgeon (endangered) and Atlantic sturgeon (threatened/endangered).

   Please indicate if your facility **directly intakes water for non-contact cooling** from, **or discharges non-contact cooling water effluent to,** the Connecticut River Watershed. EPA will consult with the U.S Fish and Wildlife Service on cooling water intakes and discharges covered under this permit in areas of the Connecticut River Watershed that overlap with the presence of the dwarf wedgemussel (endangered).
   yes☐ no☐

G. National Historic Properties Act Eligibility

1. Are any historic properties listed or eligible for listing on the National Register of Historic Places located on the facility site or in proximity to the discharge? yes☐ no☒

2. Have any State or Tribal Historic Preservation Officers been consulted in this determination? yes☐no☒
   If yes, attach the results of the consultation(s).

3. Which of the three National Historic Preservation Act scenarios listed in Appendix 3, Section C has the facility met?
   ☒ 1 ☐ 2 ☐ 3

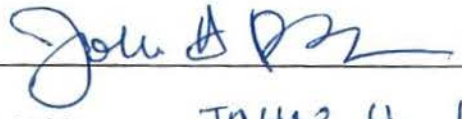
H. Supplemental Information

Please provide any supplemental information, including antidegradation review information applicable to new or increased discharges. Attach any analytical data used to support the application. Attach any certification(s) required by the General Permit.

I. Signature Requirements

The NOI must be signed by the operator in accordance with the signatory requirements of 40 CFR§ 122.22 (see below) including the following certification:

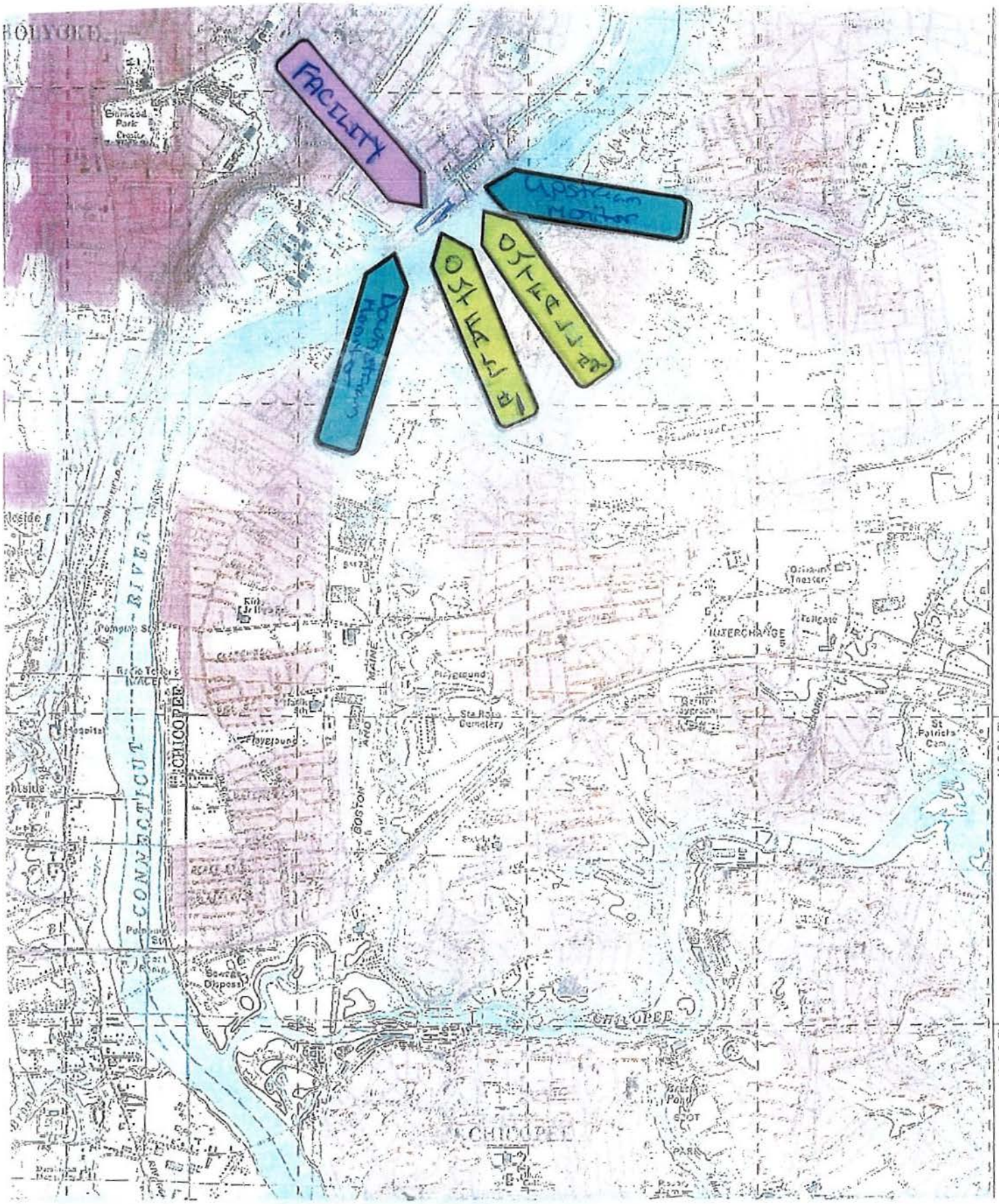
> I certify under penalty of law that (1) no biocides or other chemical additives except for those used for pH adjustment and/or dechlorination are used in the noncontact cooling water (NCCW) system; (2) the discharge consists solely of NCCW (to reduce temperature) and authorized pH adjustment and/or dechlorination chemicals; (3) the discharge does not come in contact with any raw materials, intermediate product, water product (other than heat) or finished product; (4) if the discharge of noncontact cooling water subsequently mixes with other wastewater (i.e. stormwater) prior to discharging to the receiving water, any monitoring provided under this permit will be only for noncontact cooling water; (5) where applicable, the facility has complied with the requirements of this permit specific to the Endangered Species Act and National Historic Preservation Act; and (6) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.
>
> Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I certify that I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature  Date 5/30/24

Printed Name and Title JOHN H. HAGEN President

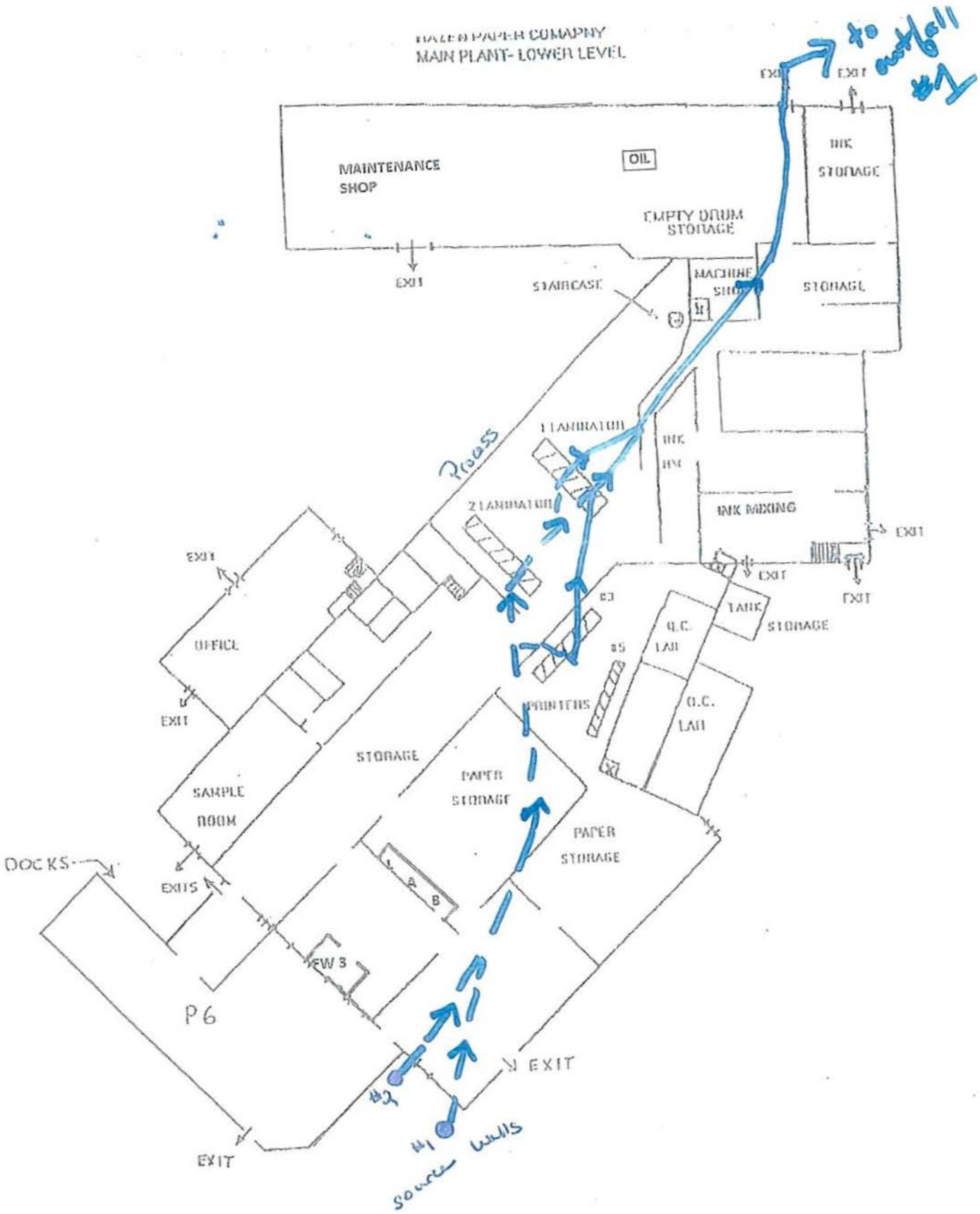
Federal regulations require this application to be signed as follows:

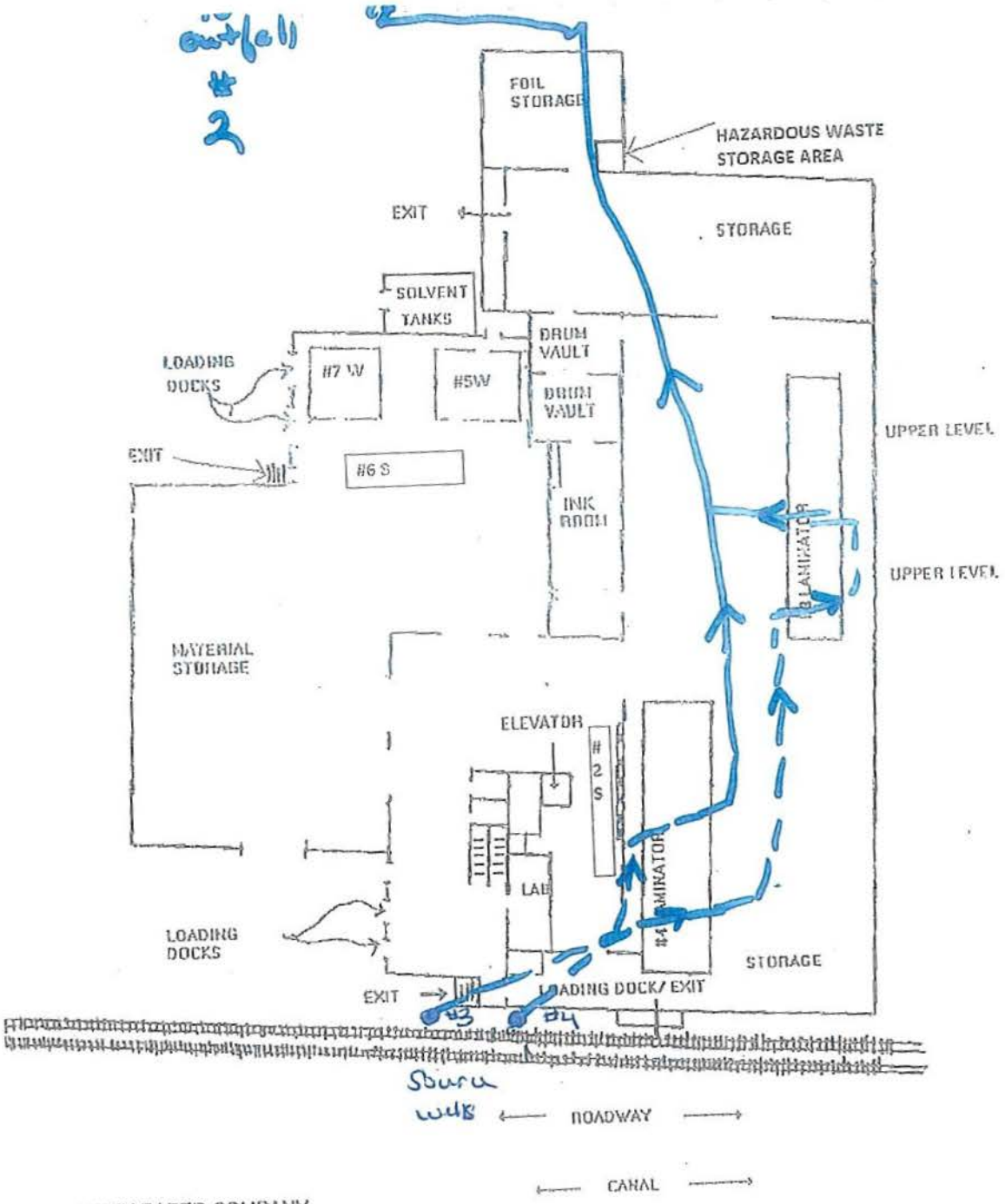
1. For a corporation, by a principal executive officer of at least the level of vice president;
2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively, or,
3. For a municipality, State, Federal or other public facility, by either a principal executive officer or ranking elected official.



Hazen Paper Company

Holyoke, Ma


HAZEL PAPER COMPANY
MAIN PLANT- LOWER LEVEL
to outfall #1
EXIT
EXIT
INK STORAGE
MAINTENANCE SHOP
OIL
EMPTY DRUM STORAGE
EXIT
STAIRCASE
MACHINE SHOP
STORAGE
Press
1 LAMINATOR
2 LAMINATOR
INK MIXING
EXIT
EXIT
EXIT
EXIT
TANK STORAGE
Q.C. LAB
#5
PRINTERS
Q.C. LAB
OFFICE
EXIT
STORAGE
PAPER STORAGE
SAMPLE ROOM
PAPER STORAGE
DOCKS
EXITS
A
B
FW 3
P6
EXIT
#2
#1
source wells
waterflow



HAZEN PAPER COMPANY

NORTH PLANT- MAIN LEVEL

JULY 23, 1992

REV. 8/97 T.B.

REV 10-29-13 JBB

water flow

Hazen Paper Company

Surface Water Temperature Rise Calculations

2024 Renewal

Outfalls #1 and #2

well water as source

max reported effluent ^{o} F	82.76
Ma Cold Water Fishery upstream measured temp ^{o} F	58
max flow MGD	0.6
7Q10 for Conn River MGD	1147

$$T_F = \frac{m_p T_p + m_r T_r}{m_p + m_r}$$

$$= \frac{(.6*82.76) + (1147*58)}{.6 + 1147}$$

$$= \frac{49.656 + 66526}{1147.6}$$

$$= \frac{66575.66}{1147.6}$$

$$= 58.01294876\ ^{o}F$$

$$\Delta T_r = T_F - T_r$$

$$= 58.0127 - 58$$

$$= 0.0127\ ^{o}F$$

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Gail Calvanese
Hazen Paper Company
240 South Water Street
PO BOX 189
Holyoke, Massachusetts 01041

Generated 6/13/2024 12:50:07 PM

JOB DESCRIPTION

Laboratory Analysis

JOB NUMBER

620-18772-1

Eurofins Rhode Island
646 Camp Ave
North Kingstown RI 02852

See page two for job notes and contact information.

my EOL

Client: Hazen Paper Company
Project/Site: Laboratory Analysis

Job ID: 620-18772-1

Client Sample ID: River Outfall 2

Date Collected: 05/22/24 13:30
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-1

Matrix: Water

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.012		mg/L		05/23/24 15:14	05/24/24 10:40	1
Arsenic	ND		0.0080		mg/L		05/23/24 15:14	05/24/24 10:40	1
Cadmium	ND		0.0050		mg/L		05/23/24 15:14	05/24/24 10:40	1
Chromium	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:40	1
Copper	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:40	1
Iron	**0.28**		0.10		mg/L		05/23/24 15:14	05/24/24 10:40	1
Lead	ND		0.015		mg/L		05/23/24 15:14	05/24/24 10:40	1
Nickel	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:40	1
Silver	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:40	1
Zinc	ND		0.020		mg/L		05/23/24 15:14	05/24/24 10:40	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		1.0		ug/L		05/30/24 13:16	06/03/24 19:20	2

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/31/24 11:11	05/31/24 17:38	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**41**		1.5		mg/L			05/29/24 14:25	1
Calcium hardness as calcium carbonate	**34**		1.2		mg/L			05/29/24 14:25	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (ASTM D1293-99B)	**7.4**	**HF**			SU			05/24/24 14:43	1
Temperature (ASTM D1293-99B)	**30**	**HF**			Degrees C			05/24/24 14:43	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**17**		1.0		mg/L			05/24/24 19:17	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	1.16	U	0.924	0.933	1.38	pCi/L	05/24/24 09:59	06/04/24 15:28	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	**0.274**		0.137	0.139	0.161	pCi/L	05/24/24 14:24	06/10/24 08:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.0*		*30 - 110*	*05/24/24 14:24*	*06/10/24 08:36*	*1*

Client Sample ID: River Outfall 2

Date Collected: 05/22/24 13:30
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-1
Matrix: Water

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.819		0.426	0.433	0.604	pCi/L	05/24/24 14:30	06/07/24 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*86.0*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*
Y Carrier	*80.7*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.09		0.447	0.455	0.604	pCi/L		06/12/24 08:47	1

Method: Chromium, Hexavalent - SM 3500 Cr B - Hexavalent Chromium

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, Hexavalent	ND		0.01		mg/L		05/22/24 22:24	05/22/24 22:24	1

Client Sample ID: Outfall 2 North

Date Collected: 05/22/24 13:58
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-2
Matrix: Water

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.012		mg/L		05/23/24 15:14	05/24/24 10:35	1
Arsenic	ND		0.0080		mg/L		05/23/24 15:14	05/24/24 10:35	1
Cadmium	ND		0.0050		mg/L		05/23/24 15:14	05/24/24 10:35	1
Chromium	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:35	1
Copper	0.15		0.010		mg/L		05/23/24 15:14	05/24/24 10:35	1
Iron	4.1		0.10		mg/L		05/23/24 15:14	05/24/24 10:35	1
Lead	0.12		0.015		mg/L		05/23/24 15:14	05/24/24 10:35	1
Nickel	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:35	1
Silver	ND		0.010		mg/L		05/23/24 15:14	05/24/24 10:35	1
Zinc	0.63		0.020		mg/L		05/23/24 15:14	05/24/24 10:35	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		1.0		ug/L		05/30/24 13:16	06/03/24 19:45	2

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00023		mg/L		05/31/24 11:11	05/31/24 17:42	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	290		1.5		mg/L			05/29/24 14:25	1
Calcium hardness as calcium carbonate	210		1.2		mg/L			05/29/24 14:25	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (ASTM D1293-99B)	8.1	HF			SU			05/24/24 14:43	1

Client Sample ID: Outfall 2 North

Date Collected: 05/22/24 13:58
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-2

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Temperature (ASTM D1293-99B)	30	HF			Degrees C			05/24/24 14:43	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	28		1.0		mg/L			05/24/24 19:33	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	14.4	G	4.70	4.98	4.87	pCi/L	05/24/24 09:59	06/04/24 15:28	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.631		0.197	0.205	0.183	pCi/L	05/24/24 14:24	06/10/24 08:36	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*30 - 110*	*05/24/24 14:24*	*06/10/24 08:36*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.904		0.382	0.391	0.491	pCi/L	05/24/24 14:30	06/07/24 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*93.8*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*
Y Carrier	*78.1*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.54		0.430	0.441	0.491	pCi/L		06/12/24 08:47	1

Method: Chromium, Hexavalent - SM 3500 Cr B - Hexavalent Chromium

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, Hexavalent	ND		0.01		mg/L		05/22/24 22:24	05/22/24 22:24	1

Client Sample ID: River Outfall 1

Date Collected: 05/22/24 13:38
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-3

Matrix: Water

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.012		mg/L		05/23/24 15:14	05/24/24 09:59	1
Arsenic	ND		0.0080		mg/L		05/23/24 15:14	05/24/24 09:59	1
Cadmium	ND		0.0050		mg/L		05/23/24 15:14	05/24/24 09:59	1
Chromium	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:59	1
Copper	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:59	1
Iron	0.26		0.10		mg/L		05/23/24 15:14	05/24/24 09:59	1

Client Sample ID: River Outfall 1
Date Collected: 05/22/24 13:38
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-3
Matrix: Water

Method: EPA 200.7 Rev 4.4 - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.015		mg/L		05/23/24 15:14	05/24/24 09:59	1
Nickel	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:59	1
Silver	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:59	1
Zinc	ND		0.020		mg/L		05/23/24 15:14	05/24/24 09:59	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		1.0		ug/L		05/30/24 13:16	06/03/24 19:48	2

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/31/24 11:11	05/31/24 17:48	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	38		1.5		mg/L			05/29/24 14:25	1
Calcium hardness as calcium carbonate	32		1.2		mg/L			05/29/24 14:25	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (ASTM D1293-99B)	7.2	HF			SU			05/24/24 14:43	1
Temperature (ASTM D1293-99B)	30	HF			Degrees C			05/24/24 14:43	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	17		1.0		mg/L			05/24/24 19:49	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	0.837	U	0.979	0.984	1.60	pCi/L	05/24/24 09:59	06/04/24 15:28	1

Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.129	U	0.105	0.105	0.149	pCi/L	05/24/24 14:24	06/10/24 08:37	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*30 - 110*	*05/24/24 14:24*	*06/10/24 08:37*	*1*

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.235	U	0.307	0.307	0.512	pCi/L	05/24/24 14:30	06/07/24 11:22	1

Carrier	*%Yield*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Ba Carrier	*85.8*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*
Y Carrier	*83.4*		*30 - 110*	*05/24/24 14:30*	*06/07/24 11:22*	*1*

Client Sample ID: River Outfall 1

Lab Sample ID: 620-18772-3
Matrix: Water

Date Collected: 05/22/24 13:38
Date Received: 05/22/24 14:35

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	0.364	U	0.324	0.324	0.512	pCi/L		06/12/24 08:47	1

Method: Chromium, Hexavalent - SM 3500 Cr B - Hexavalent Chromium

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, Hexavalent	ND		0.01		mg/L		05/22/24 22:26	05/22/24 22:26	1

Client Sample ID: Outfall 1 South

Lab Sample ID: 620-18772-4
Matrix: Water

Date Collected: 05/22/24 13:44
Date Received: 05/22/24 14:35

Method: EPA 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.012		mg/L		05/23/24 15:14	05/24/24 09:29	1
Arsenic	ND		0.0080		mg/L		05/23/24 15:14	05/24/24 09:29	1
Cadmium	ND		0.0050		mg/L		05/23/24 15:14	05/24/24 09:29	1
Chromium	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:29	1
Copper	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:29	1
Iron	**0.46**		0.10		mg/L		05/23/24 15:14	05/24/24 09:29	1
Lead	ND		0.015		mg/L		05/23/24 15:14	05/24/24 09:29	1
Nickel	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:29	1
Silver	ND		0.010		mg/L		05/23/24 15:14	05/24/24 09:29	1
Zinc	**0.024**		0.020		mg/L		05/23/24 15:14	05/24/24 09:29	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Uranium	ND		1.0		ug/L		05/30/24 13:16	06/03/24 19:52	2

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.00020		mg/L		05/31/24 11:11	05/31/24 17:50	1

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness as calcium carbonate	**520**		1.5		mg/L			05/29/24 14:25	1
Calcium hardness as calcium carbonate	**420**		1.2		mg/L			05/29/24 14:25	1

General Chemistry

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
pH (ASTM D1293-99B)	**8.0**	**HF**			SU			05/24/24 14:43	1
Temperature (ASTM D1293-99B)	**30**	**HF**			Degrees C			05/24/24 14:43	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride (EPA 300.0)	**44**		1.0		mg/L			05/24/24 20:05	1

Method: EPA 900.0 - Gross Alpha and Gross Beta Radioactivity

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Gross Alpha	**7.45**	**G**	5.06	5.13	7.18	pCi/L	05/24/24 09:59	06/05/24 07:38	1

Client: Hazen Paper Company
Project/Site: Laboratory Analysis

Job ID: 620-18772-1

Client Sample ID: Outfall 1 South

Date Collected: 05/22/24 13:44
Date Received: 05/22/24 14:35

Lab Sample ID: 620-18772-4

Matrix: Water

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Method: EPA 903.0 - Radium-226 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-226	0.232		0.135	0.137	0.180	pCi/L	05/24/24 14:26	06/10/24 08:37	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		30 - 110	05/24/24 14:26	06/10/24 08:37	1

Method: EPA 904.0 - Radium-228 (GFPC)

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium-228	0.814		0.374	0.382	0.505	pCi/L	05/24/24 14:30	06/07/24 11:23	1

Carrier	%Yield	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Ba Carrier	94.0		30 - 110	05/24/24 14:30	06/07/24 11:23	1
Y Carrier	80.7		30 - 110	05/24/24 14:30	06/07/24 11:23	1

Method: TAL-STL Ra226_Ra228 Pos - Combined Radium-226 and Radium-228

Analyte	Result	Qualifier	Count Uncert. (2σ+/-)	Total Uncert. (2σ+/-)	MDC	Unit	Prepared	Analyzed	Dil Fac
Radium 226 and 228	1.05		0.398	0.406	0.505	pCi/L		06/12/24 08:47	1

Method: Chromium, Hexavalent - SM 3500 Cr B - Hexavalent Chromium

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium, Hexavalent	ND		0.01		mg/L		05/22/24 22:27	05/22/24 22:27	1