Former Mad River Ash Pond
Initial Inflow Design Flood Control System Plan

Ohio Edison Company
Former Mad River Power Station
Clark County, Ohio

May 2026

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Certification/Statement of Professional Opinion

The Initial Inflow Design Flood Control System Plan (Plan) for the former Mad River Ash Pond was prepared by GAI Consultants, Inc. (GAI). The Plan may contain findings and determinations that are based on certain information that, other than for information GAI originally prepared, GAI has relied on, but not independently verified. This Certification/Statement of Professional Opinion is therefore limited to the information available to GAI at the time the Plan was written. On the basis of and subject to the foregoing, it is my professional opinion as a Professional Engineer licensed in the State of Ohio that the Plan has been prepared in accordance with good and accepted engineering practices as exercised by other engineers practicing in the same discipline(s), under similar circumstances, at the same time, and in the same locale. It is my professional opinion that the Plan is accurate and has been prepared consistent with the requirements of § 257.82(c) of the United States Environmental Protection Agency's "Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments," published in the Federal Register on April 17, 2015 with an effective date of October 19, 2015 and amended on May 8, 2024 with an effective date of November 8, 2024.

The use of the words "certification" and/or "certify" in this document shall be interpreted and construed as a Statement of Professional Opinion and is not and shall not be interpreted or construed as a guarantee, warranty, or legal opinion.

Arica L. DiTullio, P.E.
Engineering Director

1.0 Introduction

The former Mad River Ash Pond (Ash Pond) is a legacy coal combustion residuals (CCR) surface impoundment located in Springfield, Clark County, Ohio (OH), approximately 0.15 miles southeast of the former Mad River Power Station (Station). The Station is an inactive electric utility also located in Springfield, Clark County, OH. The former Ash Pond was used for the management, storage, and disposal of CCR when the former Station was operational. The former Station began operating in 1926 as a coal-fired generating station consisting of four coal-fired boilers. It ceased generating electricity through the combustion of coal in 1982 and was demolished around 2010. In or around 1985, the former Ash Pond was partially graded, and vegetation was established.

The former Ash Pond is bordered by Mad River to the west, along with a public roadway beyond the waterbody. A railroad right-of-way and railroad track is routed east-to-west through the site, bordering the former Ash Pond to the north. The embankments and former Ash Pond area are covered with saplings and fully mature trees with some underbrush. No permanent pool presently exists in the former Ash Pond. Limited areas of standing water have been identified after storm events. This water occupies puddles and tire ruts formed from all-terrain vehicle trails throughout the former Ash Pond and on the embankments.

2.0 Purpose

This Initial Inflow Design Flood Control System Plan (Plan) was prepared in accordance with the applicable requirements at § 257.82(c) of the United States Environmental Protection Agency's (EPA's) 40 Code of Federal Regulations (CFR) Part 257, Subpart D, *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (CCR Rule).

3.0 Initial Inflow Design Flood Control System Plan

In accordance with § 257.73(a)(2) and § 257.100(f)(2)(iii), an Initial Hazard Potential Classification was prepared for the former Ash Pond under current conditions. The former Ash Pond was determined to be a "significant hazard potential" CCR surface impoundment *(Reference 4)*. As required by § 257.82(a)(3), the inflow design flood for a significant hazard potential legacy CCR surface impoundment is a 1,000-year flood.

As required by § 257.82(c)(1) and 257.100(f)(3)(v), this Plan includes:

- Documentation of how the inflow design flood control system (IDFCS) has been designed, constructed, operated, and maintained to adequately manage flow into the former Ash Pond during and following the peak discharge of the inflow design flood [§ 257.82(a)(1)];
- Documentation of how the IDFCS has been designed, constructed, operated, and maintained to adequately manage flow from the former Ash Pond so as to collect and control the peak discharge resulting from the inflow design flood [§ 257.82(a)(2)]; and
- Documentation of how the IDFCS has been designed, constructed, operated, and maintained to adequately address the requirements of § 257.3-3 [§ 257.82(b)].

3.1 Site Configuration

The approximate area of the former Ash Pond is 21 acres. The available storage capacity of the former Ash Pond, assuming that the current topography represents an empty (dry) pond, is approximately 105 acre-feet (4,590,000 cubic feet). The former Ash Pond receives stormwater runoff only from precipitation landing within its embankments, correlating to a contributory drainage area of 21 acres. The embankments that define the former Ash Pond stand at an approximate elevation (El.) of 906 feet. A portion of the former Ash Pond's embankments appear to have been lowered to El. 904 feet in the northwest portion.

Publicly available topography indicates that the former Ash Pond contains remnants of a center berm that may have been used to create two separate units for management of CCR when the former Ash Pond was operational. When it was operational, the former Ash Pond contained a sump pit at the northern edge. Attachment 1 within Appendix A depicts existing conditions of the former Ash Pond.

3.2 Flow Into the Impoundment

Stormwater enters the former Ash Pond only from precipitation landing within its embankments. The drainage area of the former Ash Pond is therefore equivalent to the surface area of the former Ash Pond, approximately 21 acres. The drainage area map is attached within Appendix A.

3.3 Flow From the Impoundment

No evidence of discharge structures within the former Ash Pond have been found through a review of available historic documentation and field investigations. In the northwest corner of the former Ash Pond, the existing embankment lowers to El. 904 feet (two feet lower than the surrounding embankment at El. 906 feet) for a length of approximately 64 feet. It is not known when this section of the embankment was lowered. This lower section of the embankment will function as a spillway during a high water event within the former Ash Pond.

The former Ash Pond was modeled to evaluate its performance during a 1,000-year flood. Appendix A contains calculations and results of the modeling. Though no significant standing water was observed during field investigations, the potential for standing water exists during and after rainfall events. To account for this potential, the starting water surface elevation was set to 898.2 feet, which is the peak water surface elevation in the former Ash Pond following the 25-year flood.

The model indicates that the pool in the former Ash Pond from a 1,000-year flood would attain an estimated peak water surface of El. 900.12 feet. The former Ash Pond provides containment to approximately El. 904 feet to the lower portion of the embankment. This corresponds to nearly four feet of vertical freeboard in the former Ash Pond during the design storm event. As such, no discharge from the former Ash Pond is anticipated to occur during the 1,000-year flood.

As stated previously, the storage capacity within the former Ash Pond is 4,590,000 cubic feet. During the 1,000-year flood, the amount of precipitation that is anticipated to fall within the embankments of the former Ash Pond is 527,076 cubic feet. The precipitation from the 1,000-year storm is anticipated to be managed by the former Ash Pond without overtopping the embankments or discharging from the former Ash Pond. Hydrologic and hydraulic calculations to support the IDFCS analysis herein are contained in Appendix A.

3.4 Surface Water Requirements

Title 40 CFR § 257.3-3 states that “a facility shall not cause a discharge of pollutants into waters of the United States that is in violation of the National Pollutant Discharge Elimination System under section 402 of the Clean Water Act, as amended.” The former Ash Pond was evaluated to contain the inflow design flood without overtopping or discharging to waters of the United States.

4.0 Conclusion

Based on a review of available material and additional analyses performed for this Plan, the former Ash Pond IDFCS is in compliance with the requirements at § 257.82(c) of the CCR Rule for a significant hazard legacy CCR surface impoundment.

5.0 References

1. GAI Consultants, Inc. *Former Mad River Ash Pond Legacy CCR Surface Impoundment Applicability Report*, November 2024.
2. GAI Consultants, Inc. *Former Mad River Ash Pond Coal Combustion Residual Annual Report*, February 2025.
3. GAI Consultants, Inc. *Former Mad River Ash Pond History of Construction*, February 2026.
4. GAI Consultants, Inc. *Former Mad River Ash Pond Initial Hazard Potential Classification Assessment Report,* May 2026.

APPENDIX A
Hydrologic and Hydraulic Analysis

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SUBJECT	OHIO EDISON COMPANY – FORMER MAD RIVER ASH POND HYDRAULIC CAPACITY ESTIMATE					
BY:	OLMSTCC	DATE	03/10/2026	PROJ. NO.	C150917.64	
CHKD. BY	SCHELAB	DATE	04/01/2026	PAGE	1 of 6	

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PURPOSE

The purpose of this analysis is to estimate the capacity of the former Mad River Ash Pond (Ash Pond) for the 1,000-year flood to demonstrate compliance with the Environmental Protection Agency's (EPA's) regulations at 40 CFR Part 257, Subpart D, *Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* (CCR Rule).

METHODOLOGY

The analysis includes the development of the Soil Conservation Service (SCS) Type II 1,000-year event rainfall distribution, an assessment of stage/storage in the former Ash Pond based on existing topography, United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Technical Release 55 (TR-55) hydrology calculations, and modeling of the 1,000-year event and storage capacity of the former Ash Pond using the USACE HEC-HMS software package.

REFERENCES

1. NOAA, National Weather Service. *Point Precipitation Frequency Estimates, NOAA Atlas 14, Volume 2, Version 3,* downloaded by GAI on March 10, 2026.
2. Ohio Geographically Referenced Information Program (OGRIP). *Elevation (3DEP+), 2021*, downloaded by GAI on July 1, 2025.
3. United States Department of Agriculture. *Urban Hydrology for Small Watersheds Technical Release 55;* June 1986.

BACKGROUND

Sections 257.82(c) and 257.100(f)(3)(v) of the CCR Rule require an Inflow Design Flood Control System (IDFCS) Plan that documents that the legacy CCR surface impoundment adequately manages the peak discharge of the inflow design flood event. The former Ash Pond is classified as significant hazard per § 257.73(a)(2) and is therefore assigned the 1,000-year flood as the inflow design flood by the CCR Rule at § 257.82(a)(3).

Based on a review of available historic information and field investigations, no discharge structures are present for the former Ash Pond. In the northwest corner of the former Ash Pond, the existing embankment lowers to an elevation of 904 feet (2 feet lower than the surrounding embankment at an elevation of 906 feet). It is not known when this section of the embankment was lowered. Discharge from the former Ash Pond would occur in this lower section of the embankment during a high water event. The former Ash Pond has no upstream contributing drainage area and receives only the precipitation that falls within its embankments.

PRECIPITATION

Precipitation data was obtained from National Oceanic and Atmospheric Administration (NOAA) Atlas 14 (Reference 1). The approximate location of the former Ash Pond is shown on Figure 1.

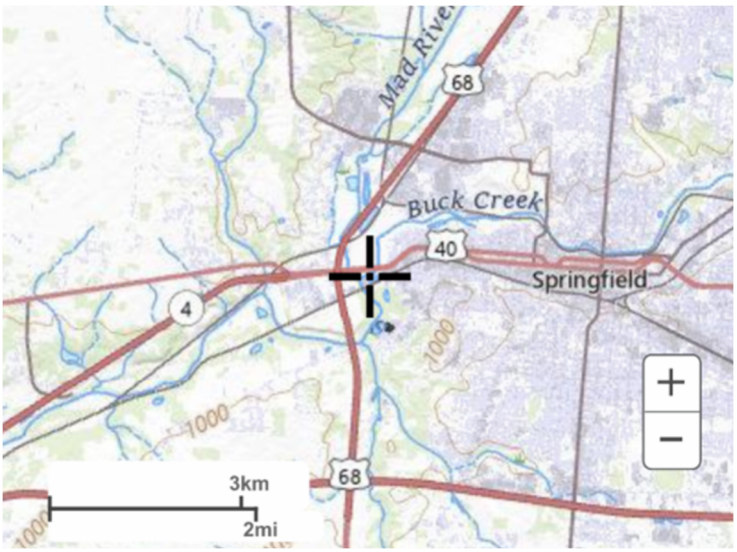

Figure 1: Approximate Location of Former Ash Pond

At the location of the former Ash Pond, the 24-hour, 1,000-year event produces a precipitation depth of 7.14 inches.

STAGE-STORAGE ESTIMATE

The stage-storage curve of the former Ash Pond was estimated using publicly available topographic mapping (Reference 2). The topography indicates that the former Ash Pond contains remnants of a center berm that may have been used to create two separate units for management of CCR when the former Ash Pond was operational. Due to the topography, two stage-storage curves were generated, one for the topography to the east of the berm remnants and one for the topography west of the berm remnants. The stage-storage data was summed between the two former ponds to generate a composite stage-storage curve for the entire former Ash Pond. The composite stage-storage curve based on the 2021 aerial mapping is presented in Figure 2.

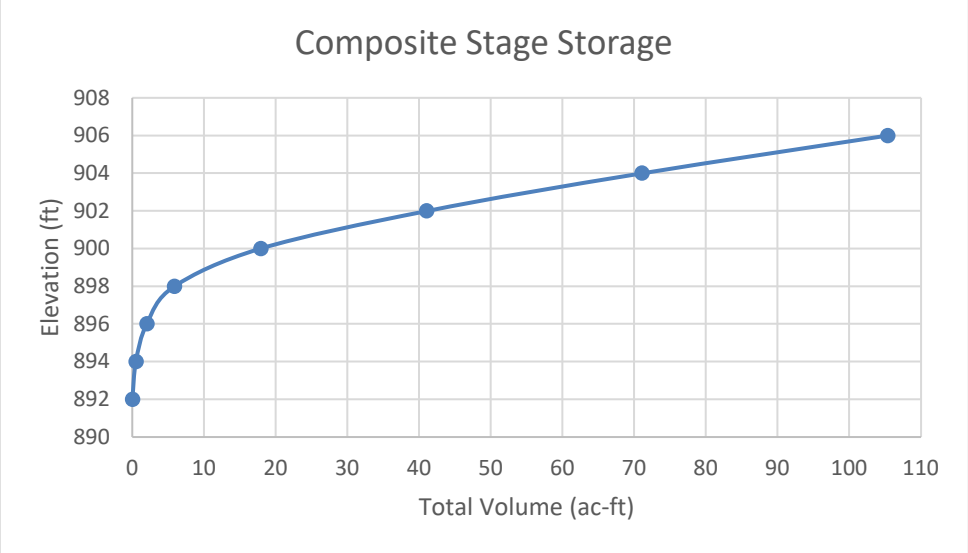

Figure 2: Composite Stage-Storage Curve (Based on 2021 Aerial Mapping)

HYDROLOGY

The hydraulic model requires inputs for a drainage area, runoff curve number, and lag time for the watershed. TR-55 methodology was used to estimate the curve number and lag time of the watershed (Reference 3). Table 1 summarizes the estimated values for these parameters. The Drainage Area Map, runoff curve number, and lag time calculations are included in the Attachment.

Table 1: Summary of Hydrologic Parameters

	Drainage Area	Runoff Curve Number	Lag Time (min)
Former Ash Pond	21 ac (0.033 sq mi)	98	6

HYDRAULIC MODELING

The computer program Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS) (Version 4.13) was used to model the 1,000-year event and to represent the former Ash Pond storage. The following conditions apply to the hydraulic modeling:

1. The lowered portion of the embankment in the northwest corner was modeled as a broad-crested spillway with a crest elevation of 904 feet and length of 64 feet;
2. The starting water surface elevation for modeling the 1,000-year storm is 898.2 feet. This is the peak water surface elevation in the former Ash Pond resulting from the geographically appropriate hypothetical SCS 25-year storm for the location (4.41 inches precipitation depth, SCS Type II distribution). The inputs and outputs of the modeling 25-year storm are included in the Attachment;
3. The meteorologic model is the geographically appropriate hypothetical SCS 1,000-year storm for the location (7.14 inches precipitation depth, SCS Type II distribution).

SUMMARY OF RESULTS

The peak water surface elevation in the reservoir during the 1,000-year event was estimated to be 900.12 feet (Figure 9). Thus, approximately 5.9 feet of freeboard will be provided between the modeled peak water surface elevation and the top of the embankment during the 1,000-year flood (and 3.9 feet of freeboard between the water surface elevation and the lowered embankment elevation in the northwest corner). The HEC-HMS inputs and outputs are presented below and on the following pages.

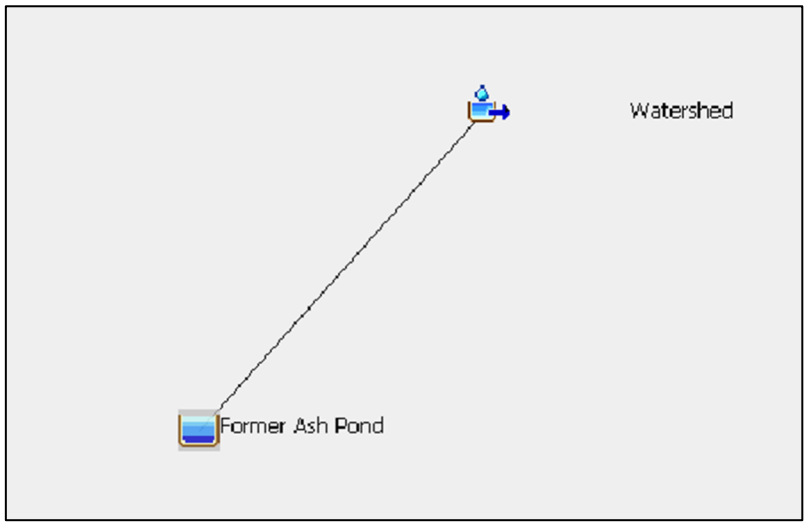

Figure 3: Basin Model (HEC-HMS)

Global Parameter Summary - Subbasin

Area (MI2)

Element Name	Area (MI2)
Watershed	0.03

Downstream

Element Name	Downstream
Watershed	Former Ash Pond

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number
Watershed	0	98

Transform: Scs

Element Name	Lag	Unitgraph Type
Watershed	6	Standard

Figure 4: Hydrologic Input Data (HEC-HMS)

Hypothetical Storm

Met Name: 1000-year SCS Type II

Method:	SCS Type 2
*Storm Duration (HR)	24.0
Spatial Distribution:	Uniform For All Subbasins
*Precipitation Method:	Point Depth
*Point Depth (IN):	7.14
Area Reduction:	--None--

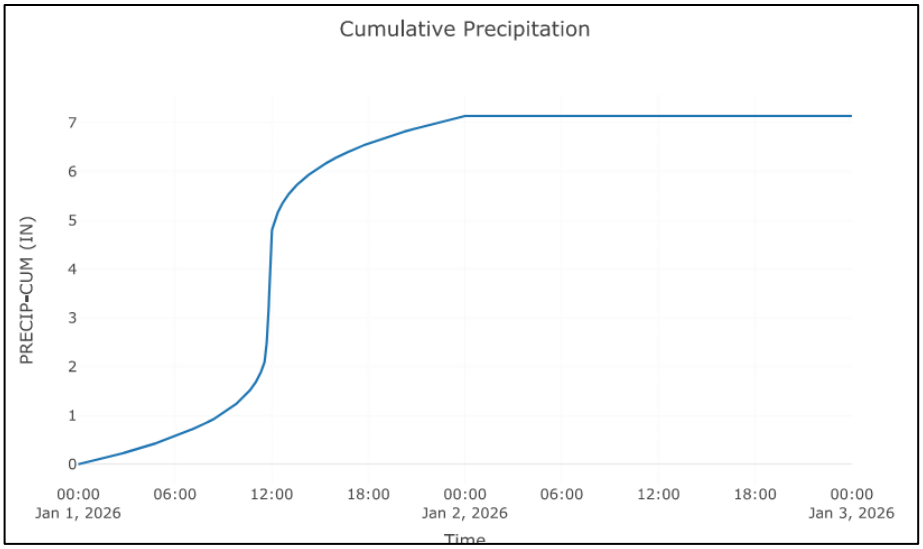

Figure 5: Meteorologic Input (HEC-HMS)

Elevation (FT)	Storage (ACRE-FT)
892.0	0.0
894.0	0.5
896.0	2.0
898.0	5.9
900.0	17.9
902.0	41.0
904.0	71.1
904.5	80.0
905.0	88.0
905.5	97.0
906.0	105.3

Figure 6: Elevation-Volume Input (HEC-HMS)

Elevation (FT)	Area (ACRE)
892.0	0.1
894.0	0.4
896.0	1.1
898.0	2.8
900.0	9.3
902.0	13.9
904.0	16.1
906.0	18.1

Figure 7: Elevation-Area Input (HEC-HMS)

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Watershed	0.03	183.02	01Jan2026, 11:59	6.9
Former Ash Pond	0.03	0	31Dec2025, 24:00	0

Figure 8: Global Summary (HEC-HMS)

Reservoir: Former Ash Pond

Results: Former Ash Pond	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2025, 24:00
Volume (IN)	0
Peak Inflow (CFS)	183.02
Time of Peak Inflow	01Jan2026, 11:59
Inflow Volume (AC - FT)	12.15
Maximum Storage (AC - FT)	19.25
Peak Elevation (FT)	900.12
Discharge Volume (AC - FT)	0

Figure 9: Former Ash Pond Results Summary (HEC-HMS)

CONCLUSION

A hydrologic and hydraulic assessment was conducted to estimate the water surface elevation in the former Ash Pond during the 1,000-year event. The assessment indicates that the former Ash Pond maintains 3.9 feet of freeboard before reaching the lowered portion of the embankment, and 5.9 feet of freeboard before overtopping the surrounding embankments.

SUBJECT OHIO EDISON COMPANY – FORMER MAD RIVER ASH POND
HYDRAULIC CAPACITY ESTIMATE

BY: OLMSTCC DATE 03/10/2026 PROJ. NO. C150917.64
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Attachment 1

Hydrology Calculations

SUBJECT OHIO EDISON COMPANY – FORMER MAD RIVER ASH POND
HYDRAULIC CAPACITY ESTIMATE

BY: OLMSTCC DATE 03/10/2026 PROJ. NO. C150917.64
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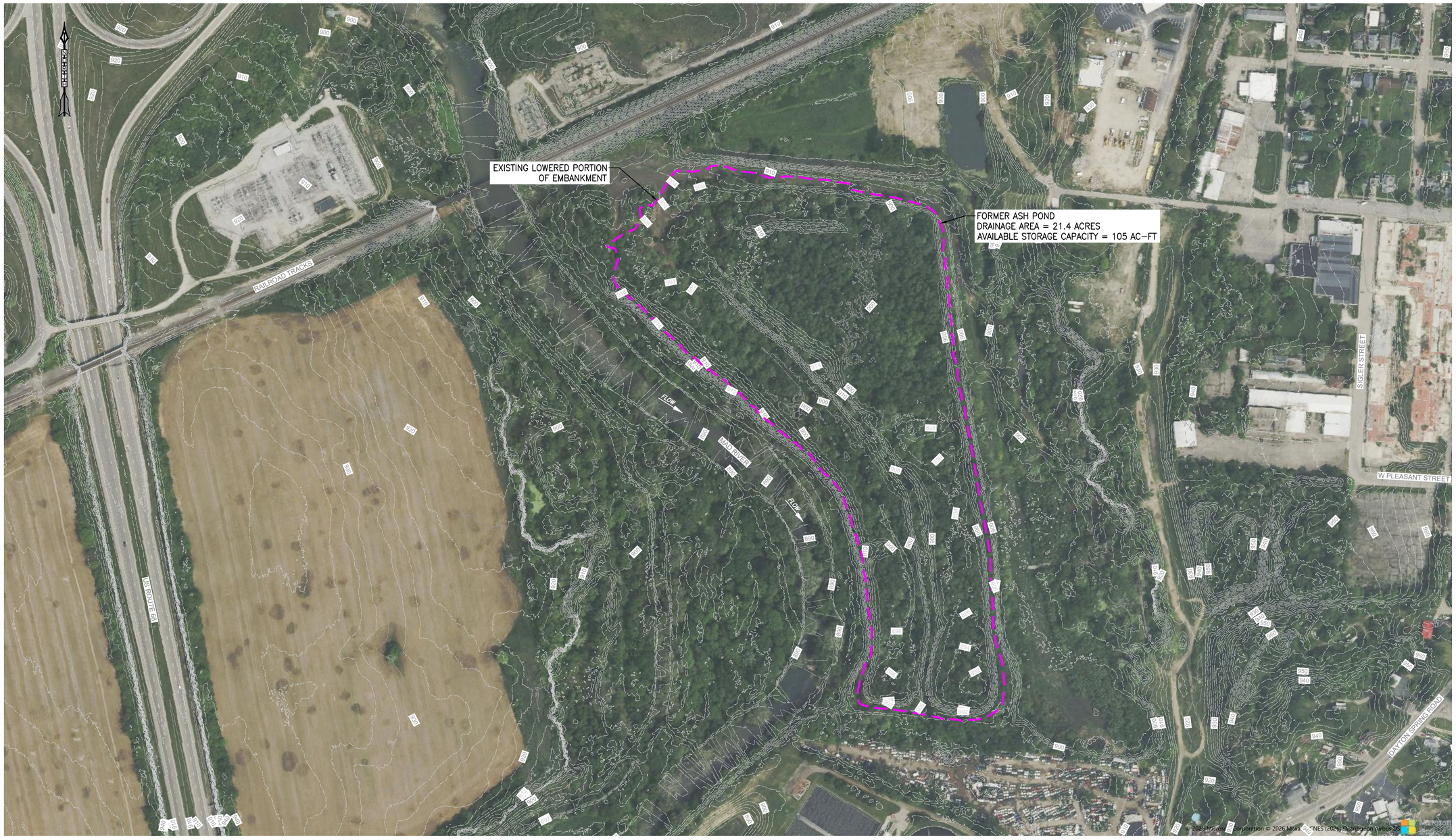
Drainage Area Map

Attachment 1 - Hydrology Calculations



REFERENCES
1. CONTOUR DATA IS BASED ON LIDAR FROM OHIO GEOGRAPHICALLY REFERENCED INFORMATION PROGRAM (OGRIP) DATED 2021 AND DOWNLOADED ON JULY 1, 2025.
2. DRAWING IS BASED ON THE OHIO STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, U.S. SURVEY FEET.
3. VERTICAL DATUM IS BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
4. AERIAL IMAGERY WAS ACCESSED IN JULY 2025 FROM THE AUTOCAD CIVIL 3D GEOLOCATION MAP FEATURE (BING 2025 MICROSOFT CORPORATION, 2025, MAXAR CNES DISTRIBUTION ARIBUS DS)

FORMER MAD RIVER ASH POND
SCALE: 1" = 150'

LEGEND

- 910 — EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- DRAINAGE AREA BOUNDARY OF FORMER MAD RIVER ASH POND

SCALE: 1" = 150'

150 0 150 300

NO.:	DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DESCRIPTION:

REVISION RECORD

This drawing was produced with computer aided drafting technology and is supported by electronic drawing files. Do not revise this drawing via manual drafting methods.

CLIENT
OHIO EDISON COMPANY
341 WHITE POND DRIVE
AKRON, OHIO 44320

GAI DRAWING NUMBER:
DRAINAGE AREA MAP

DRAWING TITLE
DRAINAGE AREA MAP

PROJECT
FORMER MAD RIVER ASH POND
INFLOW DESIGN FLOOD CONTROL SYSTEM PLAN
CLARK COUNTY, OHIO

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ALT. CLIENT DRAWING NUMBER:

GAI FILE NUMBER:
C150917-64-001-005 DA MAP

ISSUING OFFICE: Pittsburgh | 385 E. Waterfront Drive, Homestead, PA 15120

ISSUE DATE:	DRAWN BY:
03/10/2026	**OLMSTCC**
SCALE:	CHECKED BY:
AS SHOWN	**ROUNCLL**
DWG TYPE:	APPROVED BY:
	DITULAL
REVISION	SHEET NO.:
	001 OF **001**

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SUBJECT	OHIO EDISON COMPANY – FORMER MAD RIVER ASH POND HYDRAULIC CAPACITY ESTIMATE				
BY:	OLMSTCC	DATE	03/10/2026	PROJ. NO.	C150917.64
CHKD. BY	SCHELAB	DATE	04/01/2026		

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Curve Number and Time of Concentration Worksheets

Attachment 1 - Hydrology Calculations

Runoff Curve Number

Project:	By:	Date:
Mad River Former Ash Pond	OLMSTCC	7/28/2025
C150917.64	Checked:	Date:
Location:	WEBBEGA	7/29/2025
Clark County, Ohio		

Check one: ■ Present ❑ Developed

The former Ash Pond is assumed to have water during the simulation, thus the worse case curve number is selected (98).

Hydrologic Group	Cover Description	CN			Area	Product of CN x Area
		Table 2-2a	Table 2-2b	Table 2-2c	■ Acres	
		98			21.4	2097.20
			TOTALS		**21.4**	**2097.20**

CN (weighted) = Total Product / Total Area

CN	**98**

Time of Concentration

Project:	By:	Date:
Mad River Former Ash Pond	OLMSTCC	7/28/2025
Inflow Deisgn Flood Control System Plan	Checked:	Date:
Location:	WEBBEGA	7/29/2025
Clark County, Ohio		

Check one: ■ Present ❑ Developed

Since drainage area is approximately equal to the surface area of the impoundment, the minimum time of concentration based on Ohio's DOT reccommendation (Tc = 10 minutes) is assumed.

Reference: Ohio Department of Transportation, "Location & Design Manual, Volume 2, Drainage Design", July 2022.

Segment ID	-	
Surface Description (Table 3-1)……..	-	
Manning's Roughness Coefficient, n (table 3-1)……..	-	
Flow Length, L……	-	ft
Two-year 24-hour Rainfall, P_2…….……	-	in
Land Slope, s……..……	-	ft/ft
Travel Time, $T_t = (0.007*(n*L)^{0.8}) / (P_2^{0.5}*s^{0.4})$……..	**-**	**hrs**

Shallow Concentrated Flow

Segment ID	-	-	
Surface Description (Paved / Unpaved)……	-	-	
Surface Description Coefficient, C…….……..	-	-	
Flow Length, L……	-	-	ft
Watercourse Slope, s……..……..……	-	-	ft/ft
Average Velocity, $V = C*s^{0.5}$……..……..	-	-	ft/sec
Travel Time, $T_t = (L) / (3600*V)$……	**-**	**-**	**hrs**

Channel Flow

Segment ID	-	-	
Section Base, b……	-	-	
Section Depth, d……	-	-	
Section Side Slope, z……..	-	-	
Cross Sectional Flow Area, $a = b*d + z*d^2$……..	-	-	
Wetted Perimeter, $p_w = b + (2*d)*(z^2 + 1)^{0.5}$……..	-	-	
Hydraulic Radius, $r = a / p_w$……	-	-	
Channel Slope, s……	-	-	
Manning's Roughness Coefficient, n……..……	-	-	
Average Velocity, $V = (1.49*r^{2/3}*s^{1/2}) / (n)$……	-	-	ft/sec
Flow Length, L……	-	-	ft
Travel Time, $T_t = (L) / (3600*V)$……	**-**	**-**	**hrs**

Time of Concentration

Sheet Flow T_t……..	-	hrs
Shallow Concentrated Flow T_t……	-	hrs
Channel Flow T_t……	-	hrs
Time of Concentration, T_c……	**0.16**	**hrs**
	10	**mins**

Lag Time, $T_L = 0.6*T_C$……..	**0.096**	**hrs**
	6	**mins**

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HYDRAULIC CAPACITY ESTIMATE

BY: OLMSTCC DATE 03/10/2026 PROJ. NO. C150917.64
CHKD. BY SCHELAB DATE 04/01/2026

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Precipitation Data

Attachment 1 - Hydrology Calculations

NOAA Atlas 14, Volume 2, Version 3
Location name: Springfield, Ohio, USA*
Latitude: 39.9245°, Longitude: -83.8496°
Elevation: 902 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.362** (0.332-0.394)	**0.429** (0.394-0.469)	**0.509** (0.466-0.555)	**0.569** (0.520-0.620)	**0.646** (0.588-0.703)	**0.705** (0.640-0.766)	**0.760** (0.686-0.825)	**0.817** (0.734-0.886)	**0.892** (0.795-0.968)	**0.944** (0.837-1.02)
10-min	**0.562** (0.515-0.613)	**0.669** (0.615-0.732)	**0.791** (0.725-0.862)	**0.879** (0.803-0.958)	**0.988** (0.900-1.08)	**1.07** (0.970-1.16)	**1.14** (1.03-1.24)	**1.22** (1.10-1.32)	**1.31** (1.17-1.42)	**1.38** (1.22-1.49)
15-min	**0.689** (0.631-0.751)	**0.818** (0.752-0.895)	**0.971** (0.890-1.06)	**1.08** (0.988-1.18)	**1.22** (1.11-1.33)	**1.32** (1.20-1.44)	**1.42** (1.28-1.54)	**1.52** (1.36-1.64)	**1.64** (1.46-1.78)	**1.72** (1.52-1.87)
30-min	**0.912** (0.835-0.993)	**1.10** (1.01-1.20)	**1.33** (1.22-1.45)	**1.50** (1.37-1.64)	**1.72** (1.57-1.88)	**1.89** (1.72-2.06)	**2.05** (1.85-2.23)	**2.21** (1.99-2.40)	**2.42** (2.16-2.63)	**2.58** (2.28-2.80)
60-min	**1.11** (1.02-1.21)	**1.34** (1.23-1.47)	**1.67** (1.53-1.82)	**1.91** (1.75-2.08)	**2.24** (2.04-2.43)	**2.49** (2.26-2.71)	**2.74** (2.48-2.98)	**3.00** (2.70-3.26)	**3.35** (2.99-3.64)	**3.62** (3.21-3.93)
2-hr	**1.29** (1.18-1.40)	**1.56** (1.43-1.70)	**1.93** (1.77-2.10)	**2.22** (2.03-2.41)	**2.61** (2.38-2.83)	**2.92** (2.65-3.16)	**3.24** (2.93-3.50)	**3.57** (3.20-3.85)	**4.01** (3.58-4.32)	**4.36** (3.86-4.69)
3-hr	**1.37** (1.27-1.48)	**1.65** (1.53-1.80)	**2.04** (1.89-2.22)	**2.36** (2.18-2.56)	**2.79** (2.56-3.01)	**3.14** (2.86-3.38)	**3.49** (3.17-3.76)	**3.86** (3.48-4.15)	**4.37** (3.90-4.69)	**4.77** (4.23-5.12)
6-hr	**1.63** (1.50-1.78)	**1.96** (1.80-2.14)	**2.42** (2.22-2.64)	**2.79** (2.56-3.03)	**3.30** (3.01-3.58)	**3.72** (3.38-4.02)	**4.15** (3.75-4.48)	**4.60** (4.13-4.96)	**5.24** (4.65-5.64)	**5.74** (5.05-6.17)
12-hr	**1.91** (1.75-2.10)	**2.29** (2.10-2.52)	**2.82** (2.57-3.10)	**3.24** (2.95-3.55)	**3.82** (3.46-4.18)	**4.29** (3.87-4.68)	**4.78** (4.29-5.20)	**5.29** (4.72-5.76)	**6.00** (5.30-6.52)	**6.56** (5.74-7.14)
24-hr	**2.26** (2.11-2.43)	**2.71** (2.52-2.91)	**3.31** (3.09-3.55)	**3.78** (3.52-4.05)	**4.41** (4.10-4.72)	**4.91** (4.54-5.25)	**5.41** (4.99-5.79)	**5.92** (5.45-6.34)	**6.61** (6.04-7.08)	**7.14** (6.50-7.66)
2-day	**2.63** (2.46-2.82)	**3.14** (2.94-3.37)	**3.82** (3.57-4.10)	**4.35** (4.06-4.66)	**5.06** (4.70-5.40)	**5.61** (5.20-6.00)	**6.16** (5.70-6.59)	**6.72** (6.19-7.19)	**7.47** (6.85-7.99)	**8.05** (7.34-8.62)
3-day	**2.83** (2.65-3.02)	**3.38** (3.17-3.61)	**4.09** (3.83-4.37)	**4.64** (4.34-4.95)	**5.38** (5.02-5.74)	**5.96** (5.54-6.35)	**6.54** (6.07-6.98)	**7.13** (6.59-7.61)	**7.91** (7.27-8.45)	**8.51** (7.78-9.11)
4-day	**3.03** (2.85-3.23)	**3.61** (3.40-3.85)	**4.36** (4.09-4.64)	**4.93** (4.62-5.25)	**5.71** (5.34-6.07)	**6.32** (5.89-6.71)	**6.92** (6.44-7.36)	**7.54** (6.98-8.02)	**8.36** (7.70-8.91)	**8.98** (8.23-9.59)
7-day	**3.58** (3.37-3.83)	**4.26** (4.01-4.56)	**5.12** (4.81-5.46)	**5.80** (5.44-6.19)	**6.72** (6.29-7.17)	**7.45** (6.95-7.95)	**8.19** (7.62-8.74)	**8.94** (8.28-9.56)	**9.96** (9.17-10.7)	**10.7** (9.84-11.5)
10-day	**4.07** (3.84-4.32)	**4.83** (4.56-5.13)	**5.78** (5.44-6.14)	**6.52** (6.14-6.94)	**7.54** (7.08-8.01)	**8.34** (7.82-8.86)	**9.14** (8.54-9.71)	**9.96** (9.26-10.6)	**11.1** (10.2-11.8)	**11.9** (10.9-12.7)
20-day	**5.60** (5.32-5.91)	**6.62** (6.28-6.98)	**7.80** (7.40-8.22)	**8.72** (8.26-9.19)	**9.94** (9.40-10.5)	**10.9** (10.3-11.5)	**11.8** (11.1-12.5)	**12.7** (11.9-13.4)	**13.9** (13.0-14.8)	**14.8** (13.8-15.7)
30-day	**6.97** (6.62-7.32)	**8.21** (7.80-8.62)	**9.55** (9.06-10.0)	**10.6** (10.0-11.1)	**11.9** (11.3-12.5)	**12.9** (12.2-13.6)	**13.9** (13.1-14.7)	**14.9** (14.0-15.7)	**16.2** (15.1-17.1)	**17.1** (15.9-18.1)
45-day	**8.84** (8.41-9.25)	**10.4** (9.88-10.9)	**12.0** (11.4-12.5)	**13.2** (12.5-13.8)	**14.7** (14.0-15.4)	**15.9** (15.1-16.6)	**17.0** (16.1-17.8)	**18.0** (17.0-18.9)	**19.4** (18.2-20.4)	**20.4** (19.1-21.4)
60-day	**10.7** (10.2-11.2)	**12.5** (11.9-13.1)	**14.3** (13.7-15.0)	**15.7** (15.0-16.5)	**17.5** (16.7-18.4)	**18.9** (17.9-19.8)	**20.2** (19.1-21.2)	**21.4** (20.2-22.5)	**23.0** (21.6-24.2)	**24.1** (22.7-25.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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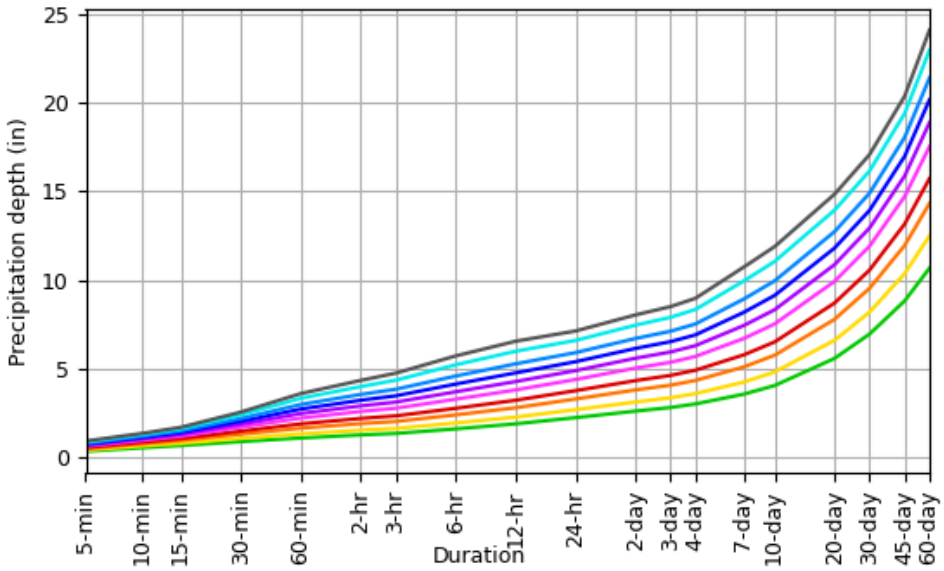
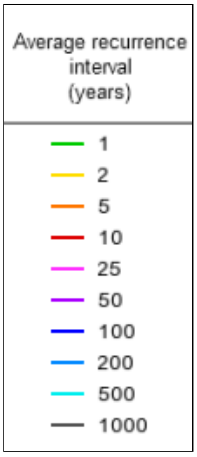
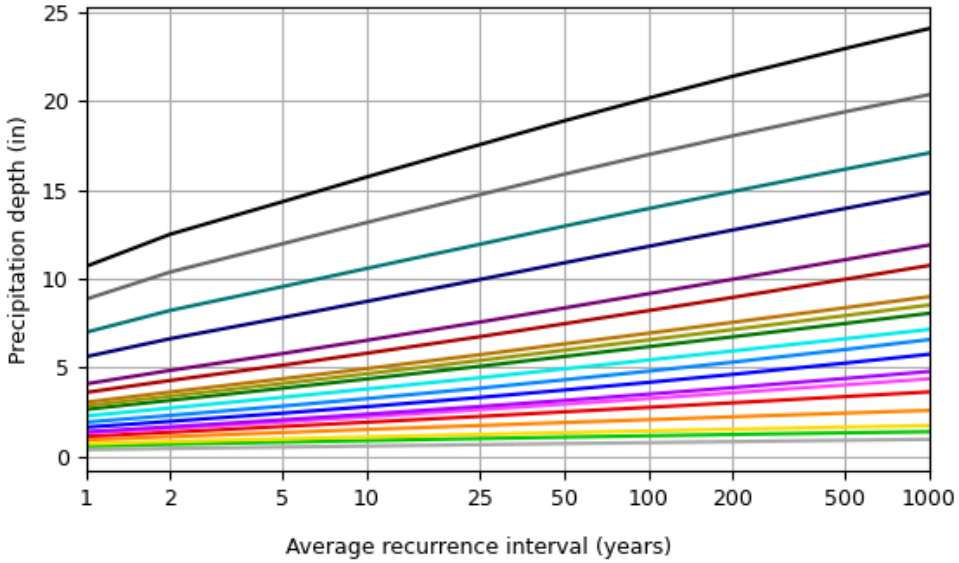
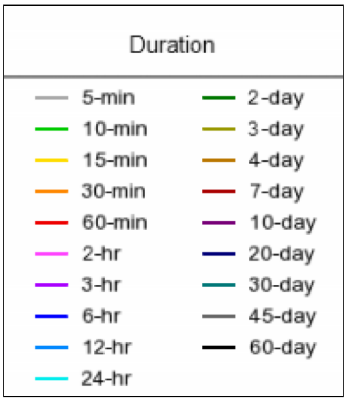
PF graphical

PDS-based depth-duration-frequency (DDF) curves
Latitude: 39.9245°, Longitude: -83.8496°









NOAA Atlas 14, Volume 2, Version 3

Created (GMT): Tue Mar 10 17:58:18 2026

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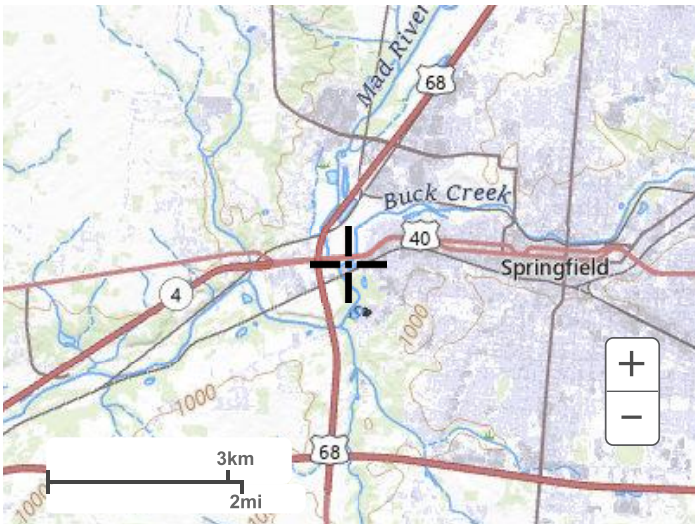
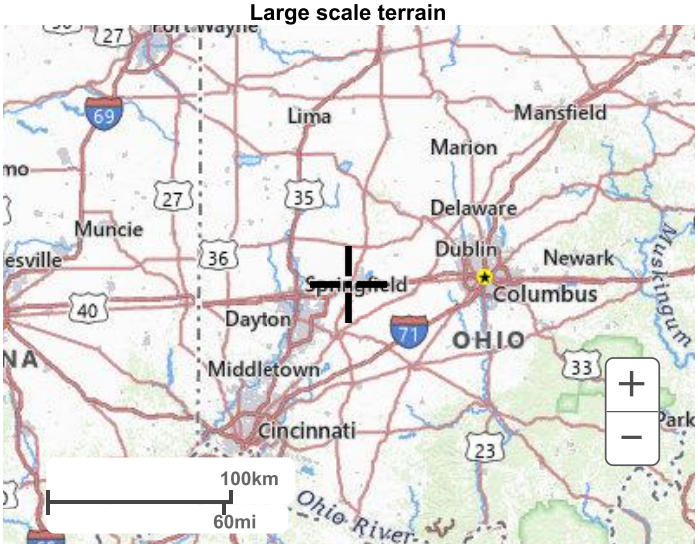
Maps & aerials

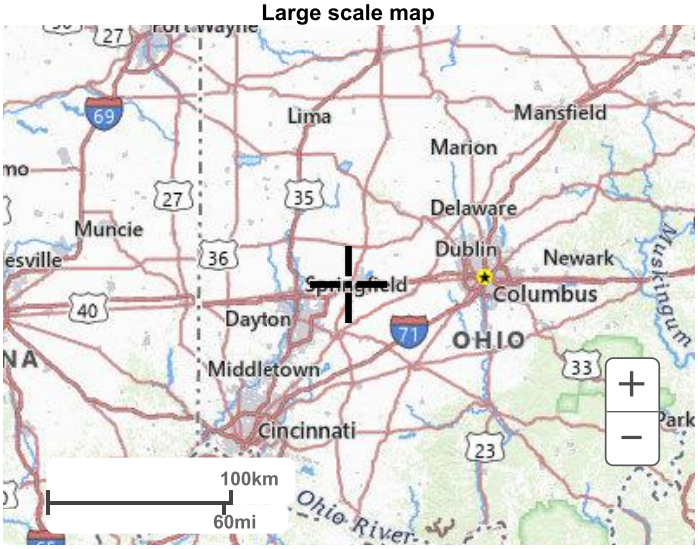
Small scale terrain



Large scale terrain



Large scale map



Large scale aerial

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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

SUBJECT OHIO EDISON COMPANY – FORMER MAD RIVER ASH POND HYDRAULIC CAPACITY ESTIMATE

BY: OLMSTCC DATE 03/10/2026 PROJ. NO. C150917.64
CHKD. BY SCHELAB DATE 04/01/2026

gai consultants

HEC-HMS Standard Reports

Attachment 1 - Hydrology Calculations

Project: Mad_River_1000_Year_Route
Simulation Run: 1000yr SCS TypeII after 25yr
Simulation Start: 31 December 2025, 24:00
Simulation End: 2 January 2026, 24:00

HMS Version: 4.13
Executed: 14 April 2026, 15:02

Global Parameter Summary - Subbasin

Area (MI2)

Element Name	Area (MI2)
Watershed	0.03

Downstream

Element Name	Downstream
Watershed	Former Ash Pond

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number
Watershed	0	98

Transform: Scs

Element Name	Lag	Unitgraph Type
Watershed	6	Standard

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Watershed	0.03	183.02	01Jan2026, 11:59	6.9
Former Ash Pond	0.03	0	31Dec2025, 24:00	0

Subbasin: Watershed

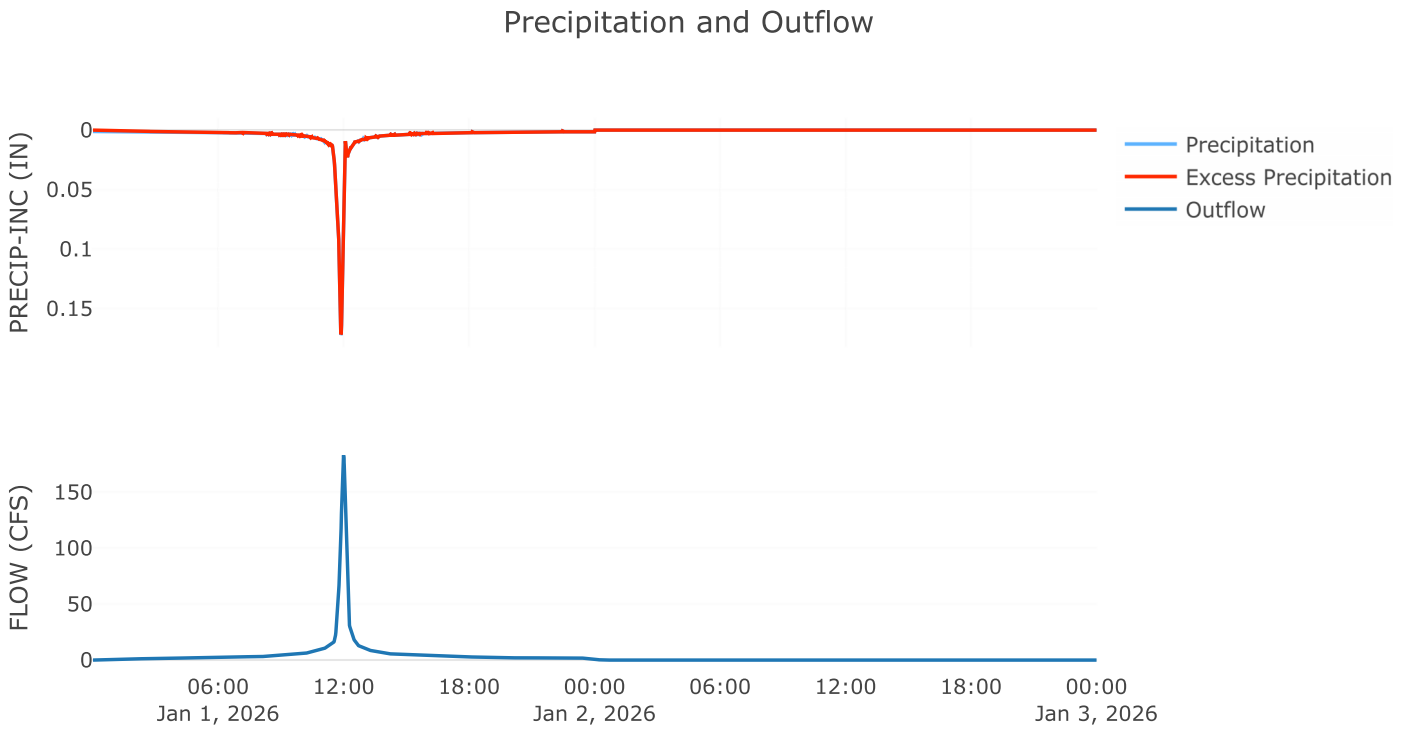
Area (MI2) : 0.03
Downstream : Former Ash Pond

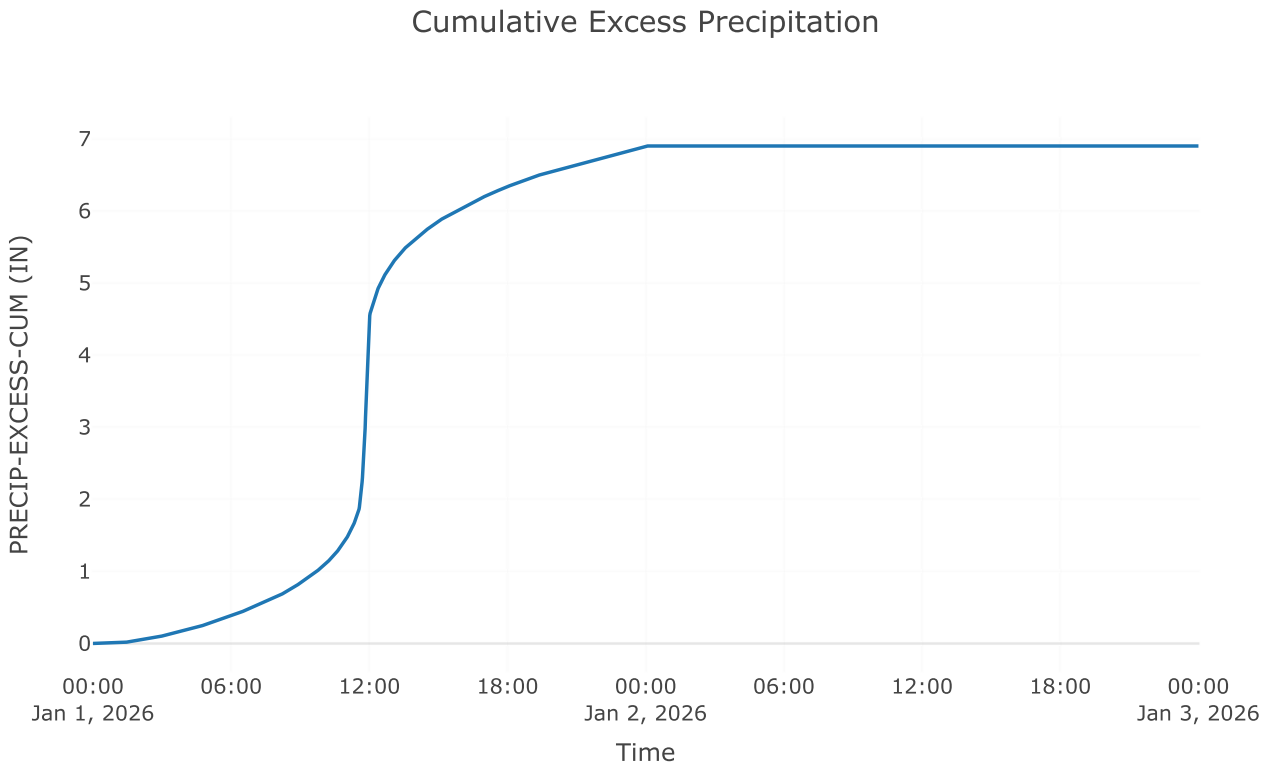
Loss Rate: Scs	
Percent Impervious Area	0
Curve Number	98

Transform: Scs	
Lag	6
Unitgraph Type	Standard

Results: Watershed	
Peak Discharge (CFS)	183.02
Time of Peak Discharge	01Jan2026, 11:59
Volume (IN)	6.9
Precipitation Volume (AC - FT)	12.57
Loss Volume (AC - FT)	0.42
Excess Volume (AC - FT)	12.15
Direct Runoff Volume (AC - FT)	12.15
Baseflow Volume (AC - FT)	0

1000-Year Event





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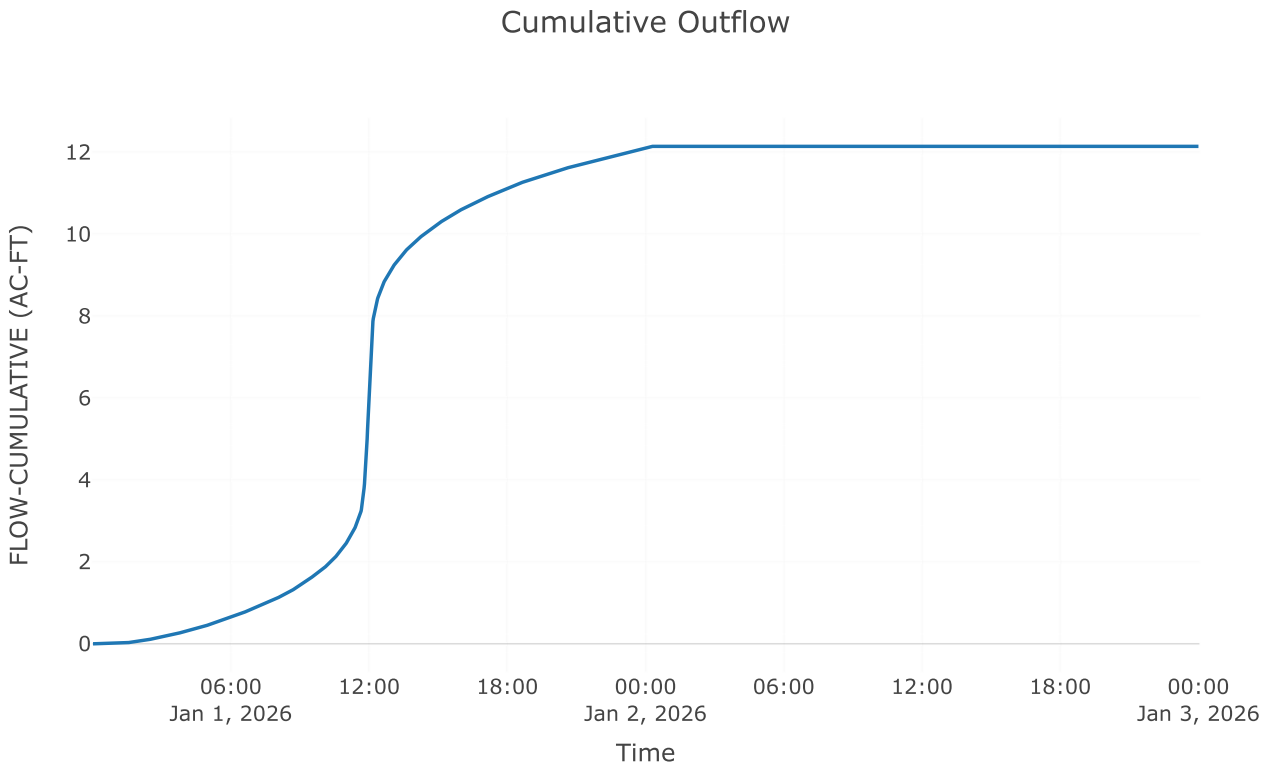
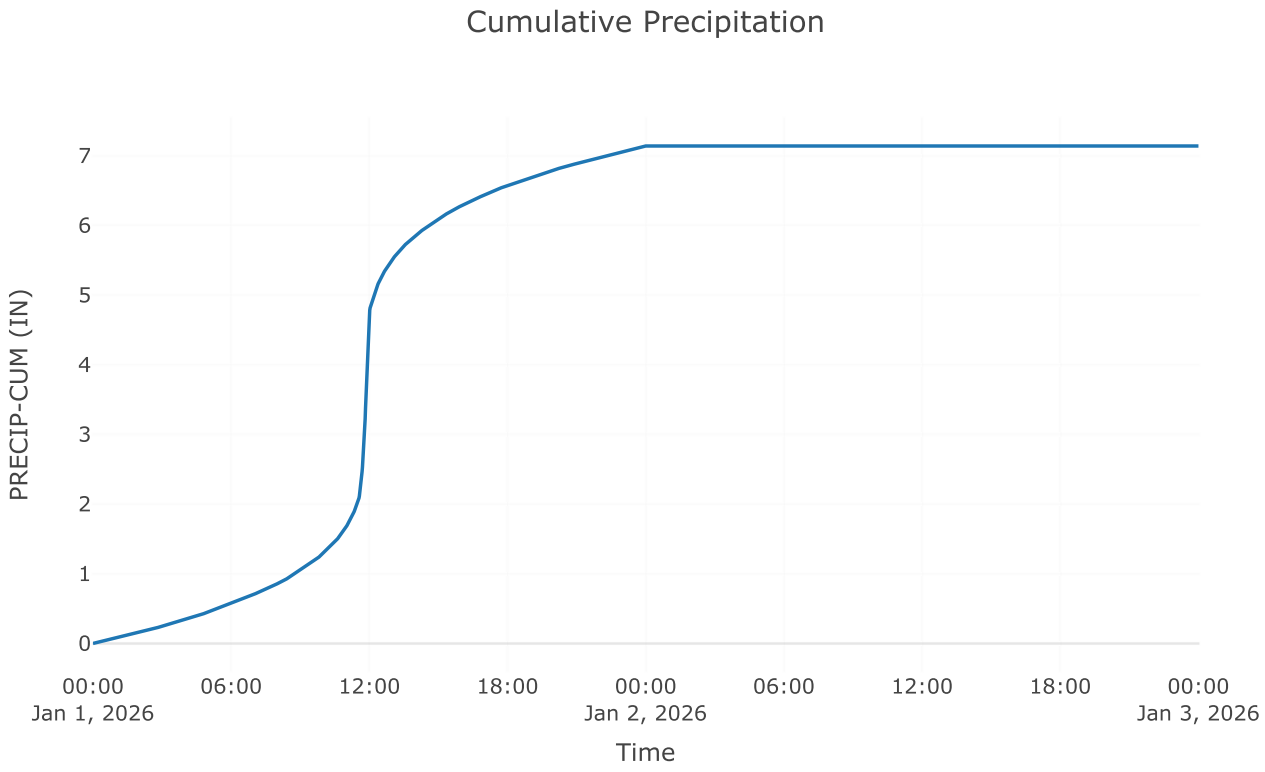
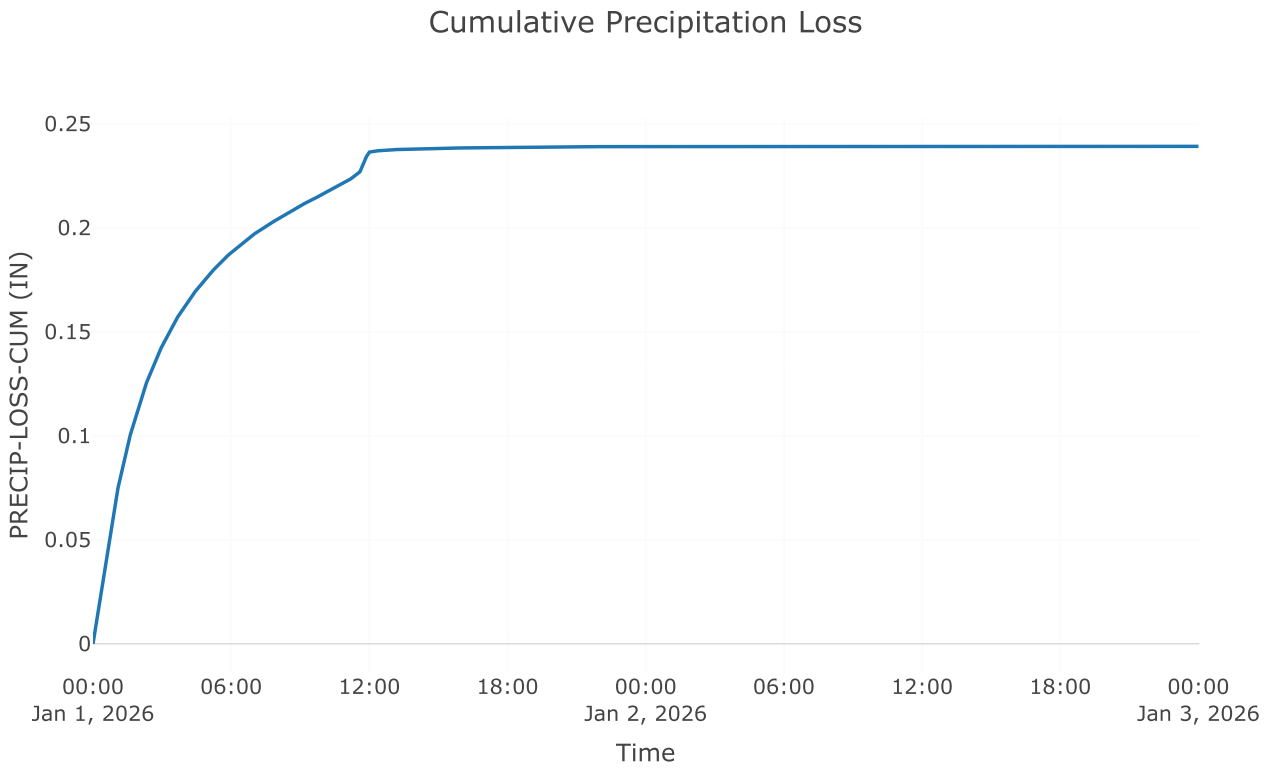
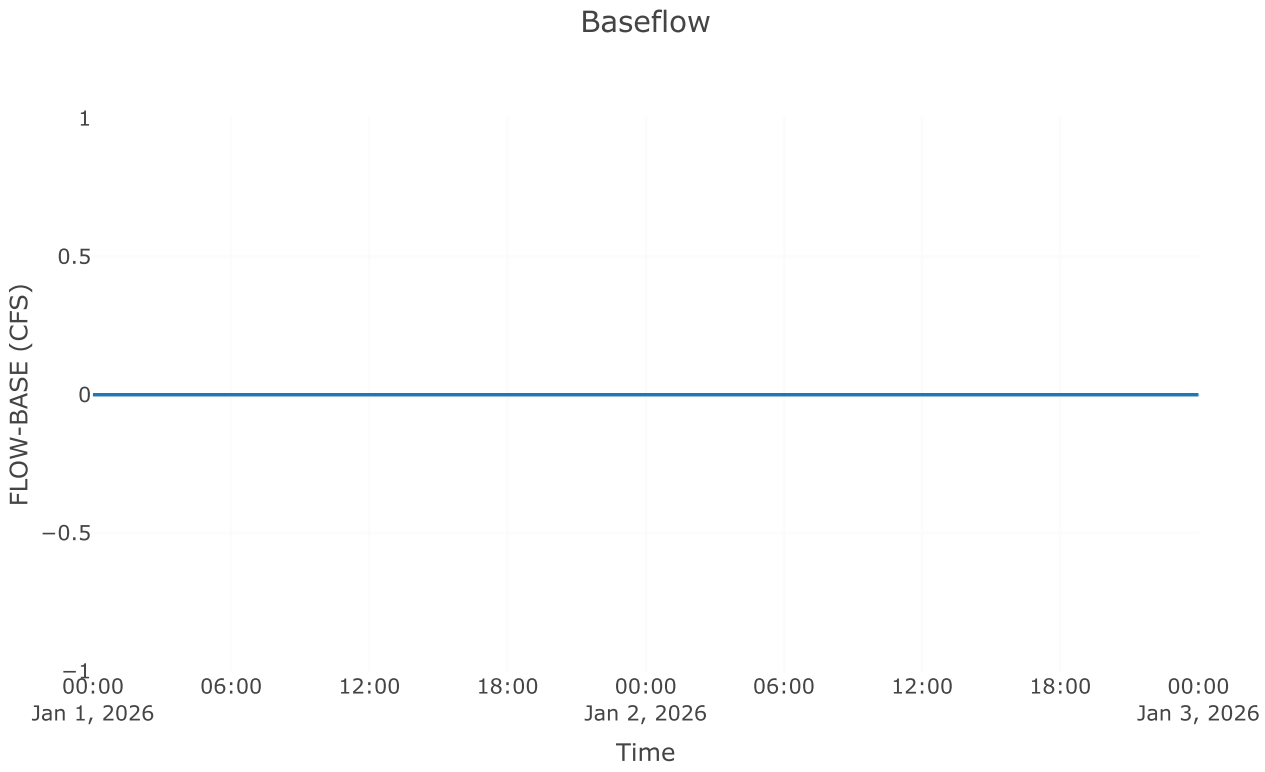


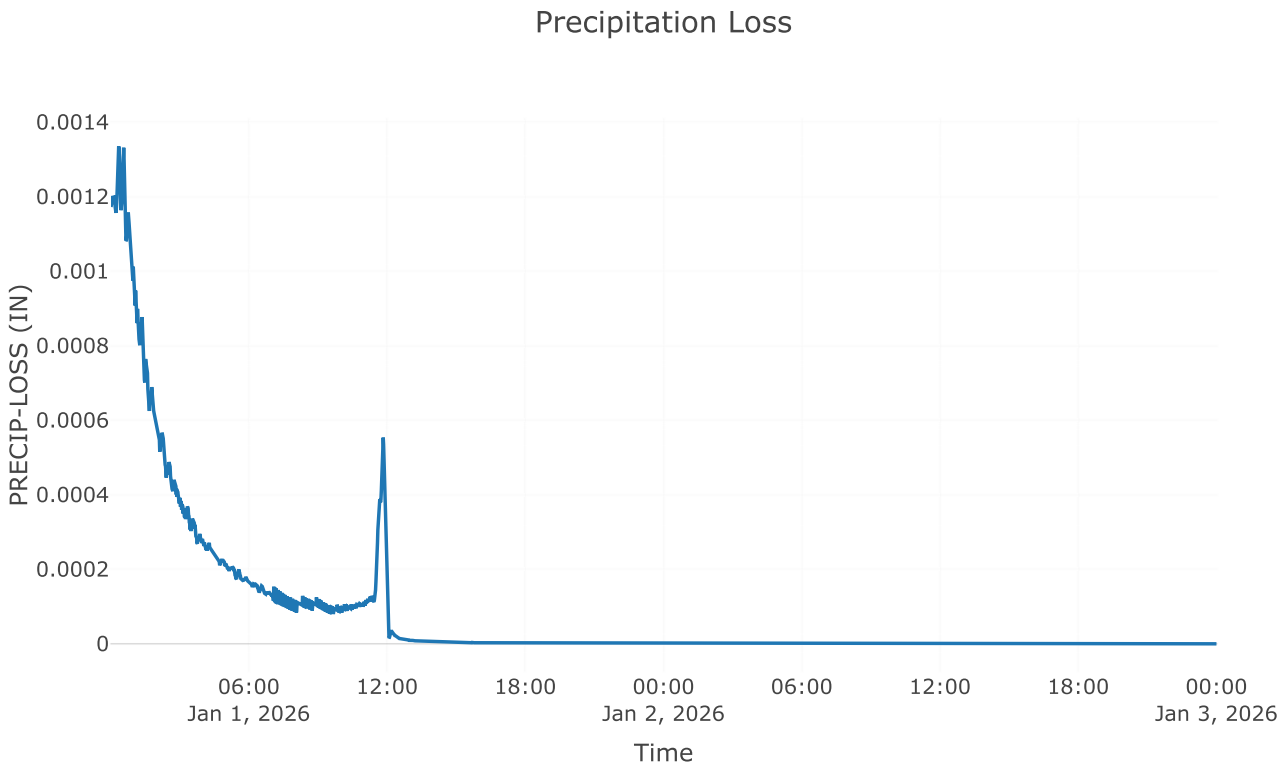


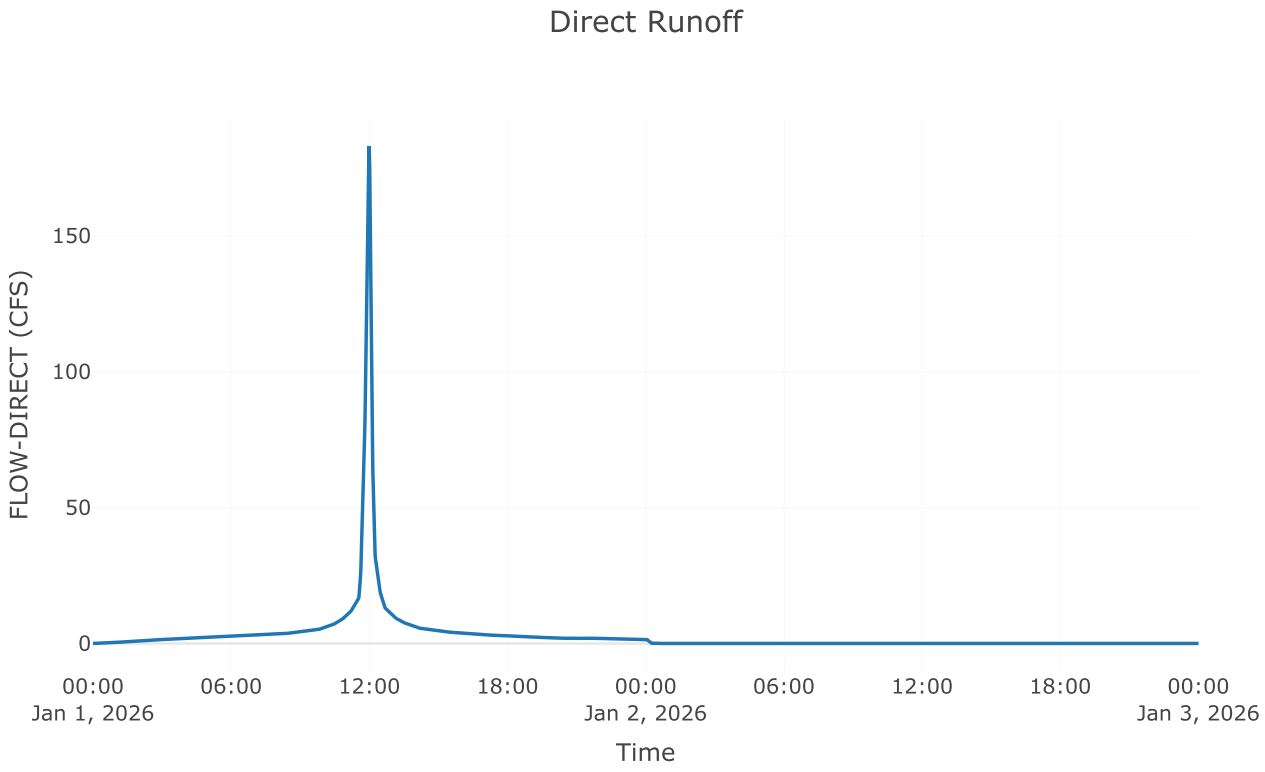
1000-Year Event



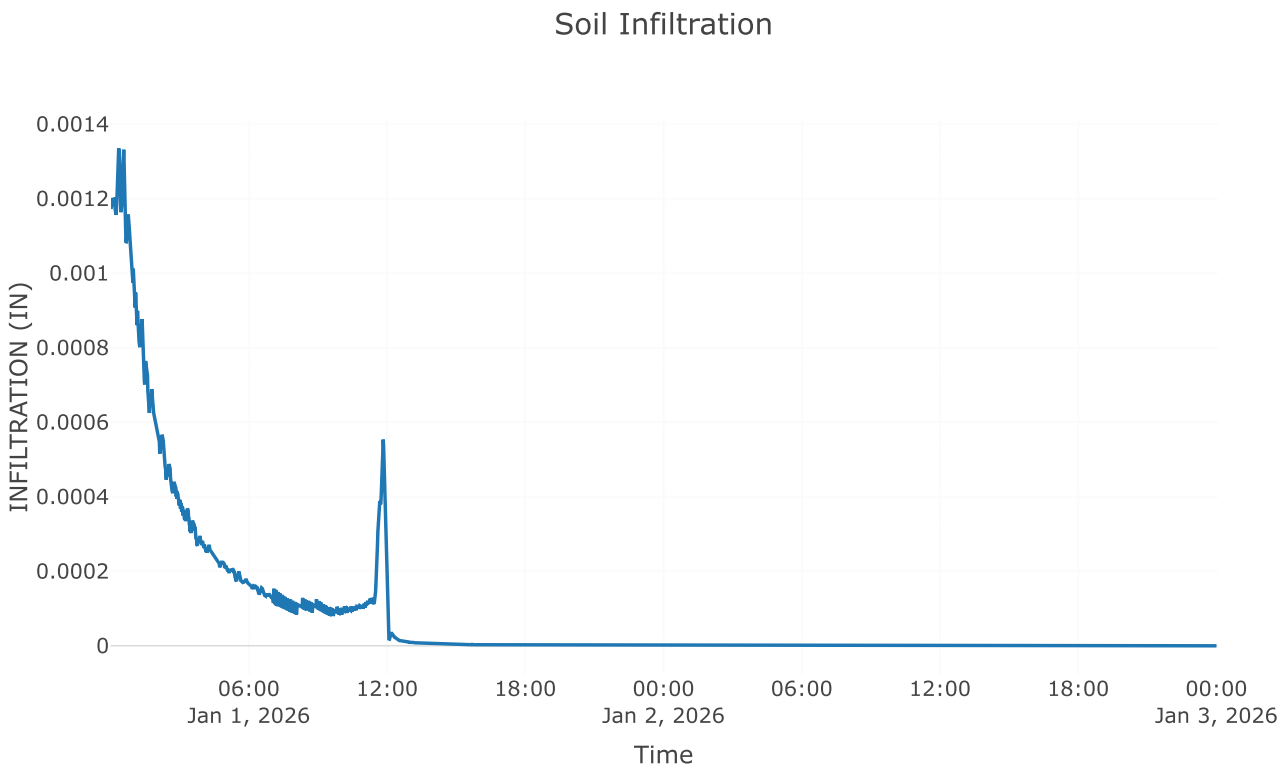


1000-Year Event





1000-Year Event

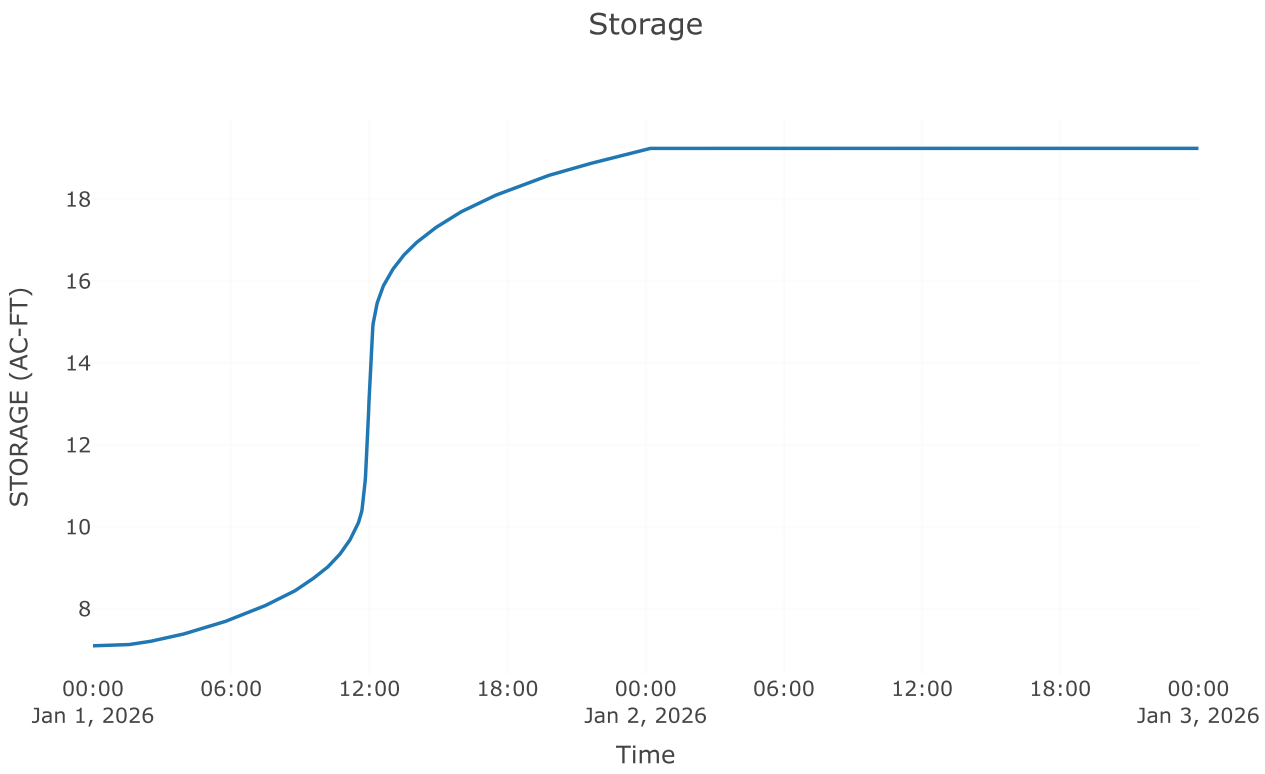


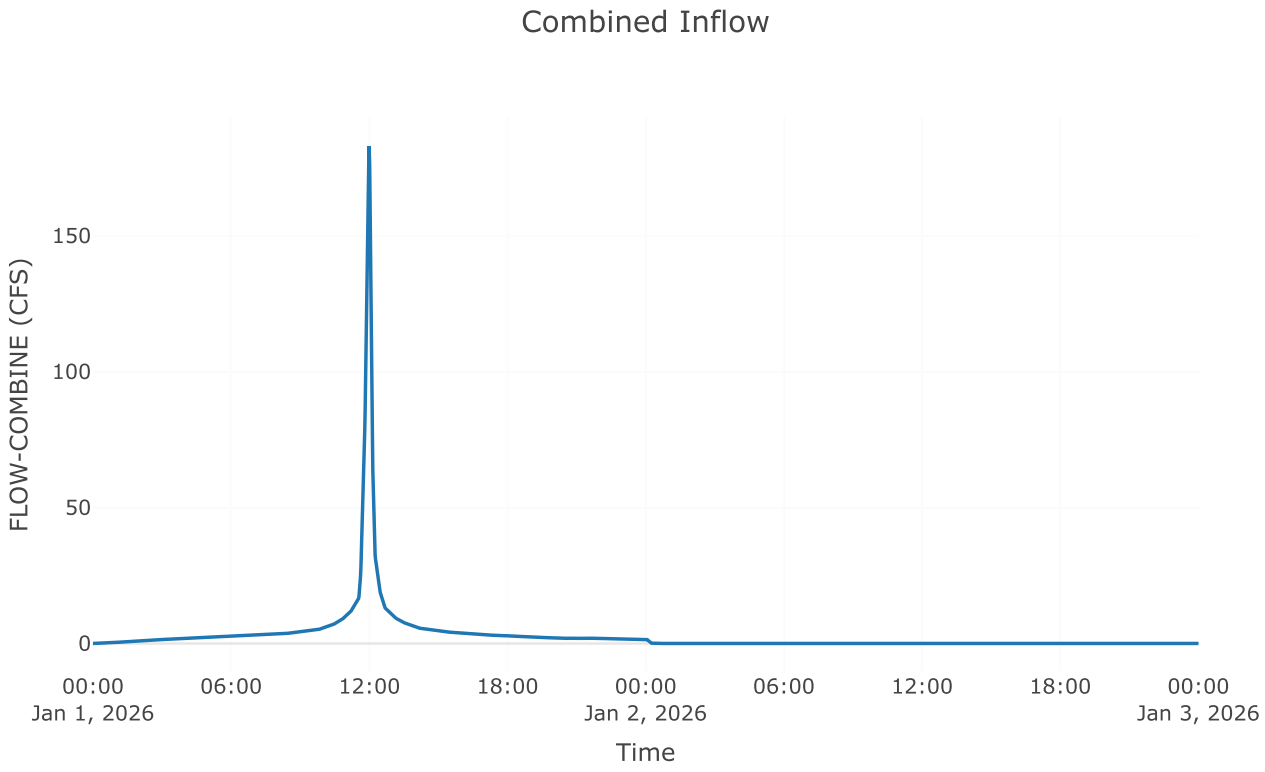
1000-Year Event

Reservoir: Former Ash Pond

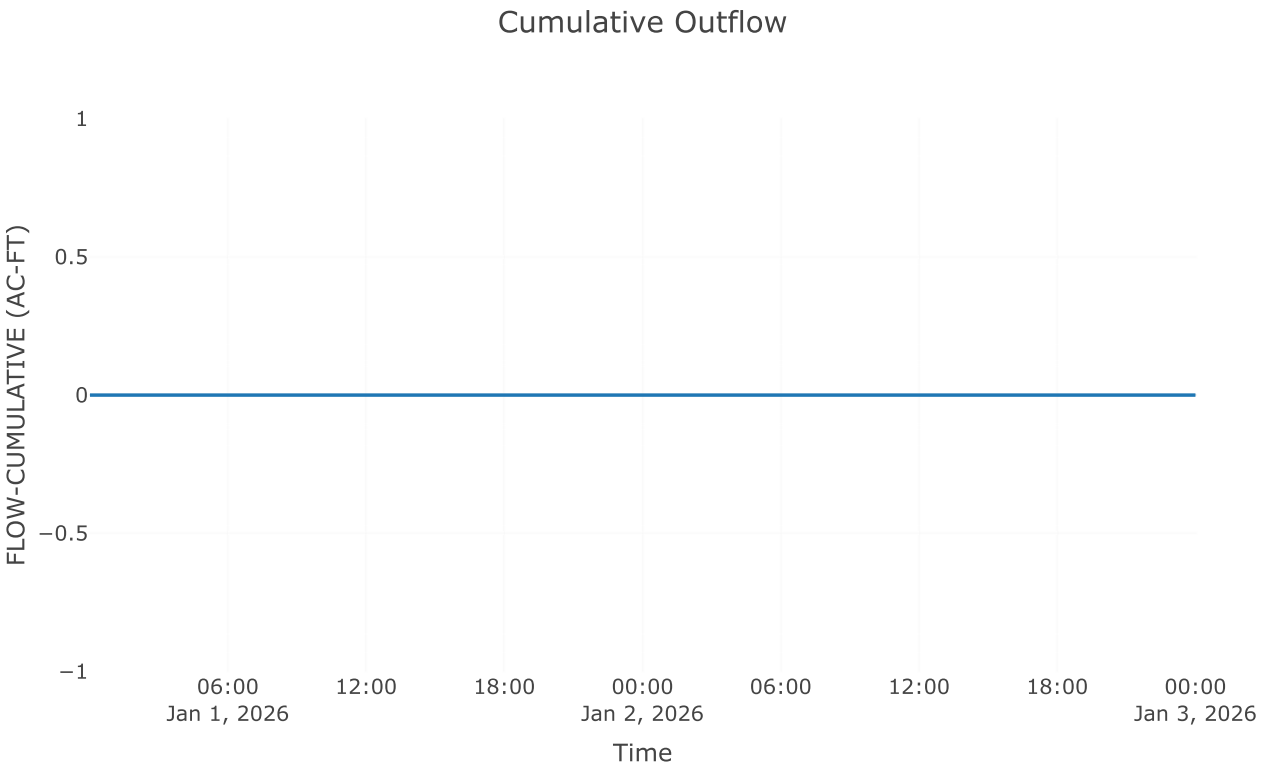
Results: Former Ash Pond	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2025, 24:00
Volume (IN)	0
Peak Inflow (CFS)	183.02
Time of Peak Inflow	01Jan2026, 11:59
Inflow Volume (AC - FT)	12.15
Maximum Storage (AC - FT)	19.25
Peak Elevation (FT)	900.12
Discharge Volume (AC - FT)	0

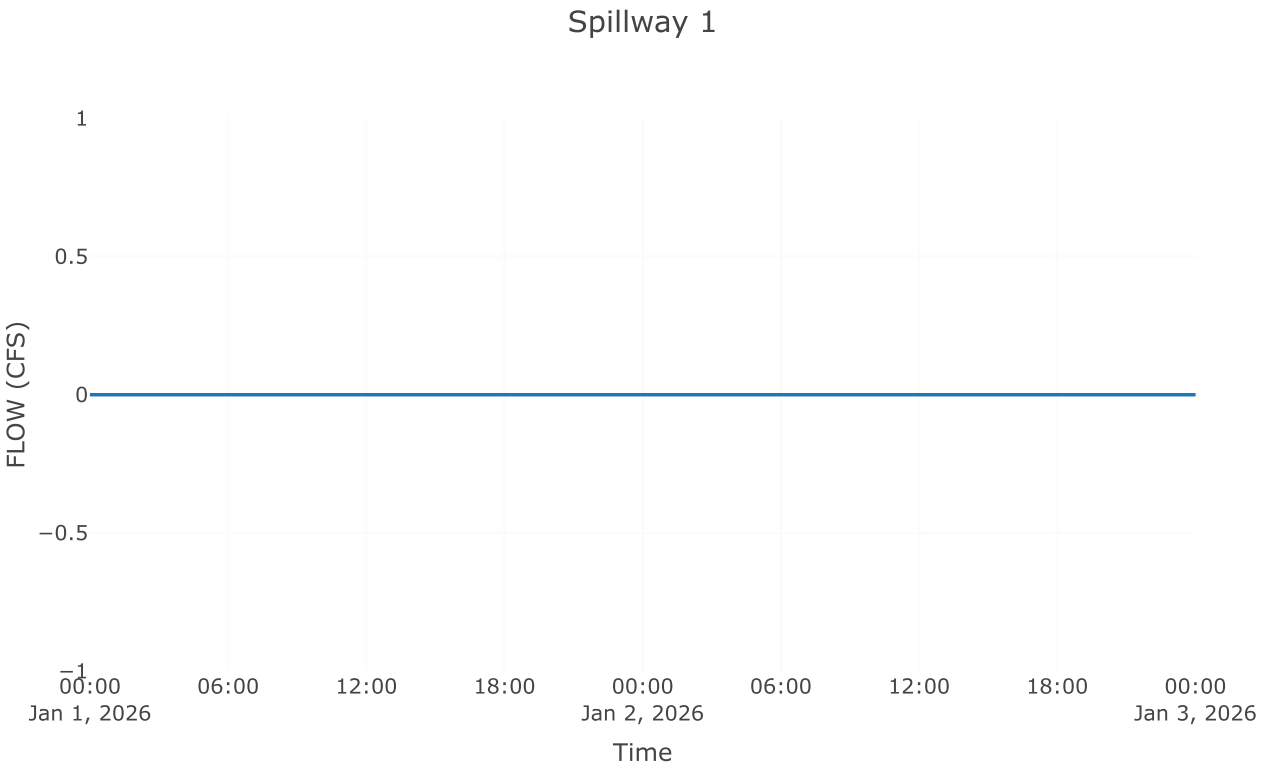
1000-Year Event



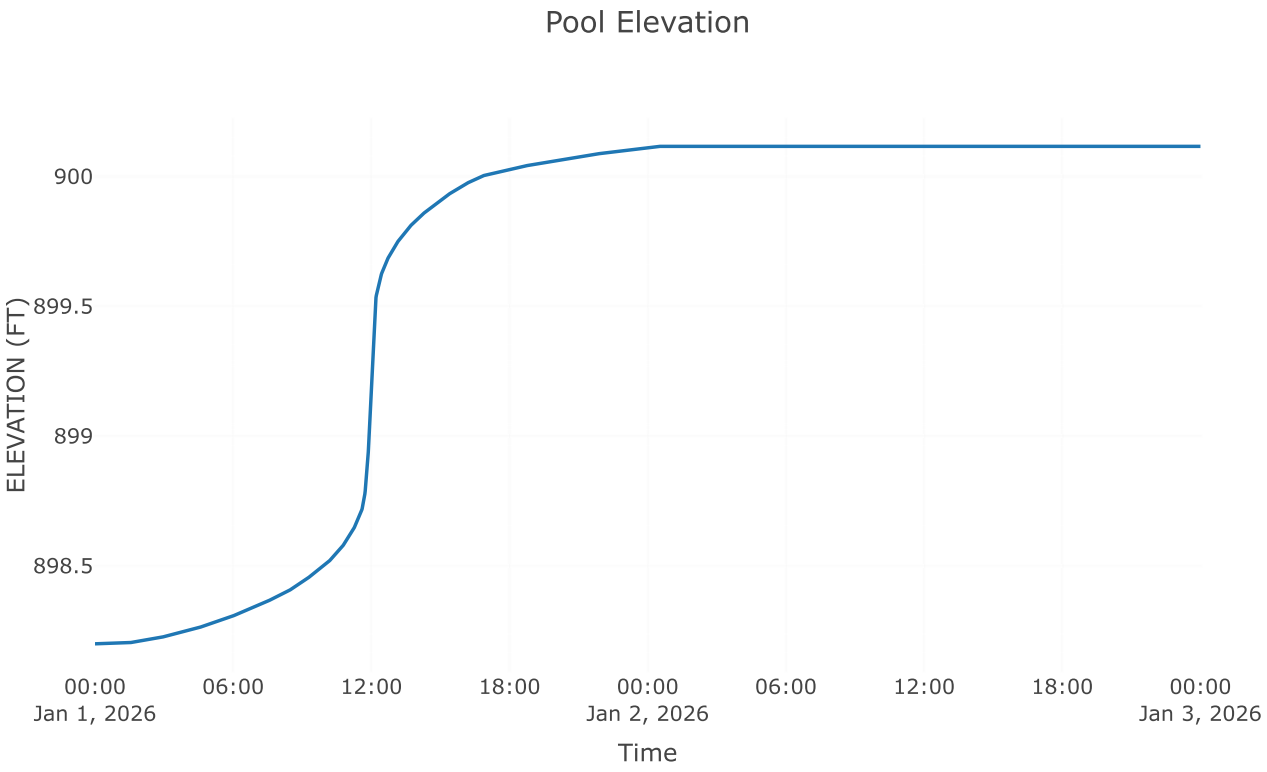


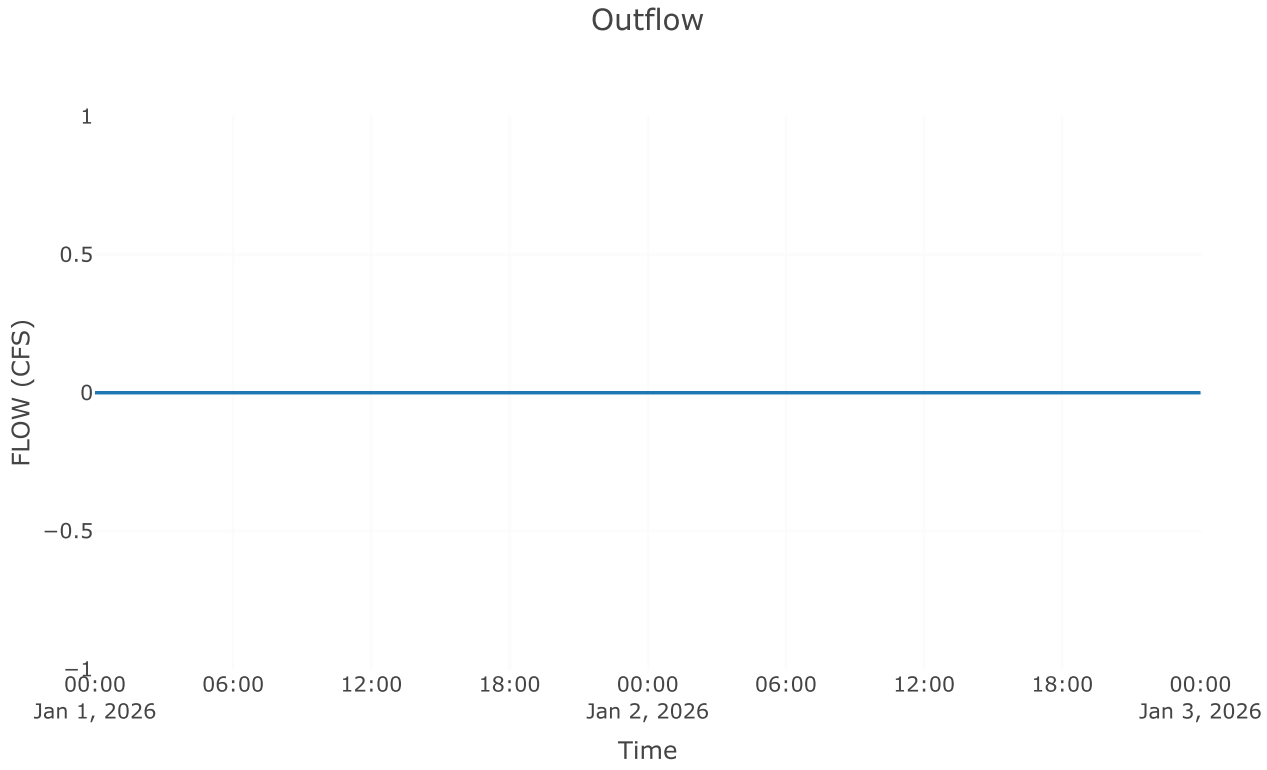
1000-Year Event





1000-Year Event





25-Year Event

Project: Mad_River_1000_Year_Route
Simulation Run: 25 Year SCS Type II
Simulation Start: 31 December 2025, 24:00
Simulation End: 2 January 2026, 24:00

HMS Version: 4.13
Executed: 14 April 2026, 15:09

Global Parameter Summary - Subbasin

Area (MI2)

Element Name	Area (MI2)
Watershed	0.03

Downstream

Element Name	Downstream
Watershed	Former Ash Pond

Loss Rate: Scs

Element Name	Percent Impervious Area	Curve Number
Watershed	0	98

Transform: Scs

Element Name	Lag	Unitgraph Type
Watershed	6	Standard

Global Results Summary

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
Watershed	0.03	112.55	01Jan2026, 11:59	4.17
Former Ash Pond	0.03	0	31Dec2025, 24:00	0

Subbasin: Watershed

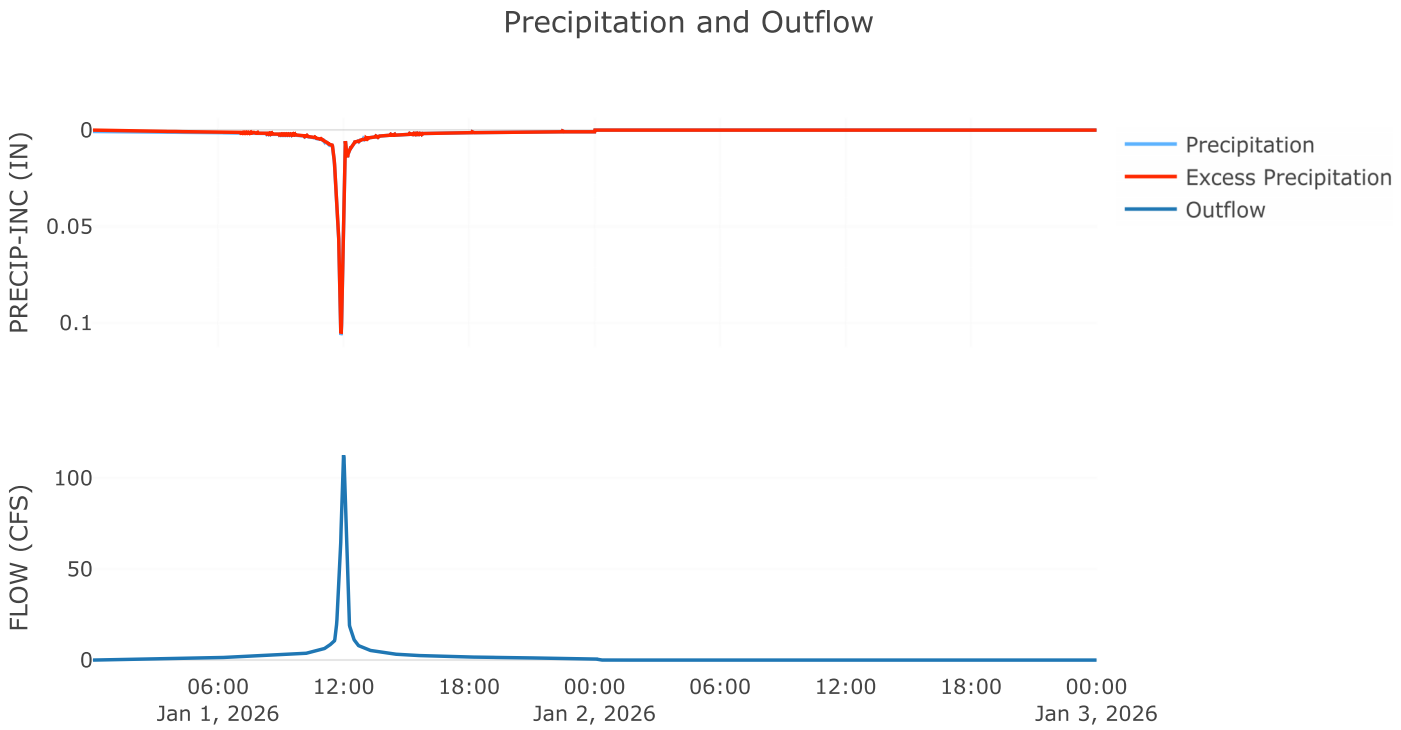
Area (MI2) : 0.03
Downstream : Former Ash Pond

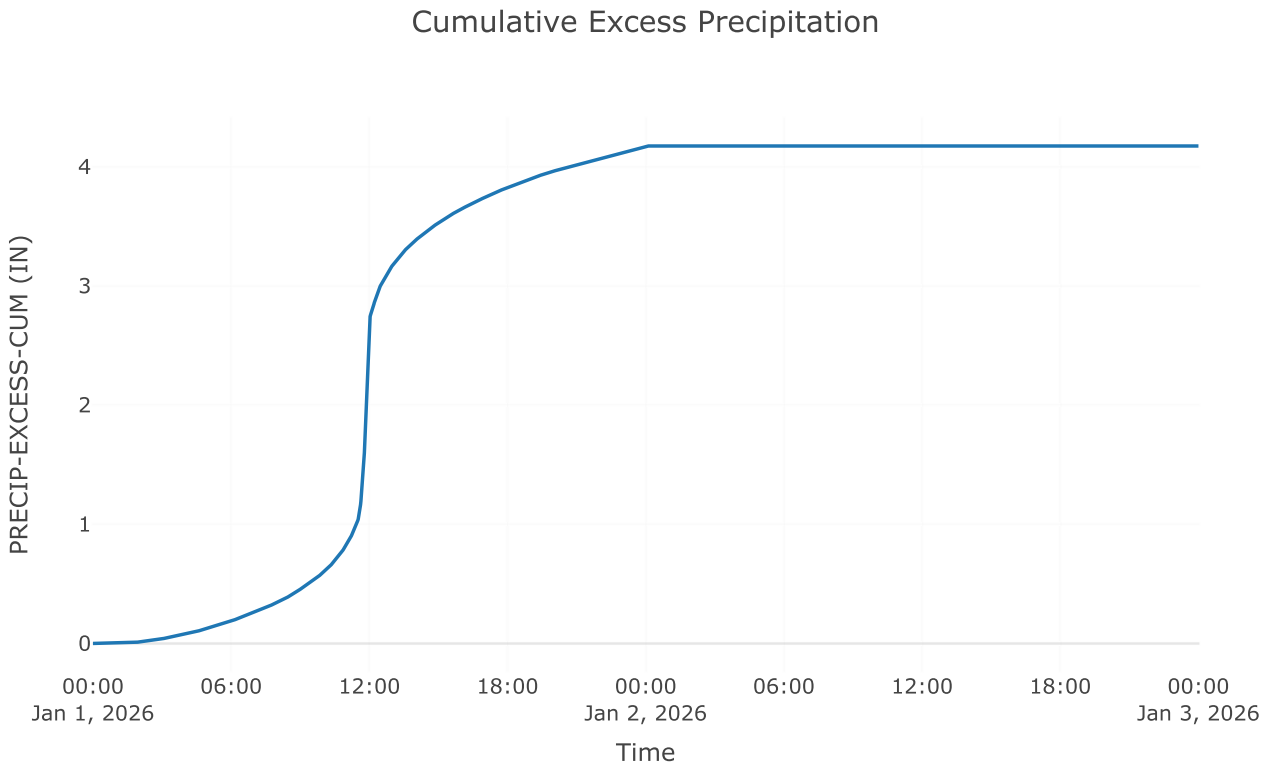
Loss Rate: Scs	
Percent Impervious Area	0
Curve Number	98

Transform: Scs	
Lag	6
Unitgraph Type	Standard

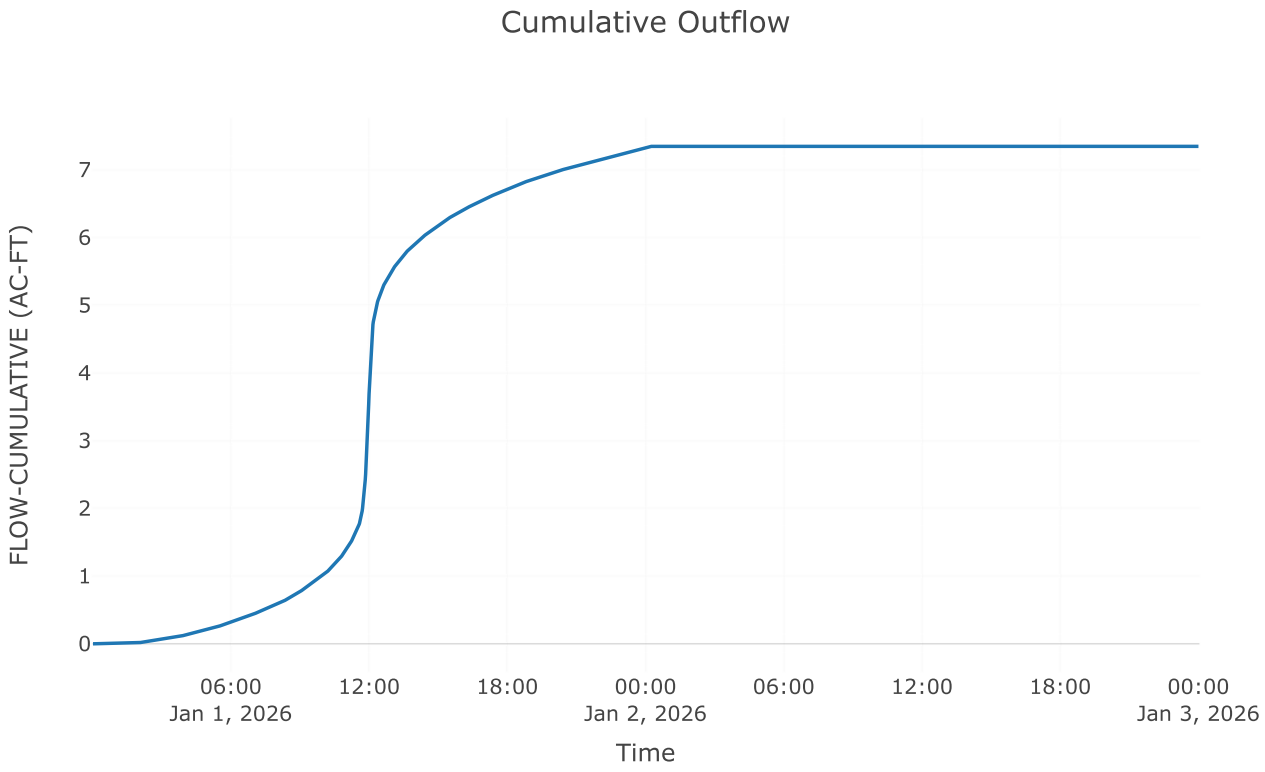
Results: Watershed	
Peak Discharge (CFS)	112.55
Time of Peak Discharge	01Jan2026, 11:59
Volume (IN)	4.17
Precipitation Volume (AC - FT)	7.76
Loss Volume (AC - FT)	0.41
Excess Volume (AC - FT)	7.35
Direct Runoff Volume (AC - FT)	7.35
Baseflow Volume (AC - FT)	0

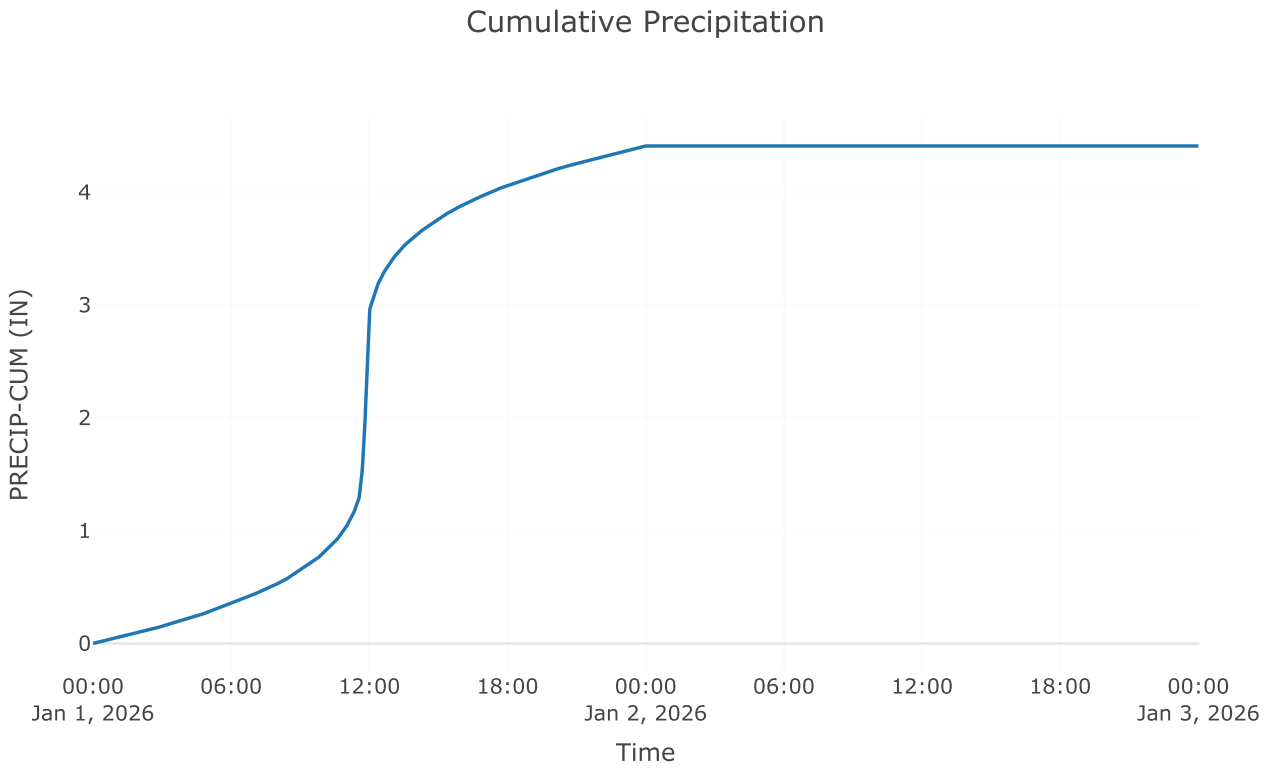
25-Year Event



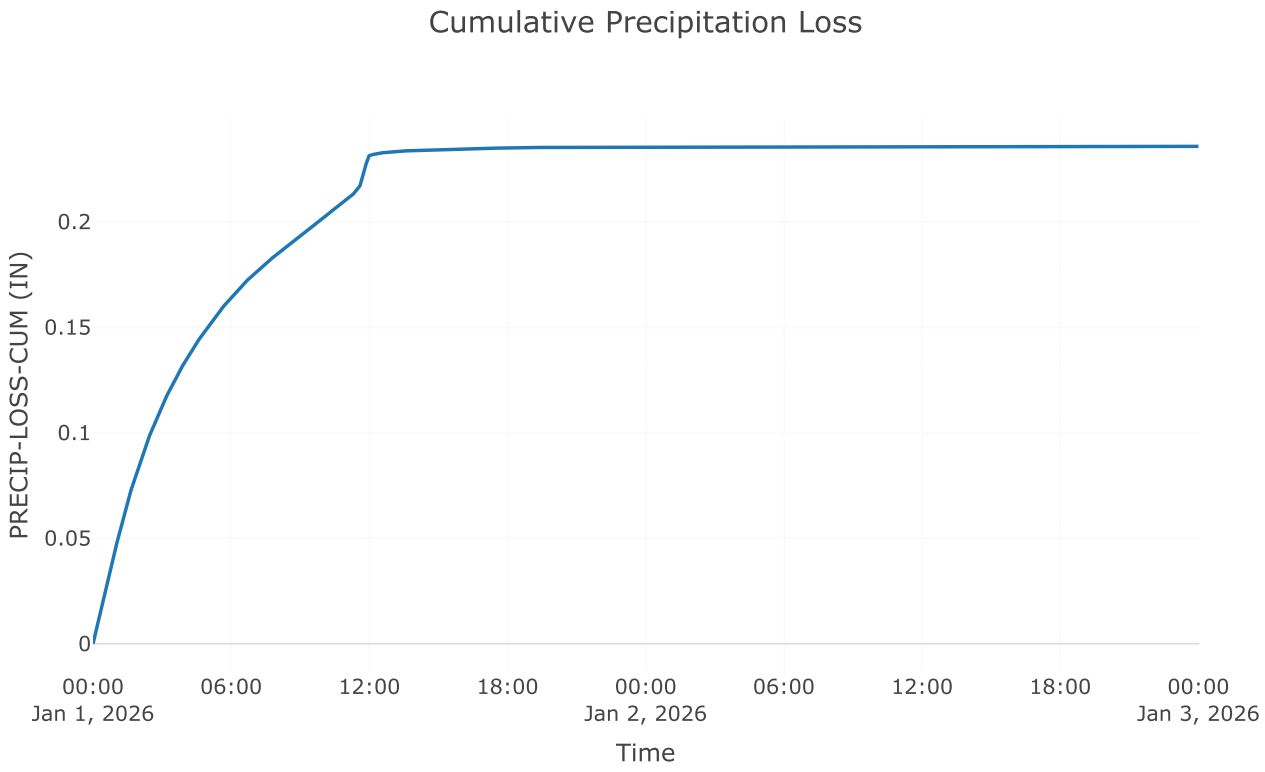


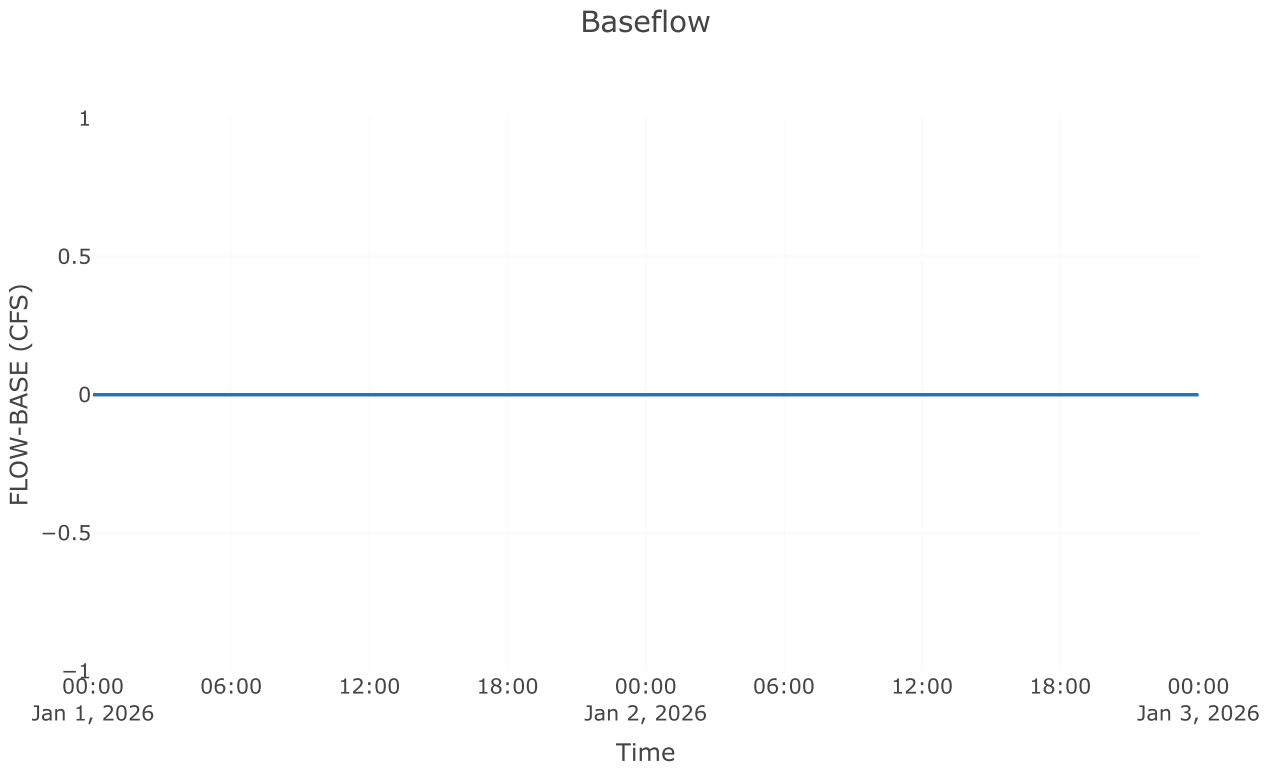
25-Year Event



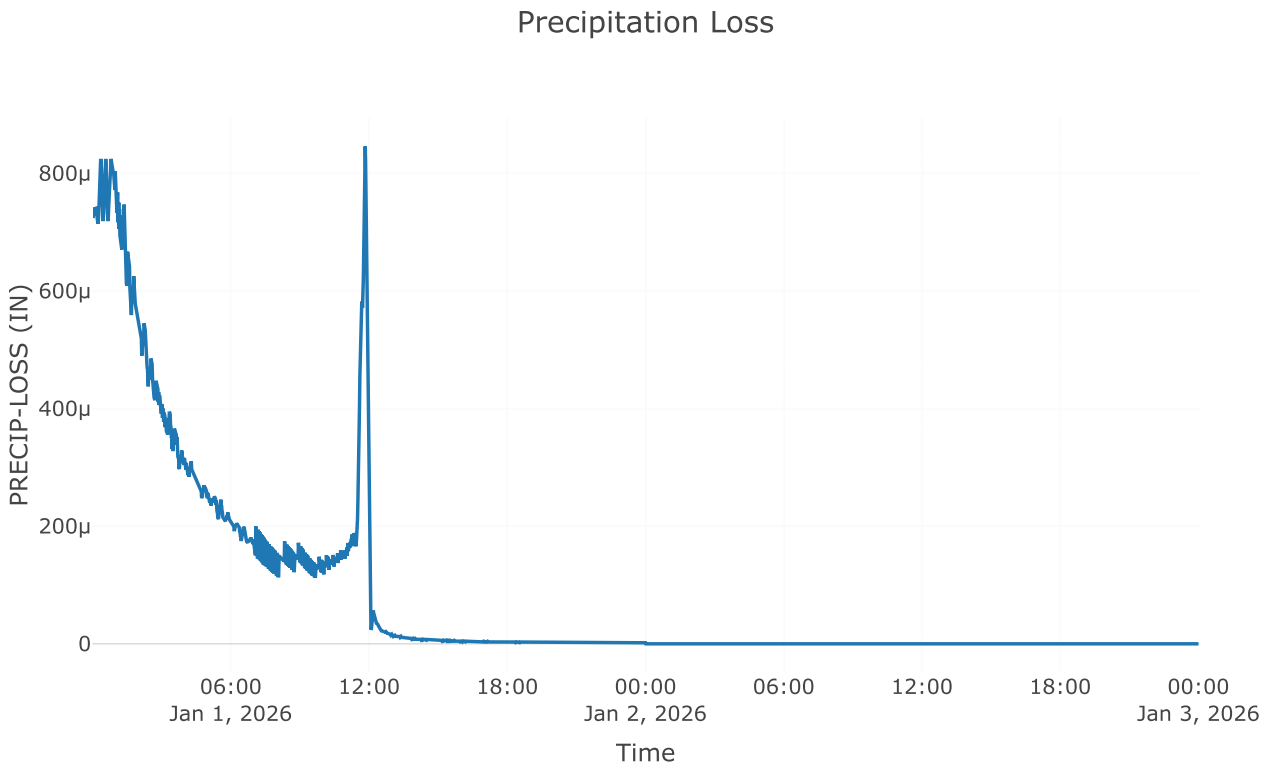


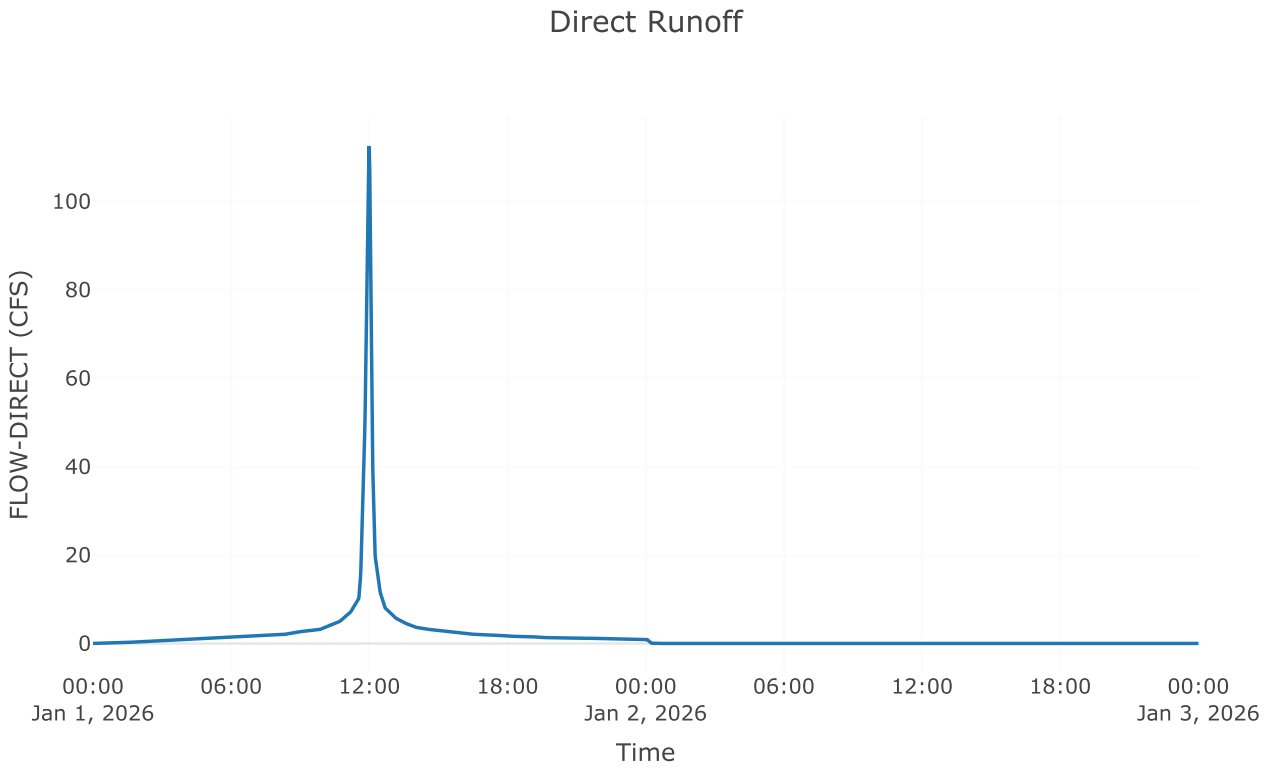
25-Year Event





25-Year Event





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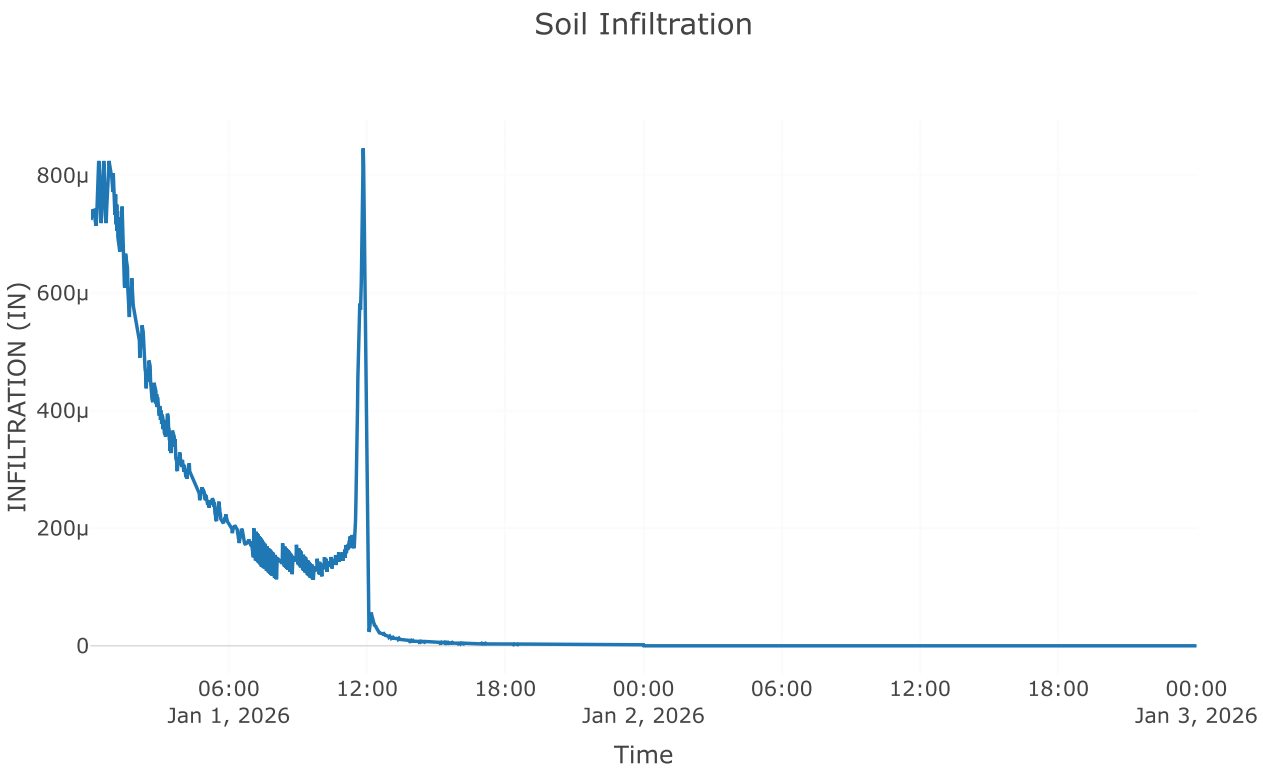
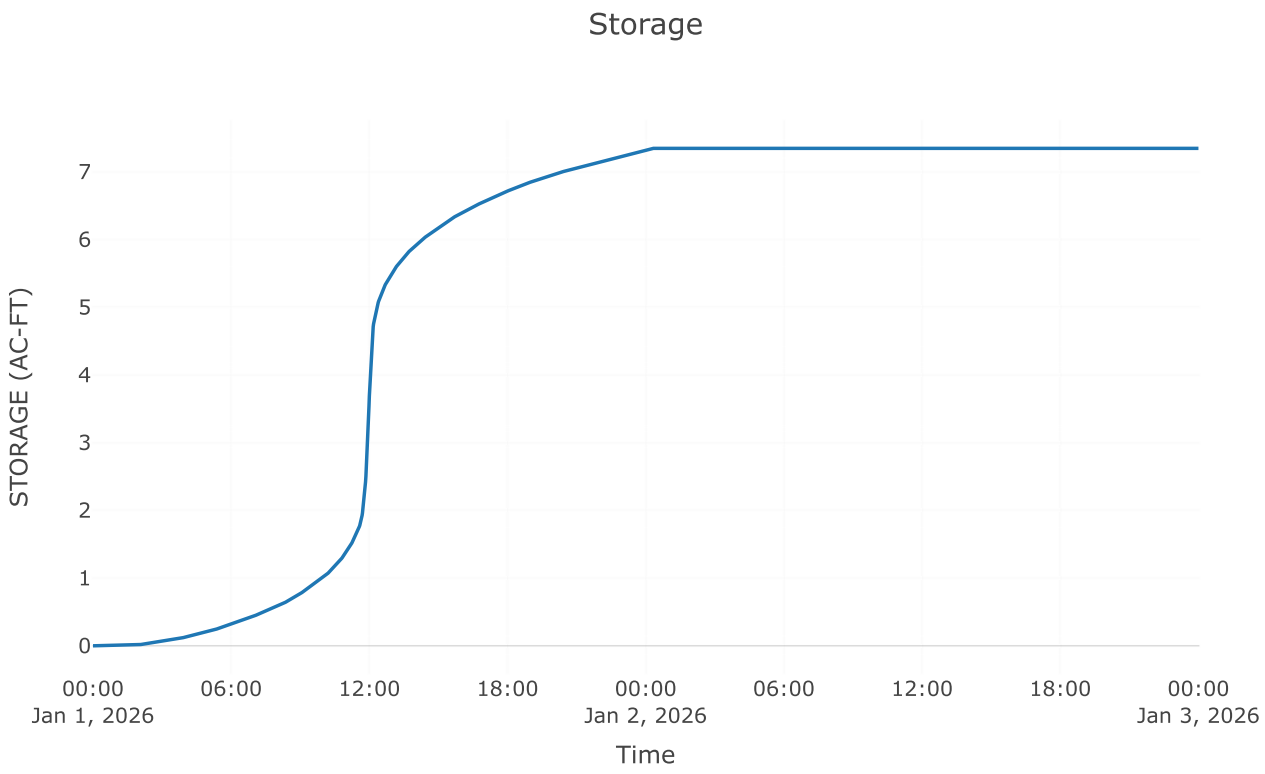


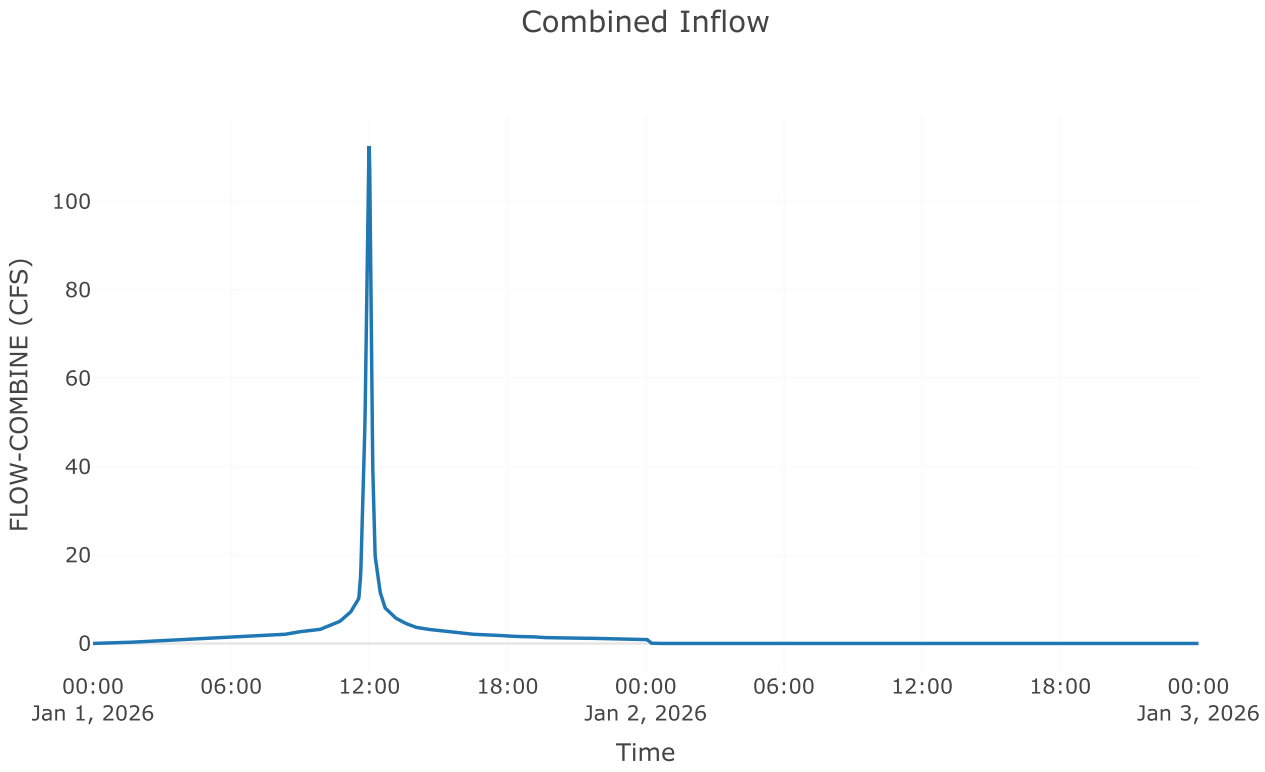
25-Year Event

Reservoir: Former Ash Pond

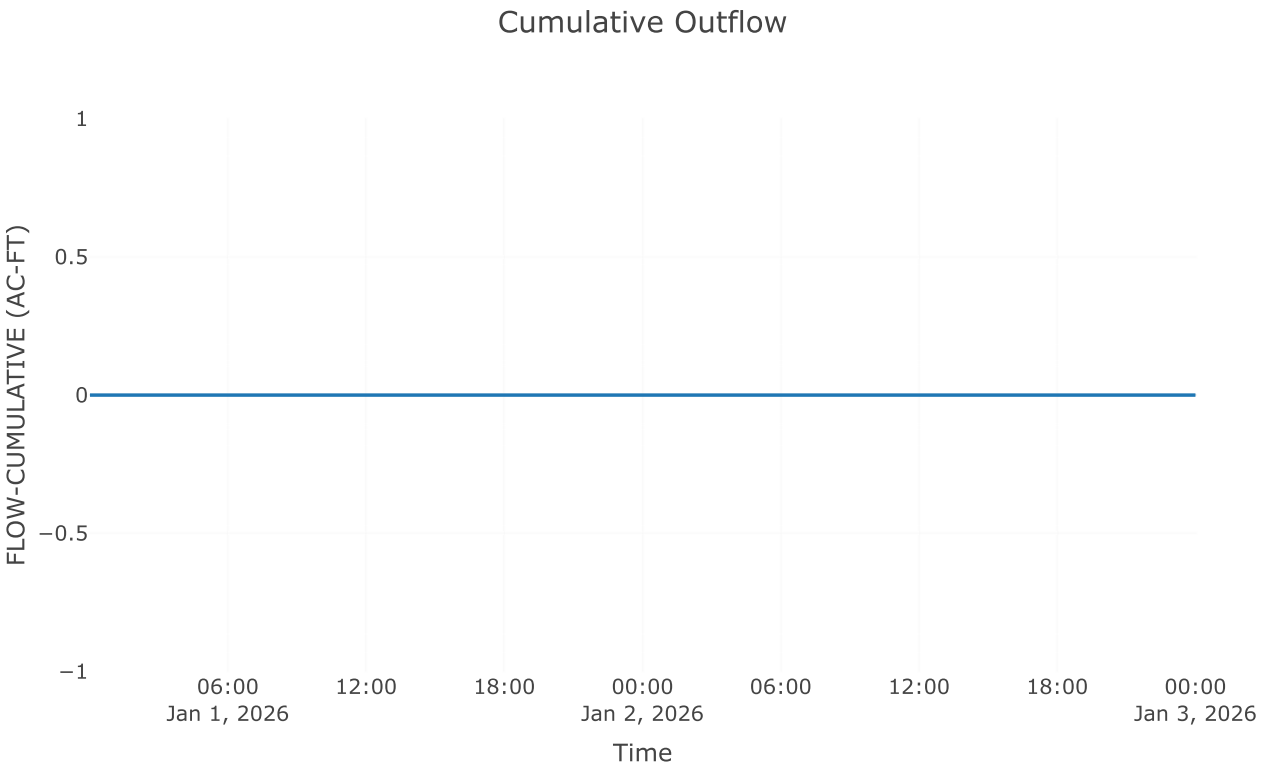
Results: Former Ash Pond	
Peak Discharge (CFS)	0
Time of Peak Discharge	31Dec2025, 24:00
Volume (IN)	0
Peak Inflow (CFS)	112.55
Time of Peak Inflow	01Jan2026, 11:59
Inflow Volume (AC - FT)	7.35
Maximum Storage (AC - FT)	7.35
Peak Elevation (FT)	898.24
Discharge Volume (AC - FT)	0

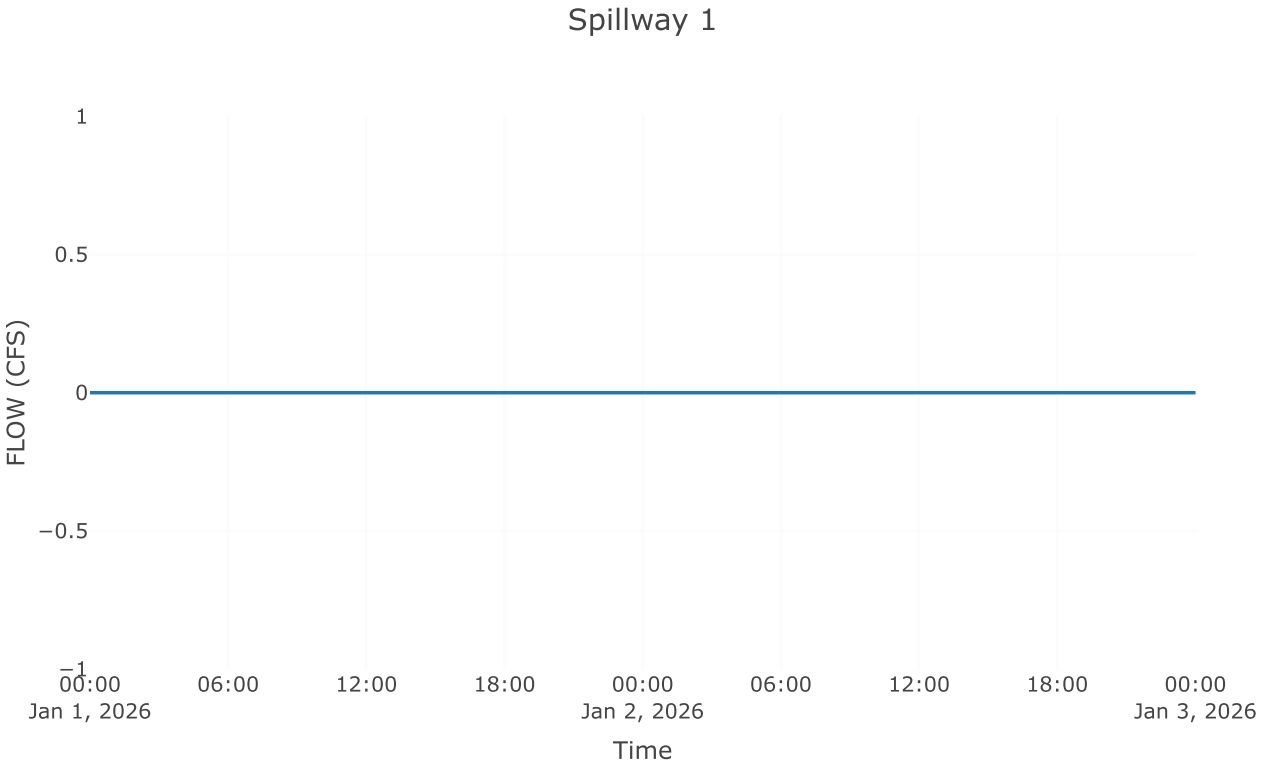
25-Year Event





25-Year Event





25-Year Event