STRUCTURAL STABILITY ASSESSMENT

MORROW CCR IMPOUNDMENT

FORMER MORROW POWER PLANT

KALAMAZOO COUNTY, COMSTOCK TOWNSHIP, MICHIGAN

Prepared for:

Morrow Acquisition Company, LLC
1128 N 2000 W, Suite 100
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Prepared by:

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200 Third Avenue
Carnegie, Pennsylvania 15106

MAY 2026

KEY ENVIRONMENTAL INCORPORATED

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1.0 INTRODUCTION

Morrow Acquisition Company, LLC (MAC) is proposing to perform closure of the Morrow Coal Combustion Residuals (CCR) Impoundment (Impoundment, Site) located southeast and adjacent to the Former Morrow Power Plant (Plant) in Kalamazoo County, Comstock Township, Michigan (Figure 1). The Impoundment is a diked unit, located adjacent to Morrow Lake, and is approximately 61 acres. The Plant was owned and operated by Consumers Power for the duration of its operating history, from 1939 to 1982. The Plant utilized coal in its power generation operation from 1939 to 1969, before converting to oil and natural gas. STS Hydropower, LLC (STS) acquired the Site as part of a hydroelectric project land acquisition around 1983 and currently owns and operates the adjacent Morrow Hydroelectric Project, which is sited at the Morrow Lake Dam, located on the Kalamazoo River. The approximately 56-acre parcel of the Impoundment owned by STS was purchased by AP Jaguar, LLC in January 2026, and MAC assumed the environmental liability for the Impoundment in January 2026. Approximately five (5) acres of the Impoundment are owned by others, as seen on Figure 2.

The U.S. Environmental Protection Agency's (EPA) Code of Federal Regulations (CFR), Part 40, Section §257.100(f) regulates legacy CCR surface impoundments. 40 CFR §257.100(f)(2)(iv) requires that the owner or operator of a legacy CCR surface impoundment complete an initial structural stability assessment as set forth by §257.73(d). The initial structural stability assessment documents whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater that can be impounded therein. This document presents the results of Key Environmental Inc.'s (KEY) initial structural stability assessment for the Morrow CCR Impoundment in accordance with 40 CFR 257.100(f)(2)(iv) by way of 40 CFR §257.73(d).

2.0 DESCRIPTION OF CCR UNIT

The Morrow CCR Impoundment is approximately 61 acres, with approximately 24 acres being inundated by water or swamp, and the remaining acreage being wooded. The Impoundment is generally bounded to the north and east by Morrow Lake, and to the south and west by wooded property owned by STS. Northwest of the property, on a parcel owned by others, are the remnants of the former Morrow Power Plant, including a vacant brick power house and two concrete stacks. A former screenhouse is located immediately east of the powerhouse and is situated on the western edge of Morrow Lake, but is also vacant. Located immediately north of the former substation area, STS is currently operating a hydroelectric generating plant that forms the outlet works for Morrow Lake and discharges to the Kalamazoo River, which then flows west toward the city of Kalamazoo. The hydroplant is situated on Morrow Dam, which is the impounding structure of Morrow Lake.

Review of historical aerial photographs indicates the Impoundment's first stage of construction began with the completion of the Morrow Dam in 1941. The left embankment of the Morrow Dam would eventually form the western berm of the current Impoundment. By 1946, the northern section of the perimeter dike projecting into Morrow Lake was completed, and as of 1972, the dike had been extended to the southeast to connect to the existing raised access road on Morrow Lake's southern shoreline, forming the current boundary of the Impoundment.

Available reports for the Impoundment have indicated the following estimates and observations:

- The depth of impounded water ranges from 0 to 5 feet.
- The thickness of CCR ranges from approximately 0 to 20 ft. The thickness of the material is greatest in the northwest corner of the Impoundment and generally decreases moving in a southeastern direction.
- The volume of impounded CCR is estimated to be approximately 576,000 cubic yards, of which approximately 479,000 cubic yards is believed to be on the 56 acres owned by AP Jaguar, and the remaining 97,000 cubic yards on property owned by others. Additionally, it is estimated that 112,000 cubic yards of CCR were used as fill material to construct the access berm along the north, east, and a portion of the south perimeter of the Impoundment. These estimates are based on limited subsurface data.

3.0 OPERATION, MAINTENANCE, AND INSPECTION

Beginning in November 2024, the former owner of the Impoundment, STS, with their consultant AECOM, began weekly inspections of the unit in accordance with 40 CFR §257.100(f)(3)(iii) and 40 CFR §257.83(a). STS and AECOM prepared a weekly inspection report form, which was completed by a qualified person on a 7-day interval. The typical conditions to be inspected and reviewed included animal burrows, erosion rills, wetness/seepage, slides/scarps/sloughs, depressions/ruts, bulges, misalignments, sink holes, cracks, undermining, vegetation or sediment in riprap, displaced riprap, and any additional observations of note. MAC assumed inspection responsibilities for the Impoundment in March 2026, which are continuing on a weekly basis. Additionally, two (2) annual inspections of the Impoundment were completed by an AECOM Professional Engineer in February 2025 and February 2026. The inspection forms for the Impoundment completed by AECOM that are referenced throughout this report are included as Attachment 1.

MAC continues routine maintenance for the Impoundment, which includes removing felled trees, control of excessive woody and brushy vegetation, repair of erosion and riprap if needed, and backfilling of animal burrows.

4.0 STRUCTURAL STABILITY ASSESSMENT

The following section addresses the requirement of §257.73(d)(1) and provides information and supporting documentation required by §257.73(d)(1)(i) through §257.73(d)(1)(vii), where available, to confirm that the CCR unit has been designed, constructed, operated, and maintained with the following features.

4.1. Stable Foundations and Abutments

§ 257.73 (d)(1)(i) Stable foundations and abutments.

In an effort to obtain relevant data for the Impoundment, MAC requested information from STS; however, no significant records other than those prepared by AECOM and published on the Impoundment's Public CCR website were provided as of the date of this report. AECOM indicated that construction plans related to the Morrow Dam from 1937 show a cross section for the left embankment of the dam, which also serves as the Impoundment's western dike, that indicates the presence of a concrete corewall located on the inboard side of the embankment. Based on a limited subsurface investigation completed by AECOM in 2024, the foundation soils of the Impoundment consist of well-graded to poorly-graded, fine to medium silty sands, which are intermingled with localized beds of lean or fat clays. AECOM also indicated that the perimeter dike surrounding the northern, eastern, and a portion of the southern perimeter of the Impoundment was found to consist of CCR material underlain with soils similar to the Impoundment's foundation soils. The northern and eastern perimeter dike includes a layer of limestone riprap armoring on the outboard side slope, which provides wave action protection from Morrow Lake. A portion of the inboard side slope of the eastern dike also contains limestone riprap armoring. The western dike of the Impoundment consists of fine, poorly-graded sand. The southern dike of the Impoundment consists of a raised access road, and the foundation is comprised of fine, silty sand with traces of coarse sand and fine gravel.

KEY reviewed all available historical information and found no known historical structural instability related to the Morrow CCR Impoundment.

4.2. Adequate Slope Protection

§ 257.73 (d)(1)(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown.

According to AECOM, regulatory documents indicate that in 2011, erosion protection improvements (riprap) were made to the outboard slopes of the northern perimeter dike as well as the inboard and outboard slopes of the eastern perimeter dike of the Impoundment, adjacent to the inundated area of the unit. Construction drawings showing cross-sections of these slope improvements depict a dike crest width of 20 feet with several layers of angular riprap placed over geotextile fabric installed on the 3H:1V side slopes. These cross sections also indicate the normal

operating pool surface elevation of the inundated area of the Impoundment to be Elevation ±775 feet (NAVD 88).

The 2025 and 2026 annual inspection forms completed by AECOM note that the riprap on the dike slopes is in fair condition, and there is no displacement indicated. Both inspection reports also state that there is soil covering the riprap on the outboard slope in the northwest corner of the Impoundment. Based on the photographs, inspection reports, and site personnel information that were provided to KEY, the protection on the dike slopes of the Impoundment appears to generally be in good condition, and it is judged to provide adequate slope protection against surface erosion, wave action, and adverse effects from sudden drawdown of Morrow Lake.

4.3. Mechanical Compaction

§ 257.73 (d)(1)(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;

Review of available historical aerial imagery indicated that at least prior to 1972, CCR was placed directly into Morrow Lake via the power plant's sluicing operations. The northern dike of the current Impoundment is first evident in an aerial photograph from 1941; however, the supplemental aerial images indicate that no other dike or containment feature was constructed until sometime between 1966 and 1972. By the 1972 aerial image, the entirety of the perimeter dike for the Impoundment is constructed.

As stated in Section 4.1, AECOM completed a preliminary subsurface investigation for the Impoundment in 2024 and indicated that the perimeter dike surrounding the northern, eastern, and a portion of the southern perimeter of the Impoundment was found to consist of CCR material. No design drawings or compaction/density data for the construction of the Impoundment dikes are available for review.

KEY reviewed the 2025 and 2026 annual inspection reports for the Impoundment and noted that there was minor rutting on the berm crest from vehicle tires, and in one location, minor channelization of stormwater was observed. No significant signs of structural instability, including slides, scarps, sloughing, unlevel surfaces, misalignment, sink holes, bulges, or cracks, were indicated.

The Impoundment and perimeter dikes do not experience a significant range of loading conditions, as active CCR disposal operations stopped in the unit around 1969, and the dikes have limited vehicle traffic. Additionally, the dikes are adequately protected from the wave action of Morrow Lake by riprap armoring that was placed in 2011. Finally, based on KEY's experience with CCR materials at multiple facilities and considering the dikes have been constructed of CCR at a generally uniform 3H:1V slope, it suggests that adequate compaction was completed during construction to achieve the current uniform and stable grades.

As evidenced by the good structural condition of the Impoundment's perimeter dike and limited loading conditions that it currently experiences, it is concluded that the dikes were constructed to a sufficient density to withstand the applicable loading conditions the Impoundment may experience.

4.4. Slope Vegetation

§ 257.73 (d)(1)(iv) Vegetated slopes of dikes and surrounding areas not to exceed a height of six inches above the slope of the dike, except for slopes which have an alternate form or forms of slope protection;

As indicated in Section 4.2, the northern and eastern perimeter dike includes a layer of limestone riprap armoring on the outboard side slope, which provides wave action protection from Morrow Lake. A portion of the inboard side slope of the eastern dike also contains limestone riprap armoring, adjacent to the limited area of standing water within the Impoundment. KEY reviewed the Impoundment inspection checklists completed in February 2025 and 2026 by AECOM. The inspection checklists noted that vegetation greater than 2 inches in diameter and 6 inches in height was observed on the inboard and outboard slopes of the perimeter dike. It was specifically stated that "several small trees and tall grasses were observed on both the inboard and outboard slopes of the perimeter dike along the north and east sides of the CCR Unit, where bordering open water. While not a significant concern at present, the trees should be cut down to prevent potential future issues caused by large/woody root systems, and the grasses should be mowed somewhat regularly to allow better inspection of the slopes."

It should be noted that following acquisition of the Impoundment in January 2026, MAC began removing excessive woody vegetation from the inboard and outboard slopes of the perimeter dike as part of routine maintenance operations.

4.5. Spillway Capacity

§ 257.73 (d)(1)(v) A single spillway or a combination of spillways configured as specified in paragraph (d)(1)(v)(a) of this section. The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in paragraph (d)(1)(v)(B) of this section.

4.5.1 § 257.73 (d)(1)(v)(A) All spillways must be either: (1) Of non-erodible construction and designed to carry sustained flows; or (2) Earth- or grass-lined and designed to carry short-term, infrequent flows at non-erosive velocities where sustained flows are not expected.

The existing hydraulic outlet structure for the Impoundment is located in the southeastern corner and is comprised of a riser structure and outlet pipe that discharges flow through the perimeter dike to Morrow Lake. No known historical design drawings or original design hydraulic calculations are available for this structure. Reports from AECOM indicate that the outlet is 4 feet

in diameter. Photographs of the structure indicate that the riser and trash guard are constructed of metal.

The 2025 and 2026 annual inspection reports prepared by AECOM indicate that concrete slope protection exists on the inboard slope of the Impoundment's perimeter dike between the outlet structure and access road. Both reports also indicate that the concrete is deteriorating and vegetative debris has built up around the trash guard/riser structure; however, the condition does not appear to pose any immediate issue. The inspection reports also note that riprap and concrete slope armoring exist at the outlet end of the hydraulic outlet, on the outboard slope of the Impoundment's perimeter dike. The reports state that the riprap and concrete are in fair condition. Further discussion regarding the outlet's ability to carry sustained flows is provided below in Section 4.5.2.

4.5.2 § 257.73 (d)(1)(v)(B) The combined capacity of all spillways must adequately manage flow during and following the peak discharge from a: (1) Probable maximum flood (PMF) for a high hazard potential CCR surface impoundment; or (2) 1000-year flood for a significant hazard potential CCR surface impoundment; or (3) 100-year flood for a low hazard potential CCR surface impoundment.

As stated in the Initial Hazard Classification Report (KEY, 2026), the Impoundment is classified as a Significant Hazard Potential unit as defined in 40 CFR §257.53. Therefore, the combined capacity of the outlet structure spillway must adequately manage flow from the 1000-year flood. KEY completed a hydraulic analysis of the outlet structure utilizing the HydroCAD stormwater modeling software. The outlet structure was modeled to be 4 feet in diameter, as indicated in the History of Construction report, and it was assumed to be constructed of a cast iron material. The outlet structure was conservatively modeled to have a nearly flat slope of approximately 0.1%. The assigned initial operating pool level, both within the Morrow CCR Impoundment and Morrow Lake, was Elevation ±775 feet. The stage storage available within the Impoundment was calculated using computer-aided drafting (CAD) software with the base comparison surface developed from a drone survey of the Impoundment completed in September 2025. The 24-hour, 1000-year design storm event was modeled using a rainfall depth of 9.06 inches.

The HydroCAD stormwater model indicated that the elevation of water within the Impoundment would increase to approximately Elevation ±778.0 feet, which is 2.0 feet below the perimeter dike crest at Elevation ±780 feet. Therefore, the outlet structure of the Impoundment can adequately manage the flow from the 1000-year flood without overtopping the perimeter dike crest. The HydroCAD report for this analysis can be found as Attachment 2.

4.6. Hydraulic Structure Integrity

§ 257.73 (d)(1)(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant

deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure.

As stated in Section 4.5.1, the existing hydraulic structure for the Impoundment is comprised of a riser structure and outlet pipe that passes through the southeast perimeter dike to Morrow Lake. No known historical design drawings are available for this structure; however, as previously stated, reports from AECOM indicate that the outlet is 4 feet in diameter. Photographs of the structure indicate that the riser and trash rack are constructed of metal.

The 2025 and 2026 annual inspection reports for the Impoundment indicate that the riser and trash guard were observed to have corrosion and debris buildup (i.e., vegetation), which made a thorough inspection of the features difficult. It should be noted that following acquisition of the Impoundment in January 2026, MAC personnel cleared the vegetation and debris at the trash guard and outlet structure as part of routine maintenance operations. There was no issue, such as deformation or deterioration, noted regarding the conduit through the dike during either inspection.

4.7. Downstream Slope Stability

§ 257.73 (d)(1)(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.

The Impoundment is adjacent to Morrow Lake on the northern and eastern sides. The pool elevation of Morrow Lake varies with the operation of the hydroelectric dam; however, survey information and historical documents indicate the normal pool elevation to be typically Elevation ±775 feet. The 500-year base flood elevation of Morrow Lake, according to Federal Emergency Management Agency (FEMA) mapping, is Elevation ±779 feet.

To account for the unlikely event of a sudden drawdown occurrence for Morrow Lake, a representative rapid drawdown stability analysis was performed for the Impoundment to simulate the potential impact on the northern dike of the unit. For the unit to maintain its structural stability, a factor of safety greater than 1.0 must be achieved which indicates that available shear resistance exceeds that required for equilibrium (USACE, 2003).

In this analysis, it was conservatively assumed that the Morrow Lake elevation was ±779 feet when the rapid drawdown event occurred. Using this conservative assumption, the calculated rapid drawdown factor of safety for the Impoundment is 1.06 which suggests the unit would maintain its structural stability under this condition. The rapid drawdown analysis result is included as Attachment 3.

MAC recently assumed the environmental liability for the Impoundment, and to facilitate closure of the Impoundment, a comprehensive pre-design investigation and geotechnical testing program

will be completed in 2026 to collect and analyze CCR and soil materials for physical and chemical properties. Based on the limited information available at this time, KEY assigned material properties using industry literature and professional judgment in the rapid drawdown analysis. Further discussion regarding material property determination is provided in the Safety Factor Assessment report prepared by KEY in May 2026.

5.0 CERTIFICATION

Pursuant to 40 CFR §257.73 (d)(1) of The Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule, the owner or operator of a CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. Per the requirements of 40 CFR §257.73(d)(3), the owner or operator must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section. In accordance therewith, this certification is provided to document that the initial structural stability assessment for the above-referenced CCR unit meets the requirements of 40 CFR §257.73(d)(1) by way of 40 CFR 257.100(f)(2)(iv).

5.1. LIMITATIONS

The signature of Consultant's authorized representative on this document represents that, to the best of Consultant's knowledge, information, and belief in the exercise of its professional judgment, it is Consultant's professional opinion that the aforementioned information is accurate as of the date of such signature. Any opinion or decisions by Consultant are made on the basis of Consultant's experience, qualifications, and professional judgment and are not to be construed as warranties or guaranties. Opinions relating to environmental, geologic, and geotechnical conditions or other estimates are based on available data, and actual conditions may vary from those encountered at the times and locations where data are obtained, despite the use of due care.

5.2. CONSULTANT'S CERTIFICATION

I, Mark Keck, being a Registered Professional Engineer in good standing in the State of Michigan, do hereby certify that, to the best of my knowledge, information, and belief, that the information contained in this certification is prepared in accordance with the accepted practice of engineering; that the information contained herein is accurate as of the date of my signature below.

Mark Keck 5-8-26

Mark Keck, P.E.
Project Manager
Michigan Professional Engineer #6201316553

6.0 REFERENCES

AECOM, 2025. CCR Rule 2025 Annual Inspection Report. Morrow Hydroelectric Project, Morrow CCR Impoundment, STS Hydropower, LLC. 40 CFR 257.83(b). February 6.

AECOM, 2026a. CCR Rule 2026 Annual Inspection Report. Morrow Hydroelectric Project, Morrow CCR Impoundment, STS Hydropower, LLC. 40 CFR 257.83(b). February 6.

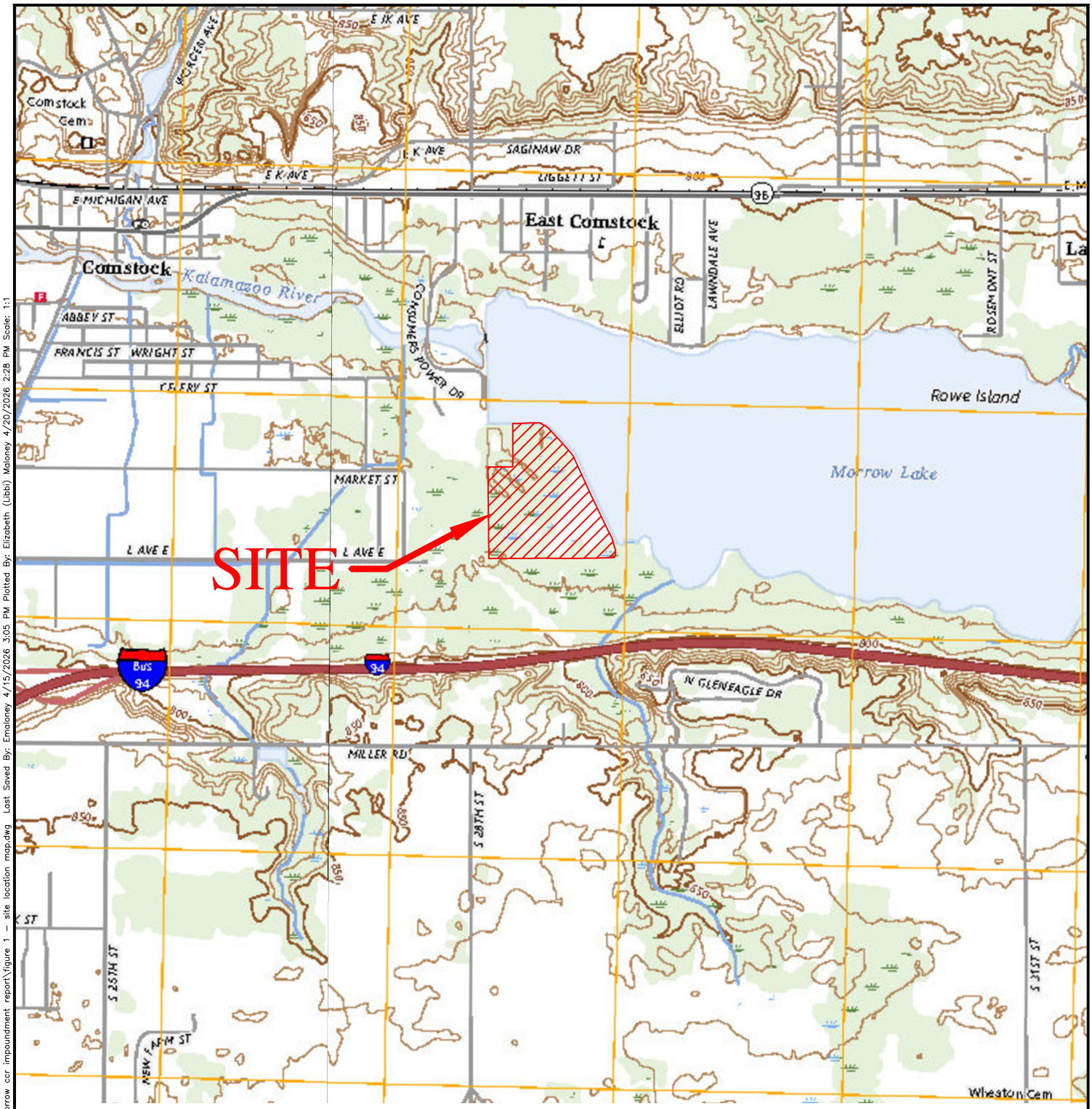
AECOM, 2026b. CCR Rule History of Construction Report. Morrow CCR Impoundment, STS Hydropower, LLC. 40 CFR 257.73(c)(1). February 9.

Key Environmental, Inc. (KEY), 2026. Initial Hazard Classification Report, Morrow CCR Impoundment. Former Morrow Power Plant, Kalamazoo County, Comstock Township, Michigan. Prepared for Morrow Acquisition Company, LLC, May.

Seequent, 2024. GeoStudio (including SLOPE/W) (Version 2024.2) [Computer software].

U.S. Army Corps of Engineers (USACE), 2003. Slope Stability (Engineer Manual No. EM 1110-2-1902). Washington, DC: Department of the Army.

FIGURES



N

MICHIGAN

QUADRANGLE LOCATION

0 2000 4000 FEET

MORROW ACQUISITION COMPANY, LLC

DRWN: ERM	DATE: 04/20/26	KEY ENVIRONMENTAL INCORPORATED
CHKD: JDP	DATE: 04/20/26	
APPD: MRK	DATE: 05/08/26	
SCALE:	1" = 2000'	

MORROW CCR IMPOUNDMENT
KALAMAZOO COUNTY, COMSTOCK TOWNSHIP, MICHIGAN

REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE:
– GALESBURG AND KALAMAZOO, MI, 2023

ISSUE DATE: 05/08/26

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

SITE LOCATION MAP

PROJECT NO: 25-098

FIGURE 1

y:\00civil\do\morrow impoundment\production drawings\0_misc\morrow ccr impoundment report\figure 1 – site location map.dwg Last Saved By: Emaloney 4/15/2026 3:05 PM Plotted By: Elizabeth (Libbi) Maloney 4/20/2026 2:28 PM Scale: 1:1

0 300 600 FEET

LEGEND

EXISTING IMPOUNDMENT BOUNDARY (APPROX.)

EXISTING PROPERTY LINE

ESTIMATED OUTLINE OF NON-MAC OWNED AREA OF THE IMPOUNDMENT

REFERENCE: USGS 7.5 MINUTE TOPOGRAPHIC QUADRANGLE:
– GALESBURG AND KALAMAZOO, MI, 2023

ISSUE DATE: 05/08/26

KEY ENVIRONMENTAL, INC.
200 THIRD AVENUE
CARNEGIE, PA 15106

MORROW ACQUISITION COMPANY, LLC

DRWN: ERM	DATE: 04/20/26
CHKD: JDP	DATE: 04/20/26
APPD: MRK	DATE: 05/08/26
SCALE:	1" = 300'

KEY ENVIRONMENTAL INCORPORATED

MORROW CCR IMPOUNDMENT
KALAMAZOO COUNTY, COMSTOCK TOWNSHIP, MICHIGAN

EXISTING CONDITIONS PLAN

PROJECT NO: 25-098

FIGURE 2

y:\00civil\da\morrow impoundment\production drawings\0_misc\morrow ccr impoundment report\figure 2 – ex cond plan.dwg Last Saved By: Mkeck 4/22/2026 10:56 AM Plotted By: Mark Keck 4/22/2026 10:57 AM Scale: 1:1

ATTACHMENT 1

CCR ANNUAL INSPECTION REPORTS

2025 & 2026

Attachment:
STS Morrow CCR Impoundment – Annual Inspection Form

STS Morrow CCR Impoundment – Annual Inspection Form

Station/Owner: Morrow CCR Impoundment / STS Hydropower, LLC		County, State: Kalamazoo, Michigan
Date of Last Inspection: NA – Initial Annual Inspection		Date of Current Inspection: 12/10/2024
Inspected By (Name/Company): Andrew Rodzianko, PE (AECOM)	Signature:	Phone: (440) 785-5658 Email: andrew.rodzianko@aecom.com
Weather ☒ Dry ☐ Wet ☐ Snow ☐ Other: Overcast	Temperature: 40° F	Recent precipitation: 0.25" in past 7 days

Perimeter Inspection

§257.83 (b) (1) (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures.

Inspection Criteria (Condition Observations)	Outboard Slope (Y/N*)	Crest (Y/N*)	Inboard Slope (Y/N*)	*If yes, additional comment required and mark location on Figure 1.
Vegetation >2" Diameter	Y	N	Y	See Comments/Action Items #1 below
Vegetation >6" Height	Y	N	Y	See Comments/Action Items #1 below
Animal Burrows/Disturbance	N	Y	Y	Minor/surficial disturbance
Erosion Rill	N	N	N	
Wetness/Seepage	Y	Y	Y	See Comments/Action Items #2 below
Slides/Scarps/Sloughing	N	N	N	
Depressions/Ruts	Y	Y	Y	See Comments/Action Items #3 below
Unlevel Surfaces	N	N	N	
Misalignment	N	N	N	
Sink Holes	N	N	N	
Bulges	N	N	N	
Cracks (Tension/Desiccation)	N	N	N	
Undermining (Wave Action)	N	N	N	
Vegetation or Sediment in Riprap	Y	N	N	Soil covering riprap on outboard slope in NW corner (see Figure 1 and Photo 2)
Displaced Riprap	N	N	N	
Additional Observations	N	N	Y	Deteriorating concrete along slope between outlet structure and perimeter road, see Comments/Action Items #4 below

Comments/Action Items:

1. Several small trees and tall grasses were observed on both the inboard and outboard slopes of the perimeter dike along the north and east sides of the CCR Unit where bordering open water (see Photos 3-5). While not a significant concern at present, the trees should be cut down to prevent potential future issues caused by large/woody root systems and the grasses should be mowed somewhat regularly to allow better inspection of the slopes.
2. Wetness observed throughout the site due to it being wet season and recent wet weather, however noted one specific location (see Figure 1 and Photo 11) where water was observed flowing across the perimeter road from a swampy area (south) and into the CCR Unit (north). Some channelization observed but no significant erosion otherwise. Continue to observe and consider future project, however no action recommended at this time.
3. Depressions/ruts (see Photos 11-12) caused by vehicle tire tracks in multiple locations around perimeter, particularly along south and west perimeter, and by water flowing across road as noted above, the latter may also be a result of animal activity. Periodic maintenance of roadway recommended.
4. Deteriorating/cracking concrete (see Figure 1 and Photo 7) along inboard slope adjacent to the outlet structure does not appear to pose any immediate issue, however this area should continue to be monitored.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

STS Morrow CCR Impoundment – Annual Inspection Form

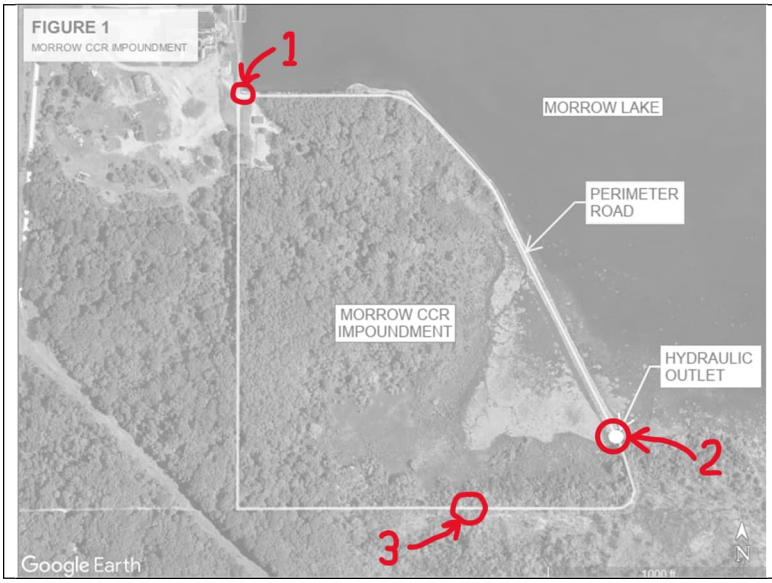
Outlet Structure *§257.83 (b) (1) (iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.*		
Inspection Criteria (Condition Observations)	Issue Observed (Y/N*)	*If yes, additional comment required.
Differential Water Levels (>1 ft) Between Impoundment and Lake	N	see Comments/Action Items #1 below
Abnormal Discoloration of Lake Water at Outlet Discharge	N	
Abnormal Flow at Discharge	N	
Abnormal Debris/Obstruction or Sediment	Y	Buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake, see Comments/Action Items #2 below
Trash Guard	Y	Corrosion and debris buildup observed
Riser Structure	Y	Corrosion and debris buildup observed
Conduit through Dike	N	
Additional Observations	N	

Comments/Action Items:

1. Water levels between the CCR Unit and Morrow Lake are in relative equilibrium with little to no flow observed passing through the outlet structure. This is understood to be the normal condition.
2. Debris buildup (see Figure 1 and Photos 6-7 and 9) at both the inlet and outlet ends of the outlet structure should be cleared regularly to remove obstructions to flow and allow for better inspections.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

Are there any other abnormal conditions at the Impoundment that could pose a risk to public health, safety or welfare, the environment or natural resources? ☐ Yes ☒ No



Additional Comments:

1. Soil covering riprap on outboard slope in NW corner
2. Hydraulic Outlet: buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake and deteriorating concrete along slope between structure and perimeter road.
3. Water observed flowing across the perimeter road and into the CCR Unit.

Attachment:
STS Morrow CCR Impoundment – Annual Inspection Form

STS Morrow CCR Impoundment – Annual Inspection Form

Station/Owner: Morrow CCR Impoundment / STS Hydropower, LLC		County, State: Kalamazoo, Michigan
Date of Last Inspection: 12/10/2024		Date of Current Inspection: 11/10/2025
Inspected By (Name/Company): Jared Taylor, PE (AECOM)	Signature:	Phone: (330) 360-3111 Email: jared.taylor@aecom.com
Weather ☐ Dry ☒ Wet ☒ Snow ☐ Other: Overcast	Temperature: 27° F	Recent precipitation: 0.64" in past 7 days

Perimeter Inspection

§257.83 (b) (1) (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures.

Inspection Criteria (Condition Observations)	Outboard Slope (Y/N*)	Crest (Y/N*)	Inboard Slope (Y/N*)	*If yes, additional comment required and mark location on Figure 1.
Vegetation >2" Diameter	Y	N	Y	
Vegetation >6" Height	Y	N	Y	
Animal Burrows/Disturbance	N	Y	N	
Erosion Rill	N	N	N	
Wetness/Seepage	Y	Y	Y	
Slides/Scarps/Sloughing	N	N	N	
Depressions/Ruts	Y	Y	Y	
Unlevel Surfaces	N	Y	N	
Misalignment	N	N	N	
Sink Holes	N	N	N	
Bulges	N	N	N	
Cracks (Tension/Desiccation)	N	N	N	
Undermining (Wave Action)	N	N	N	
Vegetation or Sediment in Riprap	Y	N	N	Soil observed covering riprap on outboard slope located at NW corner of the (See Photo 1)
Displaced Riprap	N	N	N	
Additional Observations	N	N	Y	Deteriorating concrete along slope between outlet structure and perimeter road, see Comments/Action Items #4 below.

Comments/Action Items:

1. A number of small trees and shrubs were observed on both the inboard and outboard slopes of the perimeter dike along the north and east sides of the CCR Unit bordering open water (see Photos 2-5). While not a significant concern at present, the trees should be cut down to prevent potential future issues caused by large/woody root systems and any grasses/reeds growing on slopes should continue to be maintained somewhat regularly to allow better inspection of the slopes.
2. Wetness observed throughout the site due to it being wet season and recent wet/snowy weather, however noted one specific location (see Figure 1 and Photo 11) where water was observed ponding on perimeter road. This implies the possibility of water to flow across the perimeter road from a swampy area (south) into the CCR Unit (north) under suitable conditions. Some channelization observed but no significant erosion otherwise. Continue to observe and consider future repair project, however no action recommended at this time.
3. Depressions/ruts (see Photos 11-12) caused by vehicle tire tracks in multiple locations around perimeter, particularly along south and west perimeter, and by water flowing across road as noted above, the latter may also be a result of animal activity. Periodic maintenance of roadway recommended.
4. Deteriorating/cracking concrete (see Figure 1 and Photo 7) along inboard slope adjacent to the outlet structure does not appear to pose any immediate issue, however this area should continue to be monitored.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

STS Morrow CCR Impoundment – Annual Inspection Form

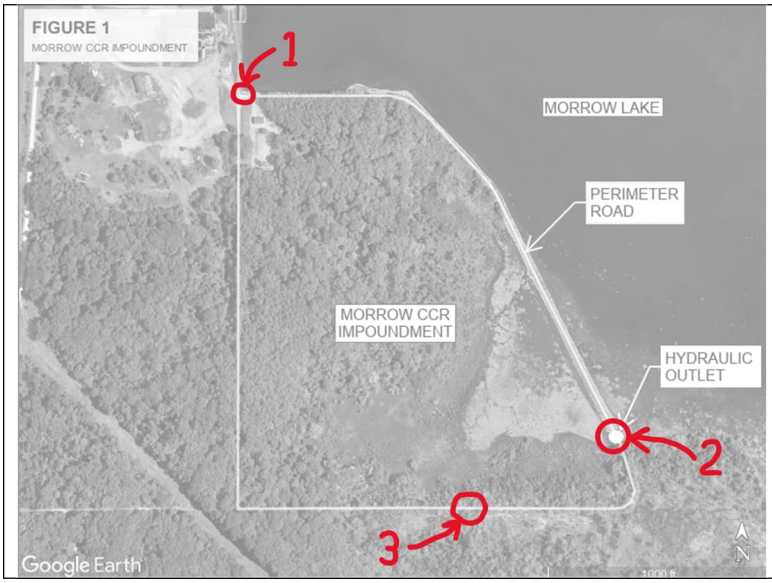
Outlet Structure *§257.83 (b) (1) (iii) A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.*		
Inspection Criteria (Condition Observations)	Issue Observed (Y/N*)	*If yes, additional comment required.
Differential Water Levels (>1 ft) Between Impoundment and Lake	N	see Comments/Action Items #1 below
Abnormal Discoloration of Lake Water at Outlet Discharge	N	
Abnormal Flow at Discharge	N	
Abnormal Debris/Obstruction or Sediment	Y	Buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake, see Comments/Action Items #2 below
Trash Guard	Y	Corrosion and debris buildup observed
Riser Structure	Y	Corrosion and debris buildup observed
Conduit through Dike	N	
Additional Observations	N	

Comments/Action Items:

1. Water levels between the CCR Unit and Morrow Lake are in relative equilibrium with little to no flow observed passing through the outlet structure. This is understood to be the normal condition.
2. Debris buildup (see Figure 1 and Photos 7, 8, and 9) at both the inlet and outlet ends of the outlet structure should be cleared regularly to remove obstructions to flow and allow for better inspections.

Actions ☐ None/No New Action ☒ Monitoring ☒ Minor Repair ☐ Major Repair/Engineering

Are there any other abnormal conditions at the Impoundment that could pose a risk to public health, safety or welfare, the environment or natural resources? ☐ Yes ☒ No



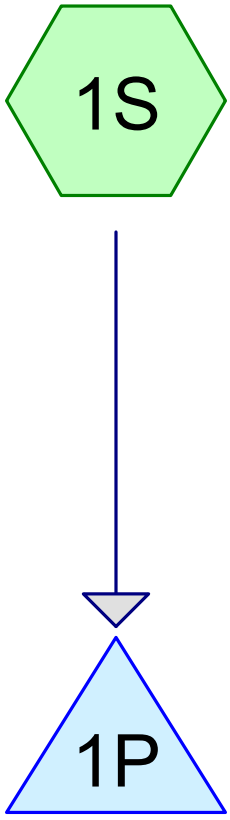
Additional Comments:

1. Soil covering riprap on outboard slope in NW corner
2. Hydraulic Outlet: buildup of vegetative debris around trash guard/riser structure and in outlet channel to lake and deteriorating concrete along slope between structure and perimeter road.
3. Water observed ponding on perimeter road. Condition implies possibility of flow across the perimeter road and into the CCR Unit under suitable conditions.

ATTACHMENT 2

HYDROCAD REPORT

Morrow Impoundment



Subcat Reach Pond Link

Routing Diagram for Morrow Impoundment Model
Prepared by Key Environmental, Inc4, Printed 4/22/2026

Summary for Subcatchment 1S:

Runoff = 712.77 cfs @ 11.97 hrs, Volume= 1,557,796 cf, Depth= 6.82"
Routed to Pond 1P :

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-210.00 hrs, dt= 0.01 hrs
Type II 24-hr 1000-Year Rainfall=9.06"

Area (sf)	CN	Description
373,520	98	Water Surface, HSG D
2,368,463	79	Woods, Fair, HSG D
2,741,983		Weighted Average
2,368,463		86.38% Pervious Area
373,520		13.62% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, Rainwater falling directly on the pond surface**

Hydrograph for Subcatchment 1S:

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
5.00	0.57	0.01	1.29
10.00	1.64	0.42	**12.41**
15.00	7.73	5.61	**16.51**
20.00	**8.63**	**6.46**	7.20
25.00	**9.06**	**6.87**	0.00
30.00	9.06	6.87	0.00
35.00	9.06	6.87	0.00
40.00	9.06	6.87	0.00
45.00	9.06	6.87	0.00
50.00	9.06	6.87	0.00
55.00	9.06	6.87	0.00
60.00	9.06	6.87	0.00
65.00	9.06	6.87	0.00
70.00	9.06	6.87	0.00
75.00	9.06	6.87	0.00
80.00	9.06	6.87	0.00
85.00	9.06	6.87	0.00
90.00	9.06	6.87	0.00
95.00	9.06	6.87	0.00
100.00	9.06	6.87	0.00
105.00	9.06	6.87	0.00
110.00	9.06	6.87	0.00
115.00	9.06	6.87	0.00
120.00	9.06	6.87	0.00
125.00	9.06	6.87	0.00
130.00	9.06	6.87	0.00
135.00	9.06	6.87	0.00
140.00	9.06	6.87	0.00
145.00	9.06	6.87	0.00
150.00	9.06	6.87	0.00
155.00	9.06	6.87	0.00
160.00	9.06	6.87	0.00
165.00	9.06	6.87	0.00
170.00	9.06	6.87	0.00
175.00	9.06	6.87	0.00
180.00	9.06	6.87	0.00
185.00	9.06	6.87	0.00
190.00	9.06	6.87	0.00
195.00	9.06	6.87	0.00
200.00	9.06	6.87	0.00
205.00	9.06	6.87	0.00
210.00	9.06	6.87	0.00

Summary for Pond 1P:

Inflow Area = 2,741,983 sf, 13.62% Impervious, Inflow Depth = 6.82" for 1000-Year event
Inflow = 712.77 cfs @ 11.97 hrs, Volume= 1,557,796 cf
Outflow = 82.24 cfs @ 12.29 hrs, Volume= 1,431,706 cf, Atten= 88%, Lag= 19.3 min
Primary = 82.24 cfs @ 12.29 hrs, Volume= 1,431,706 cf
Routed to nonexistent node 2L

Routing by Stor-Ind method, Time Span= 0.00-210.00 hrs, dt= 0.01 hrs
Peak Elev= 777.96' @ 12.29 hrs Storage= 836,359 cf

Plug-Flow detention time= 245.2 min calculated for 1,431,638 cf (92% of inflow)
Center-of-Mass det. time= 201.6 min (988.1 - 786.5)

Volume	Invert	Avail.Storage	Storage Description
#1	775.00'	3,857,625 cf	**Custom Stage Data** Listed below

Elevation (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
775.00	0	0
776.00	126,090	126,090
777.00	348,246	474,336
778.00	375,543	849,879
779.00	1,433,538	2,283,417
780.00	1,574,208	3,857,625

Device	Routing	Invert	Outlet Devices
#1	Primary	772.10'	**48.0" Round Culvert** L= 80.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 772.10' / 772.00' S= 0.0013 '/' Cc= 0.900 n= 0.013 Cast iron, coated, Flow Area= 12.57 sf
#2	Device 1	776.00'	**48.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=82.24 cfs @ 12.29 hrs HW=777.96' TW=775.00' (Fixed TW Elev= 775.00')
↑—**1=Culvert** (Inlet Controls 82.24 cfs @ 6.54 fps)
↑—**2=Orifice/Grate** (Passes 82.24 cfs of 84.80 cfs potential flow)

Hydrograph for Pond 1P:

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Primary (cfs)
0.00	0.00	0	775.00	0.00
5.00	1.29	11,579	775.09	0.00
10.00	**12.41**	**104,270**	**775.83**	**0.00**
15.00	**16.51**	**476,274**	**777.01**	**41.41**
20.00	7.20	280,029	776.44	12.08
25.00	0.00	217,703	776.26	5.56
30.00	0.00	164,293	776.11	1.51
35.00	0.00	146,675	776.06	0.61
40.00	0.00	138,764	776.04	0.33
45.00	0.00	133,972	776.02	0.21
50.00	0.00	130,992	776.01	0.13
55.00	0.00	129,139	776.01	0.08
60.00	0.00	127,986	776.01	0.05
65.00	0.00	127,269	776.00	0.03
70.00	0.00	126,823	776.00	0.02
75.00	0.00	126,546	776.00	0.01
80.00	0.00	126,374	776.00	0.01
85.00	0.00	126,266	776.00	0.00
90.00	0.00	126,200	776.00	0.00
95.00	0.00	126,158	776.00	0.00
100.00	0.00	126,132	776.00	0.00
105.00	0.00	126,116	776.00	0.00
110.00	0.00	126,106	776.00	0.00
115.00	0.00	126,100	776.00	0.00
120.00	0.00	126,096	776.00	0.00
125.00	0.00	126,094	776.00	0.00
130.00	0.00	126,092	776.00	0.00
135.00	0.00	126,092	776.00	0.00
140.00	0.00	126,091	776.00	0.00
145.00	0.00	126,091	776.00	0.00
150.00	0.00	126,090	776.00	0.00
155.00	0.00	126,090	776.00	0.00
160.00	0.00	126,090	776.00	0.00
165.00	0.00	126,090	776.00	0.00
170.00	0.00	126,090	776.00	0.00
175.00	0.00	126,090	776.00	0.00
180.00	0.00	126,090	776.00	0.00
185.00	0.00	126,090	776.00	0.00
190.00	0.00	126,090	776.00	0.00
195.00	0.00	126,090	776.00	0.00
200.00	0.00	126,090	776.00	0.00
205.00	0.00	126,090	776.00	0.00
210.00	0.00	126,090	776.00	0.00

Stage-Discharge for Pond 1P:

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
775.00	0.00	777.60	76.54
775.05	0.00	777.65	77.72
775.10	0.00	777.70	78.49
775.15	0.00	777.75	79.22
775.20	0.00	777.80	79.93
775.25	0.00	777.85	80.64
775.30	0.00	777.90	81.35
775.35	0.00	777.95	82.05
775.40	0.00	778.00	82.74
775.45	0.00	778.05	83.42
775.50	0.00	778.10	84.11
775.55	0.00	778.15	84.78
775.60	0.00	778.20	85.45
775.65	0.00	778.25	86.12
775.70	0.00	778.30	86.78
775.75	0.00	778.35	87.43
775.80	0.00	778.40	88.08
775.85	0.00	778.45	88.73
775.90	0.00	778.50	89.37
775.95	0.00	778.55	90.00
776.00	0.00	778.60	90.63
776.05	0.46	778.65	91.26
776.10	1.30	778.70	91.88
776.15	2.39	778.75	92.50
776.20	3.68	778.80	93.12
776.25	5.14	778.85	93.73
776.30	6.75	778.90	94.34
776.35	8.51	778.95	94.94
776.40	10.40	779.00	95.54
776.45	12.40	779.05	96.13
776.50	14.53	779.10	96.72
776.55	16.76	779.15	97.31
776.60	19.10	779.20	97.90
776.65	21.53	779.25	98.48
776.70	24.07	779.30	99.05
776.75	26.69	779.35	99.63
776.80	29.40	779.40	100.20
776.85	32.20	779.45	100.77
776.90	35.08	779.50	101.33
776.95	38.05	779.55	101.89
777.00	41.09	779.60	102.45
777.05	44.21	779.65	103.01
777.10	47.41	779.70	103.56
777.15	50.68	779.75	104.11
777.20	54.02	779.80	104.66
777.25	57.43	779.85	105.20
777.30	60.91	779.90	105.74
777.35	64.46	779.95	106.28
777.40	68.07	780.00	**106.81**
777.45	71.75		
777.50	74.11		
777.55	75.33		

Stage-Area-Storage for Pond 1P:

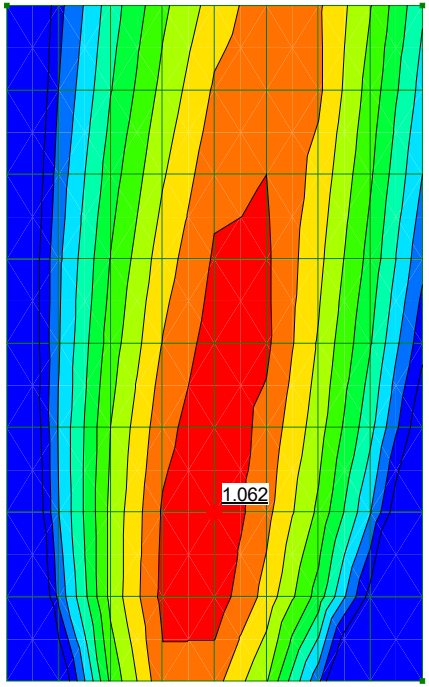
Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
775.00	0	777.60	699,662
775.05	6,304	777.65	718,439
775.10	12,609	777.70	737,216
775.15	18,913	777.75	755,993
775.20	25,218	777.80	774,770
775.25	31,523	777.85	793,548
775.30	37,827	777.90	812,325
775.35	44,132	777.95	831,102
775.40	50,436	778.00	849,879
775.45	56,741	778.05	921,556
775.50	63,045	778.10	993,233
775.55	69,349	778.15	1,064,910
775.60	75,654	778.20	1,136,587
775.65	81,958	778.25	1,208,264
775.70	88,263	778.30	1,279,940
775.75	94,568	778.35	1,351,617
775.80	100,872	778.40	1,423,294
775.85	107,177	778.45	1,494,971
775.90	113,481	778.50	1,566,648
775.95	119,786	778.55	1,638,325
776.00	126,090	778.60	1,710,002
776.05	143,502	778.65	1,781,679
776.10	160,915	778.70	1,853,356
776.15	178,327	778.75	1,925,033
776.20	195,739	778.80	1,996,709
776.25	213,152	778.85	2,068,386
776.30	230,564	778.90	2,140,063
776.35	247,976	778.95	2,211,740
776.40	265,388	779.00	2,283,417
776.45	282,801	779.05	2,362,127
776.50	300,213	779.10	2,440,838
776.55	317,625	779.15	2,519,548
776.60	335,038	779.20	2,598,259
776.65	352,450	779.25	2,676,969
776.70	369,862	779.30	2,755,679
776.75	387,275	779.35	2,834,390
776.80	404,687	779.40	2,913,100
776.85	422,099	779.45	2,991,811
776.90	439,511	779.50	3,070,521
776.95	456,924	779.55	3,149,231
777.00	474,336	779.60	3,227,942
777.05	493,113	779.65	3,306,652
777.10	511,890	779.70	3,385,363
777.15	530,667	779.75	3,464,073
777.20	549,445	779.80	3,542,783
777.25	568,222	779.85	3,621,494
777.30	586,999	779.90	3,700,204
777.35	605,776	779.95	3,778,915
777.40	624,553	780.00	**3,857,625**
777.45	643,330		
777.50	662,108		
777.55	680,885		

ATTACHMENT 3

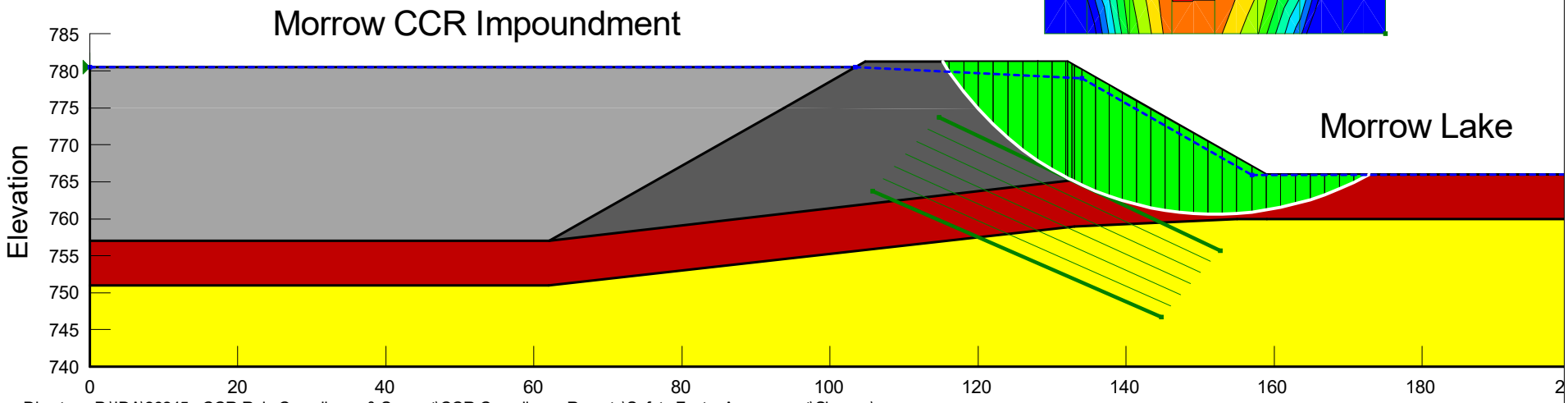
RAPID DRAWDOWN ANALYSIS

Structural Stability Assessment - Morrow Impoundment
Analysis: Deep Static Rapid Drawdown Rotational Dike Failure
Created By: KEY Environmental
Date: 05/06/2026
Factor of Safety: 1.062
Horz Seismic Coef.: g

Grid Vertical Increment: 8
Grid Horizontal Increment: 8



Color	Name	Unit Weight (pcf)	Effective Cohesion (psf)	Effective Friction Angle (°)
	Placed CCR	110	0	28
	Riprap	150	0	40
	Sand with Silt	120	0	32
	Silty Sand	110	0	28
	Sluiced CCR	90	0	25



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Product Version: 25.1.1.182

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Date: 05/07/26