Commonwealth of Virginia

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March 31, 2022

Mr. Michael Liberati
Corteva Environmental Remediation
974 Centre Road, Building 735
Wilmington, DE 19805

VIA ELECTONIC MAIL

Re: 2020 Leaf-on and 2020-2021 Leaf-off Maintenance Inspections
Former DuPont Waynesboro Site AOC 4
Waynesboro, Virginia
EPA ID# VAD003114832

Dear Mr. Liberati:

This letter acknowledges the receipt and review of the *2020 Leaf-on Maintenance Inspection* and *2020-2021 Phase 1 BMA Leaf-off Maintenance Inspection Memorandums* dated November 25, 2020 and March 24, 2021 submitted to the Virginia Department of Environmental Quality, Office of Remediation Programs (VDEQ) by AECOM on behalf of Corteva Agriscience. The memorandums document bank management inspection activities that occurred during that time.

VDEQ has no comments. If you have any questions, you may contact me at 540-209-3663 or by email at William.jordan@deq.virginia.gov.

Sincerely,

W. Calvin Jordan
Corrective Action Project Manager
Office of Remediation Programs

cc: DuPont Waynesboro Correspondence File
Josh Collins, AECOM
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Memorandum

To	Michael Liberati, Corteva Environmental Remediation Nancy Grosso, Corteva Environmental Remediation	Page 1 of 7
CC	Cameron Dixon, AECOM Kristy Hoffman, AECOM	
Subject	2020-2021 Phase 1 BMA Leaf-Off Maintenance Inspection Former DuPont Waynesboro Site, Area of Concern 4	
From	Joshua Collins, AECOM Sarah Bartle, AECOM	
Date	March 24, 2021	

This memorandum summarizes the 2020 Leaf-off Maintenance Inspections (maintenance inspection) for Constitution Park, City Shops, Allied Ready Mix, Shiloh Baptist Church, and North Park Bank Management Areas (BMAs), conducted from Jan. 18th – 20th, 2021. Inspection activities were conducted as specified in the scope described in the Maintenance Plan and included as Appendix M of the Basis of Design Report, Phase 1A BMAs, South River AOC 4 (Anchor QEA et al., 2016). The purpose of the inspections is to identify potential BMA maintenance needs, focusing on vegetative development, bank stability, and the integrity of the installed bank remediation features. Additionally, supplemental plantings are recommended at some BMA locations to enhance the existing vegetation community in order to accelerate its establishment as well as increase plant species diversity.

Additional attachments to this memorandum include maintenance inspection field sheets, photographic logs and Cap Area Inspection Records for each BMA as follows:

- Attachment A – Constitution Park BMA
- Attachment B – City Shops BMA
- Attachment C – Allied Ready Mix BMA
- Attachment D – Shiloh Baptist Church BMA
- Attachment E – North Park BMA

FINDINGS

Constitution Park

The 2020 leaf-off maintenance inspection conducted at the Constitution Park BMA documented largely stable bank conditions with areas in need of maintenance for exposed bank and geocell as well as lack of vegetative growth in several areas, consistent with the leaf-on inspection in June 2020 (AECOM 2020a). Heavy pedestrian traffic, particularly along improvised access paths and along the toe of slope, is limiting the establishment of bank vegetation, but does not appear to be affecting the overall integrity of the bank treatment. Erosion control fabric and coir logs are beginning to degrade, as designed, and a being replaced by natural sediment deposition until sustained high waters at the end of December 2020. These high flow conditions exposed large portions of the bank, geocell, and vegetative growth which needs to be addressed to maintain bank stability.

A brief summary of findings is provided below; complete details of the maintenance inspection, including maintenance inspection field sheets, photographic logs, and the Cap Area Inspection Record are provided in Attachment A.

Vegetation

- Planted native vegetation was present throughout the BMA and is becoming further established over time. Live stakes which were reinstalled in the spring/summer of 2019 were minimally established; herbaceous plugs installed at the same time were establishing where not impacted by foot traffic. There are several large areas of bank where there is little to no vegetation establishing, leaving the bank vulnerable to potential erosion.
- Coverage of Japanese knotweed (*Fallopia japonica*) has decreased throughout the BMA due to effective invasive species management practices, including targeted herbicide treatments in fall 2020. However, small, localized patches of Japanese knotweed continue to be documented within the BMA; these areas will continue to be monitored and treated as needed with targeted herbicide treatments.

Stability

- Consistent bank angles were documented, as constructed, throughout the BMA.
- Paths from extensive foot traffic, accessing the bank and along the toe of slope, were noted and appear to be limiting vegetation establishment, especially along the toe of the slope. Limited areas of localized scour were documented.
- There was no evidence of “at-risk” trees (e.g., trees that may no longer be stable due to erosion).

Installed Features

- Erosion control fabric was intact throughout most of the BMA, but is beginning to degrade as designed, and will become part of the detrital layer over time.
- Rock toe features were intact, with increased sediment deposition filling in the interstices.
- Large woody debris (LWD) were stable, and anchor chains were intact.
- Coir logs were intact and are beginning to degrade as designed, particularly in areas of increased foot traffic along the bank toe.
- The installed gravel access path is being utilized by the public but shows signs of wear with significant exposure of geocell present.
- Minimal scour and undercutting was observed along the bottom steps of the constructed staircase from high water events.

City Shops

The maintenance inspection conducted at the City Shops BMA documented stable conditions throughout the BMA with minimal change compared to the previous leaf-on inspection conducted in June 2020 (AECOM, 2020b). One area (00+350) where the City of Waynesboro Department of Public Works daylighted a covered stormwater outfall has been addressed by adding a new 12” diameter pipe and the rock slope has been replaced on the bank around the installed pipe. Although more erosion control fabric was visible due to leaf-off conditions, it was clear that extensive scour was not occurring along the bank face, and that the native planted grasses, saplings, and live stakes continue to become established.

A brief summary of findings is provided below; complete details of the maintenance inspection including field sheets, photographic logs, and the Cap Area Inspection Record are provided in Attachment B.

Vegetation

- The upper portions of the bank exhibited dense stands of native grasses, planted saplings, and shrubs throughout the BMA.
- Larger trees left in place during remediation along the BMA are healthy and show no sign of stress.
- Small patches of invasive Japanese knotweed are present throughout the BMA. These localized areas were treated with herbicide in Fall 2020 and will continue to be monitored and treated, as necessary.

Stability

- River banks generally maintained a consistent bank angle throughout the BMA, as constructed, with no sign of surface erosion, scour, or undercutting at the toe of slope within the remediated portions of the BMA.
- There was no evidence of recent erosion or “at-risk” trees (e.g., trees that may no longer be stable due to erosion) within the remediated areas.
- An area of erosion upstream from the remedial footprint shows signs of significant scour, minimally vegetated bank, and extensive exposed at-risk tree roots; this area will continue to be monitored to identify potential impacts to the adjacent, downstream BMAs.

Installed Features

- Erosion control fabric was intact throughout the BMA and is beginning to degrade, as designed, and will become part of the detrital layer over time.
- The installed rock toe was intact and is continuing to show evidence of desired sediment deposition throughout. The rock toe and geocell at location 00+350 was previously disturbed by the City of Waynesboro Department of Public to daylight an existing stormwater outfall pipe has been repaired with a new pipe and replacement of rock toe around the pipe.
- There are two stormwater overflow pipes located at 00+400’. One overflow pipe has a broken hinge and the other may be blocked by stone and/or vegetation. This will continue to be monitored; however, these outfalls are not associated with the remediation and any required maintenance/repairs are the responsibility of the City of Waynesboro. .
- Previous inspections documented two installed LWD features that were displaced from their original positions at the City Shops BMA; they are currently stable and continue to remain within the remedial project area. They will continue to be monitored and corrective actions will be implemented if warranted.
- Vegetative cover and localized scour at the base of the existing mature tree at location 00 +300 is satisfactory and will continue to be monitored to verify the integrity/stability of geocell around the base of the tree during future BMA inspections.

Allied Ready Mix

The findings of the maintenance inspection conducted at the Allied Ready Mix BMA documented stable conditions throughout the BMA with minimal change compared to the previous leaf-on inspection conducted in June 2020 (AECOM, 2020c). Limited areas of torn erosion control fabric were noted in the area where the stone toe rock was intentionally moved by unidentified individual(s) and placed in the stream to create an improvised weir. Vegetative cover throughout the BMA is becoming more established with extensive natural recruitment occurring and very limited Japanese knotweed present.

A brief summary of findings is provided below; complete details of the maintenance inspection including field sheets, photographic logs, and the Cap Area Inspection Record are provided in Attachment C.

Vegetation

- Robust growth of planted native vegetation and natural recruitment along the stone toe was noted throughout the BMA.
- Live stakes and plantings continue to become established with 50-70% survival; however, replacement live stakes planted in the spring/summer of 2019 show limited growth. Overall vegetative growth throughout bank is robust and well established.
- Localized areas of bare soil/erosion control fabric that were present predominantly in the upstream BMA near the area where the weir was constructed from the leaf-on inspection 2020 (AECOM 2020c) have been re-established with vegetation and warrant no corrective action.

Stability

- As-built river bank angles remained unchanged and consistent bank angles were maintained throughout the BMA as constructed (Attachment C - Table 1).
- There were no “at-risk” trees (e.g., trees that may no longer be stable due to erosion) within the remediated portions of the BMA.
- Areas of localized scour within the BMA associated with heavy foot traffic were limited to isolated areas in the upstream BMA, as discussed above, and at location 00+00. Vegetative community growth, including interim corrective measures, sediment deposition, and future stability will continue to be monitored to determine if additional corrective actions are warranted.
- Heavy erosion continues to be present downstream of the last remediated section of the BMA. The downstream terminus of the bank treatment will continue to be monitored for signs of back cutting, which may undermine the integrity of the bank.

Installed Features

- With one exception, the stone toe was intact throughout the BMA, with sediment deposition filling in the interstices and providing substrate for natural recruitment of native plant species.
- Rocks from the stone toe at 00+100 were moved approximately 3 to 4-feet into the stream channel parallel to the bank to create an improvised weirwere placed back into the stone toe in the Fall of 2020.
- Rip rap fortified outfall culverts, the Steel Run confluence, and the downstream bank abutment remain intact and functioning as designed.

Shiloh Baptist Church

The maintenance inspection conducted at the Shiloh Baptist Church BMA documented stable conditions at the remediated bank with limited areas of erosion caused by overland flow of stormwater behind the church and near the start of Riverside Drive. Establishment of vegetation and bank cover are notably increased from the previous leaf-on inspection conducted in June 2020 (AECOM, 2020d). Live stakes and other plantings are minimally established in most areas.

A brief summary of findings is provided below; complete details of the maintenance inspection including field sheets, photographic logs, and the Cap Area Inspection Record are provided in Attachment D.

Vegetation

- Live stakes, shrubs, and saplings are minimally established throughout bank. The small shrubs planted appear to be outcompeted by the fast growing seed mix of tall grasses. Live stakes are planted high on the bank above the rock toe and are not establishing. This will continue to be monitored and addressed, as necessary.
- Shrubs and saplings planted from 00+50' to 00+200' were removed from the section of the bank owned by the adjacent landowner and left uprooted along the bank, as noted in the June 2020 leaf-on inspection (AECOM, 2020d).
- Large trees left in place during remediation along the BMA appear to be healthy and show no signs of stress.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of any changes from the as-built condition.
- A bank failure that occurred during late summer 2020 at section 00+550' to 00+650' was repaired with replacement topsoil and reseeding.
- There was no scour documented along the toe of slope; however, surface runoff from the parking lot behind Shiloh Baptist Church and the beginning of Riverside Drive was noted. Interim corrective actions (e.g., topsoil placement, seeding, and straw wattles) will be completed and surface water drainage will be evaluated to determine if additional corrective actions are required.
- At-risk trees (e.g., trees that may no longer be stable due to erosion) were not identified within the remediated areas.

Installed Features

- The installed rock toe was intact and showed no indication of movement.
- The armor-flex reinforced stormwater drain outlet at 00+350 was intact.
- Erosion control fabric was exposed and shows signs of wear in some areas. Erosion control fabric was also torn and geocell exposed at location 00+450' where surface runoff occurs. Interim corrective actions and monitoring will be performed as described above.

North Park

The leaf-off inspection for 2020 is the initial inspection following completion of the bank remediation. The inspection documented relatively stable conditions in the upstream and downstream portions of the BMA. Largely within the downstream portion of the BMA there were areas of exposed geocell and erosion from recent sustained high water events at the end of December 2020 . As expected, vegetation, including live stakes and planting, are not fully established on the newly constructed bank.

A brief summary of findings is provided below; complete details of the maintenance inspection including field sheets, photographic logs, and the Cap Area Inspection Record are provided in Attachment E.

Vegetation

- Live stakes, shrubs, saplings, and seeded areas are minimally established; this is as expected since they were planted late in the fall of 2020. Live stakes, especially in the upstream section of the BMA, are planted high on the bank above the rock toe. Vegetation establishment will be closely monitored in the 2021 season when the vegetation has a proper growing season to establish.
- Large trees left in place during remediation along the BMA appear to be healthy and show no signs of stress.

Stability

- Consistent bank slopes were documented throughout the BMA with no indication of any changes from the as-built condition.
- There was no scour documented along the toe of slope. Vegetation establishment will be monitored and interim corrective actions (e.g., topsoil placement, seeding, and straw wattles) will be completed where high sustained water events from December 2020 washed out portions of the downstream BMA above the riverside walking path exposing geocell. Corrective actions will be initiated where required.
- At-risk trees (e.g., trees that may no longer be stable due to erosion) were not identified within the remediated areas.

Installed Features

- The installed rock toe was intact and showed no indication of movement.
- The two staircases along the downstream portion of the BMA are intact with minimal erosion and scour under the bottom steps from high water. The kayak launch ramp along the first upstream staircase is intact.
- The walking path along the stone toe between the two staircases is intact with some erosion from high water events that has scoured some of the crushed stone from the path, exposing the larger grade blue stone beneath.
- Erosion control fabric was exposed and shows signs of wear in some areas. Erosion control fabric and geocell was highly exposed in the downstream portion of the BMA from 00+1700' to 00+2200'. This will continue to be monitored to determine if repairs are warranted.

RECOMMENDATIONS

The following monitoring and maintenance activities are recommended for each of the BMAs based on the findings of the 2020 leaf-off inspection:

Constitution Park

- Add more topsoil over exposed geocell and seed while planting smaller trees withing geocell.
- Reseed bare areas where establishment and erosion are continuing issues. Consider using a new hydroseed mix known as Envirotac Rhino II with Rhino Snot Soil Stabilizer which a creates thick, sticky cap over topsoil to minimize erosion of soil and seed mix allowing for development.

- Plant more live stakes closer to water's edge and possibly drill in live stakes in packed areas, including willow and dogwood. Add black willow live stakes closer to the rip-rap on the second, downstream section.
- Supplemental plantings of herbaceous vegetation, shrubs, and trees in non-established areas including Iris, cardinal flower, and other flowering plugs; smooth alder and elderberry along the mid-bank area.
- Add the following species to the lower and mid-slope planting plan: Plugs of fox sedge (*Carex vulpinoidea*) and 1 gallon or 1 quart containers of Virginia mountain mint (*Pycnanthemum virginiana*) and wild bergamot (*Monarda didyma*).
- Add the following shrub and tree species to the upper slope planting plan: Carolina allspice (*Calycanthus floridus*), eastern ninebark (*Physocarpus opulifolius*), sweet pepperbush (*Clethra alnifolia*), and sweetbay magnolia (Magnolia virginiana).
- Clearly designate walking pathways and consider mulching areas of plantings to deter foot traffic. Add signage to reinforce proper foot traffic patterns.
- Continue invasive species management, such as herbicide treatment, in 2021. Limit broadcast spraying; use other methods for controlling knotweed such as injection, hand-wicking, cutting knotweed, and spraying with a concentrated flow, or using galvanized steel mesh to place over knotweed base to choke out stem growth.
- Discuss potential corrective actions, such as fencing, with City of Waynesboro to reduce improvised footpaths along the bank face in remediated areas.

City Shops

- Outfall pipes (n=2) at 00+400 may not be functioning properly. Findings will be shared with the City of Waynesboro Department of Public Works to determine if corrective actions are required.
- Monitor vegetation and mature trees along the BMA.
- Continue invasive species management, such as herbicide treatment, in the fall of 2021 to address a few localized areas of Japanese knotweed.
- Continue to monitor the stability of two previously dislodged pieces of LWD at 00+400 & 00+850.

Allied Ready Mix

- Continue focused monitoring for on-going scour and vegetation establishment to determine if additional corrective actions are required.
- Continue invasive species management, such as herbicide treatments (if required), in the fall of 2021 to address localized areas of Japanese knotweed.

Shiloh Baptist Church

- Re-seed bare areas according to original remedial design plan.
- Supplemental shrub and tree plantings in non-established areas: Mid-bank: Carolina allspice (*Calycanthus floridus*), American beautyberry (*Callicarpa americana*); Upper-bank: Canadian serviceberry (*Amelanchier canadensis*), sweetbay magnolia (*Magnolia virginiana*).
- Regular watering of planted vegetation through summer of 2021.
- Continue to monitor and control invasive knotweed.

North Park

- Add localized topsoil to cover exposed geocell areas and cover with coconut erosion control blanket.
- Reseed bare areas where establishment and erosion are continuing issues. Consider using a new hydroseed mix known as Envirotac Rhino II w/ Rhino Snot Soil Stabilizer which creates thick, sticky cap over topsoil to minimize erosion of soil and seed mix allowing for development.
- Plant more live stakes and/or tubelings close to the bank toe, including willow and red-osier dogwood; plant additional black willow live stakes closer to the rip-rap on the second, downstream section.
- Supplemental herbaceous, shrub, and tree plantings in non-established areas: Small potted grasses, flowering plugs, plugs of fox sedge (*Carex vulpinoidea*) and 1 gallon or 1 quart containers of Virginia mountain mint (*Pycnanthemum virginiana*) and wild bergamot (*Monarda didyma*) on lower and mid-slope.
- Supplemental shrub and tree species to add to the upper banks: Carolina allspice (*Calycanthus floridus*), eastern ninebark (*Physocarpus opulifolius*), sweet pepperbush (*Clethra alnifolia*), and sweetbay magnolia (*Magnolia virginiana*).
- Regular watering of planted vegetation through summer of 2021.
- Monitor vegetation establishment during early/mid growing season and implement supplemental plantings if necessary.
- Clearly designate walking pathways and consider mulching areas of plantings to deter foot traffic. Add signage to reinforce proper foot traffic patterns.
- Potential pollinator garden enhancement for floodplain area. Reseed this area if needed based on spring and summer 2021 establishment.

REFERENCES

AECOM 2020a. Constitution Park BMA - 2020 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. June 2020.

AECOM 2020b. City Shops BMA - 2020 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. June 2020.

AECOM 2020c. Allied Ready Mix BMA – 2020 Leaf-on Maintenance Inspection, Former DuPont Waynesboro Site, Area of Concern 4. June 2020.

AECOM 2020d. Shiloh Baptist Church BMA – 2020 Leaf-on Maintenance Inspection, Former Dupont Waynesboro Site, Area of Concern 4. June 2020.

Anchor QEA, AECOM, and E.I. du Pont de Nemours and Company. 2016. Basis of Design Report, Phase 1A Bank Management Areas, South River Area of Concern 4. September 2016.

Attachment A

Constitution Park BMA

Attachment A - Table 1
2020 Leaf-off Maintenance Inspection Log
Constitution Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			Overall Change Since Previous Inspection (Y/N)
	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Attachment A)	Exposed Roots (L /M /H)[3]	Notes	Photo # (Attachment A)	At Risk Trees Present (Y/N)[4]	Notes	Photo # (Attachment A)	Rock Toe/LWD (Y/N)[5]	Geocell (Y/N)[6]	Erosion Control Fabric (Y/N)[6]	Notes	Photo # (Attachment A)	Scour Present (Y/N)[7]	Notes	Photo # (Attachment A)	
00 - 25	30	N (see notes)	Lower bank; ~20 degrees Upper bank; ~55 degrees	1,2	L	No woody plants adjacent to edge of water	1,2	N	No trees adjacent to edge of water	1,2	NA	NA	NA	Geocell exposed along foot path	1,2	Y	Low presence of scour 5' upstream of 00 - 25. Slight erosion at waters edge	1,2	N
00 + 00	40	N (see notes)	Lower bank; ~30 degrees Upper bank; ~55 degrees	3,4	NA	Live stakes not visible	3,4	N	No trees adjacent to edge of water	3,4	NA	Y	Y	Coir logs intact, some erosion control fabric is visible; exposed geocell below constructed gravel river access.	3,4	N	Geocell 20% exposed below constructed gravel river access.	3,4	N
00 + 50	45	Y	Lower 3' of bank toe level	5,6	NA	20-30% invasive species cover. Live stakes not visible.	5,6	N	No trees adjacent to edge of water	5,6	NA	Y	Y (30% exposed)	Erosion control fabric torn at tow of slope and 70% exposed; geocell exposed where erosion control fabric deteriorating; Coir log damaged.	5,6	N	Evidence of foot traffic along the toe of slope	5,6	Y (new foot path down to river, erosion control fabric exposed, some geocell exposed)
00 + 100	40	N (see notes)	Lower bank ~10 degrees (rock toe); Upper bank ~45 degrees	7,8,9	NA	Live stakes not visible	7,8,9	N	No at-risk trees present	7,8,9	Y (rock toe)	Y	N	Rock toe along bank and constructed river access steps intact with undercutting under bottom steps	7,8,9	N	Sediment deposition adjacent to rock toe boulders	7,8,9	N
00 + 150	45	N (see notes)	Lower bank <5 degrees (rock toe); Upper bank ~45 degrees	10,11,12,13	NA	Native vegetation predominantly present; Live stakes not visible; new footpath present	10,11,12,13	N	No trees adjacent to edge of water	10,11,12,13	Y (LWD and Rock toe)	Y	Y	significant geocell exposure along bank (~50 feet across bank by 3-4' height)	10,11,12,13	Y	Silt filling in behind LWD and in boulders; scour at toe of bank	10,11,12,13	N
00 + 200	55	Y		14,15	NA	Small patches of invasive vegetation present; live stakes minimally established.	14,15	N	No trees adjacent to edge of water	14,15	NA	Y	Y (40% exposed)	installed coir logs, geocell and erosion fabric intact	14,15	Y	Evidence of foot traffic along the toe of slope, along coir logs; minimal scour along toe	14,15	Y (significant geocell exposed)
00 + 250	55	Y		16,17	NA	Patches of invasive vegetation present; Live stakes 20% established	16,17	N	No trees adjacent to edge of water	16,17	NA	Y (geocell exposed 50% at toe)	Y (50% exposed)	Erosion control fabric intact but exposed and above waterline; geocell exposed at toe below newly installed fabric. Coir logs degraded; foot traffic along toe of slope	16,17	Y	Patches of scour present around exposed geocell	16,17	N
00 + 300	70	Y		18,19,20	NA	Minimal vegetation present; live stakes 30% established	18,19,20	N	No trees adjacent to edge of water	18,19,20	NA	Y	Y (Fabric degraded)	Geocell significantly exposed across entire section by 3-5' height	18,19,20	N		18,19,20	Y (significant geocell exposed)
00 + 350	70	Y		21,22,23,24	NA	Native vegetation present; live stakes 30% established	21,22,23,24	N	No trees adjacent to edge of water	21,22,23,24	NA	Y (exposed downstream around black walnut)	Y (Fabric degraded)	Geocell significantly exposed across entire section by 3-5' height; erosion control fabric degraded; coir logs degraded; foot traffic along toe of slope; geocell exposed around base of tree downstream of 00 + 350'	23,24	Y	Minimal scour present	21,22,23,24	Y (significant geocell exposed)
00 + 400	60	Y		25,26,27	NA	Native vegetation present along top of bank with small patches of invasive knotweed at toe of slope; live stakes 20% established	25,26,27	N	No at-risk trees present	25,26,27	NA	Y	Y (Fabric degraded)	Erosion control fabric and geocell exposed around tree	25,26,27	Y	Slight scour present	25,26,27	N
00 + 450	50	Y		28,29	NA	Minimal vegetation present; live stakes 20% established	28,29	N	No at-risk trees present	28,29	NA	Y	Y (70% exposed)	Erosion control fabric exposed along toe of bank; small amount of geocell exposed at toe	28,29	Y	Evidence of scour on upper coir log	28,29	N
00 + 500	40	Y	The bank design has a decreased vertical bank height (~6') compared to upstream monitoring stations	30,31	NA	Native vegetative present with patches of the invasive knotweed; live stakes 30% established	30,31	N	No trees adjacent to edge of water	30,31	NA	Y	N	small amount of geocell exposed; coir log degraded and slumping into river	30,31	N		30,31	Y (coir log slumping into river)
00 + 525	15	Y		32,33,34	NA	Predominantly native vegetation cover; live stakes 30% established	32,33,34	N	No trees adjacent to edge of water	32,33,34	NA	Y	Y (fabric degraded)	Geocell minimally exposed near toe of bank	32,33,34	N		32,33,34	N

Notes:
1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

AECOM

South River Photolog Attachment A
Constitution Park BMA
Bank Monitoring Memo

Location: 00-25' **Photo Number:** 1 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~20 degree lower bank angle and 55 degree upper bank angle; no at risk trees present; some erosion at water's edge with minimal scour	

Location: 00-25' **Photo Title:** 2 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Start of remediated bank; evidence of foot traffic along toe of slope; some coir logs damaged and some geocell exposed; some erosion control fabric exposed	

Location: 00+00' **Photo Number:** 3 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~30 degree lower bank angle and 55 degree upper bank angle; live stakes and plantings establishing; coir logs intact; vegetation established; exposed geocell at constructed gravel access path	

Location: 00+00' **Photo Title:** 4 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Exposed geocell along constructed river access path	

Location: 00+50' **Photo Number:** 5 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~45 degree bank angle; no exposed roots; lives takes and plantings establishing; vegetation established; coir logs show wear from foot traffic along toe of slope; erosion control fabric deteriorated; geocell exposed above toe; sediment deposition along toe of slope	

Location: 00+50' **Photo Title:** 6 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Exposed geocell above toe of bank; erosion control fabric deteriorated	

Location: 00+100' **Photo Number:** 7 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~45 degree bank angle; live stakes not visible; plantings establishing; vegetation established; staircase intact; sediment deposition around rock toe; installed rock toe intact	

Location: 00+100' **Photo Title:** 8 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Staircase intact; undercutting under bottom stone slab steps	

Location: 00+100' **Photo Number:** 9 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Undercutting under bottom stone slab steps from high water events	

Location: 00+150' **Photo Title:** 10 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~45 degree bank angle; no exposed roots; live stakes not visible; evidence of foot traffic along slope; scour at toe of bank; LWD intact; sediment deposition behind LWD	

AECOM

South River Photolog Attachment A
Constitution Park BMA
Bank Monitoring Memo

Location: 00+150' **Photo Number:** 11 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Downstream view of remediated bank; vegetation established mid to upper bank; minor undercutting along slope toe at water's edge	

Location: 00+150' **Photo Title:** 12 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream view of remediated bank; vegetation established; installed rock toe intact	

Location: 00+150' **Photo Number:** 13 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Scour along toe of slope	

Location: 00+200' **Photo Title:** 14 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~55 degree bank angle; lives stakes and plantings establishing; vegetation established mid to upper bank; erosion control fabric deteriorated; large sections of geocell exposed extending approximately 3-4’ depth by 40-50’ length above the to of slope above coir logs; minimal scour	

Location: 00+200' **Photo Number:** 15 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Large section of exposed geocell 3-4’ depth extending 40-50’ left to right after recent high water events; erosion control fabric deteriorated	

Location: 00+250' **Photo Title:** 16 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~55 degree bank angle; vegetation establishing mid to upper bank; live stakes and plantings establishing; erosion control fabric deteriorated; geocell exposed above toe of slope above coir logs in large sections extending lengthwise across the bank; scour present along exposed geocell	

Location: 00+250' **Photo Number:** 17 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Large section of geocell exposed extending lengthwise across bank; erosion control fabric deteriorated	

Location: 00+300' **Photo Title:** 18 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree bank angle; vegetation establishing mid to upper bank; lives stakes and plantings establishing; large section of geocell exposed along bank at 3-5' depth and about 100' continuously lengthwise across bank above toe and coir logs; erosion control fabric deteriorated	

Location: 00+300' **Photo Number:** 19 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Exposed geocell along bank	

Location: 00+300' **Photo Title:** 20 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Exposed geocell above coir logs extending lengthwise throughout bank	

Location: 00+350' **Photo Number:** 21 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree bank angle; vegetation establishing; bank 40% exposed; live stakes and plantings establishing; large sections of geocell exposed above toe of bank; erosion control fabric deteriorated	

Location: 00+350' **Photo Title:** 22 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Downstream view showing remediated section; geocell exposed along bank; mild undercutting along toe of bank	

Location: 00+350' **Photo Number:** 23 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Large section of geocell exposed above toe of bank approximately 5’ depth extending 30-40’ in length; erosion control fabric deteriorated	

Location: Between 00+350' and 00+400' **Photo Title:** 24 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Bank largely exposed; erosion control fabric 80% exposed; fabric deteriorating; geocell exposed around tree	

Location: 00+400' **Photo Number:** 25 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree bank angle; vegetation establishing mid to upper bank; live stakes and plantings establishing; coir logs deteriorating; erosion control fabric deteriorating; lower bank slope 75% exposed; undercutting at toe of slope; small patches of geocell exposed	

Location: 00+400' **Photo Title:** 26 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream view of remediated bank; undercutting along toe of slope; large sections of geocell exposed	

Location: 00+400' **Photo Number:** 27 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Downstream view of remediated bank; undercutting along toe of slope; minimal vegetation established	

Location: 00+450' **Photo Title:** 28 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~50 degree bank angle; vegetation minimally established; erosion control fabric and bank 90% exposed; erosion control fabric deteriorating; small amount of geocell exposed at toe; scour along coir logs	

Location: 00+450' **Photo Number:** 29 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream view showing exposed erosion control fabric and bank; minimal vegetation established; undercutting along toe; coir logs slumping	

Location: 00+500' **Photo Title:** 30 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~40 degree bank angle; live stakes and plantings establishing; vegetation establishing; coir logs deteriorating and slumping into river; small patches of geocell exposed; erosion control fabric deteriorated; undercutting along toe	

Location: 00+500' **Photo Number:** 31 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Downstream showing end of bank remediation; undercutting along toe	

Location: 00+525' **Photo Title:** 32 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** End of remediation; ~15 degree bank angle; vegetation establishing; erosion along slope toe; small patches of geocell exposed above toe; fencing intact	

Location: 00+525' **Photo Number:** 33 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream view of bank remediation; undercutting along toe of slope; coir logs slumping into river	

Location: 00+525' **Photo Title:** 34 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Small patch of geocell exposed; coir log deteriorating; undercutting at toe of slope	

Attachment A - Waynesboro Off-Site Cap Areas

Inspection Record Sheet

Maintenance Plan

Location and property owner name: **Constitution Park BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	NA	NA
Trails	Stairs, greenway, and newly installed gravel path intact, but showing wear. Geocell is heavily exposed on installed gravel path. Undercutting on bottom steps of constructed staircase	2
Drainage Structures	Drainage structures intact	1
Outfall Structures	Outfall structures intact	1
Rip-Rap Protection	Rip-rap intact	1
Cap System Vegetative Cover	Native vegetation cover establishing, several access paths with trampled vegetation along toe of slope and down bank; although small patches of invasive knotweed still exist. Live stakes are less than 20% established. Continue to manage invasive knotweed.	2
Cap System Geosynthetics	Several areas of torn erosion control fabric and geocell are present; significant geocell exposure throughout downstream portion of remediated bank from high water – most erosion control fabric on top of geocell has degraded; cap system shows minimal signs of wear and scour.	2
Cap System Slope Stability	Slope is generally consistent and stable	1
Cap System Subsidence	Slight subsidence near the uppermost section of the BMA associated with foot traffic at the toe of the slope	1
Fencing and Gates	Fencing intact	1

Notes:

1. Functioning properly; no repairs needed
2. Repairs needed (describe why, what, and where), but not time critical
3. Time critical repair needed (describe what and where)

Comments:

Cap system vegetative cover will continue to be assessed in the spring of 2021 and repairs will be planned

Inspected by: Scott Gregory and Sarah Bartle Date: Jan 18, 2021

Attachment B

City Shops BMA

Attachment B - Table 1
2020 Leaf-off Maintenance Inspection Log
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			Overall Change Since Previous Inspection (Y/N)
	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Attachment B)	Exposed Roots (L /M /H)[3]	Notes	Photo # (Attachment B)	At Risk Trees Present (Y/N)[4]	Notes	Photo # (Attachment B)	Rock Toe/LWD (Y/N)[5]	Geocell exposed (Y/N)[6]	Erosion Control Fabric exposed (Y/N)[6]	Notes	Photo # (Appendix B)	Scour Present (Y/N)[7]	Notes	Photo # (Attachment B)	
00 - 25	85	Y		1,2,3	H	High quantity of exposed roots on the bank. 25% vegetated	1,2,3	Y	At risk trees present	1,2,3	NA	NA	NA		1,2,3	Y	Scour present throughout	1,2,3	N
00 + 00	70	N (see notes)	Lower bank; ~60 degrees Upper bank; ~80 degrees	4	N	No woody plants adjacent to edge of water	4	N	No woody plants adjacent to edge of water	4	Y	N	N		4	Y	Some scour present from rock toe to mid bank upstream of remediation	4	N
00 + 50	45	Y		5,6,7	N	Predominantly native vegetation along top of rock toe	5,6,7	N	No woody plants adjacent to edge of water	5,6,7	Y (LWD and Rock toe)	N	N	No geocell or erosion control fabric exposed. LWD intact; sediment filling behind LWD	5,6,7	N	No scour present along rock toe	5,6,7	N
00 + 100	45	Y		8	N	Predominantly native vegetation along top of rock toe; flood debris on rock toe	8	N	No woody plants adjacent to edge of water	8	Y (LWD and Rock toe)	N	N	No geocell or erosion control fabric exposed. LWD intact	8	N	No scour present along rock toe	8	N
00 + 150	45	Y		9	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe	9	N	No woody plants adjacent to edge of water	9	Y (LWD and Rock toe)	N	N	No geocell or erosion control fabric exposed. LWD intact	9	N	No scour present along rock toe	9	N
00 + 200	45	Y		10,11	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe	10,11	N	No woody plants adjacent to edge of water	10,11	Y	N	N	Rock stairs and gate present on upper half of bank	10,11	N	No scour present along rock toe; outfall pipe present within rock toe	10,11	N
00 + 250	45	Y		12	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe	12	N	No woody plants adjacent to edge of water	12	Y (LWD and Rock toe)	Y	N	LWD intact; small area of geocell visible above rock toe	12	N	No scour present along rock toe	12	N
00 + 300	45	Y		13	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe	13	N	Smallest old growth sycamore appears dead	13	Y (LWD and Rock toe)	N	N	LWD intact	13	N	No scour present along rock toe	13	N
00 + 350	45	Y		14,15,16,17	NA	vegetation largely absent following outfall repair	14,15,16,17	N	No at risk trees present	14,15,16,17	Y (LWD and Rock toe)	N	N	Outfall pipe repaired 10/2020 with 12" diameter pipe; rock toe replaced around pipe	14,15,16,17	N	Scour present from storm drain disturbance	14,15,16,17	Y (Outfall pipe repaired and rock toe replaced Oct.2020)
00 + 400	45	Y		18,19	NA	Predominantly native vegetation along top of rock toe; flood debris on rock toe	18,19	N	No at risk trees present	18,19	Y (LWD and Rock toe)	Y	Y	Erosion control fabric exposed on upper bank; some geocell exposed; upstream LWD has shifted and is parallel with another piece of installed LWD downstream of 00 +400'; 1st outfall pipe has broken hinge on door; 2nd outfall pipe appears to be blocked from opening	18,19	Y	No scour present along rock toe; two outfall pipes present within rock toe	18,19	N
00 + 450	45	Y		20	NA	Native vegetation along top of rock toe; some large trees present	20	N	No at risk trees present	20	Y (LWD and Rock toe)	N	Y	Erosion control fabric exposed at top of bank and around tree bases; no geocell exposed.	20	N	No scour present along rock toe	20	N
00 + 500	45	Y		21,22,23	NA	Native vegetation along top of rock toe; some large trees present	21,22,23	N	No at risk trees present	21,22,23	Y	N	Y	Erosion control fabric exposed around tree bases; no geocell exposed.	21,22,23	N	No scour present along rock toe	21,22,23	N
00 + 550	70	Y		24	H	Lower bank consists mostly of exposed roots	24	Y	Several large trees with exposed roots hanging over the river	24	NA	NA	NA	Section was not remediated	24	Y	Entire lower bank shows large amounts of scour	24	N
00 + 600	75	Y		25	H	Lower bank consists mostly of exposed roots	25	Y	Many exposed roots along the lower bank	25	NA	NA	NA	Section was not remediated	25	Y	Entire lower bank shows large amounts of scour	25	N
00 + 650	85	Y		26,27	H	Bank consists mostly of exposed roots	26,27	Y	At risk trees present along the upper bank.	26,27	NA	NA	NA	Section was not remediated	26,27	Y	Entire bank shows large amounts of scour	26,27	N

Attachment B - Table 1
2020 Leaf-off Maintenance Inspection Log
City Shops BMA
Former DuPont Waynesboro Site, Area of Concern 4

00 + 700	90	Y		28	H	Bank consists mostly of exposed roots	28	Y	At risk trees present along the upper bank.	28	NA	NA	NA	Section was not remediated	28	Y	Entire bank shows large amounts of scour	28	N
00 + 750	90	N (see notes)	Beginning of second remediated area. Upstream bank; ~90 degrees, downstream bank; ~45 degrees	29,30,31	M	Upper bank upstream of the remediation consists mostly of exposed roots	29,30,31	Y	At risk trees present upstream of rock toe	29,30,31	Y	N	N	Beginning of second remediated section	29,30,31	Y	Large amounts of scour above rock toe	29,30,31	N
00 + 800	40	Y		32,33	NA	Planted vegetation well established above rock toe	32,33	N	No at risk trees present	32,33	Y (LWD and Rock toe)	N	N	LWD intact	32,33	N	No scour present along rock toe	32,33	N
00 + 850	25	N (see notes)	Lower bank; ~25 degrees Upper bank; ~30 degrees	34,35,36	NA	Planted vegetation well established above rock toe	34,35,36	N	No at risk trees present	34,35,36	N (LWD) Y (Rock toe)	N	Y	Erosion control fabric primarily covered in vegetation; LWD moved from its installed position. The root ball side of the installed LWD has pivoted downstream from its original position and is now angled into the river.	34,35,36	N	No scour present along rock toe	34,35,36	N
00 + 880	20	Y		37,38	NA	Planted vegetation well established above rock toe	37,38	N	No woody plants adjacent to edge of water	37,38	Y (Rock toe)	N	Y	Erosion control fabric primarily covered in vegetation. Sediment filling around shifted LWD	37,38	N	No scour present along rock toe and lower bank	37,38	N

Notes:

1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA

2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)

3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)

4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)

5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)

6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)

7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

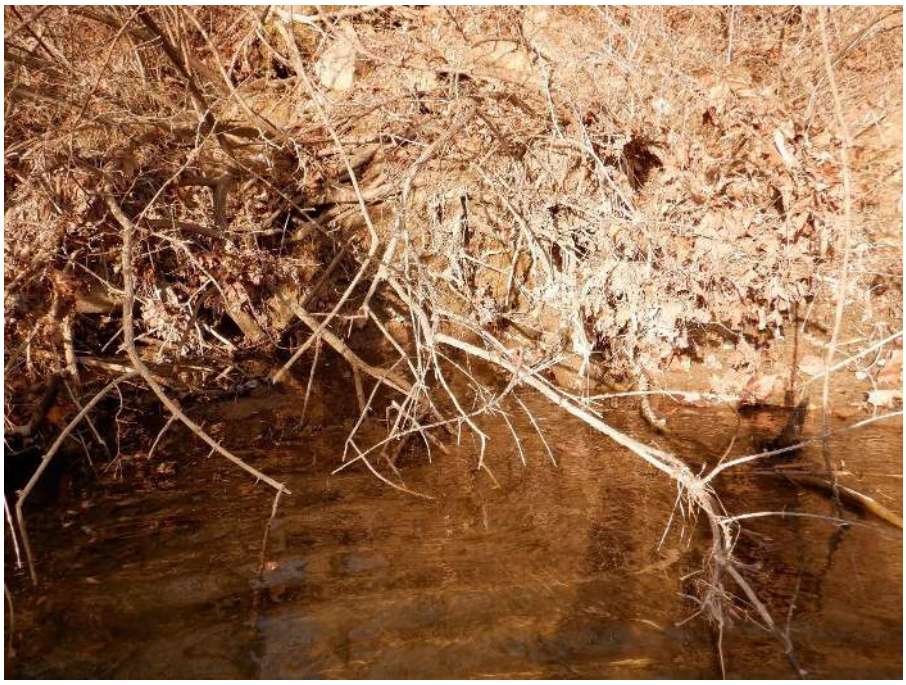
Grey shaded cells from 00+550 to 00+700 are portions of the bank that were not remediated.

AECOM

South River Photolog
City Shops BMA
Bank Monitoring Memo

Attachment B

Location: 00-25' **Photo Number:** 1 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~85 degree bank angle; as risk trees present; scour present; 25% vegetated	

Location: 00-25' **Photo Title:** 2 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** Significant root exposure on bank; at risk trees present; scour present; 25% vegetated	

Location: 00-25 **Photo Number:** 3 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Upstream extent of remediation; installed rock toe intact	

Location: 00+00 **Photo Title:** 4 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~60-80 degree bank angle; no exposed roots; evidence of scour from rock toe to mid bank upstream of remediation; installed rock toe intact; vegetation established in remediated portion	

Location: 00+50' **Photo Number:** 5 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; no scour present; installed rock toe intact; vegetation established; LWD intact; sediment deposition behind LWD	

Location: 00+50' **Photo Title:** 6 **Date:** 1/20/2021 **Direction Photo Taken:** West **Description:** Upstream view; no scour present; installed rock toe intact; vegetation established in remediated portion	

Location: 00+50' **Photo Number:** 7 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** No scour present; installed rock toe intact; vegetation established; LWD intact; sediment deposition behind LWD	

Location: 00+100' **Photo Title:** 8 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; no scour present; installed rock toe intact; vegetation established; LWD intact; sediment deposition behind LWD	

Location: 00+150' **Photo Number:** 9 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact, vegetation established; LWD intact; sediment deposition behind LWD	

Location: 00+200' **Photo Title:** 10 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; vegetation established; outfall pipe in rock toe and staircase / gate access intact	

Location: 00+200' **Photo Number:** 11 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Outfall pipe intact; installed rock toe intact; predominately native vegetation established	

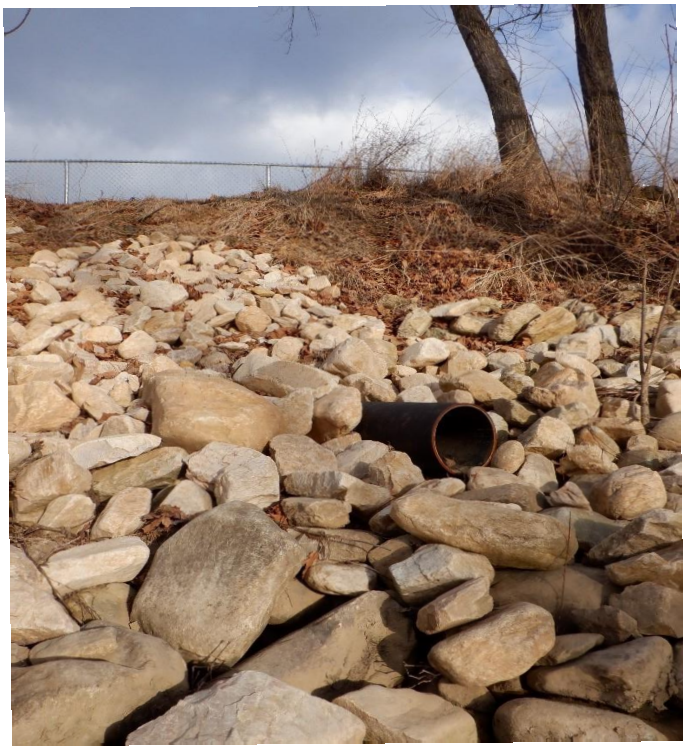
Location: 00+250' **Photo Title:** 12 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; vegetation established; small area of geocell exposed above rock toe; LWD intact; sediment deposition behind LWD	

Location: 00+300' **Photo Number:** 13 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; vegetation established; LWD intact	

Location: 00+350' **Photo Title:** 14 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; daylighted outfall pipe and stone repaired; minimal vegetation established due to outfall pipe repair in fall of 2020; LWD intact; vegetation established outside of repair	

Location: 00+350' **Photo Number:** 15 **Date:** 1/20/2021 **Direction Photo Taken:** West **Description:** Installed rock toe intact; upstream outfall pipe intact; vegetation established	

Location: 00+350' **Photo Title:** 16 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Installed rock toe intact; vegetation established	

Location: 00+350' **Photo Number:** 17 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** Outfall pipe of 12" inside diameter and stone that was repaired after previous outfall pipe was daylighted and stones were removed; vegetation establishing around repair	

Location: 00+400' **Photo Title:** 18 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact with 2 outfall pipes; LWD shifted downstream; vegetation established; 1st outfall pipe has broken hinge and 2nd appears to be blocked; some geocell visible on upper bank	

Location: 00+400' **Photo Number:** 19 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** Outfall pipe with damaged hinge; vegetation established, installed rock toe intact	

Location: 00+450' **Photo Title:** 20 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; vegetation established; LWD intact; sediment deposition behind LWD; not at risk trees present	

Location: 00+500' **Photo Number:** 21 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; installed rock toe intact; vegetation established; no at risk trees present; minimal sediment deposition in rock toe	

Location: 00+500' **Photo Title:** 22 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** Installed rock toe intact; vegetation established; no at risk trees present; minimal sediment deposition in rock toe	

Location: 00+500' **Photo Number:** 23 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Installed rock toe intact; shows end of 1st remediated section; at risk trees present in non-remediated section; vegetation established in remediated section	

Location: 00+550' **Photo Title:** 24 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~75 degree bank angle; non-remediated section; significant root exposure on lower bank; several at risk trees present; significant scour present	

Location: 00+600' **Photo Number:** 25 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~75 degree bank angle; non-remediated section; significant root exposure on lower bank; several at risk trees present; significant scour present	

Location: 00+650' **Photo Title:** 26 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~85 degree bank angle; non-remediated section; significant root exposure on lower bank and upper bank; several at risk trees present; significant scour present	

Location: 00+650' **Photo Number:** 27 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** Significant root exposure on upper bank; several at risk trees present; scour advancing under root masses or at risk trees; significant scour present on lower and mid bank	

Location: 00+700' **Photo Title:** 28 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~90 degree bank angle; non-remediated section; several at risk trees present on upper bank; significant scour present on lower and mid bank; scour advancing under root masses of at risk trees; scour advancing towards toe of slope	

Location: 00+750' **Photo Number:** 29 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~90 degree bank angle in non-remediated section and 45 degree angle in remediated section; significant root exposure and scour upstream of remediation; installed rock toe intact; vegetation established in remediated section	

Location: 00+750' **Photo Title:** 30 **Date:** 1/20/2021 **Direction Photo Taken:** West **Description:** Significant root exposure and scour ,at risk trees, and exposed roots present upstream of remediation	

Location: 00+750' **Photo Number:** 31 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Downstream view showing extent of 2nd remediated section	

Location: 00+800' **Photo Title:** 32 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree bank angle; installed rock toe intact; vegetation established; LWD intact	

Location: 00+800' **Photo Number:** 33 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Installed rock toe intact; vegetation established; LWD intact; sediment deposition behind LWD	

Location: 00+850' **Photo Title:** 34 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~30 degree bank angle; installed rock toe intact; vegetation established; LWD pivoted downstream from original position and angled into river	

Location: 00+850' **Photo Number:** 35 **Date:** 1/20/2021 **Direction Photo Taken:** West **Description:** Installed rock toe intact; vegetation established; upstream LWD intact	

Location: 00+850' **Photo Title:** 36 **Date:** 1/20/2021 **Direction Photo Taken:** North **Description:** Installed rock toe intact; LWD pivoted downstream from original position and angled into river	

Location: 00+880' **Photo Number:** 37 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** ~20 degree bank angle; no scour present; installed rock toe intact; vegetation established; shifted LWD intact; sediment deposition behind LWD	

Location: 00+880' **Photo Title:** 38 **Date:** 1/20/2021 **Direction Photo Taken:** Northwest **Description:** End of remediation; shifted LWD angled into river; sediment deposition behind LWD; vegetation established; installed rock toe intact	

Attachment B - Waynesboro Off-Site Cap Areas

Inspection Record Sheet

Maintenance Plan

Location and property owner name: **City Shops BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	NA	NA
Trails	Stairs intact	1
Drainage Structures	Drainage structures intact	1
Outfall Structures	1. Daylighted outfall pipe replaced with 12" diameter pipe and rock toe around outfall replaced 2. There are two stormwater overflow pipes located at 00+400'. One overflow pipe has a broken hinge and the other may be blocked by stone and/or vegetation.	1
Rip-Rap Protection	Rip-rap intact	1
Cap System Vegetative Cover	Plantings healthy and have been effective in preventing the colonization of invasive plants. The cap system is primarily covered in vegetation.	1
Cap System Geosynthetics	Cap system intact	1
Cap System Slope Stability	Slope is consistent and stable along remediation	1
Cap System Subsidence	None observed	1
Fencing and Gates	Fencing and gates intact	1

Notes:

1. Functioning properly; no repairs needed
2. Repairs needed (describe why, what, and where), but not time critical
3. Time critical repair needed (describe what and where)

Comments:

LWD shifted downstream at 400' and 880' remains intact

Inspected by: Scott Gregory and Sarah Bartle Date: Jan. 20, 2021

Attachment C

Allied Ready Mix BMA

Attachment C - Table 1
2020 Leaf-off Maintenance Inspection log
Allied Ready Mix BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			Overall Change Since Previous Inspection (Y/N)
	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Attachment C)	Exposed Roots (L /M /H)[3]	Notes	Photo # (Attachment C)	At Risk Trees Present (Y/N)[4]	Notes	Photo # (Attachment C)	Rock Toe/LWD (Y/N)[5]	Geocell exposed (Y/N)[6]	Erosion Control Fabric exposed (Y/N)[6]	Notes	Photo # (Attachment C)	Scour Present (Y/N)[7]	Notes	Photo # (Attachment C)	
00 - 20	20	Y		1,2	NA	No woody vegetation established adjacent to water	1,2	N	No woody plants adjacent to edge of water	1,2	NA	NA	NA	No fabric or geocell installed; upstream of remediation	1,2	Y	Some scour associated with foot traffic along bank	1,2	N
00 + 00	45	Y		3,4	NA	Minimal vegetation on slope; few live stakes observed	3,4	N	No at-risk trees present	3,4	Y(Rock Toe)	Y	Y	Erosion control fabric largely degraded; geocell moderately exposed	3,4	Y	Some scour associated with foot traffic along bank; sand deposition above rock toe	3,4	Y (Erosion control fabric torn)
00 + 50	50	Y		5,6	NA	Minimal vegetation on slope; few live stakes observed	5,6	N	No at-risk trees present	5,6	Y(Rock Toe)	Y	Y	Erosion control fabric largely degraded; geocell moderately exposed	5,6	N	Scour present where fabric is torn, ; sand deposition at toe of bank.	5,6	Y (Erosion control fabric in torn and geocell exposed)
00 + 100	50	Y		7,8,9	NA	Minimal vegetation on slope; few live stakes observed	7,8,9	N	No at-risk trees present	7,8,9	Y(Rock Toe)	Y	Y	Erosion control fabric largely degraded; Geocell exposed associated with foot traffic	7,8,9	N	Scour at end of improvised weir	7,8,9	Y (Erosion control fabric and geocell extensively exposed/torn associated with foot traffic; improvised weir built using rocks from toe, resulting in scour)
00 + 150	50	Y		10,11	NA	Native herbaceous vegetation adjacent to water; Live stakes 60% established	10,11	N	No at-risk trees present	10,11	Y(Rock Toe)	N	Y	Erosion control fabric 40% exposed with torn fabric at top of slope; no geocell exposed	10,11	N	Sand deposition at toe of bank.	10,11	N
00 + 200	50	Y		12	NA	Native herbaceous vegetation establishing; Live stakes 70% established	12	N	No at-risk trees present	12	Y(Rock Toe)	N	N	no exposure	12	N	Sand deposition at toe of bank.		N
00 + 250	50	Y		13	NA	Native herbaceous vegetation establishing; Live stakes 60% established	13	N	No at-risk trees present	13	Y(Rock Toe)	N	N	no exposure	13	N	Sand deposition at toe of bank.		N
00 + 300	40	Y		14,15	NA	Native herbaceous vegetation establishing; few live stakes observed	14,15	N	No at-risk trees present	14,15	Y(Rock Toe)	N	N	no exposure	14,15	N	Sand deposition at toe of bank.	14,15	N
00 + 350	40	Y		16	NA	Native herbaceous vegetation establishing; Live stakes pushed over from high water	16	N	No at-risk trees present	16	Y(Rock Toe)	N	N	no exposure	16	N	Sand deposition at toe of bank.	16	N
00 + 400	50	Y		17	NA	Native herbaceous vegetation establishing adjacent to water; Live stakes not visible	17	N	No at-risk trees present	17	Y(Rock Toe)	N	N	no exposure; outfall drainage structure intact	17	N	Sand deposition at toe of bank.	17	N
00 + 450	50	Y		18,19	NA	Bank completely covered in native vegetation; Live stakes not visible	18,19	N	No at-risk trees present	18,19	Y(Rock Toe)	N	N	no exposure	18,19	N	Sand deposition at toe of bank.	18,19	N
00 + 500	40	Y		20	NA	Bank completely covered in native vegetation; Live stakes not visible	20	N	No at-risk trees present	20	Y(Rock Toe)	N	N	no exposure	20	N	Sand deposition at toe of bank and above rock toe.	20	N
00 + 550	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	21,22	NA	Bank completely covered in native vegetation; Live stakes not visible	21,22	N	No at-risk trees present	21,22	Y(Rock Toe)	N	N	no exposure	21,22	N	Sand deposition at toe of bank and above rock toe.	21,22	N
00 + 600	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	23	NA	Bank completely covered in native vegetation; Live stakes not visible	23	N	No at-risk trees present	23	Y(Rock Toe)	N	N	no exposure	23	N	Sand deposition at toe of bank and above rock toe.	23	N
00 + 650	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	24	NA	Bank completely covered in native vegetation; Live stakes 20% established	24	N	No at-risk trees present	24	Y(Rock Toe)	N	N	no exposure	24	N	Sand deposition at toe of bank.	24	N
00 + 700	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	25,26,27	NA	Bank completely covered in native vegetation; Live stakes 20% established	25,26,27	N	No at-risk trees present	25,26,27	Y(Rock Toe)	N	N	no exposure	25,26,27	N	Sand deposition at toe of bank.	25,26,27	N
00 + 750	30	N	Lower bank; ~20 degrees Upper bank; ~40 degrees	28	NA	Bank completely covered in native vegetation; Live stakes not visible	28	N	No at-risk trees present in remediated area	28	Y(Rock Toe)	N	N	no exposure	28	N		28	N
00 + 1250	20	N	Non-remediated upstream section; ~80 degrees Remediated section ; ~40 degrees	29,30,31	H	Exposed roots just upstream of remediated bank	29,30,31	Y	One large at risk tree just upstream of remediated bank	29,30,31	Y(Rock Toe)	N	N	Entirely rip rap portion of bank; remediation downstream	29,30,31	N	scour upstream of remediated section	29,30,31	N
00 + 1300	20	Y	Fortified tributary channel	32,33	NA	No exposed roots	32,33	N	No at-risk trees present	32,33	Y(Rock Toe)	N	N	Entirely rip rap portion of bank	32,33	N		32,33	N
00 + 1350	50	Y		34	NA	Native herbaceous vegetation establishing; Live stakes 20% established	34	N	No at-risk trees present	34	Y(Rock Toe)	N	N	No exposure	34	N		34	N
00 + 1400	50	Y		35,36,37	NA	Native herbaceous vegetation establishing; Live stakes 50% established	35,36,37	N	No at-risk trees present	35,36,37	Y(Rock Toe)	N	N	No exposure	35,36,37	N		35,36,37	N
00 + 1450	80	Y		38	NA	Native herbaceous vegetation establishing; Live stakes 20% established	38	N	No at-risk trees present	38	Y(Rock Toe)	N	N	No exposure; Rip rap fortified bank abutment intact	38	N		38	N
00 + 1500	90	Y	Bank heavily undercut downstream of remediation	39,40	H	Severe root exposure downstream of remediated bank	39,40	Y	High density of at risk trees downstream of remediated bank	39,40	NA	NA	NA	No fabric or geocell installed; downstream of remediation	39,40	Y	Heavy erosion present downstream of remediated BMA	39,40	N

Notes:
1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has doughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

AECOM

South River Photolog Attachment C
Allied Ready Mix BMA
Bank Monitoring Memo

Location: 00-20' **Photo Number:** 1 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** (non-remediated transect under 2nd Street overpass); ~ 20 degree bank angle; no at risk trees present; some scour associated with foot traffic along bank	

Location: 00-20' **Photo Title:** 2 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** (non-remediated transect under 2nd Street overpass); ~20 degree bank angle; no at risk trees present; sand deposition above rock toe; improvised access point located downstream; scour associated with foot traffic along bank.	

Location: 00+00' **Photo Number:** 3 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~45 degree bank angle; installed rock toe intact; sand deposition above rock toe; vegetation establishing; live stakes minimally established; erosion control fabric minimally exposed; geocell moderately exposed on upper bank as erosion control fabric deteriorated; some scour associated with foot traffic.	

Location: 00+00' **Photo Title:** 4 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Installed rock toe intact; sand deposition above rock toe; some scour associated with foot traffic along bank	

Location: 00+50' **Photo Number:** 5 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; live stakes minimally established; no at risk trees present; geocell minimally exposed mid bank as erosion control fabric is deteriorated; scour present where there is exposed geocell; sand deposition at toe of bank.	

Location: 00+50' **Photo Title:** 6 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Installed rock toe intact; live stakes minimally established; no at risk trees present; sand deposition at toe of bank.	

Location: 00+100' **Photo Number:** 7 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; live stakes minimally established; geocell exposed in areas with heavy foot traffic and erosion control fabric disintegrated; rocks from improvised weir moved back to stone toe.	

Location: 00+100' **Photo Title:** 8 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Geocell exposed at top of bank as erosion control fabric has deteriorated; rocks from improvised weir moved back to stone toe.	

Location: 00+100' **Photo Number:** 9 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Vegetation established along bank; improvised weir rocks moved back to stone toe.	

Location: 00+150' **Photo Title:** 10 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; vegetation established; no at risk trees present; 20% erosion control fabric exposed above rock toe; little sediment deposition in rock toe	

Location: 00+150' **Photo Number:** 11 **Date:** 1/19/2021 **Direction Photo Taken:** N/A **Description:** Erosion control fabric exposed above rock toe.	

Location: 00+200' **Photo Title:** 12 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; live stakes minimally established; vegetation established; little sediment deposition at toe of bank	

Location: 00+250' **Photo Number:** 13 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; live stakes minimally established; no at risk trees present; vegetation established; minimal sediment deposition in rock toe	

Location: 00+300' **Photo Title:** 14 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~40 degree bank angle; installed rock toe intact; vegetation established; minimal sediment deposition in rock toe	

Location: 00+300' **Photo Number:** 15 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Installed rock toe intact; minimal sediment deposition in rock toe; vegetation established	

Location: 00+350' **Photo Title:** 16 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~40 degree bank angle; installed rock toe intact; live pushed over from high water events; no at risk trees present; vegetation established; minimal sediment deposition in rock toe	

Location: 00+400' **Photo Number:** 17 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; outfall and drainage structure intact; rock toe intact; vegetation established; live stakes not visible; no at risk trees present; minimal sediment deposition in rock toe	

Location: 00+450' **Photo Title:** 18 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; vegetation established; minimal sediment deposition in rock toe	

Location: 00+450' **Photo Number:** 19 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Vegetation established throughout bank; live stakes pushed over from high water events; sand deposition from high water events above rock toe	

Location: 00+500' **Photo Title:** 20 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~40 degree bank angle; installed rock toe intact; vegetation established throughout bank; live stakes minimally established; sand deposition from high water events above rock toe	

Location: 00+550' **Photo Number:** 21 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree lower bank angle and 40 degree upper bank angle; installed rock toe intact; live stakes minimally established; vegetation established; sand deposition from high water events above rock toe	

Location: 00+550' **Photo Title:** 22 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Installed rock toe intact; vegetation established; sand deposition from high water events above rock toe	

Location: 00+600' **Photo Number:** 23 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree lower bank angle and 40 degree upper bank angle; installed rock toe intact; vegetation established; live stakes minimally established; sand deposition from high water events above rock toe; flood debris deposited above rock toe	

Location: 00+650' **Photo Title:** 24 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree lower bank angle and 40 degree upper bank angle; installed rock toe intact; vegetation established; live stakes minimally established; minimal sediment deposition in rock toe	

Location: 00+700' **Photo Number:** 25 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree lower bank angle and 40 degree upper bank angle; installed rock toe intact; vegetation established; live stakes minimally established; minimal sediment deposition in rock toe	

Location: 00+700' **Photo Title:** 26 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Downstream end of first remediated section; installed rock toe intact; vegetation established	

Location: 00+700' **Photo Number:** 27 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Installed rock toe intact; vegetation established; live stakes minimally established; minimal sediment deposition in rock toe	

Location: 00+750' **Photo Title:** 28 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree lower bank angle and 40 degree upper bank angle; installed rock toe intact; no live stakes observed; vegetation established; improvised access path observed; partially exposed roots downstream of BMA	

Location: 00+1250' **Photo Number:** 29 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~40 degree bank angle (non-remediated 80 degrees); exposed roots of large at risk trees are present upstream of remediation; heavy scour around roots; significant scour above remediation; installed rock toe intact within remediated section	

Location: 00+1250' **Photo Title:** 30 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Riprap tributary channel downstream with continued bank remediation	

Location: 00+1250' **Photo Number:** 31 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Exposed roots of large at risk trees are present upstream of remediation; heavy scour around roots; significant scour above remediation	

Location: 00+1300' **Photo Title:** 32 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~20 degree bank angle; riprap fortified tributary channel intact; no trees or live stakes planted; vegetation around channel established	

Location: 00+1300' **Photo Number:** 33 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Installed rock toe intact downstream; live stakes minimally established; vegetation established throughout bank	

Location: 00+1350' **Photo Title:** 34 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; vegetation established; live stakes minimally established; minimal sediment deposition in rock toe	

Location: 00+1400' **Photo Number:** 35 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle; installed rock toe intact; live stakes minimally established; vegetation established; minimal sediment deposition in rock toe	

Location: 00+1400' **Photo Title:** 36 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Downstream showing end of remediation with rock toe intact; significant erosion after remediation	

Location: 00+1400' **Photo Number:** 37 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Upstream showing fortified riprap bank and tributary channel; vegetation established; installed rock toe intact	

Location: 00+1450' **Photo Title:** 38 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~50 degree bank angle within remediated section and 90 degrees downstream of remediation; end of installed rock toe intact; vegetation established within remediated section; severe erosion downstream of BMA	

Location: 00+1500' **Photo Number:** 39 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** ~90 degree bank angle; significant erosion and scour along bank; several exposed roots; several at risk trees; bank heavily undercut	

Location: 00+1500' **Photo Title:** 40 **Date:** 1/19/2021 **Direction Photo Taken:** East **Description:** Severe erosion downstream of BMA; at risk trees and exposed roots present; bank heavily undercut	

Attachment C - Waynesboro Off-Site Cap Areas

Inspection Record Sheet

Maintenance Plan

Location and property owner name: **Allied Ready Mix BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	Some washout of gravel access road near fortified tributary channel	1
Trails	Some improvised civilian pathways present near upstream and downstream portions of BMA	1
Drainage Structures	Drainage structures intact	1
Outfall Structures	Outfall structures intact	1
Rip-Rap Protection	Rip-rap intact	1
Cap System Vegetative Cover	Live stakes installed in spring of 2019 have established along the bank; native vegetation has covered much of the erosion control fabric, particularly in the downstream portion of the BMA	1
Cap System Geosynthetics	Erosion control fabric is not exposed in most areas and vegetation appears healthy and established.	1
Cap System Slope Stability	Slope is generally consistent and stable along BMA; heavy erosion present downstream of secondary remediated BMA.	1
Cap System Subsidence	No cap system subsidence observed	1
Fencing and Gates	Fencing and gates intact.	1

Notes:

1. Functioning properly; no repairs needed
2. Repairs needed (describe why, what, and where), but not time critical
3. Time critical repair needed (describe what and where)

Comments:

Cap system vegetative cover will continue to be assessed in the spring of 2021

Inspected by: Scott Gregory and Sarah Bartle Date: Jan. 19, 2021

Attachment D

Shiloh Baptist Church BMA

Attachment D - Table 1
2020 Leaf-off Maintenance Inspection Log
Shiloh Baptist Church BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			Overall Change Since Previous Inspection (Y/N)
	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Attachment D)	Exposed Roots (L /M /H)[3]	Notes	Photo # (Attachment D)	At Risk Trees Present (Y/N)[4]	Notes	Photo # (Attachment D)	Rock Toe/LWD (Y/N)[5]	Geocell exposed (Y/N)[6]	Erosion Control Fabric exposed (Y/N)[6]	Notes	Photo # (Attachment D)	Scour Present (Y/N)[7]	Notes	Photo # (Attachment D)	
00 - 25	30	Y		1	M	Minimal vegetation; exposed roots along bank; access pathways present	1	N	No at-risk trees present	1	NA	NA	NA	Upstream of remediation	1	Y	Minimal scour present	1	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 00	45	Y		2,3,4	N	Live stakes and plantings minimally established; minimal grasses established	2,3,4	N	No trees adjacent to edge of water	2,3,4	Y(Rock Toe)	N	N	No exposure; culvert just upstream of remediation	2,3,4	N	Evidence of sediment deposition in rock toe	2,3,4	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 50	65	Y		5	N	Live stakes and plantings removed from bank by someone; minimal grasses established	5	N	No trees adjacent to edge of water	5	Y(Rock Toe)	N	N	No exposure; rock toe intact	5	N	Evidence of sediment deposition in rock toe	5	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 100	50	N	Lower bank; ~40 degrees Upper bank; ~60 degrees	6	N	Live stakes and plantings removed from bank by someone; minimal grasses established	6	N	No trees adjacent to edge of water	6	Y(Rock Toe)	N	N	No exposure; rock toe intact; footpath present	6	N	Evidence of sediment deposition in rock toe	6	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 150	50	N	Lower bank; ~40 degrees Upper bank; ~60 degrees Above GW; ~60 degrees	7,8	N	Live stakes and plantings removed from bank by someone; minimal grasses established	7,8	N	No trees adjacent to edge of water	7,8	Y(Rock Toe)	N	Y	Erosion control fabric minimally exposed below GW and above; evidence of surface water runoff above GW	7,8	N	Evidence of sediment deposition in rock toe	7,8	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 200	65	Y		9	N	Live stakes and plantings removed from bank by someone; native vegetation covering 80% of bank	9	N	No trees adjacent to edge of water	9	Y(Rock Toe)	N	N	No exposure; footpath present; rock toe intact	9	N	Evidence of sediment deposition in rock toe	9	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 250	55	N	Lower bank; ~45 degrees Upper bank; ~65 degrees Above GW; ~70 degrees	10,11,12,13	N	Native herbaceous vegetation establishing; plantings installed above and below GW intact	10,11,12,13	N	No trees adjacent to edge of water	10,11,12,13	Y(Rock Toe)	N	Y	Erosion control fabric 50% exposed below the GW and minimally exposed above the GW; drainage pipe across GW cut; rock toe intact; GW intact	10,11,12,13	N	Evidence of sediment deposition in rock toe	10,11,12,13	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 300	65	N	Lower bank; ~45 degrees Upper bank; ~80 degrees Above GW; ~70 degrees	14,15	N	Plantings intact but some missing above GW; some grass cover; live stakes not establishing	14,15	N	No trees adjacent to edge of water	14,15	Y(Rock Toe)	N	Y	Erosion control fabric minimally exposed below GW and above GW; erosion control fabric torn around plantings; coir logs intact; rock toe intact	14,15	N	Evidence of sediment deposition in rock toe	14,15	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 350	50	Y		16	N	Plantings intact downstream of culvert and grasses establishing upstream of culvert; live stakes not establishing	16	N	No trees adjacent to edge of water	16	Y(Rock Toe)	N	N	Entirely riprap; large plastic corrugated pipe and Armorflex mat installed and intact;	16	N	Gravel deposition at outfall	16	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 400	50	N	Lower bank; ~45 degrees Upper bank; ~50 degrees	17,18,19	N	Live stakes and plantings not establishing; some grasses established	17,18,19	N	No at-risk trees present	17,18,19	Y(Rock Toe)	N	N	No exposure; rock toe intact	17,18,19	N	Evidence of sediment deposition in rock toe	17,18,19	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 450	50	N	Lower bank; ~45 degrees Upper bank; ~55 degrees	20,21	N	Live stakes and plantings not establishing; some grasses established	20,21	N	No trees adjacent to edge of water	20,21	Y(Rock Toe)	N	Y	Erosion control fabric minimally exposed; some evidence of erosion from runoff from Riverside Drive.	20,21	N	Evidence of sediment deposition in rock toe	20,21	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 500	55	N	Lower bank; ~45 degrees Upper bank; ~65 degrees	22	N	Installed live stakes and plantings not establishing	22	N	No at-risk trees present	22	Y(Rock Toe)	N	Y	Erosion control fabric minimally exposed at end of repaired area; rock toe intact	22	N	Evidence of sediment deposition in rock toe	22	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 550	65	N	Lower bank; ~60 degrees Upper bank; ~70 degrees	23,24,25	N	Reseeded grasses establishing on failed bank section	23,24,25	N	No trees adjacent to edge of water	23,24,25	Y(Rock Toe)	N	Y	Erosion control fabric 40% exposed; rock toe intact; repaired bank intact	23,24,25	N	Evidence of sediment deposition in rock toe	23,24,25	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 600	70	Y		26	N	Reseeded grasses establishing on failed bank section	26	N	No trees adjacent to edge of water	26	Y(Rock Toe)	N	Y	Erosion control fabric 40% exposed; rock toe intact	26	N	Evidence of sediment deposition in rock toe	26	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 650	65	N	Lower bank; ~60 degrees Upper bank; ~70 degrees	27	N	Installed live stakes and plantings not establishing; thick mats of dead grasses; bank 40% exposed	27	N	No at-risk trees present	27	Y(Rock Toe)	N	N	No exposure; rock toe intact	27	N	Evidence of sediment deposition in rock toe	27	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 700	65	Y		28,29,30	N	Installed live stakes and plantings not establishing; thick mats of dead grasses	28,29,30	N	No trees adjacent to edge of water	28,29,30	Y(Rock Toe)	N	N	No exposure; rock toe intact	28,29,30	N	Evidence of sediment deposition in rock toe	28,29,30	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 750	60	Y		31	N	Live stakes and plantings not established; grasses established	31	N	No at-risk trees present	31	Y(Rock Toe)	N	N	No exposure; rock toe intact	31	N	Evidence of sediment deposition in rock toe	31	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 800	65	Y		32	N	Live stakes and plantings not established; grasses established	32	N	No trees adjacent to edge of water	32	Y(Rock Toe)	N	N	No exposure; rock toe intact	32	N	Evidence of sediment deposition in rock toe	32	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 850	65	Y		33	N	Live stakes and plantings not established; grasses established	33	N	No at-risk trees present	33	Y(Rock Toe)	N	N	No exposure; rock toe intact	33	N	Evidence of sediment deposition in rock toe	33	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 900	70	Y		34	N	Live stakes and plantings not established; grasses established	34	N	No trees adjacent to edge of water	34	Y(Rock Toe)	N	N	No exposure; rock toe intact	34	N	Evidence of sediment deposition in rock toe	34	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 950	65	N	Lower bank; ~70 degrees Upper bank; ~60 degrees	35	N	Grasses established along upper bank	35	N	No at-risk trees present	35	Y(Rock Toe)	N	N	No exposure; rock toe intact	35	N	Evidence of sediment deposition in rock toe	35	Y (vegetation establishing throughout bank; evidence of sediment deposition)
00 + 975	60	Y	End of remediation	36,37,38	N	Grasses established along upper bank	36,37,38	Y	Exposed roots and at risk trees present downstream of remediation	36,37,38	Y(Rock Toe)	N	N	No exposure; rock toe intact	36,37,38	Y	Evidence of sediment deposition; scour present downstream of remediation	36,37,38	Y (vegetation establishing throughout bank; evidence of sediment deposition)

Notes:
1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

AECOM

South River Photolog Attachment D
Shiloh Baptist Church BMA
Bank Monitoring Memo

Location: 00-25' **Photo Number:** 1 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~30 degree bank angle; upstream of remediation; improvised access paths present; minimal scour	

Location: 00+00' **Photo Title:** 2 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~45 degree bank angle; start of remediation; culvert just upstream out of remediation; installed rock toe intact; few installed live stakes observed; vegetation established; no erosion control fabric or geocell exposed; minimal sediment deposition from recent high water events	

AECOM

South River Photolog Attachment D
Shiloh Baptist Church BMA
Bank Monitoring Memo

Location: 00+00' **Photo Number:** 3 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream of remediation; no at risk trees; access paths to river present	

Location: 00+00' **Photo Title:** 4 **Date:** 1/18/2021 **Direction Photo Taken:** North **Description:** Upstream extent of BMA; vegetation establishing throughout bank	

Location: 00+50' **Photo Number:** 5 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; installed rock toe intact; few installed live stakes observed; vegetation established; no erosion control fabric or geocell exposed; minimal sediment deposition from recent high water events	

Location: 00+100' **Photo Title:** 6 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree upper bank angle and 40 degree lower bank angle; no installed live stakes or plantings present after being removed from property owner; vegetation established; sediment deposition from high water events	

Location: 00+150' **Photo Number:** 7 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree bank angle and 40 degree upper bank angle; no installed live stakes of plantings present after being removed by nearby property owner; vegetation established; minimal sediment deposition from recent flood events	

Location: 00+150' **Photo Title:** 8 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree upper bank angle upslope of Greenway; some evidence of surface runoff; installed plantings removed by property owner; vegetation minimally established	

Location: 00+200' **Photo Number:** 9 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; vegetation establishing covering 80%; installed rock toe intact; few live stakes present; erosion control fabric 20% exposed, no geocell exposed	

Location: 00+250' **Photo Title:** 10 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; installed rock toe intact; vegetation establishing; erosion control fabric 30% exposed; live stakes and plantings establishing	

Location: 00+250' **Photo Number:** 11 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle upslope of Greenway; vegetation establishing; erosion control fabric 20% exposed	

Location: 00+250' **Photo Title:** 12 **Date:** 1/18/2021 **Direction Photo Taken:** N/A **Description:** Drainage pipe on upper bank above Greenway and buried under Greenway is damaged	

Location: 00+250' **Photo Number:** 13 **Date:** 1/18/2021 **Direction Photo Taken:** North **Description:** Greenway road intact; vegetation establishing; live stakes and plantings intact	

Location: 00+300' **Photo Title:** 14 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~80 degree upper bank angle and 45 degree lower bank angle; installed live stakes and plantings present; vegetation established; installed rock toe intact; sediment deposition in rock toe from high water events	

Location: 00+300' **Photo Number:** 15 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree upper bank angle upslope of Greenway; installed plantings intact; vegetation establishing	

Location: 00+350' **Photo Title:** 16 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~50 degree bank angle; entirely riprap; large plastic corrugated pipe and Armorflex mat installed intact; gravel deposition at outfall; vegetation established	

Location: 00+400' **Photo Number:** 17 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~50 degree upper bank angle and 45 degree lower bank angle; no at risk trees present; lives stakes minimally established; plantings establishing; vegetation established; no erosion control fabric or geocell exposed; installed rock toe intact; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+400' **Photo Title:** 18 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Vegetation establishing throughout bank; installed rock toe intact	

Location: 00+400' **Photo Number:** 19 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Installed rock toe intact; vegetation establishing throughout bank	

Location: 00+450' **Photo Title:** 20 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~55 degree upper bank angle and 45 degree lower bank angle; installed live stakes and plantings establishing; installed rock toe intact; vegetation establishing throughout bank; evidence of erosion from surface runoff; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+450' **Photo Number:** 21 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** Surface water runoff on upper bank; vegetation establishing	

Location: 00+500' **Photo Title:** 22 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree upper bank angle and 45 degree lower bank angle; no at risk trees present; installed live stakes and plantings establishing; vegetation establishing; bank covered by seeded grasses that appear to be dead and no longer establishing; installed rock toe intact	

Location: 00+550' **Photo Number:** 23 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree upper bank angle and 60 degree lower bank angle; portion of the bank that failed over the summer has been repaired; grasses establishing along repaired portion of bank; installed rock toe intact; erosion control fabric 40% exposed in repaired area	

Location: 00+550' **Photo Title:** 24 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Upstream portion of failed bank that was repaired fall of 2020; grasses establishing on repaired bank; erosion control fabric 40% exposed in repaired area	

Location: 00+550' **Photo Number:** 25 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Downstream portion showing extent of failed bank that was repaired fall of 2020; grasses establishing on repaired bank; erosion control fabric 40% exposed in repaired area	

Location: 00+600' **Photo Title:** 26 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree upper bank angle and 60 degree lower bank angle; portion of the bank that failed over the summer has been repaired; grasses establishing along repaired portion of bank; installed rock toe intact; erosion control fabric 40% exposed in repaired area	

Location: 00+650' **Photo Number:** 27 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree upper bank angle and 60 degree lower bank angle; installed live stakes and plantings establishing; vegetation establishing; no at risk trees present; installed rock toe intact; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+700' **Photo Title:** 28 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; installed live stakes and plantings establishing; installed rock toe intact; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+700' **Photo Number:** 29 **Date:** 1/18/2021 **Direction Photo Taken:** Southwest **Description:** Installed rock toe intact; vegetation establishing; newly repaired bank upstream	

Location: 00+700' **Photo Title:** 30 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Installed rock toe intact; vegetation establishing; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+750' **Photo Number:** 31 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree bank angle; installed live stakes and plantings establishing; no at risk trees present; installed rock toe intact; vegetation establishing; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+800' **Photo Title:** 32 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; installed live stakes and plantings establishing; installed rock toe intact; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+850' **Photo Number:** 33 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~65 degree bank angle; installed live stakes and plantings establishing; vegetation establishing; installed rock toe intact; minimal sediment deposition in rock toe	

Location: 00+900' **Photo Title:** 34 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~70 degree bank angle; installed live stakes and plantings establishing; installed rock toe intact; minimal sediment deposition in rock toe; bank covered by seeded grasses that appear to be dead and no longer establishing	

Location: 00+950' **Photo Number:** 35 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** ~60 degree upper bank angle and 70 degree lower bank angle; no at risk trees present; installed rock toe intact; minimal sediment deposition in rock toe; bank covered by seeded grasses that appear dead and no longer establishing	

Location: 00+975' **Photo Title:** 36 **Date:** 1/18/2021 **Direction Photo Taken:** West **Description:** End of remediation; ~60 degree bank angle; installed rock toe intact; remediated bank portion covered by seeded grasses that appear dead and no longer establishing	

Location: 00+975' **Photo Number:** 37 **Date:** 1/18/2021 **Direction Photo Taken:** South **Description:** Installed rock toe intact; bank covered by seeded grasses that appear dead and no longer establishing	

Location: 00+975' **Photo Title:** 38 **Date:** 1/18/2021 **Direction Photo Taken:** Northwest **Description:** Non-remediated bank; exposed roots and at risk trees present; scour along lower bank downstream of rock toe	

Attachment D - Waynesboro Off-Site Cap Areas

Inspection Record Sheet

Maintenance Plan

Location and property owner name: **Shiloh Baptist Church BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	NA	NA
Trails	Road intact. Greenway set to begin construction in spring of 2021	1
Drainage Structures	Drainage structures intact. Corrugated drainage pipe buried beneath Greenway cut at edge.	2
Outfall Structures	Outfall structures intact	1
Rip-Rap Protection	Rip-rap intact	1
Cap System Vegetative Cover	Plantings and live stakes installed but with plants and grasses establishing. Bank associated with property directly downstream from church property had all of shrub and saplings ripped out of ground in spring 2020. Vegetative cover thick mat of dormant vegetation with plantings minimally established. Live stakes not establishing and are planted high on bank above rock toe.	2
Cap System Geosynthetics	Erosion control fabric minimally exposed. Evidence of surface water run-off at 00+450'.	1
Cap System Slope Stability	Slope is consistent and stable along remediation. Section of bank from 00+550'-00+650' that failed late summer 2020 was repaired and seeded.	1
Cap System Subsidence	None observed	1
Fencing and Gates	Fencing and gates intact.	1

Notes:

1. Functioning properly; no repairs needed
2. Repairs needed (describe why, what, and where), but not time critical
3. Time critical repair needed (describe what and where)

Comments: vegetation establishing but need to add shrub and saplings to cover with regular watering. Failed section becoming established with herbaceous vegetation.

Inspected by: Scott Gregory and Sarah Bartle Date: Jan. 18, 2021

Attachment E

North Park BMA

Attachment E - Table 1
2020 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

Station (ft)[1]	Undercutting				Exposed Roots			At Risk Trees			Installed Stabilization Features Intact					Local Scour			Overall Change Since Previous Inspection (Y/N)
	Approximate Bank Angle (Degrees)	Consistent Grade (Y/N)[2]	Notes	Photo # (Attachment E)	Exposed Roots (L /M /H)[3]	Notes	Photo # (Attachment E)	At Risk Trees Present (Y/N)[4]	Notes	Photo # (Attachment E)	Rock Toe/LWD (Y/N)[5]	Geocell exposed (Y/N)[6]	Erosion Control Fabric exposed (Y/N)[6]	Notes	Photo # (Attachment E)	Scour Present (Y/N)[7]	Notes	Photo # (Attachment E)	
00 - 25	70	Y	vertical drop at toe	1,2	H	undercut bank with exposed roots	1,2	N	no woody vegetation	1,2	NA	NA	NA	Upstream of remediation	1,2	Y	Minimal scour present; bank undercut	1,2	Initial Inspection after Remediation
00 + 00	60	Y	start of 1st remediated section	3,4	N/A	no woody vegetation; live stakes and plantings present; vegetation 10% established	3,4	N	no at-risk trees present	3,4	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact	3,4	N	No sediment deposition	3,4	Initial Inspection after Remediation
00 + 50	60	Y		5	N/A	no woody vegetation; live stakes and plantings present; vegetation 10% established	5	N	no at-risk trees present	5	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact; straw wattle intact	5	N	Fine sediment deposition	5	Initial Inspection after Remediation
00 + 100	60	Y		6,7,8	N/A	no woody vegetation; live stakes and plantings present; vegetation 10% established	6,7,8	N	no at-risk trees present	6,7,8	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact	6,7,8	N	Moderate sediment deposition	6,7,8	Initial Inspection after Remediation
00 + 150	60	Y		9	N/A	no woody vegetation; live stakes and plantings present; vegetation 10% established	9	N	tree on upper bank by GW bark damaged	9	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact	9	N	Moderate sediment deposition	9	Initial Inspection after Remediation
00 + 200	60	Y		10	N/A	no woody vegetation; live stakes and plantings present; vegetation 20% established	10	N	trees present mid bank	10	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	10	N	Moderate sediment deposition	10	Initial Inspection after Remediation
00 + 250	60	Y		11	N/A	no woody vegetation; live stakes and plantings present; vegetation 10% established	11	N	no at-risk trees present	11	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact; straw wattle intact	11	N	Minimal sediment deposition	11	Initial Inspection after Remediation
00 + 300	70	Y		12,13,14	N/A	no woody vegetation; live stakes and plantings present; vegetation 30% established	12,13,14	N	no at-risk trees present	12,13,14	Y (rock toe)	N	Y	erosion control fabric 70% exposed; no geocell exposed; coir log intact; straw wattle intact	12,13,14	N	Minimal sediment deposition	12,13,14	Initial Inspection after Remediation
00 + 350	65	Y		15	N/A	no woody vegetation; live stakes and plantings present; vegetation 20% established	15	N	no at-risk trees present	15	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	15	N	Minimal sediment deposition	15	Initial Inspection after Remediation
00 + 400	40	Y		16	N/A	no woody vegetation; live stakes and plantings present; vegetation 20% established	16	N	trees near rock toe in good condition	16	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	16	N	Minimal sediment deposition	16	Initial Inspection after Remediation
00 + 450	40	Y		17	N/A	no woody vegetation; live stakes and plantings present; vegetation 20% established	17	N	no at-risk trees present	17	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	17	N	Minimal sediment deposition	17	Initial Inspection after Remediation
00 + 500	50	Y		18	N/A	no woody vegetation; live stakes and plantings present; vegetation 30% established	18	N	no at-risk trees present	18	Y (rock toe)	N	Y	erosion control fabric 70% exposed; no geocell exposed; coir log intact; straw wattle intact	18	N	No sediment deposition	18	Initial Inspection after Remediation
00 + 550	50	Y		19	N/A	no woody vegetation; live stakes and plantings present; vegetation 30% established	19	N	no at-risk trees present	19	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	19	N	No sediment deposition	19	Initial Inspection after Remediation
00 + 600	60	Y		20	N/A	live stakes and plantings present; vegetation 20% established	20	N	one tree near GW in good condition	20	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; coir log intact; straw wattle intact	20	N	No sediment deposition	20	Initial Inspection after Remediation
00 + 650	50	Y		21	N/A	live stakes and plantings present; vegetation 5% established	21	N	one tree above rock toe in good condition	21	Y (rock toe)	N	Y	erosion control fabric 95% exposed; no geocell exposed; coir log intact; straw wattle intact	21	N	No sediment deposition	21	Initial Inspection after Remediation
00 + 700	50	Y		22,23,24	N/A	live stakes and plantings present; vegetation 10% established	22,23,24	N	one tree near GW has damaged bark	22,23,24	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact; straw wattle intact	22,23,24	N	No sediment deposition	22,23,24	Initial Inspection after Remediation
00 + 750	40	Y		25	N/A	live stakes and plantings present; vegetation 10% established	25	N	no at-risk trees present	25	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact; straw wattle intact	25	N	No sediment deposition	25	Initial Inspection after Remediation
00 + 800	50	Y		26	N/A	live stakes and plantings present; vegetation 10% established	26	N	no at-risk trees present	26	Y (rock toe)	N	Y	erosion control fabric 90% exposed; no geocell exposed; coir log intact; straw wattle intact	26	N	Minimal sediment deposition	26	Initial Inspection after Remediation
00 + 850	20	Y		27	N/A	live stakes and plantings present; vegetation 25% established	27	N	group of 3 trees near top of bank in good condition	27	Y (rock toe)	N	Y	erosion control fabric 75% exposed; no geocell exposed; coir log intact; straw wattle intact	27	N	Minimal sediment deposition	27	Initial Inspection after Remediation
00 + 900	20	Y		28	N/A	live stakes and plantings present; vegetation 25% established	28	N	no at-risk trees present	28	Y (rock toe)	N	Y	erosion control fabric 75% exposed; no geocell exposed; coir log intact; straw wattle intact	28	N	No sediment deposition	28	Initial Inspection after Remediation
00 + 950	30	Y		29	N/A	live stakes and plantings present; vegetation 25% established	29	N	no at-risk trees present	29	Y (rock toe)	N	Y	erosion control fabric 75% exposed; no geocell exposed; coir log intact; straw wattle intact	29	N	No sediment deposition	29	Initial Inspection after Remediation
00 + 1000	30	Y		30	N/A	live stakes and plantings present; vegetation 25% established	30	N	no at-risk trees present	30	Y (rock toe)	N	Y	erosion control fabric 75% exposed; no geocell exposed; coir log intact; straw wattle intact	30	N	No sediment deposition	30	Initial Inspection after Remediation
00 + 1050	45	Y		31,32	N/A	live stakes and plantings present; vegetation 25% established	31,32	N	no at-risk trees present	31,32	Y (rock toe)	N	Y	erosion control fabric 75% exposed; no geocell exposed; coir log intact; straw wattle intact	31,32	N	No sediment deposition	31,32	Initial Inspection after Remediation
00 + 1100	45	Y	start of non-remediated section	33,34	M	grass adjacent to water's edge; shrubs mid and upper bank	33,34	N	no at-risk trees present	33,34	N/A	N/A	N/A	minimal undercutting at toe of bank	33,34	N	no scour	33,34	Initial Inspection after Remediation

Attachment E - Table 1
2020 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

00 + 1150	45	Y		35	M	grass adjacent to water's edge; shrubs mid and upper bank	35	N	one tree mid bank in good condition	35	N/A	N/A	N/A	minimal undercutting at toe of bank	35	N	no scour	35	Initial Inspection after Remediation
00 + 1200	45	Y		36	M	sparse grasses at toe; shurbs on upper bank	36	N	3 trees mid bank in good condition	36	N/A	N/A	N/A	minimal undercutting at toe of bank; LWD present	36	N	no scour	36	Initial Inspection after Remediation
00 + 1250	55	N	Lower bank ~70 degrees Upper bank ~45 degrees	37,38	L	no vegetation at toe; woody vegetation on mid and upper bank	37,38	N	one tree mid bank in good condition	37,38	N/A	N/A	N/A	wooden steps present from top of bank to mid bank then a mostly vertical drop from scour and erosion at the base of steps	37,38	Y	Scour present at base of wooden steps	37,38	Initial Inspection after Remediation
00 + 1300	45	Y		39	M	no vegetation at toe; woody vegetation on mid and upper bank; exposed roots on one tree at toe	39	Y	1 tree at toe and 1 at mid bank; tree mid bank appears to be dead	39	N/A	N/A	N/A	undercutting mostly at tree at toe of bank	39	Y	some scour at exposed roots at toe of bank	39	Initial Inspection after Remediation
00 + 1350	45	Y		40	H	woody vegetation at water's edge; enitre bank shows exposed roots	40	N	1 tree at toe and 3 at mid bank in good condition	40	N/A	N/A	N/A	undercutting at bank toe	40	N	no scour	40	Initial Inspection after Remediation
00 + 1400	45	Y		41	H	highly exposed roots throughout bank; bank covered with woody vegetation; sparse grasses at toe	41	N	one tree mid bank in good condition	41	N/A	N/A	N/A	bank undercutting minimal	41	N	no scour	41	Initial Inspection after Remediation
00 + 1450	50	Y		42	M	exposed roots throughout bank; bank covered with woody vegetation; sparse grasses at toe	42	N	one tree mid bank in good condition	42	N/A	N/A	N/A	bank undercutting minimal	42	Y	minimal scour	42	Initial Inspection after Remediation
00 + 1500	60	Y	end of non-remediated section	43	M	no vegetation mid bank to toe; shrubs mid bank to top with exposed roots	43	N	1 tree at toe and 1 on upper bank in good condition	43	N/A	N/A	N/A	minimal undercutting at tree roots at toe of bank	43	Y	minimal scour at exposed tree roots at toe	43	Initial Inspection after Remediation
00 + 1550'	60	N	start of 2nd section of bank remediation lower bank ~50 degrees upper bank ~ 75 degrees	44,45,46	N/A	vegetation 20% established	44,45,46	N	no at-risk trees present	44,45,46	Y (rock toe)	N	Y	erosion control fabric 80% exposed; no geocell exposed; rock toe intact	44,45,46	N	No sediment deposition	44,45,46	Initial Inspection after Remediation
00 + 1600'	50	Y		47,48,49	N/A	live stakes and plantings present; vegetation cover 80% established	47,48,49	N	no at-risk trees present	47,48,49	Y (rock toe)	N	Y	erosion control fabric 20% exposed; no geocell exposed; rock toe intact	47,48,49	N	No sediment deposition	47,48,49	Initial Inspection after Remediation
00 + 1650'	45	Y		50,51,52	N/A	vegetation 70% established; surface water discharge pipe in good condition	50,51,52	N	no at-risk trees present	50,51,52	Y (rock toe)	N	Y	erosion control fabric 30% exposed; no geocell exposed; kayak launch and steps intact with minimal ersoioin of gravel around bottom steps	50,51,52	N	No sediment deposition	50,51,52	Initial Inspection after Remediation
00 + 1700'	50	Y		53,54,55,56,57	N/A	live stakes and plantings present; vegetatioin 70% established	53,54,55,56,57	N	group of 4 trees above gravel walking path in good condition	53,54,55,56,57	Y (rock toe)	Y	Y	erosion control fabric 30% exposed; geocell 30% exposed from high water events above rock toe; walking path above toe in good condition	53,54,55,56,57	N	No sediment deposition	53,54,55,56,57	Initial Inspection after Remediation
00 + 1750'	50	Y		58,59,60	N/A	live stakes and plantings present; vegetation 60% established	58,59,60	N	no at-risk trees present	58,59,60	Y (rock toe)	Y	Y	erosion control fabric 40% exposed; geocell 40% exposed above rock toe; walking path gravel minimally moved by high water	58,59,60	N	No sediment deposition	58,59,60	Initial Inspection after Remediation
00 + 1800'	50	Y		61,62,63	N/A	live stakes and plantings present; vegetatioin 80% established	61,62,63	N	no at-risk trees present	61,62,63	Y (rock toe)	Y	Y	erosion control fabric 20% exposed; geocell 20% exposed above rock toe; gravel on walking path moved by high water to expose larger grade gravel	61,62,63	N	No sediment deposition	61,62,63	Initial Inspection after Remediation
00 + 1850'	40	Y		64,65	N/A	live stakes and plantings present; vegetationi 75% established	64,65	N	no at-risk trees present	64,65	Y (rock toe)	Y	Y	erosion control fabric 25% exposed; geocell 25% exposed above rock toe; gravel on walking path moved by high water to expose larger grade gravel	64,65	N	No sediment deposition	64,65	Initial Inspection after Remediation
00 + 1900'	45	Y		66,67,68	N/A	live stakes and plantings present; vegetation 50% established	66,67,68	N	no at-risk trees present	66,67,68	Y (rock toe)	Y	Y	erosion control fabric 50% exposed; geocell 50% exposed; walking path stonedust pushed into mound by high water exposeing large grade stone on path; constructed wooden staircase intact	66,67,68	N	No sediment deposition	66,67,68	Initial Inspection after Remediation
00 + 1950'	60	Y		69,70,71	N/A	live stakes and plantings present; vegetation 70% established	69,70,71	N	no at-risk trees present	69,70,71	Y (rock toe)	Y	Y	erosion control fabric 30% exposed; geocell 30% exposed above rock toe; concrete outfall pipe above rock toe intact	69,70,71	N	No sediment deposition	69,70,71	Initial Inspection after Remediation
00 + 2000'	60	Y		72,73	N/A	live stakes and plantings present; vegetation 80% established	72,73	N	no at-risk trees present	72,73	Y (rock toe)	Y	Y	erosion control fabric and geocell 20% exposed above rock toe; rock toe intact	72,73	N	No sediment deposition	72,73	Initial Inspection after Remediation
00 + 2050'	60	Y		74,75,76	N/A	live stakes and plantings present; vegetation 80% established	74,75,76	N	no at-risk trees present	74,75,76	Y (rock toe)	Y	Y	erosion control fabric and geocell 20% exposed above rock toe; rock toe intact	74,75,76	N	No sediment deposition	74,75,76	Initial Inspection after Remediation
00 + 2100'	60	Y		77,78	N/A	live stakes and plantings present; vegetation 90% established	77,78	N	no at-risk trees present	77,78	Y (rock toe)	Y	Y	erosion control fabric and geocell 10% exposed above rock toe; rock toe intact	77,78	N	No sediment deposition	77,78	Initial Inspection after Remediation
00 + 2150'	60	Y		79,80	N/A	live stakes and plantings present; vegetation 90% established	79,80	N	no at-risk trees present	79,80	Y (rock toe)	Y	Y	erosion control fabric and geocell 10% exposed above rock toe; rock toe intact	79,80	N	No sediment deposition	79,80	Initial Inspection after Remediation
00 + 2200'	60	Y		81,82,83,84	N/A	live stakes and plantings present; vegetation 90% established	81,82,83,84	Y	one tree mid bank in good condition	81,82,83,84	Y (rock toe)	Y	Y	erosion control fabric and geocell 10% exposed above rock toe; rock toe intact	81,82,83,84	N	No sediment deposition	81,82,83,84	Initial Inspection after Remediation
00 + 2250'	60	Y	end of 2nd remediated section	85	N/A	live stakes and plantings present; vegetation 90% established	85	Y	one tree mid bank in good condition	85	Y (rock toe)	N	Y	erosion control fabric 10% exposed; no geocell exposed; rock toe intact; higher rock toe in this section	85	N	No sediment deposition	85	Initial Inspection after Remediation

Attachment E - Table 1
2020 Leaf-off Maintenance Inspection Log
North Park BMA
Former DuPont Waynesboro Site, Area of Concern 4

00 + 2300'	65	N	start of non-remediated section lower bank ~90 degrees upper bank ~40 degrees	86	M	woody vegetation throughout bank; medium exposed roots mid to lower bank; sparse vegetation	86	N	no at-risk trees present	86	N/A	N/A	N/A	bank undercutting minimal	86	N	no scour	86	Initial Inspection after Remediation
00 + 2350'	65	N	lower bank ~90 degrees upper bank ~40 degrees	87	H	woody vegetation mid to upper bank; highly exposed roots; no vegetation established adjacent to water's edge	87	Y	several trees on upper bank in good condition	87	N/A	N/A	N/A	significant bank undercutting from mid to lower bank	87	Y	scour mid to lower bank by exposed roots	87	Initial Inspection after Remediation
00 + 2380'	65	N	lower bank ~90 degrees upper bank ~40 degrees	88,89,90	M	woody vegetation throughout bank; medium exposed roots mid to lower bank; sparse vegetation	88,89,90	Y	several trees on upper bank in good condition	88,89,90	N/A	N/A	N/A	minimal undercutting at toe of bank	88,89,90	Y	minimal scour at toe of slope	88,89,90	Initial Inspection after Remediation
North Park	N/A	N/A	largely flat	91-113	N/A	large trees present across greenspace in North Park in good condition; vegetation minimally established in greenspace; plantings present	91-113	N	no at-risk trees present	91-113	N/A	N/A	N/A	erosion control fabric highly exposed (50-90%) within North Park; Greenway intact and ready for pavement; some ruts along GW from vehicles	91-113	N	N/A	91-113	Initial Inspection after Remediation

Notes:

1, Inspection station is described as the distance (feet) upstream (-) or downstream (+) from the start of the BMA (00); for example, Station 00 + 50' is 50 feet downstream from the start of the BMA
2, A significant deviation from continuous bank slope or break in grade may be used as an indicator of undercutting; consistent bank grade is evaluated as Y (yes) or N (no)
3, The extent to which roots are exposed may provide a relative measure of the magnitude of apparent erosion; extent of exposed roots is evaluated as L (low), M (moderate), H (high), or NA (not applicable- no exposed roots)
4, At-risk trees (i.e., trees that lean towards the river) typically have a greater potential to fall into the river and dislodge the bank soil and erosion-control products immediately around and above the tree; presence of at-risk trees is evaluated as Y (yes) or N (no)
5, Installed rock toe and large woody debris (LWD) features are monitored to ensure that they are anchored and determine whether material has sloughed, or been eroded, or moved downstream; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
6, Installed geocell and erosion control fabric are monitored to ensure that they are intact and determine whether material is exposed or visible; these installed features are evaluated as Y (yes, intact), N (no, not intact), or NA (not applicable- no installed features to monitor)
7, The presence of local scour is assessed at the toe and center of the bank, per inspection station, as well as approximately 25 feet upstream and downstream of the start and end of the BMA; the presence of scour is evaluated as Y (yes) or N (no)

AECOM

South River Photolog
North Park BMA
Bank Monitoring Memo

Attachment C

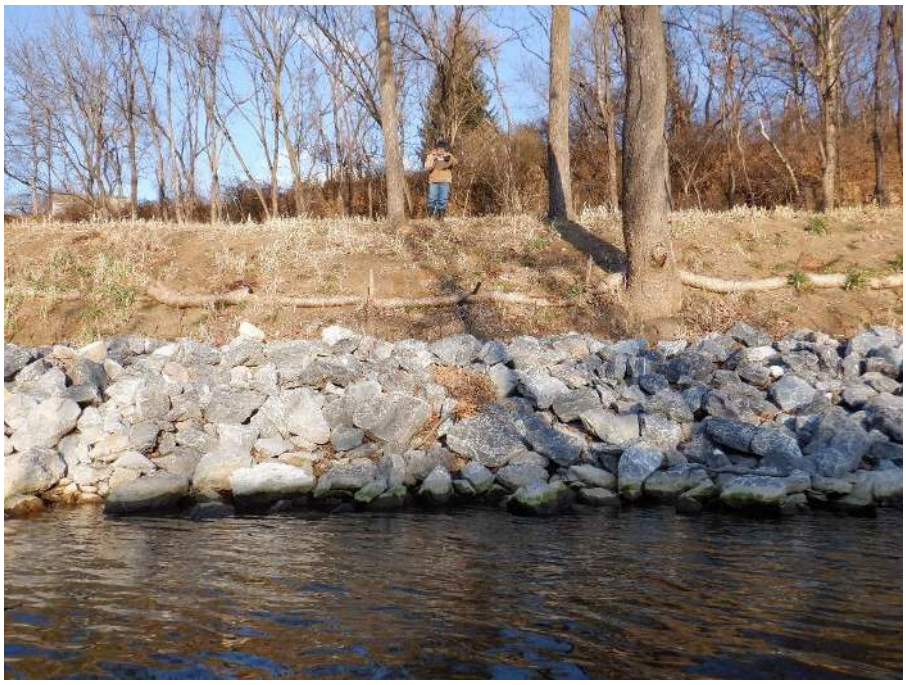
Location: 00-25' **Photo Number:** 1 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Upstream of remediation; ~70 degree bank angle; 60% vegetation cover; significant root exposure; no at risk trees; minor erosion and scour around exposed roots; some undercutting at toe of slope	

Location: 00-25' **Photo Title:** 2 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view showing start of remediated section; minimal scour and undercutting of slope toe before remediated section	

Location: 00+00 **Photo Number:** 3 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Start of remediation; ~60 degree bank angle; installed rock toe intact; no at risk trees; lives stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; no sediment deposition in rock toe	

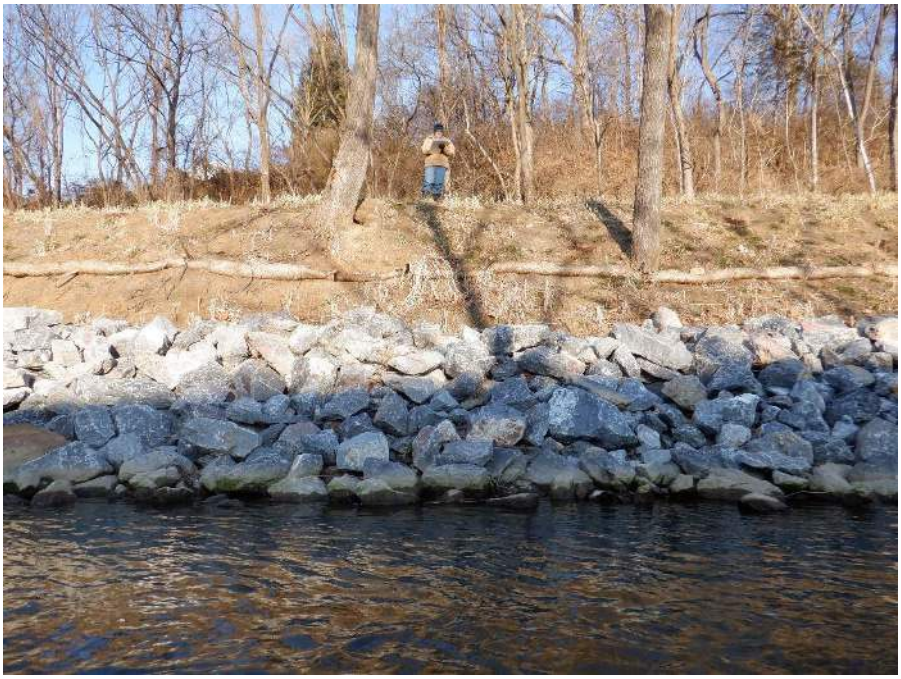
Location: 00+00 **Photo Title:** 4 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view shoing remediated bank; ~60 degree bank angle; installed rock toe intact; minimal vegetation cover; erosion control fabric 90% exposed	

Location: 00+50' **Photo Number:** 5 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; straw wattle in place; minimal fine sediment deposition in rock toe	

Location: 00+100' **Photo Title:** 6 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; bark damaged on tree on upper bank close to Greenway; minimal vegetation cover; erosion control fabric 90% exposed; sand deposition in rock toe	

Location: 00+100' **Photo Number:** 7 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view of start of remediation; installed rock toe intact; minimal vegetation established; erosion control fabric significantly exposed	

Location: 00+100' **Photo Title:** 8 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of remediation; installed rock toe intact; minimal vegetation established; erosion control fabric significantly exposed	

Location: 00+150' **Photo Number:** 9 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; no at risk trees present; some sediment deposition in rock toe	

Location: 00+200' **Photo Title:** 10 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; straw wattle intact; sediment deposition in rock toe	

Location: 00+250' **Photo Number:** 11 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; some sediment deposition in rock toe	

Location: 00+300' **Photo Title:** 12 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~70 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 70% exposed; no at risk trees present; some sediment deposition in rock toe	

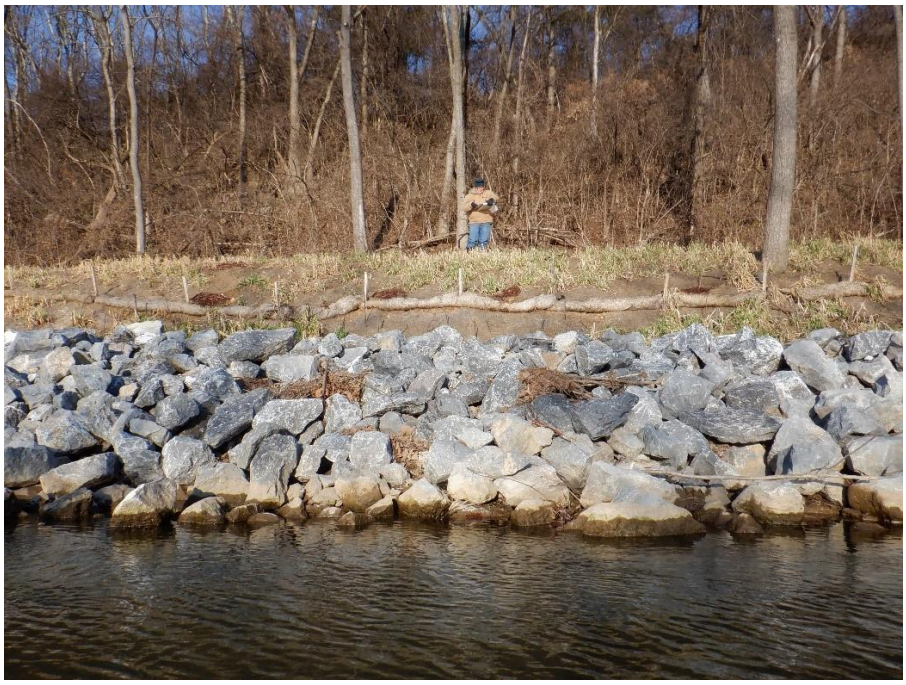
Location: 00+300' **Photo Number:** 13 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view of remediated bank; installed rock toe intact; minimal vegetation cover	

Location: 00+300' **Photo Title:** 14 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of remediated bank; installed rock toe intact; minimal vegetation cover	

Location: 00+350' **Photo Number:** 15 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~65 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 80% exposed; sediment deposition in rock toe	

Location: 00+400' **Photo Title:** 16 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 80% exposed; no at risk trees present; some sediment deposition in rock toe	

Location: 00+450' **Photo Number:** 17 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 80% exposed; some sediment deposition in rock toe	

Location: 00+500' **Photo Title:** 18 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 70% exposed; no at risk trees present; no sediment deposition in rock toe	

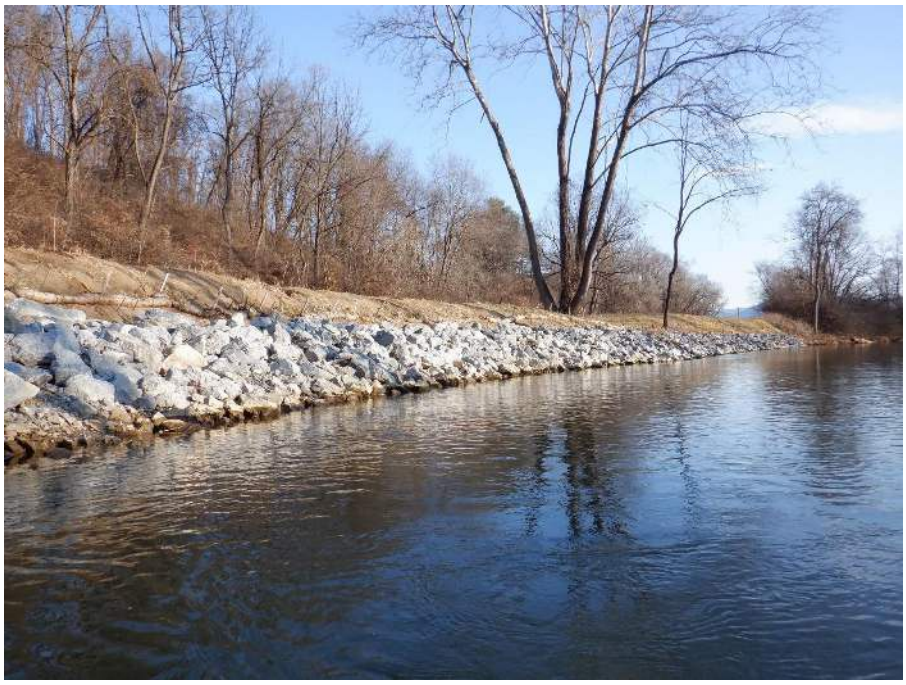
Location: 00+550' **Photo Number:** 19 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 70% exposed; no sediment deposition in rock toe	

Location: 00+600' **Photo Title:** 20 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 80% exposed; no sediment deposition in rock toe	

Location: 00+650 **Photo Number:** 21 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 95% exposed; no at risk trees present; no sediment deposition in rock toe	

Location: 00+700 **Photo Title:** 22 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; no at risk trees present; no sediment deposition in rock toe	

Location: 00+700' **Photo Number:** 23 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view of 1st section of remediated bank; installed rock toe intact; minimal vegetation cover	

Location: 00+700' **Photo Title:** 24 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of 1st remediated bank section; installed rock toe intact; minimal vegetation cover	

Location: 00+750' **Photo Number:** 25 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; no sediment deposition in rock toe	

Location: 00+800' **Photo Title:** 26 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 90% exposed; some sediment deposition in rock toe	

Location: 00+850' **Photo Number:** 27 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~20 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 75% exposed; no at risk trees present; some sediment deposition in rock toe	

Location: 00+900' **Photo Title:** 28 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~20 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 75% exposed; no at risk trees present; no sediment deposition in rock toe	

Location: 00+950' **Photo Number:** 29 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~30 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 75% exposed; no at risk trees present; no sediment deposition in rock toe	

Location: 00+1000' **Photo Title:** 30 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~30 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 75% exposed; no at risk trees present; no sediment deposition in rock toe	

Location: 00+1050' **Photo Number:** 31 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Immediately upstream of end of 1st section of remediated bank; ~45 degree bank angle; installed rock toe intact; live stakes and plantings establishing; minimal vegetation cover; erosion control fabric 75% exposed; no at risk trees present; no sediment de	

Location: 00+1050' **Photo Title:** 32 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of end of 1st section of remediation; minimal erosion and scour after remedation	

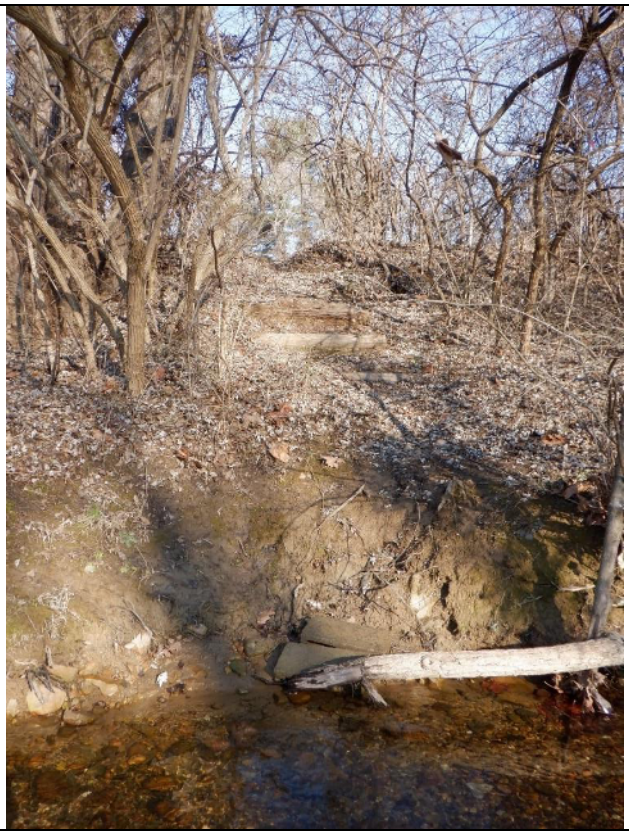
Location: 00+1100' **Photo Number:** 33 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; some vegetation adjacent to waters edge; exposed roots along toe of bank; minimal undercutting at toe of bank; 50% vegetation cover; some shrubs mid to upper bank	

Location: 00+1100' **Photo Title:** 34 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view of end of 1st section of remediation; installed rock toe intact; minimal vegetation cover	

Location: 00+1150' **Photo Number:** 35 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; some vegetation adjacent to waters edge; exposed roots along toe of bank; undercutting at toe of bank; scour around exposed roots; 50% vegetation cover; shrubs mid to upper bank; no at risk trees present	

Location: 00+2000' **Photo Title:** 36 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; some grasses adjacent to waters edge; exposed roots along toe of bank; minimal undercutting at toe of bank; 40% vegetation cover; shrubs mid to upper bank; no at risk trees present	

Location: 00+1250' **Photo Number:** 37 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degrees upper bank and 70 degrees lower bank; no vegetation at toe; erosion and scour at bank toe; 20% vegetation cover; shrubs mid to upper bank; no at risk trees present; exposed roots mid bank; some undercutting at toe	

Location: 00+1250' **Photo Title:** 38 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Significant erosion and scour and bank edge; most erosion and scour present by manmade pathway to waters edge; cinder blocks placed at erosive edge as steps; upper bank consists of constructed and tiered steps to get to water	

Location: 00+1300' **Photo Number:** 39 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; exposed roots at waters edge; scour and undercutting at toe of bank especially around exposed roots; several at risk trees present; 30% vegetation cover; no vegetation adjacent to waters edge; shrubs from mid to upper bank	

Location: 00+1350' **Photo Title:** 40 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; exposed roots at waters edge; scour and undercutting at toe of bank mostly around exposed roots; at risk trees present; 20% vegetation cover; minimal vegetation adjacent to waters edge; shrubs throughout bank	

Location: 00+1400' **Photo Number:** 41 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; exposed roots at bank toe; scour and undercutting at bank toe mostly around exposed roots; at risk trees present; 20% vegetation cover; shrubs mid to upper bank	

Location: 00+1450' **Photo Title:** 42 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; exposed roots at bank toe; scour and undercutting around roots at bank toe; at risk trees present; 30% vegetation cover; shrubs established throughout bank	

Location: 00+1500' **Photo Number:** 43 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Immediately upstream of 2nd remediated bank section; ~60 degree bank angle; exposed roots at bank toe; some scour and undercutting around exposed roots; at risk tree present by waters edge; 20% vegetation cover; shrubs mid to upper bank	

Location: 00+1550' **Photo Title:** 44 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Start of 2nd remediated bank section; ~75 degree upper bank angle and 50 degree lower bank angle; undercutting and scour around exposed roots upstream of remediation; installed rock toe intact; minimal vegetation established in remediated section; erosion	

Location: 00+1550' **Photo Number:** 45 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view showing non-remediated section before 2nd remediated bank area; undercutting and scour around exposed roots by bank toe	

Location: 00+1550' **Photo Title:** 46 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view showing start of 2nd remediated bank section; installed rock toe intact; minimal vegetation cover	

Location: 00+1600' **Photo Number:** 47 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; installed live stakes and plantings establishing; vegetation establishing; erosion control fabric 30% exposed; no sediment deposition in rock toe	

Location: 00+1600' **Photo Title:** 48 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view of start of 2nd remediated bank section; installed rock toe intact; minimal vegetation cover	

Location: 00+1600' **Photo Number:** 49 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of 2nd remediated section showing constructed staircase and kayak launch; installed rock toe intact; minimal vegetation established	

Location: 00+1650' **Photo Title:** 50 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; constructed staircase and kayak launch intact; mild erosion of gravel around large stone slab steps at bottom of staircase; installed rock toe intact; erosion control fabric 30% exposed; no sediment deposition in rock toe; surface w	

Location: 00+1650' **Photo Number:** 51 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view of constructed walking path between upstream and downstream constructed staircases withing the 2nd remediated section; installed rock toe in path; walking path intact with some erosion of gravel and stonedust from high water events	

Location: 00+1650' **Photo Title:** 52 **Date:** 1/19/2021 **Direction Photo Taken:** Northeast **Description:** Erosion of gravel behind large stone slab steps at the bottom of constructed staircase	

Location: 00+1700' **Photo Number:** 53 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; no at risk trees present; walking path above rock toe intact with minimal erosion of gravel from high water; vegetation establishing; erosion control fabric 50% expo	

Location: 00+1700' **Photo Title:** 54 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view showing constructed 1st constructed staircase; installed rock toe intact; gravel access path intact; minimal vegetation cover	

Location: 00+1700' **Photo Number:** 55 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Large section of exposed geocell above gravel access path from high water events	

Location: 00+1700' **Photo Title:** 56 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Upstream view of gravel access path between staircases and exposed geocell directly above access path	

Location: 00+1700' **Photo Number:** 57 **Date:** 1/19/2021 **Direction Photo Taken:** Northeast **Description:** Downstream view of gravel access path between constructed staircases showing exposed geocell throughout the remediated bank directly above access path	

Location: 00+1750' **Photo Title:** 58 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; live stakes and plantings establishing; walking path above rock toe intact with minimal erosion of gravel from high water; vegetation establishing; erosion control fabric 50% exposed; no sediment depositio	

Location: 00+1750' **Photo Number:** 59 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Large section of geocell exposed above gravel access path from high water events	

Location: 00+1750' **Photo Title:** 60 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Section of remediated bank above gravel access path that is likely to fail with natural erosive tendencies and/or future high water events; edges of geocell exposed from slump in soil along bank	

Location: 00+1800' **Photo Number:** 61 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~50 degree bank angle; installed rock toe intact; gravel access path above rock toe intact with minimal erosion of gravel from high water; vegetation establishing; erosion control fabric 20% exposed; no sediment deposition in rock toe; some geocell expose	

Location: 00+1800' **Photo Title:** 62 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Section of geocell exposed above gravel access path; gravel deposition at toe of bank from gravel access path from high water events	

Location: 00+1800' **Photo Number:** 63 **Date:** 1/19/2021 **Direction Photo Taken:** Northeast **Description:** Erosion of gravel access path from high water events showing small grade gravel deposited in a mound at upper bank toe and exposing larger grade base gravel along access path	

Location: 00+1850' **Photo Title:** 64 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree bank angle; installed rock toe intact; gravel access path above rock toe intact with minimal erosion of gravel from high water; vegetation establishing; erosion control fabric 25% exposed; no sediment deposition in rock toe	

Location: 00+1850' **Photo Number:** 65 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view showing 2nd constructed staircase in 2nd remediated section; installed rock toe intact; gravel access path between staircases intact with some erosion of gravel from high water events	

Location: 00+1900' **Photo Title:** 66 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~45 degree bank angle; constructed staircase intact; erosion control fabric visible at bottom of staircase; installed rock toe intact; vegetation minimally established; erosion control fabric 50% exposed; no sediment deposition in rock toe	

Location: 00+1900' **Photo Number:** 67 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Erosion control fabric exposed at bottom of constructed staircase	

Location: 00+1900' **Photo Title:** 68 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Erosion around stones from high water events and some exposed erosion control fabric exposed	

Location: 00+1950' **Photo Number:** 69 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; outfall pipe with riprap intact; vegetation establishing; erosion control fabric 30% exposed; sections of geocell exposed above rock toe; no sediment deposition in r	

Location: 00+1950' **Photo Title:** 70 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Erosion control fabric torn and geocell exposed above rock toe; fabric exposed around outfall riprap	

Location: 00+1950' **Photo Number:** 71 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Erosion control fabric torn and geocell starting to be exposed from erosion and slump after high water events	

Location: 00+2000' **Photo Title:** 72 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; vegetation establishing; erosion control fabric 20% exposed; geocell exposed above rock toe; no sediment deposition above rock toe	

Location: 00+2000' **Photo Number:** 73 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Minimal geocell exposed above rock toe from erosion from high water events	

Location: 00+2050' **Photo Title:** 74 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; vegetation establishing; erosion control fabric 20% exposed; geocell significantly exposed above rock toe; no sediment deposition above rock toe	

Location: 00+2050' **Photo Number:** 75 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Large sections of geocell exposed above rock toe from erosion	

Location: 00+2050' **Photo Title:** 76 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Large sections of geocell exposed along remediated bank above rock toe from erosion and soil slump	

Location: 00+2100' **Photo Number:** 77 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; vegetation establishing; erosion control fabric 10% exposed; geocell exposed above rock toe from erosion and slump; no sediment deposition in rock toe	

Location: 00+2100' **Photo Title:** 78 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Significant sections of geocell exposed above rock toe from erosion and soil slump along length of remediated bank	

Location: 00+2150' **Photo Number:** 79 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; vegetation establishing; erosion control fabric 10% exposed; geocell exposed above rock toe; no sediment deposition in rock toe	

Location: 00+2150' **Photo Title:** 80 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Small sections of geocell exposed above rock toe	

Location: 00+2200' **Photo Number:** 81 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; no at risk trees; vegetation establishing; erosion control fabric 10% exposed; geocell exposed above rock toe; no sediment deposition in rock toe	

Location: 00+2200' **Photo Title:** 82 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream vies showing remediated bank; geocell exposed along length of bank above rock toe; installed rock toe intact	

Location: 00+2200' **Photo Number:** 83 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Downstream view showing end of remediated bank section; installed rock toe intact	

Location: 00+2200' **Photo Title:** 84 **Date:** 1/19/2021 **Direction Photo Taken:** North **Description:** Some fabric showing along vertically extended section of rock toe	

Location: 00+2250' **Photo Number:** 85 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~60 degree bank angle; installed rock toe intact; live stakes and plantings establishing; no at risk trees; vegetation establishing; erosion control fabric 10% exposed; no geocell exposed; no sediment deposition in rock toe	

Location: 00+2300' **Photo Title:** 86 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree upper bank angle and 90 degree lower bank angle; downstream of remediated section exposed roots with scour and undercutting around exposed roots; installed rock toe intact at end of remediation; no at risk trees	

Location: 00+2350' **Photo Number:** 87 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree upper bank angle and 90 degree lower bank angle; significant exposure of roots with scour and undercutting around exposed roots; several at risk trees; erosion from mid bank to toe	

Location: 00+2350' **Photo Title:** 88 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Severe erosion and scour around exposed roots; some undercutting at toe of bank	

Location: 00+2380' **Photo Number:** 89 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** ~40 degree upper bank angle and 90 degree lower bank angle; erosion and scour around exposed roots; minimal undercutting at bank toe	

Location: 00+2380' **Photo Title:** 90 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Upstream view showing non-remediated section beyond BMA to bridge; significant erosion, scour, and undercutting around exposed roots in non-remediated section	

Location: North Park **Photo Number:** 91 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Downstream end of Greenway showing gravel walking path to be paved	

Location: North Park **Photo Title:** 92 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** Top of 2nd constructed staircase (downstream) from Greenway	

Location: North Park **Photo Number:** 93 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Greenway section between constructed staircases	

Location: North Park **Photo Title:** 94 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Top of 1st constructed staircase (upstream) for river access with kayak launch ramp	

Location: North Park **Photo Number:** 95 **Date:** 1/19/2021 **Direction Photo Taken:** Southeast **Description:** Top view of 1st constructed staircase (upstream) with kayak launch ramp	

Location: North Park **Photo Title:** 96 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Greenway path upstream of 1st stairway access to river	

Location: North Park **Photo Number:** 97 **Date:** 1/19/2021 **Direction Photo Taken:** Northwest **Description:** Access path from parking lot to Greenway to be paved	

Location: North Park **Photo Title:** 98 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Access pathway for construction equipment for North Park work seeded; vegetation establishing; tire marks along drive	

Location: North Park **Photo Number:** 99 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Some vegetation establishing on construction vehicle access path; fabric intact	

Location: North Park **Photo Title:** 100 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Installed fence and gate to green space in North Park; paved basketball court in background	

Location: North Park **Photo Number:** 101 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Paved basketball court; vegetation establishing	

Location: North Park **Photo Title:** 102 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Edge of excavated section; fabric intact; vegetation establishing	

Location: North Park **Photo Number:** 103 **Date:** 1/19/2021 **Direction Photo Taken:** Northeast **Description:** Paved basketball court; vegetation establishing	

Location: North Park **Photo Title:** 104 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** View of excavated green space in North Park; fabric intact; vegetation minimally established	

Location: North Park **Photo Number:** 105 **Date:** 1/19/2021 **Direction Photo Taken:** West **Description:** Green space along Greenway path; fabric intact; minimal vegetation establishing	

Location: North Park **Photo Title:** 106 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Ruts made from vehicle along Greenway; vegetation establishing at top of remediated bank	

Location: North Park **Photo Number:** 107 **Date:** 1/19/2021 **Direction Photo Taken:** South **Description:** Vegetation and plantings establishing along top of remediated bank next to Greenway	

Location: North Park **Photo Title:** 108 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Greenway along 1st remediated bank section of BMA to be paved; fabric intact; vegetation and plantings establishing	

Location: North Park **Photo Number:** **Date:** 109 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Greenway to be paved above 1st remediated bank section; vegetation establishing along Greenway; fabric intact	

Location: North Park **Photo Title:** **Date:** 110 1/19/2021 **Direction Photo Taken:** South **Description:** Damage to bark to tree along Greenway	

Location: North Park **Photo Number:** 111 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Greenway path at upstream portion of BMA to be paved; minimal vegetation establishing; fabric intact	

Location: North Park **Photo Title:** 112 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** Ruts made from vehicle along Greenway path; fabric torn; minimal vegetation establishing	

AECOM

South River Photolog
North Park BMA
Bank Monitoring Memo

Attachment C

Location: North Park **Photo Number:** 113 **Date:** 1/19/2021 **Direction Photo Taken:** Southwest **Description:** End of top portion of upstream remediated section; vegetation establishing; Greenway to be extended and paved to meet with Shiloh Baptist Church portion of remediation	

Attachment E - Waynesboro Off-Site Cap Areas
Inspection Record Sheet
Maintenance Plan

Notes:

Location and property owner name: **North Park BMA**		
Item	**Status/Maintenance Needs**	**Repairs Needed?**
Access Roads	N/A	
Trails	Upper Greenway trails in good condition. Some erosion and washout on lower staircases portion from recent high water. The lower gravel path connecting the staircases along the river has washout of the stone dust top layer piling them along the edge of the path along the bank exposing the larger grade blue stones.	2
Drainage Structures	Drainage structures intact	1
Outfall Structures	Outfall structures intact	1
Rip-Rap Protection	Rip-rap intact and showing sediment deposition	1
Cap System Vegetative Cover	Sparse vegetation cover along bank slopes where seeded. Depending on vegetation establishment in 2021, the banks may need to be reseeded	2
Cap System Geosynthetics	Erosion control fabric 80-95% exposed along remediated banks as vegetation has not had time to establish. Geocell is heavily exposed on downstream 2nd remediated section along almost the entire section of the bank above the rock toe especially between the two staircases above the constructed footpath from sustained high-water events in Dec. of 2020.	2
Cap System Slope Stability	Slope is generally consistent and stable along BMA	1
Cap System Subsidence	No cap system subsidence observed	1
Fencing and Gates	Fencing and gates intact	1

1. Functioning properly; no repairs needed
2. Repairs needed (describe why, what, and where), but not time critical
3. Time critical repair needed (describe what and where)

Comments:
Exposed geocell and vegetation establishment will be monitored and addressed in 2021

Inspected by: Scott Gregory and Sarah Bartle Date: Jan. 19, 2021