September 9, 2025

via electronic mail

Matthew Jones, Section Manager
Delaware Department of Natural Resources and Environmental Control
Division of Water – Wetlands and Waterways Section
89 Kings Highway
Dover, Delaware 19901
Matthew.jones@delaware.gov

RE: Application for Subaqueous Lands Permit, Subaqueous Lands Lease, and Section 401 Water Quality Certification
Silver Run Expansion Project
New Castle County, Delaware

Dear Mr. Jones:

Silver Run Electric, LLC ("SRE") is hereby re-submitting an application to DNREC to request a Subaqueous Lands Permit, Subaqueous Lands Lease, and Section 401 Water Quality Certification for the Silver Run Expansion Project ("Project"). This re-submittal includes revisions to SRE's 2024 application that are intended to address DNREC comments and to incorporate minor revisions to Project plans. SRE proposes to construct, operate, maintain, and own the Project, which will increase the capacity of the existing Silver Run – Hope Creek transmission line ("Silver Run Line"), a 230 kilovolt ("kV") alternating current ("AC") transmission line between SRE's Silver Run substation in Delaware and Public Service Electric & Gas Company's ("PSEG") Hope Creek substation in New Jersey. The Project includes installation of four new electric transmission cables in Delaware State waters (i.e., the Delaware River), including submarine cables and modifications at the existing Silver Run Line in-river transition structure. Additional Project details are provided in the attachments.

SRE presented the Project to you and Katie Esposito during a pre-application meeting held on October 11, 2024, which satisfied the requirement for a pre-filing meeting for the Section 401 Water Quality Certification application, pursuant to 40 CFR Part 121.4, as confirmed by your email dated October 15, 2024 (Attachment B).

On December 6, 2024, SRE submitted an application to DNREC to request a Subaqueous Lands Permit, Subaqueous Lands Lease, and Section 401 Water Quality Certification for the Project. On February 17, 2025, DNREC emailed SRE to request additional information in support of the permit application. DNREC's request for additional information was discussed during a conference call between DNREC and SRE held on March 4, 2025. Via email dated August 15, 2025, DNREC confirmed that a mitigation plan related to electric and magnetic fields ("EMF") is not required for the Project. The enclosed revised permit application contains the additional information requested

by DNREC on February 17, 2025, except for an EMF mitigation plan, and has been updated to reflect current the latest Project design.

This application includes the following documents:

1. Completed and endorsed Wetlands and Subaqueous Lands Section Permit Application Form (Attachment A), including the following Appendices:

   a. Appendix E (Utility Crossings);
   b. Appendix H (Fill, excavated material at in-river transition structure);
   c. Appendix H (Fill, cable mattresses, if needed);
   d. Appendix H (Fill, piles at in-river transition structure); and
   e. Appendix S (New Dredging Projects).

   On behalf of the Applicant, Silver Run Electric, LLC, the enclosed permit application form is signed by Douglas Mulvey, V.P., an officer of Silver Run Electric, LLC, as evidenced by the resolution ("Action of the Sole Member of Silver Run Electric, LLC", dated September 1, 2024) that follows the enclosed permit application form.

2. Documentation in support of the request for Section 401 Water Quality Certification (Attachment B), pursuant to 40 CFR Part 121.5, including the following:

   a. Email from Matthew Jones dated October 15, 2024 (Exhibit 1), confirming that the pre-application meeting held for this Project on October 11, 2024 satisfied the requirement for a pre-filing meeting with DNREC for the Section 401 Water Quality Certification application, pursuant to 40 CFR Part 121.4;
   b. A table comparing the bulk chemistry analytical results for sediment samples from Delaware waters to Delaware Hazardous Substance Cleanup Act ("HSCA") standards (Exhibit 2);
   c. Document entitled, "Comparison of Estimated Pore-Water Concentrations to DNREC Surface Water Quality Standards & HSCA Screening Levels" (Exhibit 3); and
   d. Report entitled, "Suspended Sediment Monitoring Plan," prepared by TRC, dated February 2025 (Exhibit 4).

3. Project Location map (Attachment C).

4. "Photo log" with photos of the Project Area in Delaware waters (Attachment D).

5. Set of permitting plans entitled, "Silver Run Expansion Project;" prepared by TRC; dated September 27, 2024; last revised June 4, 2025 (Attachment E).

6. "Submarine Cable Route Field Evaluations Report," prepared by TRC, dated December 2024 (Attachment F).

7. Report entitled, "Modeling of Sediment Dispersion during Submarine Cable Installation, Silver Run Project;" prepared by ESS Group; dated May 22, 2017 (Attachment G).

8. Decommissioning Plan (Attachment H).

9. Emergency Preparedness and Response Plan (Attachment I).

10. Report entitled, "Silver Run Expansion Project, Magnetic Field and Marine Assessment for Delaware River Crossing;" prepared by Exponent; dated September 27, 2024 (Attachment J).

In the email from DNREC dated February 17, 2025, DNREC provided the following two comments regarding the Project's DNREC permit application dated December 6, 2024. SRE's response to each comment is provided below in italicized text.

- There is a noted inconsistency in the square footage for areas of fill from excavation and dredging. Appendix H for "Fill" states 800 cubic yards within a 5,556 sq. ft area, while "New Dredging" in another appendix mentions the same volume within a 3,600 sq. ft area. Since these figures describe the same activity, please clarify this difference.

  The latest Project design requires up to approximately 1,250 cubic yards of excavation and backfill of the riverbed at DE-15 for the purpose of installing the four proposed submarine cables. Refer to Sheets 7 and 10 of the enclosed permit plan set (Attachment E) for details. Appendix H and Appendix S have been revised accordingly.

- Sheet 11 of the project plans, please update the label "Excavation area" to "Excavation area and area to be filled with cable mattress protection, if needed, and excavated sediment" to accurately represent the scope of sediment removal and replacement, including the placement of cable mattressing if necessary.

  DNREC's comment pertains to the graphic on the left side of Sheet 10 of the enclosed permit plan set (Attachment E). The subject note has been revised to address DNREC's comment.

On September 27, 2024, SRE submitted an application to the U.S. Army Corps of Engineers ("USACE"), Philadelphia District to request an Individual Permit for the Project pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act. This permit application is pending, assigned to David Caplan with USACE File No. NAP-2016-00542-

46. SRE is in the process of revising this USACE permit application to reflect the latest Project design, and the revised application will be shared with DNREC upon submission to the USACE.

We look forward to working cooperatively with the Wetlands and Waterways Section on this important project. Please feel free to contact me at 856-287-9359 or via electronic mail at dbrickner@lspower.com with any questions or comments.

Sincerely,

Donald Brickner
Director, Environmental Permitting

Enclosures

cc: David Caplan, Project Manager, USACE, Philadelphia District (via e-mail)
Stephanie Zmina, Regulatory Environmental Specialist III, DNREC, Coastal Management Program (via e-mail)
Dave Wilson, Silver Run Electric, LLC (via e-mail)
Kristen Bachand, TRC (via e-mail)
Payson Whitney, P.E., TRC (via e-mail)

ATTACHMENT A

WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM

For Subaqueous Lands, Wetlands, Marina and 401 Water Quality Certification Projects

State of Delaware
Department of Natural Resources and Environmental Control
Division of Water

Wetlands and Subaqueous Lands Section

APPLICATION FOR APPROVAL OF
SUBAQUEOUS LANDS, WETLANDS, MARINA
AND WATER QUALITY CERTIFICATION PROJECTS

Last Revised on: March 28, 2017

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

Application Instructions:

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.

2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.

3. All applications must have an original signature page and proof of ownership or permitted land use agreement.

4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee* (prepared in separate checks) to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

*Application and public notice fees are non-refundable regardless of the Permit decision or application status.

5. No construction may begin at the project site before written approval has been received from this office.

Helpful Information:

1.	Tax Parcel Information:	New Castle County	(302) 395-5400
		Kent County	(302) 736-2010
		Sussex County	(302) 855-7878
2.	Recorder of Deeds:	New Castle County	(302) 571-7550
		Kent County	(302) 744-2314
		Sussex County	(302) 855-7785

3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: http://www.nap.usace.army.mil/Missions/Regulatory.aspx.

4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

X	Yes	BASIC APPLICATION (Attachment A)
X	Yes	SIGNATURE PAGE (Page 3) (Attachment A)
X	Yes	APPLICABLE APPENDICES (Attachment A)
X	Yes	SCALED PLAN VIEW (Attachment E)
X	Yes	SCALED CROSS-SECTION OR ELEVATION VIEW PLANS (Attachment E)
X	Yes	VICINITY MAP (Attachment C)
N/A	Yes	COPY OF THE PROPERTY DEED & SURVEY
N/A	Yes	THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET
X	Yes	APPROPRIATE APPLICATION FEE & PUBLIC NOTICE FEE (Separate checks made payable to the State of Delaware) (Checks to be mailed to DNREC under separate cover)

Submit 3 complete copies of the application packet to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

Submission made via email in accordance with instructions from Matt Jones on 10/11/24.

Before signing and mailing your application packet, please read the following:

The Department requests that the contractor or party who will perform the construction of your proposed project, if other than the applicant, sign the application signature page along with the applicant in the spaces provided. When the application is signed by the contractor as well as the applicant, the Department will issue the Permit to both parties. For Leases, the contractor will receive a separate construction authorization that will make them subject to all of the terms and conditions of the Lease relating to the construction

Section 1: Applicant Identification

1. Applicant's Name: Silver Run Electric, LLC
   Mailing Address: 16150 Main Circle Drive, Suite 310
   Chesterfield, Missouri 63017
   Telephone #: (636) 532-2200
   Fax #: (636) 532-2250
   E-mail: dmulvey@lspower.com

2. Consultant's Name: Kristen Bachand
   Mailing Address: 404 Wyman Street, Suite 375
   Waltham, Massachusetts 02451
   Company Name: TRC
   Telephone #: (781) 419-7706
   Fax #:
   E-mail: kbachand@trccompanies.com

3. Contractor's Name: TBD
   Mailing Address:
   Company Name: TBD
   Telephone #:
   Fax #:
   E-mail:

Section 2: Project Description

4. Check those that apply:
☑ New Project/addition to existing project? ☐ Repair/Replace existing structure? (If checked, must answer #16)

5. Project Purpose (attach additional sheets as necessary):

~~The purpose of the Project is to reliably and economically construct, interconnect, and commission upgrades to the existing electric transmission line between SRE's existing Silver Run substation east of Odessa, Delaware and PSEG's existing Hope Creek substation in New Jersey. The Project will address reliability violations caused by the planned injection of new power generation sources into the regional transmission grid.~~

6. Check each Appendix that is enclosed with this application:

☐	A. Boat Docking Facilities	☐	G. Bulkheads	☐	N. Preliminary Marina Checklist
☐	B. Boat Ramps	☑	H. Fill	☐	O. Marinas
☐	C. Road Crossings	☐	I. Rip-Rap Sills and Revetments	☐	P. Stormwater Management
☐	D. Channel Modifications/Dams	☐	J. Vegetative Stabilization	☐	Q. Ponds and Impoundments
☑	E. Utility Crossings	☐	K. Jetties, Groins, Breakwaters	☐	R. Maintenance Dredging
☐	F. Intake or Outfall Structures	☐	M. Activities in State Wetlands	☑	S. New Dredging

Section 3: Project Location

7. Project Site Address: Lower Delaware River
   See attached Figure 1 (Attachment C)
   County: ☑ N.C. ☐ Kent ☐ Sussex
   Site owner name (if different from applicant): State of Delaware
   Address of site owner: 89 Kings Highway, Dover, Delaware 19901

8. Driving Directions: See attached Figure 1 (Attachment C). Project will be installed in the Lower Delaware River.
   (Attach a vicinity map identifying road names and the project location)

9. Tax Parcel ID Number: N/A
   Subdivision Name: N/A

WSLS Use Only: **Permit #s:** _____ _____ _____ _____

Type **SP** ☐ **SL** ☐ **SU** ☐ **WE** ☐ **WQ** ☐ **LA** ☐ **SA** ☐ **MP** ☐ **WA** ☐

Corps Permit: SPGP 18 ☐ **20** ☐ **Nationwide Permit #:** _____ **Individual Permit #** _____
Received Date: _____ **Project Scientist:** _____
Fee Received? Yes ☐ **No** ☐ **Amt: $** _____ **Receipt #:** _____
Public Notice #: _____ **Public Notice Dates: ON** _____ **OFF** _____

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: Lower Delaware River waterbody is a tributary to: Atlantic Ocean

11. Is the waterbody: ☑ Tidal ☐ Non-tidal Waterbody width at mean low or ordinary high water ~2.6 miles

12. Is the project: ☑ On public subaqueous lands? ☐ On private subaqueous lands?*
☐ In State-regulated wetlands? ☐ In Federally-regulated wetlands?

*If the project is on private subaqueous lands, provide the name of the subaqueous lands owner:
N/A
(Written permission from the private subaqueous lands owner must be included with this application)

13. Present Zoning: ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industrial ☑ Other

Section 4: Miscellaneous

14. A. List the names and complete mailing addresses of the immediately adjoining property owners on all sides of the project (attach additional sheets as necessary):
State of Delaware Augustine Wildlife Area, 865 Silver Run Rd, Middletown, Delaware 19709

B. For wetlands and marina projects, list the names and complete mailing addresses of property owners within a 1,000 foot radius of the project (attach additional sheets as necessary):
N/A

15. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:
DNREC: Matt Jones, Katie Esposito, Jennifer Holmes (pre-application meetings on 10/11/24; conference call on 3/4/25).
USACE: Dave Caplan, Project Manager, Regulatory, Philadelphia District

A. Have you had a State Jurisdictional Determination performed on the property? ☐ Yes ☑ No
B. Has the project been reviewed in a monthly Joint Permit Processing Meeting? ☑ Yes ☐ No
*If yes, what was the date of the meeting? February 16, 2023

16. Are there existing structures or fill at the project site in subaqueous lands? ☑ Yes ☐ No
*If yes, provide the permit and/or lease number(s):
USACE CENAP-OP-R-2016-00542-75 DNREC WE-413/18 and SL-413/18

*If no, were structures and/or fill in place prior to 1969? ☐ Yes ☐ No

17. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?
☐ No ☑ Pending ☐ Issued ☐ Denied Date: September 27, 2024

Type of Permit: Individual Permit (Section 10/404), Section 408 Federal Permit or ID #: CENAP-2016-00542-46

18. Have you applied for permits from other Sections within DNREC?
☐ No ☐ Pending ☑ Issued ☐ Denied Date: 6/4/2025 Permit or ID #: FC 2025.0010

Type of permit (circle all that apply): Septic Well NPDES Storm Water

Other: Coastal Zone Management Program Consistency Certification

Section 5: Signature Page

19. Agent Authorization:

If you choose to complete this section, all future correspondence to the Department may be signed by the duly authorized agent. In addition, the agent will become the primary point of contact for all correspondence from the Department.

I do not wish to authorize an agent to act on my behalf ☐

I wish to authorize an agent as indicated below ☑

I, Douglas Mulvey, Silver Run Electric, LLC, hereby designate and authorize TRC
(Name of Applicant) (Name of Agent)
to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

Authorized Agent's Name: Kristen Bachand, TRC
Mailing Address: 404 Wyman Street, Suite 375
Waltham, MA 02451

Telephone #: 781-419-7706
Fax #:
E-mail: kbachand@trccompaniescom

20. Agent's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Kristen Bachand
Agent's Signature

12/4/2024
Date

21. Applicant's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application. I grant permission to authorized Department representatives to enter upon the premises for inspection purposes during working hours.

Douglas Mulvey
Applicant's Signature

12/4/24
Date

Douglas Mulvey, Officer, Silver Run Electric, LLC
Print Name

22. Contractor's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge, and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Contractor's Name

Date

N/A
Print Name

ACTION OF THE SOLE MEMBER

OF

SILVER RUN ELECTRIC, LLC

September 1, 2024

The undersigned, being the sole Member of Silver Run Electric, LLC, a Delaware limited liability company (the "Company"), does hereby, pursuant to Section 18-407 of the Delaware Limited Liability Act and the Second Amended and Restated Limited Liability Company Agreement of the Company dated as of June 28, 2018 (the "Operating Agreement"), adopt the following resolutions pertaining to the organization of the Company:

RESOLVED, that the following persons be, and hereby are, appointed to the offices of the Company set forth opposite their respective names, to replace and supersede any and all persons previously appointed to an office of the Company and to serve in accordance with the Operating Agreement or until his or her successor shall be duly elected and qualified:

Paul Thessen	President
Cameron Fredkin	Chief Operating Officer
Joseph Myers	Chief Accounting Officer
Darpan Kapadia	Executive Vice President
Robert Colozza	Executive Vice President
Lawrence Willick	Executive Vice President
Shimon Edelstein	Executive Vice President, Tax
John Burke	Managing Director
Richard Roloff	Managing Director
Adam Gassaway	Senior Vice President
Upendra Prajapati	Senior Vice President, Tax
Casey Carroll	Vice President
Douglas Mulvey	Vice President, Development
Ron Fischer	Secretary
Casey Brandt	Assistant Secretary
Michelle Genieczko	Assistant Secretary
Scott Tansey	Treasurer
Jeff Wade	Chief Compliance Officer

RESOLVED, that the list of persons above constitutes a true, complete and accurate list of all officers of the Company.

IN WITNESS WHEREOF, the undersigned has hereunto set his name as of September 1, 2024.

By: Silver Run Holdings, LLC,
Its Sole Member

By: Michelle Genieczko
Name: Michelle Genieczko
Title: Assistant Secretary

Utility Crossings

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Please indicate the total number of subaqueous lands crossings associated with the project here: 1 Complete a separate Appendix E for each crossing.

2. The information below is for Crossing # 1.

General Information

3. What type of utility is being installed and what is its diameter?

____ wastewater pipeline	_____ inches	4	electric line	~6	inches
____ water line	_____ inches	____	TV/cable	_____	inches
____ gas line	_____ inches	4	fiber optic cable	<1	inches
____ other (describe) _____				_____	inches

Fiber optic cable bundled with electric line.

4. What is the total length of the crossing relative to:

MHW ~7,800 ft. MLW ~7,800 ft. OHW N/A ft.

DE-15 to State of Delaware boundary shown on attached engineering plans.

5. What is the total area of impact for the crossing relative to:

MHW ~62,400 sq. ft. MLW ~62,400 sqft. OHW N/A sq. ft.

6. What is the method of installation for the crossing:

_____ directional bore _____ trench _____blasting X _____plow

If another method of installation will be utilized, please describe here:

Submarine cables will be installed by jetting and limited excavation at the transition structure.

7. Briefly outline the construction sequence for placement of the structure:

The submarine cables will be installed below the riverbed of the Lower Delaware River along the alignment shown in Figure 1 of this submission and the attached engineering plans. Limited excavation and low impact water jetting technology will be used to bury the cable to a depth sufficient to protect it and avoid interference with navigation, aquatic resource habitats, and recreational use.

8. Will dredging, excavating, or filling be required? X Yes _____ No

If "yes", complete the appropriate dredging appendix and/or fill appendix and include them with your application.

9. Will there be any permanent towers, poles, platforms or other structures (excluding submarine cables) on subaqueous land or in wetlands? X Yes _____ No

If "yes", give the number of structures, and provide a description, including square footage and material (the location of all structures must be shown on the plans or the application cannot be processed).

Four approximately 24-inch diameter steel piles will be driven into the riverbed to modify the existing in-river transition structure facility (DE-15). The piles will be within the bounds of the existing vessel allision protection system. See attached engineering plans for additional detail.

10. At what depth will the subaqueous crossing be placed below the bottom of the waterbody? See below ft.
    At what height will an aerial crossing be above MHW? N/A feet

Depth of target cable burial varies with location in the Lower Delaware River, ranging from approximately 6 feet adjacent to DE-15 to 70 feet below MLLW in the vicinity of the Delaware River federal navigation channel. See attached engineering plans for additional detail.

11. Is the crossing in, on, over or under public (undeeded) or private subaqueous lands?
    X Public _____ Private
    If private, who is/are the property holder(s)? N/A
    Provide a copy of any deed, ROW or easement granting access if the private property owner is other than the applicant.

12. Is the crossing adjacent to subaqueous lands on State-owned property? X Yes _____ No
    If so, which State agency is the owner? DNREC Division of Fish and Wildlife

    Is the crossing within a DelDOT right of way? _____ Yes X No

13. Please include evidence of written permission from the private land owner above (if other than the applicant).

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? ~122 ft.
      mean low water line? ~122 ft.
   b. Non-tidal waters: ordinary high water line? N/A ft.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) ~5,990 sq. ft.
   b. on vegetated wetlands? N/A sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   X Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? ~1,250 cubic yards
   a. What is the total fill per running foot of shoreline? N/A cubic yards

5. What method will be used to place the fill?
   A clamshell bucket or equivalent device will be used to place the material on the bottom. Material would be placed in the same area from where it was excavated.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)
   The sediment would be predominantly organic clays and inorganic silts. Poorly graded sands and silty sands are also present. For additional details, refer to the Submarine Cable Route Field Evaluations Report (Attachment F).

7. How will the fill be retained? Complete appropriate appendix.
   Excavated material will be temporarily stored in a barge. The excavated sediment will be replaced after the J-tubes and submarine cables have been installed.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?
   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.
   The material would be placed on top of installed J-tubes and submarine cables next to the in-river transition structure.

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings. Locations of any cable mattress(es) within the Lower Delaware River would be unknown until the cable was installed. Cable protection, if needed, would be required where burial depth was not reached due to unforeseen circumstances.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? 0 _____ ft.

Silver Run Electric estimates that up to 780 linear feet of cable protection would be needed. These responses, describing the materials and methods for installation, are provided in the event cable mattressing is necessary. DNREC would be notified of the locations of any cable protection prior to installation and as-built drawings would follow within 90 days.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) up to 15,600 sq. ft.
   b. on vegetated wetlands? 0 _____ sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

   Silver Run Electric would use flexible concrete mattresses that can conform to bottom contours.

4. What is the total volume of fill? Up to 433 cubic yards
   a. What is the total fill per running foot of shoreline? 0 _____ cubic yards

5. What method will be used to place the fill?
   Upon completion of cable installation activities, a post-installation survey will be performed. If the post-installation survey reveals locations where the target burial depth is not achieved, concrete mattresses may be placed over the cables at select locations to protect the cables from damage. The mattresses would be placed on the riverbed using a crane operated from a vessel, possibly with diver assistance.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Silver Run Electric would use flexible concrete mattresses that can conform to bottom contours.

7. How will the fill be retained? Complete appropriate appendix.

   Not applicable. No anchoring is needed to secure the mattresses to the riverbed.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   Not applicable. The purpose of any mattressing would be cable protection.

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? N/A ft.
      mean low water line? N/A ft.
   b. Non-tidal waters: ordinary high water line? N/A ft.

The existing in-river transition structure is located approximately 800 feet channelward of the mean high water line.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) ~13 sq. ft.
   b. on vegetated wetlands? 0 sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

   Four approximately 24-inch diameter steel piles will be installed at the existing in-water transition structure facility.

4. What is the total volume of fill? N/A cubic yards
   a. What is the total fill per running foot of shoreline? 0 cubic yards

   A concrete plug will be installed within each steel foundation pile, totaling approximately 3.2 cubic yards of concrete installed within the piles below the mean high water line.

5. What method will be used to place the fill?

   The piles will be driven initially using vibratory hammering. Installation will be completed using an impact hammer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Four approximately 24-inch diameter steel piles will be installed at the existing in-river transition structure facility.

7. How will the fill be retained? Complete appropriate appendix.

   The piles will be driven initially using vibratory hammering. Installation will be completed using an impact hammer. The concrete plugs will be contained within the steel piles. Unset concrete will not come in contact with river water.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   The piles will support modifications to the transition structure. A concrete cap will be constructed atop the four proposed piles. The concrete cap will support the proposed monopole. The four proposed cables will be installed through the concrete cap and attached to the monopole.

NEW DREDGING PROJECTS

Please make sure that answers to all of the questions in this appendix correspond to the information on the application drawings.

CLASSIFICATION OF CREEK TO BE DREDGED (for projects in the Inland Bays only)

1. How is the creek classified according to the State dredging program's classification system? Is it open to dredging, open to dredging but requiring further study, or restricted due to environmental sensitivity? See example "Classification System" on page 7 of this application. For further explanation, refer to Section 2.0 of the "Goals and Objectives - Creek Evaluation Dredging Criteria" dated April, 1986.
    a. **Step One:** If the creek to be dredged is "restricted", an application cannot be accepted.
    b. **Step Two:** If the creek is "open" to dredging, the applicable parts of this application must be completed.
    c. **Step Three:** If the creek is "open" to dredging but requiring further analysis, submit information request as part of procedure outlined on page 4 and further explained in Section 2.4 of the Dredging Study. Not applicable. The project is located in the Lower Delaware River.
2. SITE LOCATION OF DREDGING PROJECT
    a. Locate the project site with respect to the county, creek, tributary (enclose 8 ½" x 11" map).

    See Figure 1 (Attachment C).
3. DESCRIPTION OF DREDGING PROJECT
    a. How many cubic yards of material will be dredged or excavated channelward of the:

    Tidal waters: mean high water line? ~1,250 cu. yds.

    mean low water line? ~1,250 cu. yds.

    Non-tidal waters: ordinary high water line? N/A cu. yds.

    b. What are the proposed dimensions of the dredged area relative to mean low water or ordinary high water?

    up to 122' length 6-11 ft depth up to 63' base width up to 63' top width

    c. What are average and range of existing depths in area of proposed dredging? 4-6 MLW ft. (mlw/ohw)

    Include a survey of proposed and existing depths on application drawings.

    d. What is the proposed dredging depth in relation to surrounding bathymetry? 6 to 11 ft below riverbed ft.(mlw/ohw)

    Indicate both proposed depths and surrounding depths on attached drawings.

    a. Describe the other details of the proposed project including the equipment to be used, place and method of disposal, etc. Detail is important.

Excavation would be done using a combination of mechanical (i.e., clamshell bucket) and hydraulic dredging (i.e., jet pump). Material would be stored temporarily on a barge near the in-river transition structure. A clamshell bucket or equivalent device will be used to place the material on the river bottom. Material would be placed in the same area from where it was excavated.

4. PURPOSE OF PROPOSED DREDGING PROJECT

   a. Define the purpose and need of the proposed dredging project. Who will benefit?

The Silver Run Expansion Project is needed to resolve electrical grid reliability issues and to provide reliability and congestion relief benefits to the region. Electric utility customers within the PJM region will benefit from the proposed transmission upgrade.

   b. Submit color photos of site and bordering upland with explanation of the views shown (prints only).

5. How often will maintenance dredging be required? N/A What measures are being taken to reduce the frequency of dredging.

No maintenance excavation is planned. This work will occur during construction only.

ENVIRONMENTAL CONSIDERATIONS OF THE DREDGING PROJECT

A sediment analysis must be performed in accordance with the attached sampling plan.

6. CHARACTERIZE THE SUBSTRATE TO BE DREDGED

   a. What is the chemical composition of the material to be dredged? Does the substrate contain more pollutants relative to known clean bay sediments of similar composition? Attach Lab Reports and Analyses

The quality of sediments in the area to be dredged, including the bulk chemistry analytical results, are described in the Submarine Cable Route Field Evaluations Report (Attachment F).

   b. What is the physical composition of the substrate? State percent of sand, gravel, mud, silt. Does it contain shell fragments?

The sediment is predominantly organic clays and inorganic silts. Poorly graded sands and silty sands are also present. Please see the Submarine Cable Route Field Evaluations Report (Attachment F) for additional details.

7. CHARACTERIZE THE UNDERLYING SUBSTRATE TO BE EXPOSED BY THE PROJECT

   a. Is the underlying substrate (material at proposed dredging depth) of similar physical composition and chemical quality as material to be dredged? X Yes _____ No

   b. Project the expected turbidity levels and area of effect (extent of plume) based on the percent of silt, sand, and gravel in the dredged material.

Turbidity levels for excavation are expected to be less than those for jet plow installation due to sheet pile current break and turbidity curtain use in the excavation area. Suspended sediment concentrations of 200 mg/L are predicted to typically occur within distances of approximately 670 feet upstream and downstream of the cable furrow during cable installation (depending on current direction). The maximum displacement of 200 mg/L suspended sediment concentrations (above ambient) is predicted to be approximately 2,280 feet from the cable furrow. For further details, refer to the sediment dispersion modeling report (Appendix 4.5-1 of the USACE Permit Application).

8. CHARACTERIZE THE BIOLOGICAL COMMUNITY IN THE AREA TO BE DREDGED

   a. Characterize how the area is utilized by shellfish and finfish and potential temporary and/or permanent impacts to these species.

Refer to Sections 4.6 and 4.7 of the USACE permit application.

   b. Identify the practices proposed to reduce impacts to aquatic species and the potential for degradation of water quality (turbidity curtain, time of year restrictions, etc.). Dredging in Delaware waters may be subject to certain time of year restrictions in order to protect fish and wildlife.

Excavation would occur in a localized area and impacts would be temporary. The excavation will occur between two temporary sheet pile walls that will minimize the spread of the turbidity plume, and two sections of turbidity curtain may be used as operationally feasible to further contain the turbidity plume. SRE is planning to conduct the proposed in-river excavation work outside of the applicable seasonal restriction for fish species (i.e., March 1 to June 30).

   c. What are the major benthic (bottom dwelling) species found at the area to be dredged?

   d. Characterize the subaquatic vegetation and other vegetation at or near the project site.

c. Species include crustaceans, mollusks, nemertean ribbon worms, oligochaete worms, and polychaete worms.

d. There is no vegetation (submerged aquatic vegetation or otherwise) located within the area of proposed in-river excavation.

9. CHARACTERIZE THE EXISTING WATER QUALITY

a. Determine the classification of the stream according to state water quality criteria. Will the dredging project cause violations of the water quality criteria? Will designated water uses be affected?

The project is located within Zone 5 of the DRBC waterbody zone classification scheme. Stream quality objectives for Zone 5 (DRBC Regulations Section 3.30.5.C) address the following factors: Dissolved Oxygen levels, Temperature, pH, Phenols, Threshold Odor Number, Synthetic Detergents, Radioactivity, Bacteria, Turbidity, Alkalinity, and Toxic Pollutants. Dredging is not anticipated to cause violations of water quality criteria. Designated uses will not be affected.

b. Determine levels of dissolved oxygen (D.O.) in and around the project area. Measure D.O. at the water/substrate interface during worst case conditions (i.e. summer morning).

Based on the Delaware Water Quality Portal (https://cema.udel.edu/applications/waterquality/), historical dissolved oxygen values in the Project area range from 5.89 mg/L to 15.3 mgL.

10. IMPACT TO THE BOTTOM CONTOURS OF THE BAY OR CREEK

a. What is proposed dredging depth in relation to surrounding bathymetry? Provide map showing surrounding depths.

The proposed depth of excavation is approximately 6 to 11 feet below the mudline. Contours of the riverbed adjacent to DE-15 are depicted on Sheet 4 of the USACE Permit Plans (Attachment E).

b. Will the project change flow or circulation patterns in the bay or creek? Will shoaling patterns be altered?

There will be no change to flow or circulation patterns in the Lower Delaware River. Shoaling patterns will not be altered.

c. Describe the impact to sediment transportation along the shoreline and the potential for depriving adjacent shorelines of sediment?

No impacts to sediment transportation along the shoreline are anticipated.

11. IMPACT TO SURROUNDING LANDS

a. What is the proximity of the dredging project to the nearest creek bank or banks?

The location of proposed in-river excavation is approximately 800 feet from the Delaware shoreline.

b. What are the existing land uses along this bank(s)?

The project is adjacent to the Augustine Wildlife Area, which is used for outdoor recreation.

c. What is the shoreline composition adjacent to the proposed dredging and the areas immediately up and downstream (wetland, vegetated bank, rip-rap, bulkhead eroding bank)?

The shoreline composition is generally composed of wetlands, vegetated banks, and beaches. The Project will not disturb undeveloped land or shoreline area in Delaware. Mobilization of marine construction equipment will occur from nearby existing developed port facilities.

12. What measures will be taken during the dredging operation to minimize environmental impact?

Sheet piles will be used to isolate the area from the surrounding currents. Turbidity curtains will be used if operationally feasible. SRE is planning to conduct the proposed in-river excavation work outside of the applicable seasonal restriction for fish species (i.e., March 1 to June 30).

CONSIDERATIONS FOR DISPOSAL OF DREDGED MATERIALS

13. What are your plans for disposing of dredged material (i.e., upland disposal, wetland creation, island creation, etc.)? What alternatives have you considered?

The material will be deposited back on to the riverbed after completion of cable installation.

14. When do you plan to conduct your dredging/disposal operation (approximate dates of operation)?

SRE is planning to conduct the in-river excavation and backfilling work as early as July 2026 to December 2026.

15. Describe the characteristics and location of the proposed dredged material disposal site? What is the present use of the disposal site? Please identify both temporary dewatering/stockpiling areas as well as the permanent disposal area and pipeline route if applicable.

The material will be returned to where it was excavated. It will be temporarily stored on a barge, as shown on Sheet 10 of the permitting plans.

16. CHARACTERISTICS OF THE DREDGED MATERIAL

1. Based on sediment analysis required or other known factors, does the material contain any contaminants?

The quality of sediments in the area to be dredged, including the bulk chemistry analytical results, are described in the Submarine Cable Route Field Evaluations Report (Attachment F).

a. What is the bulking factor of the material (e.g., how much will material increase in volume during dredging and disposal operation based on material composition, material water holding capacity and dredging method)?

Not applicable.

b. What is the settling rate of the dredged material? Not applicable.

c. What is the mounding ability of the material being disposed of?

Not applicable.

17. CONSIDERATIONS FOR HABITAT DEVELOPMENT

a. Does similar habitat already exist in the area proposed for development?

Not applicable.

b. What is the depth of water at mean low water (for water disposal for marsh or island creation)?

Not applicable.

c. What is the salinity of water at the proposed site of development?

Not applicable.

d. What is the salinity of water from which material is being dredged?

Not applicable.

e. Is the composition of the dredged material similar to the substrate at the site of habitat development?

Not applicable.

f. What are the biological characteristics of the site proposed for development? Are there oyster bars, spawning grounds, submerged aquatic vegetation, or other fragile ecosystems which require temporary or permanent protection? These sites should be avoided for habitat development.

Not applicable.

g. What are the wind and current conditions at the site? Do they change seasonally?

Not applicable.

h. Will habitat development interfere with any existing commercial or recreational activities?

Not applicable.

i. Is there enough material to achieve desired elevations? Is the potential site of development large enough to accommodate the dredged material?

Not applicable.

j. Who is the owner of the site proposed for development? Who will maintain the new habitat?

Not applicable.

k. What types of wildlife are to be attracted to the site? Will the food and habitat needs be met?

Not applicable.

l. What measures will be taken to reduce potential environmental impact?

Not applicable.

18. CONSIDERATIONS FOR UPLAND DISPOSAL

a. What is the distance from the dredging operation to the proposed site of disposal?

Not applicable.

b. What method of disposal is to be utilized (i.e., pipeline discharge, barge, hopper, etc.)?

Not applicable.

c. Describe the proposed method of containment for the dredged material.

Not applicable.

d. How much acreage is required for the quantity of material being disposed of?

Not applicable.

e. Provide an engineering drawing of the proposed disposal facility. Include dimensions of the sediment to be contained in this dredging event. (Length, width, depth)

Not applicable.

f. What measures will be taken to reduce potential environmental impact?

Not applicable.

g. What is estimated life of the dredge spoil disposal site?

Not applicable.

h. Are there any wells within 300 feet of the disposal site? If yes, show location of adjacent wells on disposal area plan.

Not applicable.

19. If required, has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

☐ Yes ☐ No ☑ Not required

20. SAMPLING PLAN FOR NEW DREDGING PROJECTS

1. Physical and Chemical Analysis of Sediment

Sampling and Analysis plan previously approved by DNREC on May 13, 2024. A copy of this plan is provided as Appendix A of the Submarine Cable Route Field Evaluations Report (Attachment F).

a. Particle size distribution and percent solids analysis on core samples taken to depth of proposed dredging. Percentage sand, silt and clay should be given based on:

sand: Greater than or equal to 0.0625mm

silt: Less than 0.0635mm but greater then 0.0039mm

clay: Less than 0.0039mm

b. Bulk sediment analysis (mg/lg) core samples taken to depth of proposed dredging for parameters as determined by the Department.

c. Elutriate analysis (mg/l) on core samples taken to depth of proposal dredging for parameters as determined by the Department. Dredge site water should be used for the dilution water.

d. Surface water analysis (mg/l) on one composite sample from the dredging area for parameters as determined by the Department.

2. Biological Sampling

e. Benthic Invertebrate survey based on minimum of three surface grab samples or benthic dredge. Organisms should be identified to genus-level species where possible.

f. Description of emergent and submerged vegetation in or adjacent to the proposed dredging area.

Important Notes:

The number of samples is dependent on size of area to be dredged and suspected pollution level. As a general rule, a minimum of three sampling stations should be established.

If sediment contaminants are shown to exist at levels of concern by the above analyses, a bioassay may be required. Suspected contaminated sediment proposed for upland disposal should be subjected to an EP Toxicity analysis.

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

CLASSIFICATION OF CREEK TO BE DREDGED (for Inland Bays)

Step One: Environmental Classification	**Areas of Restricted Dredging**	
Objective: Classify as areas where dredging should be restricted creeks, creek segments, and open water areas with high environmental sensitivity. Factor One: Bodies of water and associated shorelines which have been designated as state natural areas, or which are totally contained in or where more than 50% of the shoreline borders a wildlife refuge or state/federal/parkland. Factor Two: Creek segments whose shorelines are dominated by wetland vegetation and which have open water channels equal to or less than 40 feet in width. Factor Three: Creek segments where the presence of rare and endangered species has been identified either in-stream or along the shoreline. Factor Four: Creek segments where at least 30% of the land area within ¼ mile of the water's edge is contained in designated wetlands and is less than 50% developed as moderate density residential development. *Creeks less than 40 feet in width (headwaters and tributaries) and other areas not designated on the maps should not be considered for dredging by the state	**<u>Upstream reaches of:</u>** Vines Creek Pepper Creek Herring Creek • Hopkins Prong • Burton Prong • Guinea Creek Wilson Creek White Oak Creek • Johnson Branch Collins Creek • Joshua Prong Simon Glade • Edgar Creek White Creek Arnell Creek Dirickson Creek Emily Gut Love Creek Lingo Creek Drum Creek Roy Creek Lee Joseph Creek Love Creek Blackwater Creek Miller Creek	**<u>Segments of:</u>** Drum Creek Dirickson Creek Love Creek Dorman Branch Lingo Cove Joshua Cove Sloughs Gut Collins Creek Joshua Prong Edgar Prong Stump Creek Swan Creek Island Creek Warwick Gut Emily Gut Lingo creek Other small unnamed creeks/guts *May list more creek segments as the presence of both state and federally designated rare and endangered species are identified.
Step Two: Classification by Water Use and Dredging History	**Areas Open to Dredging**	
Objective: To further segregate creeks into those which are characterized by intensive use and a recent dredging history and those which are less used and have not been previously dredged. Those areas which are both intensively used and have a recent dredging history will then be classified as being open to dredging. Factor One: Is the waterbody, creek or creek segment consistently and intensively used as and access route to, or between the following types of boating activities: • Recreational boating, including sailing and excursions • Recreational or commercial fishing, including shellfishing • Water skiing, jet skiing, etc. • Commercial transportation (i.e. hauling of commodities) • Access channel connecting major water use areas Factor Two: Has the water area, creek or creek segment been dredged by the State of Federal government within the last 10-15 years?	Assawoman Canal and approach channels to be dredged for navigation purposes only. Future development projects requiring access to Assawoman Canal, structures that conflict with navigation and projects which degrade water quality will be prohibited. Indian River Navigation Channel Lewes & Rehoboth canal Massey's Ditch Rehoboth Bay Navigation Channel As a general policy, the State should not dredge artificially constructed dead-end lagoons unless it is for environmental rehabilitation or ther are overriding concerns. If dredging is requested by incorporated communities, cost/benefit analysis should be conducted.	
Step Three: Generators and Attractors of Boat Traffic	**Areas Requiring Further Analysis**	
Objective: To further segregate the group remaining after Step II into those areas with or without navigational demand. The criteria used to determine navigational demand is the presence of generators and/or attractors of boat traffic as defined below. Factor One: The presence of a marina with one of the following characteristics: • Publicly accessible marina with more than 25 slips • Significant proportion of vessels using marina have drafts exceeding 4'and lengths exceeding 25'. • Publicly accessible boat launching ramp • Private marina with more than 100 slips Factor Two: The presence of a residential subdivision, campground or trailer park with more than 50 units and which has either and accompanying marina, or whose parcels front on boat channel Factor Three: The presence of waterfront recreational, industrial or commercial activities that are regularly visited by vessels with drafts exceeding 2'. Factor Four: At least 50 percent of the land area located within ½ mile of the creek or creek segment is developed at a minimum as moderate density residential. (i.e. at least one dwelling unit acre). If at least one of the factors is present, classify as Level I; if none of the factors are present, classify as Level II. Level I creeks are higher priority projects as they satisfy the navigational demand criteria. Level II creeks exhibit little current demand or use.	**<u>Level I Creek Segments</u>** Love Creek (up to first bridge) Arnell Creek (mouth only) Lingo Creek Pepper Creek (up to Holland Pt.) Vines Creek (up to Ballast Pt.) Dirickson creek Roy Creek Herring Creek Burton Prong Hopkins Prong Wilson Creek (mouth only) Lee Joseph Creek (mouth only) **<u>Level II Creek Segments</u>** Bald Eagle Creek White Oak Creek (mouth only) Beach Cove Vines Creek (from Ballast Pt. to first bridge) *These are only portions of the creeks listed under each level as illustrated on the set of maps accompanying this report *These requirements were developed for marinas near the creek mouths on the bays. The marina size and facility requirements increase the farther upstream it is located due to related dredging costs and environmental impacts.	

ATTACHMENT A

WETLANDS AND SUBAQUEOUS LANDS SECTION PERMIT APPLICATION FORM

For Subaqueous Lands, Wetlands, Marina and 401 Water Quality Certification Projects

State of Delaware
Department of Natural Resources and Environmental Control
Division of Water

Wetlands and Subaqueous Lands Section

APPLICATION FOR APPROVAL OF
SUBAQUEOUS LANDS, WETLANDS, MARINA
AND WATER QUALITY CERTIFICATION PROJECTS

Last Revised on: March 28, 2017

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

Application Instructions:

1. Complete each section of this basic application and appropriate appendices as thoroughly and accurately as possible. Incomplete or inaccurate applications will be returned.

2. All applications must be accompanied by a scaled plan view and cross-section view plans that show the location and design details for the proposed project. Full construction plans must be submitted for major projects.

3. All applications must have an original signature page and proof of ownership or permitted land use agreement.

4. Submit an original and two (2) additional copies of the application (total of 3) with the appropriate application fee and public notice fee* (prepared in separate checks) to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

*Application and public notice fees are non-refundable regardless of the Permit decision or application status.

5. No construction may begin at the project site before written approval has been received from this office.

Helpful Information:

1.	Tax Parcel Information:	New Castle County	(302) 395-5400
		Kent County	(302) 736-2010
		Sussex County	(302) 855-7878
2.	Recorder of Deeds:	New Castle County	(302) 571-7550
		Kent County	(302) 744-2314
		Sussex County	(302) 855-7785

3. A separate application and/or approval may be required through the Army Corps of Engineers. Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements. For more information, contact the Philadelphia District Regulator of the Day at (215) 656-6728 or visit their website at: http://www.nap.usace.army.mil/Missions/Regulatory.aspx.

4. For questions about this application or the Wetlands and Subaqueous Lands Section, contact us at (302) 739-9943 or visit our website at: http://www.dnrec.delaware.gov/wr/Services/Pages/WetlandsAndSubaqueousLands.aspx. Office hours are Monday through Friday 8:00 AM to 4:30 PM, except on State Holidays.

APPLICANT'S REVIEW BEFORE MAILING

DID YOU COMPLETE THE FOLLOWING?

X	Yes	BASIC APPLICATION (Attachment A)
X	Yes	SIGNATURE PAGE (Page 3) (Attachment A)
X	Yes	APPLICABLE APPENDICES (Attachment A)
X	Yes	SCALED PLAN VIEW (Attachment E)
X	Yes	SCALED CROSS-SECTION OR ELEVATION VIEW PLANS (Attachment E)
X	Yes	VICINITY MAP (Attachment C)
N/A	Yes	COPY OF THE PROPERTY DEED & SURVEY
N/A	Yes	THREE (3) COMPLETE COPIES OF THE APPLICATION PACKET
X	Yes	APPROPRIATE APPLICATION FEE & PUBLIC NOTICE FEE (Separate checks made payable to the State of Delaware) (Checks to be mailed to DNREC under separate cover)

Submit 3 complete copies of the application packet to:

Department of Natural Resources and Environmental Control
Wetlands and Subaqueous Lands Section
89 Kings Highway
Dover, Delaware 19901

Submission made via email in accordance with instructions from Matt Jones on 10/11/24.

Before signing and mailing your application packet, please read the following:

The Department requests that the contractor or party who will perform the construction of your proposed project, if other than the applicant, sign the application signature page along with the applicant in the spaces provided. When the application is signed by the contractor as well as the applicant, the Department will issue the Permit to both parties. For Leases, the contractor will receive a separate construction authorization that will make them subject to all of the terms and conditions of the Lease relating to the construction

Section 1: Applicant Identification

1. Applicant's Name: Silver Run Electric, LLC
   Mailing Address: 16150 Main Circle Drive, Suite 310
   Chesterfield, Missouri 63017
   Telephone #: (636) 532-2200
   Fax #: (636) 532-2250
   E-mail: dmulvey@lspower.com

2. Consultant's Name: Kristen Bachand
   Mailing Address: 404 Wyman Street, Suite 375
   Waltham, Massachusetts 02451
   Company Name: TRC
   Telephone #: (781) 419-7706
   Fax #:
   E-mail: kbachand@trccompanies.com

3. Contractor's Name: TBD
   Mailing Address:
   Company Name: TBD
   Telephone #:
   Fax #:
   E-mail:

Section 2: Project Description

4. Check those that apply:
☑ New Project/addition to existing project? ☐ Repair/Replace existing structure? (If checked, must answer #16)

5. Project Purpose (attach additional sheets as necessary):

~~The purpose of the Project is to reliably and economically construct, interconnect, and commission upgrades to the existing electric transmission line between SRE's existing Silver Run substation east of Odessa, Delaware and PSEG's existing Hope Creek substation in New Jersey. The Project will address reliability violations caused by the planned injection of new power generation sources into the regional transmission grid.~~

6. Check each Appendix that is enclosed with this application:

☐	A. Boat Docking Facilities	☐	G. Bulkheads	☐	N. Preliminary Marina Checklist
☐	B. Boat Ramps	☑	H. Fill	☐	O. Marinas
☐	C. Road Crossings	☐	I. Rip-Rap Sills and Revetments	☐	P. Stormwater Management
☐	D. Channel Modifications/Dams	☐	J. Vegetative Stabilization	☐	Q. Ponds and Impoundments
☑	E. Utility Crossings	☐	K. Jetties, Groins, Breakwaters	☐	R. Maintenance Dredging
☐	F. Intake or Outfall Structures	☐	M. Activities in State Wetlands	☑	S. New Dredging

Section 3: Project Location

7. Project Site Address: Lower Delaware River
   See attached Figure 1 (Attachment C)
   County: ☑ N.C. ☐ Kent ☐ Sussex
   Site owner name (if different from applicant): State of Delaware
   Address of site owner: 89 Kings Highway, Dover, Delaware 19901

8. Driving Directions: See attached Figure 1 (Attachment C). Project will be installed in the Lower Delaware River.
   (Attach a vicinity map identifying road names and the project location)

9. Tax Parcel ID Number: N/A
   Subdivision Name: N/A

WSLS Use Only: **Permit #s:** _____ _____ _____ _____

Type **SP** ☐ **SL** ☐ **SU** ☐ **WE** ☐ **WQ** ☐ **LA** ☐ **SA** ☐ **MP** ☐ **WA** ☐

Corps Permit: SPGP 18 ☐ **20** ☐ **Nationwide Permit #:** _____ **Individual Permit #** _____
Received Date: _____ **Project Scientist:** _____
Fee Received? Yes ☐ **No** ☐ **Amt: $** _____ **Receipt #:** _____
Public Notice #: _____ **Public Notice Dates: ON** _____ **OFF** _____

Section 3: Project Location (Continued)

10. Name of waterbody at Project Location: Lower Delaware River waterbody is a tributary to: Atlantic Ocean

11. Is the waterbody: ☑ Tidal ☐ Non-tidal Waterbody width at mean low or ordinary high water ~2.6 miles

12. Is the project: ☑ On public subaqueous lands? ☐ On private subaqueous lands?*
☐ In State-regulated wetlands? ☐ In Federally-regulated wetlands?

*If the project is on private subaqueous lands, provide the name of the subaqueous lands owner:
N/A
(Written permission from the private subaqueous lands owner must be included with this application)

13. Present Zoning: ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industrial ☑ Other

Section 4: Miscellaneous

14. A. List the names and complete mailing addresses of the immediately adjoining property owners on all sides of the project (attach additional sheets as necessary):
State of Delaware Augustine Wildlife Area, 865 Silver Run Rd, Middletown, Delaware 19709

B. For wetlands and marina projects, list the names and complete mailing addresses of property owners within a 1,000 foot radius of the project (attach additional sheets as necessary):
N/A

15. Provide the names of DNREC and/or Army Corps of Engineers representatives whom you have discussed the project with:
DNREC: Matt Jones, Katie Esposito, Jennifer Holmes (pre-application meetings on 10/11/24; conference call on 3/4/25).
USACE: Dave Caplan, Project Manager, Regulatory, Philadelphia District

A. Have you had a State Jurisdictional Determination performed on the property? ☐ Yes ☑ No
B. Has the project been reviewed in a monthly Joint Permit Processing Meeting? ☑ Yes ☐ No
*If yes, what was the date of the meeting? February 16, 2023

16. Are there existing structures or fill at the project site in subaqueous lands? ☑ Yes ☐ No
*If yes, provide the permit and/or lease number(s):
USACE CENAP-OP-R-2016-00542-75 DNREC WE-413/18 and SL-413/18

*If no, were structures and/or fill in place prior to 1969? ☐ Yes ☐ No

17. Have you applied for or obtained a Federal permit from the Army Corps of Engineers?
☐ No ☑ Pending ☐ Issued ☐ Denied Date: September 27, 2024

Type of Permit: Individual Permit (Section 10/404), Section 408 Federal Permit or ID #: CENAP-2016-00542-46

18. Have you applied for permits from other Sections within DNREC?
☐ No ☐ Pending ☑ Issued ☐ Denied Date: 6/4/2025 Permit or ID #: FC 2025.0010

Type of permit (circle all that apply): Septic Well NPDES Storm Water

Other: Coastal Zone Management Program Consistency Certification

Section 5: Signature Page

19. Agent Authorization:

If you choose to complete this section, all future correspondence to the Department may be signed by the duly authorized agent. In addition, the agent will become the primary point of contact for all correspondence from the Department.

I do not wish to authorize an agent to act on my behalf ☐

I wish to authorize an agent as indicated below ☑

I, Douglas Mulvey, Silver Run Electric, LLC, hereby designate and authorize TRC
(Name of Applicant) (Name of Agent)
to act on my behalf in the processing of this application and to furnish any additional information requested by the Department.

Authorized Agent's Name: Kristen Bachand, TRC
Mailing Address: 404 Wyman Street, Suite 375
Waltham, MA 02451

Telephone #: 781-419-7706
Fax #:
E-mail: kbachand@trccompaniescom

20. Agent's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Kristen Bachand
Agent's Signature

12/4/2024
Date

21. Applicant's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application. I grant permission to authorized Department representatives to enter upon the premises for inspection purposes during working hours.

Douglas Mulvey
Applicant's Signature

12/4/24
Date

Douglas Mulvey, Officer, Silver Run Electric, LLC
Print Name

22. Contractor's Signature:

I hereby certify that the information on this form and on the attached plans are true and accurate to the best of my knowledge, and that I am required to inform the Department of any changes or updates to the information provided in this application. I further understand that the Department may request information in addition to that set forth herein if deemed necessary to appropriately consider this application.

Contractor's Name

Date

N/A
Print Name

ACTION OF THE SOLE MEMBER

OF

SILVER RUN ELECTRIC, LLC

September 1, 2024

The undersigned, being the sole Member of Silver Run Electric, LLC, a Delaware limited liability company (the "Company"), does hereby, pursuant to Section 18-407 of the Delaware Limited Liability Act and the Second Amended and Restated Limited Liability Company Agreement of the Company dated as of June 28, 2018 (the "Operating Agreement"), adopt the following resolutions pertaining to the organization of the Company:

RESOLVED, that the following persons be, and hereby are, appointed to the offices of the Company set forth opposite their respective names, to replace and supersede any and all persons previously appointed to an office of the Company and to serve in accordance with the Operating Agreement or until his or her successor shall be duly elected and qualified:

Paul Thessen	President
Cameron Fredkin	Chief Operating Officer
Joseph Myers	Chief Accounting Officer
Darpan Kapadia	Executive Vice President
Robert Colozza	Executive Vice President
Lawrence Willick	Executive Vice President
Shimon Edelstein	Executive Vice President, Tax
John Burke	Managing Director
Richard Roloff	Managing Director
Adam Gassaway	Senior Vice President
Upendra Prajapati	Senior Vice President, Tax
Casey Carroll	Vice President
Douglas Mulvey	Vice President, Development
Ron Fischer	Secretary
Casey Brandt	Assistant Secretary
Michelle Genieczko	Assistant Secretary
Scott Tansey	Treasurer
Jeff Wade	Chief Compliance Officer

RESOLVED, that the list of persons above constitutes a true, complete and accurate list of all officers of the Company.

IN WITNESS WHEREOF, the undersigned has hereunto set his name as of September 1, 2024.

By: Silver Run Holdings, LLC,
Its Sole Member

By: Michelle Genieczko
Name: Michelle Genieczko
Title: Assistant Secretary

Utility Crossings

Please respond to each question. Questions left blank may result in the application being returned as incomplete. In addition, the answers to all of the questions in this Appendix must correspond accurately to the information on the plan and section view drawings for the project.

1. Please indicate the total number of subaqueous lands crossings associated with the project here: 1 Complete a separate Appendix E for each crossing.

2. The information below is for Crossing # 1.

General Information

3. What type of utility is being installed and what is its diameter?

____ wastewater pipeline	_____ inches	4	electric line	~6	inches
____ water line	_____ inches	____	TV/cable	_____	inches
____ gas line	_____ inches	4	fiber optic cable	<1	inches
____ other (describe) _____				_____	inches

Fiber optic cable bundled with electric line.

4. What is the total length of the crossing relative to:

MHW ~7,800 ft. MLW ~7,800 ft. OHW N/A ft.

DE-15 to State of Delaware boundary shown on attached engineering plans.

5. What is the total area of impact for the crossing relative to:

MHW ~62,400 sq. ft. MLW ~62,400 sqft. OHW N/A sq. ft.

6. What is the method of installation for the crossing:

_____ directional bore _____ trench _____blasting X _____plow

If another method of installation will be utilized, please describe here:

Submarine cables will be installed by jetting and limited excavation at the transition structure.

7. Briefly outline the construction sequence for placement of the structure:

The submarine cables will be installed below the riverbed of the Lower Delaware River along the alignment shown in Figure 1 of this submission and the attached engineering plans. Limited excavation and low impact water jetting technology will be used to bury the cable to a depth sufficient to protect it and avoid interference with navigation, aquatic resource habitats, and recreational use.

8. Will dredging, excavating, or filling be required? X Yes _____ No

If "yes", complete the appropriate dredging appendix and/or fill appendix and include them with your application.

9. Will there be any permanent towers, poles, platforms or other structures (excluding submarine cables) on subaqueous land or in wetlands? X Yes _____ No

If "yes", give the number of structures, and provide a description, including square footage and material (the location of all structures must be shown on the plans or the application cannot be processed).

Four approximately 24-inch diameter steel piles will be driven into the riverbed to modify the existing in-river transition structure facility (DE-15). The piles will be within the bounds of the existing vessel allision protection system. See attached engineering plans for additional detail.

10. At what depth will the subaqueous crossing be placed below the bottom of the waterbody? See below ft.
    At what height will an aerial crossing be above MHW? N/A feet

Depth of target cable burial varies with location in the Lower Delaware River, ranging from approximately 6 feet adjacent to DE-15 to 70 feet below MLLW in the vicinity of the Delaware River federal navigation channel. See attached engineering plans for additional detail.

11. Is the crossing in, on, over or under public (undeeded) or private subaqueous lands?
    X Public _____ Private
    If private, who is/are the property holder(s)? N/A
    Provide a copy of any deed, ROW or easement granting access if the private property owner is other than the applicant.

12. Is the crossing adjacent to subaqueous lands on State-owned property? X Yes _____ No
    If so, which State agency is the owner? DNREC Division of Fish and Wildlife

    Is the crossing within a DelDOT right of way? _____ Yes X No

13. Please include evidence of written permission from the private land owner above (if other than the applicant).

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? ~122 ft.
      mean low water line? ~122 ft.
   b. Non-tidal waters: ordinary high water line? N/A ft.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) ~5,990 sq. ft.
   b. on vegetated wetlands? N/A sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   X Obtained from dredged material: Complete Dredging Appendix.

4. What is the total volume of fill? ~1,250 cubic yards
   a. What is the total fill per running foot of shoreline? N/A cubic yards

5. What method will be used to place the fill?
   A clamshell bucket or equivalent device will be used to place the material on the bottom. Material would be placed in the same area from where it was excavated.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)
   The sediment would be predominantly organic clays and inorganic silts. Poorly graded sands and silty sands are also present. For additional details, refer to the Submarine Cable Route Field Evaluations Report (Attachment F).

7. How will the fill be retained? Complete appropriate appendix.
   Excavated material will be temporarily stored in a barge. The excavated sediment will be replaced after the J-tubes and submarine cables have been installed.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?
   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.
   The material would be placed on top of installed J-tubes and submarine cables next to the in-river transition structure.

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings. Locations of any cable mattress(es) within the Lower Delaware River would be unknown until the cable was installed. Cable protection, if needed, would be required where burial depth was not reached due to unforeseen circumstances.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? _____ ft.
      mean low water line? _____ ft.
   b. Non-tidal waters: ordinary high water line? 0 _____ ft.

Silver Run Electric estimates that up to 780 linear feet of cable protection would be needed. These responses, describing the materials and methods for installation, are provided in the event cable mattressing is necessary. DNREC would be notified of the locations of any cable protection prior to installation and as-built drawings would follow within 90 days.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) up to 15,600 sq. ft.
   b. on vegetated wetlands? 0 _____ sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

   Silver Run Electric would use flexible concrete mattresses that can conform to bottom contours.

4. What is the total volume of fill? Up to 433 cubic yards
   a. What is the total fill per running foot of shoreline? 0 _____ cubic yards

5. What method will be used to place the fill?
   Upon completion of cable installation activities, a post-installation survey will be performed. If the post-installation survey reveals locations where the target burial depth is not achieved, concrete mattresses may be placed over the cables at select locations to protect the cables from damage. The mattresses would be placed on the riverbed using a crane operated from a vessel, possibly with diver assistance.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Silver Run Electric would use flexible concrete mattresses that can conform to bottom contours.

7. How will the fill be retained? Complete appropriate appendix.

   Not applicable. No anchoring is needed to secure the mattresses to the riverbed.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   Not applicable. The purpose of any mattressing would be cable protection.

FILL

Please make sure answers to all of the questions in this appendix correspond to information on the application drawings.

1. How many linear feet will the fill extend channelward of the:
   a. Tidal waters: mean high water line? N/A ft.
      mean low water line? N/A ft.
   b. Non-tidal waters: ordinary high water line? N/A ft.

The existing in-river transition structure is located approximately 800 feet channelward of the mean high water line.

2. What is the area of fill that will be located:
   a. on subaqueous land (channelward of mean high water) ~13 sq. ft.
   b. on vegetated wetlands? 0 sq. ft.

3. What is the source of the fill?
   _____ Hauled in from upland sources: What is the source company/location/parcel number?
   _____ Obtained from dredged material: Complete Dredging Appendix.

   Four approximately 24-inch diameter steel piles will be installed at the existing in-water transition structure facility.

4. What is the total volume of fill? N/A cubic yards
   a. What is the total fill per running foot of shoreline? 0 cubic yards

   A concrete plug will be installed within each steel foundation pile, totaling approximately 3.2 cubic yards of concrete installed within the piles below the mean high water line.

5. What method will be used to place the fill?

   The piles will be driven initially using vibratory hammering. Installation will be completed using an impact hammer.

6. State the type and composition percentage of the fill material (e.g. sand 80%, silt 5%, clay 15%, etc.)

   Four approximately 24-inch diameter steel piles will be installed at the existing in-river transition structure facility.

7. How will the fill be retained? Complete appropriate appendix.

   The piles will be driven initially using vibratory hammering. Installation will be completed using an impact hammer. The concrete plugs will be contained within the steel piles. Unset concrete will not come in contact with river water.

8. What type of vegetation or ground cover will be provided for the filled area(s) to prevent soil erosion and help keep sediment from reaching State waters?

   Not applicable.

9. Describe the type(s) of structure(s) to be erected on the filled area (if any). Complete appropriate appendix.

   The piles will support modifications to the transition structure. A concrete cap will be constructed atop the four proposed piles. The concrete cap will support the proposed monopole. The four proposed cables will be installed through the concrete cap and attached to the monopole.

NEW DREDGING PROJECTS

Please make sure that answers to all of the questions in this appendix correspond to the information on the application drawings.

CLASSIFICATION OF CREEK TO BE DREDGED (for projects in the Inland Bays only)

1. How is the creek classified according to the State dredging program's classification system? Is it open to dredging, open to dredging but requiring further study, or restricted due to environmental sensitivity? See example "Classification System" on page 7 of this application. For further explanation, refer to Section 2.0 of the "Goals and Objectives - Creek Evaluation Dredging Criteria" dated April, 1986.
    a. **Step One:** If the creek to be dredged is "restricted", an application cannot be accepted.
    b. **Step Two:** If the creek is "open" to dredging, the applicable parts of this application must be completed.
    c. **Step Three:** If the creek is "open" to dredging but requiring further analysis, submit information request as part of procedure outlined on page 4 and further explained in Section 2.4 of the Dredging Study. Not applicable. The project is located in the Lower Delaware River.
2. SITE LOCATION OF DREDGING PROJECT
    a. Locate the project site with respect to the county, creek, tributary (enclose 8 ½" x 11" map).

    See Figure 1 (Attachment C).
3. DESCRIPTION OF DREDGING PROJECT
    a. How many cubic yards of material will be dredged or excavated channelward of the:

    Tidal waters: mean high water line? ~1,250 cu. yds.

    mean low water line? ~1,250 cu. yds.

    Non-tidal waters: ordinary high water line? N/A cu. yds.

    b. What are the proposed dimensions of the dredged area relative to mean low water or ordinary high water?

    up to 122' length 6-11 ft depth up to 63' base width up to 63' top width

    c. What are average and range of existing depths in area of proposed dredging? 4-6 MLW ft. (mlw/ohw)

    Include a survey of proposed and existing depths on application drawings.

    d. What is the proposed dredging depth in relation to surrounding bathymetry? 6 to 11 ft below riverbed ft.(mlw/ohw)

    Indicate both proposed depths and surrounding depths on attached drawings.

    a. Describe the other details of the proposed project including the equipment to be used, place and method of disposal, etc. Detail is important.

Excavation would be done using a combination of mechanical (i.e., clamshell bucket) and hydraulic dredging (i.e., jet pump). Material would be stored temporarily on a barge near the in-river transition structure. A clamshell bucket or equivalent device will be used to place the material on the river bottom. Material would be placed in the same area from where it was excavated.

4. PURPOSE OF PROPOSED DREDGING PROJECT

   a. Define the purpose and need of the proposed dredging project. Who will benefit?

The Silver Run Expansion Project is needed to resolve electrical grid reliability issues and to provide reliability and congestion relief benefits to the region. Electric utility customers within the PJM region will benefit from the proposed transmission upgrade.

   b. Submit color photos of site and bordering upland with explanation of the views shown (prints only).

5. How often will maintenance dredging be required? N/A What measures are being taken to reduce the frequency of dredging.

No maintenance excavation is planned. This work will occur during construction only.

ENVIRONMENTAL CONSIDERATIONS OF THE DREDGING PROJECT

A sediment analysis must be performed in accordance with the attached sampling plan.

6. CHARACTERIZE THE SUBSTRATE TO BE DREDGED

   a. What is the chemical composition of the material to be dredged? Does the substrate contain more pollutants relative to known clean bay sediments of similar composition? Attach Lab Reports and Analyses

The quality of sediments in the area to be dredged, including the bulk chemistry analytical results, are described in the Submarine Cable Route Field Evaluations Report (Attachment F).

   b. What is the physical composition of the substrate? State percent of sand, gravel, mud, silt. Does it contain shell fragments?

The sediment is predominantly organic clays and inorganic silts. Poorly graded sands and silty sands are also present. Please see the Submarine Cable Route Field Evaluations Report (Attachment F) for additional details.

7. CHARACTERIZE THE UNDERLYING SUBSTRATE TO BE EXPOSED BY THE PROJECT

   a. Is the underlying substrate (material at proposed dredging depth) of similar physical composition and chemical quality as material to be dredged? X Yes _____ No

   b. Project the expected turbidity levels and area of effect (extent of plume) based on the percent of silt, sand, and gravel in the dredged material.

Turbidity levels for excavation are expected to be less than those for jet plow installation due to sheet pile current break and turbidity curtain use in the excavation area. Suspended sediment concentrations of 200 mg/L are predicted to typically occur within distances of approximately 670 feet upstream and downstream of the cable furrow during cable installation (depending on current direction). The maximum displacement of 200 mg/L suspended sediment concentrations (above ambient) is predicted to be approximately 2,280 feet from the cable furrow. For further details, refer to the sediment dispersion modeling report (Appendix 4.5-1 of the USACE Permit Application).

8. CHARACTERIZE THE BIOLOGICAL COMMUNITY IN THE AREA TO BE DREDGED

   a. Characterize how the area is utilized by shellfish and finfish and potential temporary and/or permanent impacts to these species.

Refer to Sections 4.6 and 4.7 of the USACE permit application.

   b. Identify the practices proposed to reduce impacts to aquatic species and the potential for degradation of water quality (turbidity curtain, time of year restrictions, etc.). Dredging in Delaware waters may be subject to certain time of year restrictions in order to protect fish and wildlife.

Excavation would occur in a localized area and impacts would be temporary. The excavation will occur between two temporary sheet pile walls that will minimize the spread of the turbidity plume, and two sections of turbidity curtain may be used as operationally feasible to further contain the turbidity plume. SRE is planning to conduct the proposed in-river excavation work outside of the applicable seasonal restriction for fish species (i.e., March 1 to June 30).

   c. What are the major benthic (bottom dwelling) species found at the area to be dredged?

   d. Characterize the subaquatic vegetation and other vegetation at or near the project site.

c. Species include crustaceans, mollusks, nemertean ribbon worms, oligochaete worms, and polychaete worms.

d. There is no vegetation (submerged aquatic vegetation or otherwise) located within the area of proposed in-river excavation.

9. CHARACTERIZE THE EXISTING WATER QUALITY

a. Determine the classification of the stream according to state water quality criteria. Will the dredging project cause violations of the water quality criteria? Will designated water uses be affected?

The project is located within Zone 5 of the DRBC waterbody zone classification scheme. Stream quality objectives for Zone 5 (DRBC Regulations Section 3.30.5.C) address the following factors: Dissolved Oxygen levels, Temperature, pH, Phenols, Threshold Odor Number, Synthetic Detergents, Radioactivity, Bacteria, Turbidity, Alkalinity, and Toxic Pollutants. Dredging is not anticipated to cause violations of water quality criteria. Designated uses will not be affected.

b. Determine levels of dissolved oxygen (D.O.) in and around the project area. Measure D.O. at the water/substrate interface during worst case conditions (i.e. summer morning).

Based on the Delaware Water Quality Portal (https://cema.udel.edu/applications/waterquality/), historical dissolved oxygen values in the Project area range from 5.89 mg/L to 15.3 mgL.

10. IMPACT TO THE BOTTOM CONTOURS OF THE BAY OR CREEK

a. What is proposed dredging depth in relation to surrounding bathymetry? Provide map showing surrounding depths.

The proposed depth of excavation is approximately 6 to 11 feet below the mudline. Contours of the riverbed adjacent to DE-15 are depicted on Sheet 4 of the USACE Permit Plans (Attachment E).

b. Will the project change flow or circulation patterns in the bay or creek? Will shoaling patterns be altered?

There will be no change to flow or circulation patterns in the Lower Delaware River. Shoaling patterns will not be altered.

c. Describe the impact to sediment transportation along the shoreline and the potential for depriving adjacent shorelines of sediment?

No impacts to sediment transportation along the shoreline are anticipated.

11. IMPACT TO SURROUNDING LANDS

a. What is the proximity of the dredging project to the nearest creek bank or banks?

The location of proposed in-river excavation is approximately 800 feet from the Delaware shoreline.

b. What are the existing land uses along this bank(s)?

The project is adjacent to the Augustine Wildlife Area, which is used for outdoor recreation.

c. What is the shoreline composition adjacent to the proposed dredging and the areas immediately up and downstream (wetland, vegetated bank, rip-rap, bulkhead eroding bank)?

The shoreline composition is generally composed of wetlands, vegetated banks, and beaches. The Project will not disturb undeveloped land or shoreline area in Delaware. Mobilization of marine construction equipment will occur from nearby existing developed port facilities.

12. What measures will be taken during the dredging operation to minimize environmental impact?

Sheet piles will be used to isolate the area from the surrounding currents. Turbidity curtains will be used if operationally feasible. SRE is planning to conduct the proposed in-river excavation work outside of the applicable seasonal restriction for fish species (i.e., March 1 to June 30).

CONSIDERATIONS FOR DISPOSAL OF DREDGED MATERIALS

13. What are your plans for disposing of dredged material (i.e., upland disposal, wetland creation, island creation, etc.)? What alternatives have you considered?

The material will be deposited back on to the riverbed after completion of cable installation.

14. When do you plan to conduct your dredging/disposal operation (approximate dates of operation)?

SRE is planning to conduct the in-river excavation and backfilling work as early as July 2026 to December 2026.

15. Describe the characteristics and location of the proposed dredged material disposal site? What is the present use of the disposal site? Please identify both temporary dewatering/stockpiling areas as well as the permanent disposal area and pipeline route if applicable.

The material will be returned to where it was excavated. It will be temporarily stored on a barge, as shown on Sheet 10 of the permitting plans.

16. CHARACTERISTICS OF THE DREDGED MATERIAL

1. Based on sediment analysis required or other known factors, does the material contain any contaminants?

The quality of sediments in the area to be dredged, including the bulk chemistry analytical results, are described in the Submarine Cable Route Field Evaluations Report (Attachment F).

a. What is the bulking factor of the material (e.g., how much will material increase in volume during dredging and disposal operation based on material composition, material water holding capacity and dredging method)?

Not applicable.

b. What is the settling rate of the dredged material? Not applicable.

c. What is the mounding ability of the material being disposed of?

Not applicable.

17. CONSIDERATIONS FOR HABITAT DEVELOPMENT

a. Does similar habitat already exist in the area proposed for development?

Not applicable.

b. What is the depth of water at mean low water (for water disposal for marsh or island creation)?

Not applicable.

c. What is the salinity of water at the proposed site of development?

Not applicable.

d. What is the salinity of water from which material is being dredged?

Not applicable.

e. Is the composition of the dredged material similar to the substrate at the site of habitat development?

Not applicable.

f. What are the biological characteristics of the site proposed for development? Are there oyster bars, spawning grounds, submerged aquatic vegetation, or other fragile ecosystems which require temporary or permanent protection? These sites should be avoided for habitat development.

Not applicable.

g. What are the wind and current conditions at the site? Do they change seasonally?

Not applicable.

h. Will habitat development interfere with any existing commercial or recreational activities?

Not applicable.

i. Is there enough material to achieve desired elevations? Is the potential site of development large enough to accommodate the dredged material?

Not applicable.

j. Who is the owner of the site proposed for development? Who will maintain the new habitat?

Not applicable.

k. What types of wildlife are to be attracted to the site? Will the food and habitat needs be met?

Not applicable.

l. What measures will be taken to reduce potential environmental impact?

Not applicable.

18. CONSIDERATIONS FOR UPLAND DISPOSAL

a. What is the distance from the dredging operation to the proposed site of disposal?

Not applicable.

b. What method of disposal is to be utilized (i.e., pipeline discharge, barge, hopper, etc.)?

Not applicable.

c. Describe the proposed method of containment for the dredged material.

Not applicable.

d. How much acreage is required for the quantity of material being disposed of?

Not applicable.

e. Provide an engineering drawing of the proposed disposal facility. Include dimensions of the sediment to be contained in this dredging event. (Length, width, depth)

Not applicable.

f. What measures will be taken to reduce potential environmental impact?

Not applicable.

g. What is estimated life of the dredge spoil disposal site?

Not applicable.

h. Are there any wells within 300 feet of the disposal site? If yes, show location of adjacent wells on disposal area plan.

Not applicable.

19. If required, has an Erosion and Sediment Control Plan been approved by the designated plan approval agency for the project? An Erosion and Sediment Control Plan is required for any project disturbing more than 5,000 square feet of uplands. Final approved plans must be received by this office prior to permit issuance.

☐ Yes ☐ No ☑ Not required

20. SAMPLING PLAN FOR NEW DREDGING PROJECTS

1. Physical and Chemical Analysis of Sediment

Sampling and Analysis plan previously approved by DNREC on May 13, 2024. A copy of this plan is provided as Appendix A of the Submarine Cable Route Field Evaluations Report (Attachment F).

a. Particle size distribution and percent solids analysis on core samples taken to depth of proposed dredging. Percentage sand, silt and clay should be given based on:

sand: Greater than or equal to 0.0625mm

silt: Less than 0.0635mm but greater then 0.0039mm

clay: Less than 0.0039mm

b. Bulk sediment analysis (mg/lg) core samples taken to depth of proposed dredging for parameters as determined by the Department.

c. Elutriate analysis (mg/l) on core samples taken to depth of proposal dredging for parameters as determined by the Department. Dredge site water should be used for the dilution water.

d. Surface water analysis (mg/l) on one composite sample from the dredging area for parameters as determined by the Department.

2. Biological Sampling

e. Benthic Invertebrate survey based on minimum of three surface grab samples or benthic dredge. Organisms should be identified to genus-level species where possible.

f. Description of emergent and submerged vegetation in or adjacent to the proposed dredging area.

Important Notes:

The number of samples is dependent on size of area to be dredged and suspected pollution level. As a general rule, a minimum of three sampling stations should be established.

If sediment contaminants are shown to exist at levels of concern by the above analyses, a bioassay may be required. Suspected contaminated sediment proposed for upland disposal should be subjected to an EP Toxicity analysis.

Please be advised that all dredging in the Inland Bays must be undertaken between September 1 and December 31 in order to protect summer and winter flounder and other aquatic species. Dredging in other Delaware waters may also be subject to certain time of year restrictions in order to protect fish and wildlife. Contact DNREC for more specific information regarding the restrictions that may apply within your project area.

CLASSIFICATION OF CREEK TO BE DREDGED (for Inland Bays)

Step One: Environmental Classification	**Areas of Restricted Dredging**	
Objective: Classify as areas where dredging should be restricted creeks, creek segments, and open water areas with high environmental sensitivity. Factor One: Bodies of water and associated shorelines which have been designated as state natural areas, or which are totally contained in or where more than 50% of the shoreline borders a wildlife refuge or state/federal/parkland. Factor Two: Creek segments whose shorelines are dominated by wetland vegetation and which have open water channels equal to or less than 40 feet in width. Factor Three: Creek segments where the presence of rare and endangered species has been identified either in-stream or along the shoreline. Factor Four: Creek segments where at least 30% of the land area within ¼ mile of the water's edge is contained in designated wetlands and is less than 50% developed as moderate density residential development. *Creeks less than 40 feet in width (headwaters and tributaries) and other areas not designated on the maps should not be considered for dredging by the state	**<u>Upstream reaches of:</u>** Vines Creek Pepper Creek Herring Creek • Hopkins Prong • Burton Prong • Guinea Creek Wilson Creek White Oak Creek • Johnson Branch Collins Creek • Joshua Prong Simon Glade • Edgar Creek White Creek Arnell Creek Dirickson Creek Emily Gut Love Creek Lingo Creek Drum Creek Roy Creek Lee Joseph Creek Love Creek Blackwater Creek Miller Creek	**<u>Segments of:</u>** Drum Creek Dirickson Creek Love Creek Dorman Branch Lingo Cove Joshua Cove Sloughs Gut Collins Creek Joshua Prong Edgar Prong Stump Creek Swan Creek Island Creek Warwick Gut Emily Gut Lingo creek Other small unnamed creeks/guts *May list more creek segments as the presence of both state and federally designated rare and endangered species are identified.
Step Two: Classification by Water Use and Dredging History	**Areas Open to Dredging**	
Objective: To further segregate creeks into those which are characterized by intensive use and a recent dredging history and those which are less used and have not been previously dredged. Those areas which are both intensively used and have a recent dredging history will then be classified as being open to dredging. Factor One: Is the waterbody, creek or creek segment consistently and intensively used as and access route to, or between the following types of boating activities: • Recreational boating, including sailing and excursions • Recreational or commercial fishing, including shellfishing • Water skiing, jet skiing, etc. • Commercial transportation (i.e. hauling of commodities) • Access channel connecting major water use areas Factor Two: Has the water area, creek or creek segment been dredged by the State of Federal government within the last 10-15 years?	Assawoman Canal and approach channels to be dredged for navigation purposes only. Future development projects requiring access to Assawoman Canal, structures that conflict with navigation and projects which degrade water quality will be prohibited. Indian River Navigation Channel Lewes & Rehoboth canal Massey's Ditch Rehoboth Bay Navigation Channel As a general policy, the State should not dredge artificially constructed dead-end lagoons unless it is for environmental rehabilitation or ther are overriding concerns. If dredging is requested by incorporated communities, cost/benefit analysis should be conducted.	
Step Three: Generators and Attractors of Boat Traffic	**Areas Requiring Further Analysis**	
Objective: To further segregate the group remaining after Step II into those areas with or without navigational demand. The criteria used to determine navigational demand is the presence of generators and/or attractors of boat traffic as defined below. Factor One: The presence of a marina with one of the following characteristics: • Publicly accessible marina with more than 25 slips • Significant proportion of vessels using marina have drafts exceeding 4'and lengths exceeding 25'. • Publicly accessible boat launching ramp • Private marina with more than 100 slips Factor Two: The presence of a residential subdivision, campground or trailer park with more than 50 units and which has either and accompanying marina, or whose parcels front on boat channel Factor Three: The presence of waterfront recreational, industrial or commercial activities that are regularly visited by vessels with drafts exceeding 2'. Factor Four: At least 50 percent of the land area located within ½ mile of the creek or creek segment is developed at a minimum as moderate density residential. (i.e. at least one dwelling unit acre). If at least one of the factors is present, classify as Level I; if none of the factors are present, classify as Level II. Level I creeks are higher priority projects as they satisfy the navigational demand criteria. Level II creeks exhibit little current demand or use.	**<u>Level I Creek Segments</u>** Love Creek (up to first bridge) Arnell Creek (mouth only) Lingo Creek Pepper Creek (up to Holland Pt.) Vines Creek (up to Ballast Pt.) Dirickson creek Roy Creek Herring Creek Burton Prong Hopkins Prong Wilson Creek (mouth only) Lee Joseph Creek (mouth only) **<u>Level II Creek Segments</u>** Bald Eagle Creek White Oak Creek (mouth only) Beach Cove Vines Creek (from Ballast Pt. to first bridge) *These are only portions of the creeks listed under each level as illustrated on the set of maps accompanying this report *These requirements were developed for marinas near the creek mouths on the bays. The marina size and facility requirements increase the farther upstream it is located due to related dredging costs and environmental impacts.	

ATTACHMENT B

ATTACHMENT B
REQUEST FOR SECTION 401 WATER QUALITY CERTIFICATION
SILVER RUN EXPANSION PROJECT

Submitted to: Delaware Department of Natural Resources and Environmental Control, Wetlands and Waterways Section

Submitted by: Silver Run Electric, LLC
16150 Main Circle Drive, Suite 310
Chesterfield, Missouri 63017

Date: December 5, 2024; revised September 8, 2025

Introduction

Silver Run Electric, LLC ("SRE"), the project proponent, is hereby submitting a request for Section 401 Water Quality Certification ("WQC") to the Delaware Department of Natural Resources and Environmental Control ("DNREC"), Division of Water, Wetlands and Waterways Section, for the Silver Run Expansion Project ("Project"). On September 27, 2024, SRE submitted an application to the United States Army Corps of Engineers ("USACE"), Philadelphia District to request a Section 10/404 Individual Permit for the Project (NAP-2016-00542-46; application pending). Pursuant to Section 404 of the Clean Water Act, Section 401 Water Quality Certifications from the State of Delaware and the State of New Jersey are required before the USACE can issue a Section 404 Permit for the Project. Concurrent with this request, SRE has also submitted an application to DNREC to request a Subaqueous Lands Lease and Subaqueous Lands Permit for the Project ("DNREC WW Permit Application").

SRE presented the Project to DNREC Wetlands and Waterways Section staff (i.e., Matt Jones and Katie Esposito) during a pre-application meeting held on October 11, 2024, which satisfied the requirement for a pre-filing meeting for the WQC application, pursuant to 40 CFR Part 121.4, as confirmed by Matt Jones' email dated October 15, 2024 (Exhibit 1).

Contents of the Request for WQC

Pursuant to 40 CFR Part 121.5, this request for WQC includes the following information and documents:

40 CFR Part 121.5(a)(1)(i) – A complete copy of the Project's updated USACE Section 10/404 Permit application will be shared with DNREC upon submission to the USACE.

40 CFR Part 121.5(a)(1)(ii) – The following water quality-related materials informed the development of the DNREC WW Permit Application:

- Submarine Cable Route Field Evaluations Report (Attachment F of the DNREC WW Permit Application), which includes the results of physical and chemical analysis of sediment samples from the Delaware River in the Project Area;

- Sediment Dispersion Modeling Report (Attachment G);
- Suspended Sediment Monitoring Plan (Exhibit 4), which includes the proposed compliance threshold and monitoring methods related to total suspended solids;
- Delaware River Basin Commission Water Quality Regulations, in accordance with 7 Del. Admin. Code § 7401 - 4.4 (https://www.nj.gov/drbc/library/documents/WQregs.pdf).

40 CFR Part 121.5(b)(1) – Refer to Attachment A of the DNREC WW Permit Application.

40 CFR Part 121.5(b)(2) – The activities proposed in the State of Delaware are located in the Delaware River, at approximately River Mile 51.5.

40 CFR Part 121.5(b)(3) – Refer to Attachment C of the DNREC WW Permit Application and the USACE Permitting Plans (Attachment E of the DNREC WW Permit Application).

40 CFR Part 121.5(b)(4) – Photographs of the Project Area in Delaware State waters are provided as Attachment D of the DNREC WW Permit Application.

40 CFR Part 121.5(b)(5) – SRE is planning to conduct the in-river excavation and backfilling work as early as July 2026 to December 2026.

40 CFR Part 121.5(b)(6) – The following is a list of permits, approvals, and authorizations required for the construction and operation of the Project:

Agency	Permit Type/Number	Status	Notes
Federal			
Federal Aviation Administration	Determination of No Hazard to Air Navigation	Notice to be submitted	Notice planned for submission in 2026.
USACE, Philadelphia District	Nationwide Permit 6 (NAP-2016-00542-46)	Authorized 7/16/2024	Authorized collection of benthic grab and vibracore samples from the Delaware River.
USACE, Philadelphia District	Section 10/404 Individual Permit (NAP-2016-00542-46)	Pending	Application submitted September 27, 2024
USACE, Philadelphia District	Section 408 Authorization (408-NAP-2024-0017A)	Pending	Application submitted September 27, 2024
U.S. Coast Guard	Private Aids to Navigation	Application to be submitted	Application planned for submission in 2026.
Delaware			
DNREC, Wetlands and Waterways Section	Letter of Authorization (LA 054/24)	Approved 5/13/2024	Authorized collection of benthic grab and vibracore samples from the Delaware River.
DNREC, Wetlands and Waterways Section	Subaqueous Lands Permit	This Application	
DNREC, Wetlands and Waterways Section	Subaqueous Lands Lease	This Application	

Agency	Permit Type/Number	Status	Notes
DNREC, Wetlands and Waterways Section	Section 401 Water Quality Certification	This Application	
DNREC Coastal Management Program	Concurrence with Federal Coastal Zone Management Consistency Certification	Approved 6/04/2025	
New Jersey			
New Jersey Department of Environmental Protection ("NJDEP"), Division of Land Resource Protection	Waterfront Development Individual Permit (in-water) with Water Quality Certificate (1704-23-0005.1 LUP230001)	Approved 3/15/2024	Authorized collection of benthic grab and vibracore samples from the Delaware River.
NJDEP, Division of Land Resource Protection	Coastal Area Facility Review Act (CAFRA) Individual Permit	Approved 7/15/2025	File No. 1700-22-0002.4 LUP240001
NJDEP, Division of Land Resource Protection	Waterfront Development Individual Permit (in-water)	Approved 7/15/2025	File No. 1700-22-0002.4 LUP240001
NJDEP, Division of Land Resource Protection	Coastal Wetlands Individual Permit	Approved 7/15/2025	File No. 1700-22-0002.4 LUP240001
NJDEP, Division of Land Resource Protection	Section 401 Water Quality Certification	Approved 7/15/2025	File No. 1700-22-0002.4 LUP240001
NJDEP, Tidelands Resource Council	Tideland License (Utility)	Pending	Application submitted 12/19/2024. File No. 1700-22-0002.4
NJDEP, Tidelands Resource Council	Tidelands License (Dredging)	Pending	Application submitted 12/19/2024. File No. 1700-22-0002.4
NJDEP, Bureau of Stormwater Permitting	New Jersey Pollutant Discharge Elimination System General Permit for Construction Activities (5G3)	Request for Authorization to be submitted	Request for Authorization planned for submission in 2026, shortly before the start of onshore construction in New Jersey.
County (DE)			
The Project does not require any permit or approval from New Castle County, Delaware.			
County (NJ)			
Cumberland-Salem Conservation District	Soil Erosion and Sediment Control Plan Certification	Application to be submitted	Application planned for submission in 2026.
Local (NJ)			
Lower Alloways Creek Township Combined Land Use Board	Minor Site Plan Approval and Conditional Use Approval	Approved 5/28/2025	

40 CFR Part 121.5(b)(7) – See Exhibit 1 (this attachment) for the email from Matthew Jones dated October 15, 2024, confirming that the pre-application meeting held for this Project on October 11, 2024 satisfied the requirement for a pre-filing meeting with DNREC for the Section 401 Water Quality Certification application, pursuant to 40 CFR Part 121.4.

40 CFR Part 121.5(c) – During the pre-application/pre-filing meeting held with DNREC on October 11, 2024, DNREC staff requested that the following documentation be included with the Project's request for WQC:

- A table comparing the bulk chemistry analytical results for sediment samples from Delaware waters to Delaware Hazardous Substance Cleanup Act ("HSCA") standards (provided as Exhibit 2, this attachment).
- Suspended Sediment Monitoring Plan (provided as Exhibit 4, this attachment).
- A description of operational modifications to be considered for implementation should an exceedance of the total suspended solids compliance threshold, as set forth in the Suspended Sediment Monitoring Plan, be detected during the proposed cable jetting activities (see Section 2.2 of the Suspended Sediment Monitoring Plan, Exhibit 4).

Certification

SRE hereby certifies that all information contained herein is true, accurate, and complete to the best of its knowledge and belief.

SRE hereby requests that DNREC review and take action on this request for WQC within the applicable reasonable period of time, in accordance with 40 CFR Part 121.6.

Donald Brickner
Director, Environmental Permitting
Silver Run Electric, LLC

EXHIBIT 1

From: Jones, Matthew R. (DNREC)
To: Brandon Skoba; Esposito, Katie (DNREC)
Cc: Don Brickner; David Wilson
Subject: *ext* Re: Silver Run Expansion Section 401 WQC Pre-Filing Meeting
Date: Tuesday, October 15, 2024 4:02:06 PM
Attachments: Outlook-bnwg5dhz.png
Outlook-0cIr1yXSX4.png
Outlook-r1AhNH-e0A.png
Outlook-tRHZv1Mbc2.png
Outlook-GZ42p1VBPu.png

CAUTION: This email originated from outside of the organization. Do **not** click links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Brandon,

Thanks for the email. I'm concurring that the meeting held on 10/11/2024 qualified as a pre-filing meeting for the Section 401 Water Quality Certification (WQC) application.

Thank you,

Matthew Jones
Section Manager
Division of Water-Wetlands and Waterways Section

302-739-9943
matthew.jones@delaware.gov
89 Kings Highway, Dover, DE 19901
www.de.gov/water

From: Brandon Skoba <BSkoba@lspower.com>
Sent: Tuesday, October 15, 2024 2:28 PM
To: Esposito, Katie (DNREC) <Katie.Esposito@delaware.gov>; Jones, Matthew R. (DNREC) <Matthew.Jones@delaware.gov>
Cc: Don Brickner <DBrickner@lspower.com>; David Wilson <DWilson@lspower.com>
Subject: Silver Run Expansion Section 401 WQC Pre-Filing Meeting

Matt,
We appreciate you and Katie for meeting with us last Friday (10/11/2024) to discuss the DNREC permitting requirements for the Silver Run Expansion project. You had mentioned that our meeting would qualify as a pre-filing meeting for the Section 401 Water Quality Certification (WQC) application, pursuant to 40 CFR Part 121.4, and that our application for Section 401 WQC may be submitted to DNREC no sooner than 30 days after the meeting date. As discussed, please respond to this email to confirm this information.

Thank you,
Brandon Skoba

Brandon Skoba
P: 314-985-7550
BSkoba@lspower.com

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EXHIBIT 2

			SAMPLE ID:	VC-06 (0-26.6')				VC-106				VC-02 (0-4.7')				VC-02 (4.7'-17')				VC-04 (0-17')			
			LAB ID:	L2446143-01				L2446143-02				L2446143-03				L2446143-04				L2446143-05			
			COLLECTION DATE:	8/14/2024				8/14/2024				8/15/2024				8/15/2024				8/16/2024			
			SAMPLE MATRIX:	Sediment				Sediment				Sediment				Sediment				Sediment			
ANALYTE	CAS	DNREC HSCA (mg/kg)	Lab Units	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PAHS																							
Acenaphthene	83-32-9	0.00671	(mg/kg)	ND		0.00174	0.000307	ND		0.0017	0.0003	**0.000317**	J	0.0017	0.0003	ND		0.00113	0.000199	ND		0.00197	0.000348
Acenaphthylene	208-96-8		(mg/kg)	ND		0.00174	0.000332	ND		0.0017	0.000325	ND		0.0017	0.000325	ND		0.00113	0.000215	ND		0.00197	0.000377
Anthracene	120-12-7	0.0469	(mg/kg)	ND		0.00174	0.000359	**0.000462**	J	0.0017	0.000351	**0.00103**	J	0.0017	0.000351	ND		0.00113	0.000232	**0.000643**	J	0.00197	0.000407
Benz(a)anthracene	56-55-3	0.0748	(mg/kg)	ND		0.00174	0.000355	ND		0.0017	0.000347	**0.000964**	J	0.0017	0.000347	ND		0.00113	0.00023	ND		0.00197	0.000402
Benzo(a)pyrene	50-32-8	0.0888	(mg/kg)	ND		0.00174	0.000497	ND		0.0017	0.000486	**0.00123**	J	0.0017	0.000486	ND		0.00113	0.000322	ND		0.00197	0.000564
Benzo(b)fluoranthene	205-99-2		(mg/kg)	ND		0.00174	0.000452	**0.00083**	J	0.0017	0.000443	**0.00179**		0.0017	0.000443	ND		0.00113	0.000293	**0.000766**	J	0.00197	0.000513
Benzo(e)pyrene	192-97-2		(mg/kg)	ND		0.00174	0.000359	**0.000637**	J	0.0017	0.000352	**0.00136**	J	0.0017	0.000352	ND		0.00113	0.000233	**0.000559**	J	0.00197	0.000407
Benzo(g,h,i)perylene	191-24-2		(mg/kg)	ND		0.00174	0.000462	**0.000596**	J	0.0017	0.000453	**0.00172**		0.0017	0.000453	ND		0.00113	0.0003	**0.000615**	J	0.00197	0.000524
Benzo(j)+(k)fluoranthene	205-82-3/207-08-9		(mg/kg)	ND		0.00174	0.000345	**0.000432**	J	0.0017	0.000338	**0.00124**	J	0.0017	0.000338	ND		0.00113	0.000224	**0.000437**	J	0.00197	0.000392
C1-Chrysenes	218-01-9C1		(mg/kg)	**0.00067**	J	0.00174	0.000352	**0.00141**	J	0.0017	0.000344	**0.00193**		0.0017	0.000344	ND		0.00113	0.000228	**0.000915**	J	0.00197	0.000399
C1-Fluoranthenes/Pyrenes	FLUORPYRC1		(mg/kg)	**0.00156**	J	0.00174	0.000458	**0.0027**		0.0017	0.000448	**0.00256**		0.0017	0.000448	ND		0.00113	0.000296	**0.00268**		0.00197	0.000519
C1-Fluorenes	86-73-7C1		(mg/kg)	**0.000649**	J	0.00174	0.000464	**0.001**	J	0.0017	0.000455	**0.00104**	J	0.0017	0.000454	ND		0.00113	0.000301	**0.00125**	J	0.00197	0.000527
C1-Naphthalenes	91-20-3C1		(mg/kg)	ND		0.00174	0.0005	ND		0.0017	0.00049	**0.000696**	J	0.0017	0.00049	ND		0.00113	0.000324	ND		0.00197	0.000567
C1-Phenanthrenes/Anthracenes	PHENANTHC1		(mg/kg)	**0.00137**	J	0.00174	0.000576	**0.003**		0.0017	0.000565	**0.00223**		0.0017	0.000564	ND		0.00113	0.000374	**0.00448**		0.00197	0.000654
C2-Chrysenes BS	218-01-9C2		(mg/kg)	ND		0.00174	0.000352	**0.00258**		0.0017	0.000344	**0.00275**		0.0017	0.000344	ND		0.00113	0.000228	ND		0.00197	0.000399
C2-Fluorenes	86-73-7C2		(mg/kg)	**0.00141**	J	0.00174	0.000464	ND		0.0017	0.000455	**0.00169**	J	0.0017	0.000454	ND		0.00113	0.000301	ND		0.00197	0.000527
C2-Naphthalenes	91-20-3C2		(mg/kg)	**0.000845**	J	0.00174	0.0005	**0.00141**	J	0.0017	0.00049	**0.00161**	J	0.0017	0.00049	ND		0.00113	0.000324	**0.00176**	J	0.00197	0.000567
C2-Phenanthrenes/Anthr BS	PHENANTHC2		(mg/kg)	**0.0015**	J	0.00174	0.000576	**0.00226**		0.0017	0.000565	**0.00216**		0.0017	0.000564	**0.000482**	J	0.00113	0.000374	**0.00325**		0.00197	0.000654
C3-Chrysenes	218-01-9C3		(mg/kg)	ND		0.00174	0.000352	ND		0.0017	0.000344	**0.00682**		0.0017	0.000344	ND		0.00113	0.000228	ND		0.00197	0.000399
C3-Fluorenes	86-73-7C3		(mg/kg)	ND		0.00174	0.000464	ND		0.0017	0.000455	**0.00251**		0.0017	0.000454	ND		0.00113	0.000301	ND		0.00197	0.000527
C3-Naphthalenes	91-20-3C3		(mg/kg)	**0.000894**	J	0.00174	0.0005	**0.000929**	J	0.0017	0.00049	**0.00133**	J	0.0017	0.00049	ND		0.00113	0.000324	**0.00113**	J	0.00197	0.000567
C3-Phenanthrenes/Anthracenes	PHENANTHC3		(mg/kg)	**0.00133**	J	0.00174	0.000576	**0.00217**		0.0017	0.000565	**0.00191**		0.0017	0.000564	ND		0.00113	0.000374	**0.00227**		0.00197	0.000654
C4-Chrysenes	218-01-9C4		(mg/kg)	ND		0.00174	0.000352	ND		0.0017	0.000344	ND		0.0017	0.000344	ND		0.00113	0.000228	ND		0.00197	0.000399
C4-Naphthalenes	91-20-3C4		(mg/kg)	ND		0.00174	0.0005	ND		0.0017	0.00049	**0.00106**	J	0.0017	0.00049	ND		0.00113	0.000324	ND		0.00197	0.000567
C4-Phenanthrenes/Anthracenes	PHENANTHC4		(mg/kg)	ND		0.00174	0.000576	**0.00208**		0.0017	0.000565	**0.00174**		0.0017	0.000564	ND		0.00113	0.000374	**0.00193**	J	0.00197	0.000654
Chrysene	218-01-9	0.108	(mg/kg)	**0.000547**	J	0.00174	0.000352	**0.00119**	J	0.0017	0.000344	**0.00166**	J	0.0017	0.000344	ND		0.00113	0.000228	**0.00116**	J	0.00197	0.000399
Dibenz(a,h)+(a,c)anthracene	215-58-7/53-70-3	0.00622	(mg/kg)	ND		0.00174	0.00047	ND		0.0017	0.00046	ND		0.0017	0.00046	ND		0.00113	0.000304	ND		0.00197	0.000533
Fluoranthene	206-44-0	0.113	(mg/kg)	**0.00116**	J	0.00174	0.000553	**0.00204**		0.0017	0.000542	**0.00329**		0.0017	0.000541	ND		0.00113	0.000358	**0.00279**		0.00197	0.000627
Fluorene	86-73-7	0.0212	(mg/kg)	**0.000714**	J	0.00174	0.000464	**0.00124**	J	0.0017	0.000455	**0.0018**		0.0017	0.000454	ND		0.00113	0.000301	**0.0022**		0.00197	0.000527
Indeno(1,2,3-cd)pyrene	193-39-5	0	(mg/kg)	ND		0.00174	0.000472	ND		0.0017	0.000463	**0.00146**	J	0.0017	0.000462	ND		0.00113	0.000306	ND		0.00197	0.000536
Naphthalene	91-20-3	0.0346	(mg/kg)	ND		0.00174	0.0005	ND		0.0017	0.00049	**0.00162**	J	0.0017	0.00049	ND		0.00113	0.000324	**0.000895**	J	0.00197	0.000567
Perylene	198-55-0	0	(mg/kg)	**0.18**		0.00174	0.000336	**0.428**		0.0017	0.000329	**0.134**		0.0017	0.000329	**0.00512**		0.00113	0.000218	0.363		0.00197	0.000381
Phenanthrene	85-01-8	0.0867	(mg/kg)	**0.000835**	J	0.00174	0.000576	**0.00128**	J	0.0017	0.000565	**0.00281**		0.0017	0.000564	ND		0.00113	0.000374	**0.00288**		0.00197	0.000654
Pyrene	129-00-0	0.153	(mg/kg)	**0.00101**	J	0.00174	0.000458	**0.00167**	J	0.0017	0.000448	**0.00255**		0.0017	0.000448	ND		0.00113	0.000296	**0.00182**	J	0.00197	0.000519
ORGANOCHLORINE PESTICIDES BY GC																							
2,4'-DDD	53-19-0	0.00122	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
2,4'-DDE	3424-82-6	0.00207	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
2,4'-DDT	789-02-6	0.00119	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
4,4'-DDD	72-54-8	0.00122	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
4,4'-DDE	72-55-9	0.00207	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
4,4'-DDT	50-29-3	0.00119	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Aldrin	309-00-2		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
alpha-BHC	319-84-6		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
alpha-Chlordane	5103-71-9		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
beta-BHC	319-85-7		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Chlordane	57-74-9		(mg/kg)	ND		0.00849	0.00849	ND		0.00818	0.00818	ND		0.00864	0.00864	ND		0.00566	0.00566	ND		0.00951	0.00951
cis-Nonachlor	5103-73-1		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
delta-BHC	319-86-8		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Dieldrin	60-57-1	0.00072	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Endosulfan I	959-98-8	0.000107	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Endosulfan II	33213-65-9	0.000107	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Endosulfan sulfate	1031-07-8		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Endrin	72-20-8	0.00267	(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Endrin aldehyde	7421-93-4		(mg/kg)	ND		0.000507	0.000507	ND		0.000489	0.000489	ND		0.000516	0.000516	ND		0.000338	0.000338	ND		0.000568	0.000568
Endrin ketone	53494-70-5		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
gamma-BHC	58-89-9		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
gamma-Chlordane	5103-74-2		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Heptachlor	76-44-8		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Heptachlor epoxide (B)	1024-57-3	0.0006	(mg/kg)	ND		0.000338	0.000338	ND		0.000326	0.000326	ND		0.000344	0.000344	ND		0.000225	0.000225	ND		0.000379	0.000379
Hexachlorobenzene	118-74-1		(mg/kg)	ND		0.000338	0.000338	ND		0.000326	0.000326	ND		0.000344	0.000344	ND		0.000225	0.000225	ND		0.000379	0.000379
Methoxychlor	72-43-5	0.0296	(mg/kg)	ND		0.00169	0.00169	ND		0.00163	0.00163	ND		0.00172	0.00172	ND		0.00113	0.00113	ND		0.00189	0.00189
Mirex	2385-85-5		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189
Oxychlordane	27304-13-8		(mg/kg)	ND		0.000338	0.000338	ND		0.000326	0.000326	ND		0.000344	0.000344	ND		0.000225	0.000225	ND		0.000379	0.000379
Toxaphene	8001-35-2	0.536	(mg/kg)	ND		0.00849	0.00849	ND		0.00818	0.00818	ND		0.00864	0.00864	ND		0.00566	0.00566	ND		0.00951	0.00951
trans-Nonachlor	39765-80-5		(mg/kg)	ND		0.000169	0.000169	ND		0.000163	0.000163	ND		0.000172	0.000172	ND		0.000113	0.000113	ND		0.000189	0.000189

			SAMPLE ID:	VC-06 (0-26.6')				VC-106				VC-02 (0-4.7')				VC-02 (4.7'-17')				VC-04 (0-17')			
			LAB ID:	L2446143-01				L2446143-02				L2446143-03				L2446143-04				L2446143-05			
			COLLECTION DATE:	8/14/2024				8/14/2024				8/15/2024				8/15/2024				8/16/2024			
			SAMPLE MATRIX:	Sediment				Sediment				Sediment				Sediment				Sediment			
ANALYTE	CAS	DNREC HSCA (mg/kg)	Lab Units	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS																							
Aluminum, Total	7429-90-5		(mg/kg)	**13,900**		168	24.9	**14,200**		164	24.3	**11,100**		164	24.3	**3,670**		113	16.7	**11,800**		194	28.8
Antimony, Total	7440-36-0		(mg/kg)	ND		2.7	0.228	ND		2.63	0.222	ND		2.63	0.222	**0.378**	J	1.8	0.152	ND		3.11	0.263
Arsenic, Total	7440-38-2	7.24	(mg/kg)	**9.2**		0.842	0.111	**8.79**		0.821	0.108	**7.84**		0.822	0.108	**3.33**		0.564	0.074	**8.08**		0.973	0.128
Barium, Total	7440-39-3		(mg/kg)	**54.1**		5.05	0.356	**54.3**		4.93	0.347	**47.1**		4.93	0.347	**10.4**		3.38	0.238	**39.4**		5.84	0.411
Beryllium, Total	7440-41-7		(mg/kg)	**0.777**		0.505	0.147	**0.799**		0.493	0.143	**0.613**		0.493	0.143	**0.36**		0.338	0.098	**0.689**		0.584	0.17
Cadmium, Total	7440-43-9	0.68	(mg/kg)	**0.093**	J	0.337	0.045	**0.091**	J	0.328	0.043	**0.071**	J	0.329	0.043	**0.058**	J	0.226	0.03	**0.088**	J	0.389	0.051
Calcium, Total	7440-70-2		(mg/kg)	**2400**		842	102	**2430**		821	99.8	**2190**		822	99.9	**366**	J	564	68.6	**1950**		973	118
Chromium, Total	7440-47-3	52.3	(mg/kg)	**36.8**		3.37	0.788	**37.2**		3.28	0.768	**30.9**		3.29	0.769	**49.4**		2.26	0.528	**34.3**		3.89	0.91
Cobalt, Total	7440-48-4		(mg/kg)	**11.2**		0.842	0.09	**11.3**		0.821	0.087	**8.66**		0.822	0.087	**3.04**		0.564	0.06	**9.32**		0.973	0.104
Copper, Total	7440-50-8	18.7	(mg/kg)	**10.9**		3.37	0.327	**11.3**		3.28	0.318	**8.41**		3.29	0.319	**3.19**		2.26	0.219	**8.77**		3.89	0.377
Iron, Total	7439-89-6		(mg/kg)	**28200**		337	34.7	**28000**		328	33.8	**24100**		329	33.8	**15000**		226	23.2	**27200**		389	40.1
Lead, Total	7439-92-1	30.2	(mg/kg)	**12.1**		1.01	0.246	**12**		0.985	0.24	**8.88**		0.986	0.24	**3.57**		0.677	0.165	**9.83**		1.17	0.284
Magnesium, Total	7439-95-4		(mg/kg)	**6910**		168	20.8	**7020**		164	20.2	**5360**		164	20.2	**1010**		113	13.9	**6080**		194	24
Manganese, Total	7439-96-5		(mg/kg)	**834**		3.37	0.748	**806**		3.28	0.729	**257**		3.29	0.73	**125**		2.26	0.501	**641**		3.89	0.864
Mercury, Total	7439-97-6	0.13	(mg/kg)	**0.017**	J	0.026	0.003	**0.018**	J	0.023	0.003	**0.015**	J	0.024	0.003	ND		0.015	0.002	**0.016**	J	0.027	0.003
Nickel, Total	7440-02-0	15.9	(mg/kg)	**24.8**		1.68	0.45	**25**		1.64	0.439	**19.7**		1.64	0.439	**6.09**		1.13	0.301	**21.4**		1.94	0.52
Potassium, Total	7440-09-7		(mg/kg)	**2290**		168	26.8	**2370**		164	26.1	**1890**		164	26.1	**1110**		113	17.9	**2190**		194	30.9
Selenium, Total	7782-49-2		(mg/kg)	**5.21**		3.37	1.27	**5.48**		3.28	1.24	**3.96**		3.29	1.24	**1.16**	J	2.26	0.853	**4.18**		3.89	1.47
Silver, Total	7440-22-4	0.73	(mg/kg)	ND		0.842	0.082	ND		0.821	0.08	ND		0.822	0.08	ND		0.564	0.055	ND		0.973	0.095
Sodium, Total	7440-23-5		(mg/kg)	**1460**		253	19.7	**1490**		246	19.2	**1900**		246	19.2	**479**		169	13.2	**2170**		292	22.8
Thallium, Total	7440-28-0		(mg/kg)	**0.153**	J	0.674	0.087	**0.149**	J	0.657	0.085	**0.127**	J	0.657	0.085	ND		0.451	0.058	**0.121**	J	0.778	0.1
Vanadium, Total	7440-62-2		(mg/kg)	**33.8**		1.68	0.639	**34.1**		1.64	0.623	**27.2**		1.64	0.623	**32.1**		1.13	0.428	**30.2**		1.94	0.738
Zinc, Total	7440-66-6	124	(mg/kg)	**64.7**		16.8	4.38	**66.6**		16.4	4.27	**54.9**		16.4	4.27	**24.7**		11.3	2.93	**59.2**		19.4	5.06
GENERAL CHEMISTRY																							
Solids, Total	NONE		%	**0.0573**		0.0001	0.0001	**0.0578**		0.0001	0.0001	**0.0572**		0.0001	0.0001	**0.0865**		0.0001	0.0001	**0.05**		0.0001	0.0001
Nitrogen, Ammonia	7664-41-7		(mg/kg)	**370**		13	4.7	**370**		13	4.8	**31**		12	4.6	**11**		8.4	3.1	**350**		15	5.5
Phosphorus, Total	7723-14-0		(mg/kg)	**880**		39	13	**920**		46	15	**620**		40	13	**220**		25	8.5	**700**		46	15
% Soot (Rep 1)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
% Soot (Rep 2)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
% Soot (Average)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
TOTAL ORGANIC CARBON																							
Total Organic Carbon (Rep1)	7440-44-0		%	**1.7**		0.05	0.05	**1.7**		0.05	0.05	**1.44**		0.05	0.05	**0.094**		0.05	0.05	**1.89**		0.05	0.05
Total Organic Carbon (Rep2)	7440-44-0		%	**1.61**		0.05	0.05	**1.64**		0.05	0.05	**1.4**		0.05	0.05	**0.115**		0.05	0.05	**1.92**		0.05	0.05
Total Organic Carbon (Average)	7440-44-0		%	**1.65**		0.05	0.05	**1.67**		0.05	0.05	**1.42**		0.05	0.05	**0.105**		0.05	0.05	**1.9**		0.05	0.05

NOTES:
mg/kg - milligrams per kilogram
J - estimated concentration
Detections are **BOLDED**
Exceedances of Standards or Thresholds are HIGHLIGHTED
DNREC HSCA - Delaware Department of Natural Resources and Environmental Control
Hazardous Substance Cleanup Act Screening Level Table Guidance
HSCA Ecological Screening Level Table - October 2024
Ecological Sediment - Marine
Conc - Concentration
Q - Laboratory Qualifier
RL - Reporting Limit
MDL - Method Detection Limit

			SAMPLE ID:	VC-01 (0-4.3')				VC-01 (4.3'-17)				VC-05 (0-17')				VC-03 (0-17')			
			LAB ID:	L2446143-06				L2446143-07				L2446143-08				L2446143-09			
			COLLECTION DATE:	8/17/2024				8/17/2024				8/17/2024				8/17/2024			
			SAMPLE MATRIX:	Sediment				Sediment				Sediment				Sediment			
ANALYTE	CAS	DNREC HSCA (mg/kg)	Lab Units	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
PAHS																			
Acenaphthene	83-32-9	0.00671	(mg/kg)	ND		0.00286	0.000504	ND		0.00124	0.000218	ND		0.00189	0.000334	ND		0.00192	0.000339
Acenaphthylene	208-96-8		(mg/kg)	ND		0.00286	0.000545	ND		0.00124	0.000236	ND		0.00189	0.000361	ND		0.00192	0.000367
Anthracene	120-12-7	0.0469	(mg/kg)	ND		0.00286	0.000589	ND		0.00124	0.000255	**0.000572**	**J**	0.00189	0.00039	**0.00064**	**J**	0.00192	0.000397
Benz(a)anthracene	56-55-3	0.0748	(mg/kg)	ND		0.00286	0.000583	ND		0.00124	0.000252	ND		0.00189	0.000386	ND		0.00192	0.000392
Benzo(a)pyrene	50-32-8	0.0888	(mg/kg)	ND		0.00286	0.000816	ND		0.00124	0.000353	ND		0.00189	0.00054	ND		0.00192	0.000549
Benzo(b)fluoranthene	205-99-2		(mg/kg)	ND		0.00286	0.000743	ND		0.00124	0.000322	**0.00128**	**J**	0.00189	0.000492	**0.0008**	**J**	0.00192	0.000501
Benzo(e)pyrene	192-97-2		(mg/kg)	ND		0.00286	0.00059	ND		0.00124	0.000255	**0.000813**	**J**	0.00189	0.000391	**0.000626**	**J**	0.00192	0.000397
Benzo(g,h,i)perylene	191-24-2		(mg/kg)	ND		0.00286	0.000759	ND		0.00124	0.000328	**0.00112**	**J**	0.00189	0.000503	**0.000815**	**J**	0.00192	0.000511
Benzo(j)+(k)fluoranthene	205-82-3/207-08-9		(mg/kg)	ND		0.00286	0.000567	ND		0.00124	0.000245	**0.000602**	**J**	0.00189	0.000376	**0.000468**	**J**	0.00192	0.000382
C1-Chrysenes	218-01-9C1		(mg/kg)	**0.00352**		0.00286	0.000578	ND		0.00124	0.00025	**0.00176**	**J**	0.00189	0.000383	**0.00124**	**J**	0.00192	0.000389
C1-Fluoranthenes/Pyrenes	FLUORPYRC1		(mg/kg)	**0.00136**	**J**	0.00286	0.000752	**0.000806**	**J**	0.00124	0.000325	**0.00282**		0.00189	0.000498	**0.00197**		0.00192	0.000506
C1-Fluorenes	86-73-7C1		(mg/kg)	ND		0.00286	0.000762	ND		0.00124	0.00033	**0.00111**	**J**	0.00189	0.000505	**0.00108**	**J**	0.00192	0.000513
C1-Naphthalenes	91-20-3C1		(mg/kg)	ND		0.00286	0.000822	ND		0.00124	0.000355	ND		0.00189	0.000544	ND		0.00192	0.000553
C1-Phenanthrenes/Anthracenes	PHENANTHC1		(mg/kg)	**0.00179**	**J**	0.00286	0.000947	**0.000478**	**J**	0.00124	0.00041	**0.00271**		0.00189	0.000627	**0.00192**		0.00192	0.000638
C2-Chrysenes BS	218-01-9C2		(mg/kg)	ND		0.00286	0.000578	ND		0.00124	0.00025	**0.0027**		0.00189	0.000383	**0.00334**		0.00192	0.000389
C2-Fluorenes	86-73-7C2		(mg/kg)	ND		0.00286	0.000762	ND		0.00124	0.00033	**0.00241**		0.00189	0.000505	**0.00168**	**J**	0.00192	0.000513
C2-Naphthalenes	91-20-3C2		(mg/kg)	**0.0017**	**J**	0.00286	0.000822	ND		0.00124	0.000355	**0.00152**	**J**	0.00189	0.000544	**0.00123**	**J**	0.00192	0.000553
C2-Phenanthrenes/Anthr BS	PHENANTHC2		(mg/kg)	ND		0.00286	0.000947	ND		0.00124	0.00041	**0.00236**		0.00189	0.000627	**0.00242**		0.00192	0.000638
C3-Chrysenes	218-01-9C3		(mg/kg)	ND		0.00286	0.000578	ND		0.00124	0.00025	ND		0.00189	0.000383	ND		0.00192	0.000389
C3-Fluorenes	86-73-7C3		(mg/kg)	ND		0.00286	0.000762	ND		0.00124	0.00033	**0.00341**		0.00189	0.000505	ND		0.00192	0.000513
C3-Naphthalenes	91-20-3C3		(mg/kg)	ND		0.00286	0.000822	ND		0.00124	0.000355	**0.00126**	**J**	0.00189	0.000544	**0.000949**	**J**	0.00192	0.000553
C3-Phenanthrenes/Anthracenes	PHENANTHC3		(mg/kg)	ND		0.00286	0.000947	ND		0.00124	0.00041	**0.00232**		0.00189	0.000627	**0.0015**	**J**	0.00192	0.000638
C4-Chrysenes	218-01-9C4		(mg/kg)	ND		0.00286	0.000578	ND		0.00124	0.00025	ND		0.00189	0.000383	ND		0.00192	0.000389
C4-Naphthalenes	91-20-3C4		(mg/kg)	ND		0.00286	0.000822	ND		0.00124	0.000355	**0.00132**	**J**	0.00189	0.000544	ND		0.00192	0.000553
C4-Phenanthrenes/Anthracenes	PHENANTHC4		(mg/kg)	ND		0.00286	0.000947	ND		0.00124	0.00041	**0.00188**	**J**	0.00189	0.000627	**0.00156**	**J**	0.00192	0.000638
Chrysene	218-01-9	0.108	(mg/kg)	ND		0.00286	0.000578	ND		0.00124	0.00025	**0.00139**	**J**	0.00189	0.000383	**0.000975**	**J**	0.00192	0.000389
Dibenz(a,h)+(a,c)anthracene	215-58-7/53-70-3	0.00622	(mg/kg)	ND		0.00286	0.000772	ND		0.00124	0.000334	ND		0.00189	0.000511	ND		0.00192	0.00052
Fluoranthene	206-44-0	0.113	(mg/kg)	**0.00262**	**J**	0.00286	0.000908	ND		0.00124	0.000393	**0.00238**		0.00189	0.000602	**0.00227**		0.00192	0.000612
Fluorene	86-73-7	0.0212	(mg/kg)	**0.00162**	**J**	0.00286	0.000762	ND		0.00124	0.00033	**0.00172**	**J**	0.00189	0.000505	**0.00177**	**J**	0.00192	0.000513
Indeno(1,2,3-cd)pyrene	193-39-5	0	(mg/kg)	ND		0.00286	0.000776	ND		0.00124	0.000336	**0.0008**	**J**	0.00189	0.000514	**0.000598**	**J**	0.00192	0.000522
Naphthalene	91-20-3	0.0346	(mg/kg)	**0.00231**	**J**	0.00286	0.000822	ND		0.00124	0.000355	**0.00065**	**J**	0.00189	0.000544	**0.00078**	**J**	0.00192	0.000553
Perylene	198-55-0	0	(mg/kg)	**0.0647**		0.00286	0.000552	**0.0623**		0.00124	0.000239	**0.583**		0.00189	0.000365	**0.371**		0.00192	0.000372
Phenanthrene	85-01-8	0.0867	(mg/kg)	**0.00421**		0.00286	0.000947	ND		0.00124	0.00041	**0.00232**		0.00189	0.000627	**0.00244**		0.00192	0.000638
Pyrene	129-00-0	0.153	(mg/kg)	**0.0015**	**J**	0.00286	0.000752	**0.000458**	**J**	0.00124	0.000325	**0.00179**	**J**	0.00189	0.000498	**0.00138**	**J**	0.00192	0.000506
ORGANOCHLORINE PESTICIDES BY GC																			
2,4'-DDD	53-19-0	0.00122	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
2,4'-DDE	3424-82-6	0.00207	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
2,4'-DDT	789-02-6	0.00119	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
4,4'-DDD	72-54-8	0.00122	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
4,4'-DDE	72-55-9	0.00207	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
4,4'-DDT	50-29-3	0.00119	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Aldrin	309-00-2		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
alpha-BHC	319-84-6		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
alpha-Chlordane	5103-71-9		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
beta-BHC	319-85-7		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Chlordane	57-74-9		(mg/kg)	ND		0.0138	0.0138	ND		0.00624	0.00624	ND		0.00933	0.00933	ND		0.00963	0.00963
cis-Nonachlor	5103-73-1		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
delta-BHC	319-86-8		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Dieldrin	60-57-1	0.00072	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Endosulfan I	959-98-8	0.000107	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Endosulfan II	33213-65-9	0.000107	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Endosulfan sulfate	1031-07-8		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Endrin	72-20-8	0.00267	(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Endrin aldehyde	7421-93-4		(mg/kg)	ND		0.000822	0.000822	ND		0.000373	0.000373	ND		0.000557	0.000557	ND		0.000576	0.000576
Endrin ketone	53494-70-5		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
gamma-BHC	58-89-9		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
gamma-Chlordane	5103-74-2		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Heptachlor	76-44-8		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Heptachlor epoxide (B)	1024-57-3	0.0006	(mg/kg)	ND		0.000548	0.000548	ND		0.000248	0.000248	ND		0.000372	0.000372	ND		0.000384	0.000384
Hexachlorobenzene	118-74-1		(mg/kg)	ND		0.000548	0.000548	ND		0.000248	0.000248	ND		0.000372	0.000372	ND		0.000384	0.000384
Methoxychlor	72-43-5	0.0296	(mg/kg)	ND		0.00274	0.00274	ND		0.00124	0.00124	ND		0.00186	0.00186	ND		0.00192	0.00192
Mirex	2385-85-5		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192
Oxychlordane	27304-13-8		(mg/kg)	ND		0.000548	0.000548	ND		0.000248	0.000248	ND		0.000372	0.000372	ND		0.000384	0.000384
Toxaphene	8001-35-2	0.536	(mg/kg)	ND		0.0138	0.0138	ND		0.00624	0.00624	ND		0.00933	0.00933	ND		0.00963	0.00963
trans-Nonachlor	39765-80-5		(mg/kg)	ND		0.000274	0.000274	ND		0.000124	0.000124	ND		0.000186	0.000186	ND		0.000192	0.000192

			SAMPLE ID:	VC-01 (0-4.3')				VC-01 (4.3'-17)				VC-05 (0-17')				VC-03 (0-17')			
			LAB ID:	L2446143-06				L2446143-07				L2446143-08				L2446143-09			
			COLLECTION DATE:	8/17/2024				8/17/2024				8/17/2024				8/17/2024			
			SAMPLE MATRIX:	Sediment				Sediment				Sediment				Sediment			
ANALYTE	CAS	DNREC HSCA (mg/kg)	Lab Units	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL	Conc	Q	RL	MDL
TOTAL METALS																			
Aluminum, Total	7429-90-5		(mg/kg)	**10,200**		273	40.5	**4,340**		120	17.8	**14,600**		191	28.2	**12,300**		188	27.8
Antimony, Total	7440-36-0		(mg/kg)	ND		4.38	0.37	**0.626**	J	1.93	0.163	ND		3.05	0.258	ND		3.01	0.254
Arsenic, Total	7440-38-2	7.24	(mg/kg)	**5.34**		1.37	0.18	**6.8**		0.602	0.08	**8.72**		0.955	0.126	**7.36**		0.941	0.124
Barium, Total	7440-39-3		(mg/kg)	**30.2**		8.2	0.578	**5.46**		3.62	0.254	**50.6**		5.73	0.403	**37.6**		5.65	0.398
Beryllium, Total	7440-41-7		(mg/kg)	**0.786**	J	0.82	0.238	**0.597**		0.362	0.105	**0.765**		0.573	0.166	**0.642**		0.565	0.164
Cadmium, Total	7440-43-9	0.68	(mg/kg)	ND		0.547	0.072	**0.04**	J	0.241	0.032	**0.078**	J	0.382	0.05	**0.072**	J	0.376	0.05
Calcium, Total	7440-70-2		(mg/kg)	**1900**		1370	166	**160**	J	602	73.3	**2300**		955	116	**2170**		941	114
Chromium, Total	7440-47-3	52.3	(mg/kg)	**38.9**		5.47	1.28	**107**		24.1	5.64	**37.7**		3.82	0.894	**33.1**		3.76	0.881
Cobalt, Total	7440-48-4		(mg/kg)	**5.79**		1.37	0.145	**5.16**		0.602	0.064	**10.3**		0.955	0.102	**8.7**		0.941	0.1
Copper, Total	7440-50-8	18.7	(mg/kg)	**5.67**		5.47	0.53	**2.29**	J	2.41	0.234	**9.92**		3.82	0.37	**7.89**		3.76	0.365
Iron, Total	7439-89-6		(mg/kg)	**23500**		547	56.3	**26200**		241	24.8	**28000**		382	39.3	**24900**		376	38.8
Lead, Total	7439-92-1	30.2	(mg/kg)	**6.67**		1.64	0.399	**5.51**		0.723	0.176	**10.9**		1.14	0.279	**8.55**		1.13	0.275
Magnesium, Total	7439-95-4		(mg/kg)	**4670**		273	33.7	**842**		120	14.8	**7000**		191	23.5	**6260**		188	23.2
Manganese, Total	7439-96-5		(mg/kg)	**148**		5.47	1.21	**176**		2.41	0.535	**780**		3.82	0.848	**545**		3.76	0.836
Mercury, Total	7439-97-6	0.13	(mg/kg)	**0.013**	J	0.037	0.005	**0.006**	J	0.018	0.002	**0.017**	J	0.027	0.003	**0.015**	J	0.028	0.004
Nickel, Total	7440-02-0	15.9	(mg/kg)	**15.1**		2.73	0.731	**18.3**		1.2	0.322	**23.5**		1.91	0.51	**20.2**		1.88	0.503
Potassium, Total	7440-09-7		(mg/kg)	**1760**		273	43.4	**1260**		120	19.1	**2450**		191	30.3	**2260**		188	29.9
Selenium, Total	7782-49-2		(mg/kg)	**4.05**	J	5.47	2.07	**1.83**	J	2.41	0.911	**4.87**		3.82	1.44	**4.04**		3.76	1.42
Silver, Total	7440-22-4	0.73	(mg/kg)	ND		1.37	0.133	ND		0.602	0.059	ND		0.955	0.093	ND		0.941	0.092
Sodium, Total	7440-23-5		(mg/kg)	**3470**		410	32	**358**		181	14.1	**1890**		286	22.4	**2220**		282	22.1
Thallium, Total	7440-28-0		(mg/kg)	ND		1.09	0.141	ND		0.482	0.062	**0.158**	J	0.764	0.099	**0.13**	J	0.753	0.097
Vanadium, Total	7440-62-2		(mg/kg)	**32**		2.73	1.04	**67.3**		12	4.57	**34.8**		1.91	0.724	**30.3**		1.88	0.714
Zinc, Total	7440-66-6	124	(mg/kg)	**35.4**		27.3	7.11	**87.5**		12	3.13	**63.5**		19.1	4.96	**53.6**		18.8	4.89
GENERAL CHEMISTRY																			
Solids, Total	NONE		%	**0.0346**		0.0001	0.0001	**0.0793**		0.0001	0.0001	**0.052**		0.0001	0.0001	**0.0512**		0.0001	0.0001
Nitrogen, Ammonia	7664-41-7		(mg/kg)	**86**		21	7.9	**11**		8.7	3.2	**400**		14	5.2	**350**		14	5.2
Phosphorus, Total	7723-14-0		(mg/kg)	**440**		76	26	**420**		28	9.3	**800**		44	15	**840**		49	16
% Soot (Rep 1)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
% Soot (Rep 2)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
% Soot (Average)	NONE		%	ND		NA	NA	ND		NA	NA	ND		NA	NA	ND		NA	NA
TOTAL ORGANIC CARBON																			
Total Organic Carbon (Rep1)	7440-44-0		%	**8.65**		0.05	0.05	**0.518**		0.05	0.05	**1.74**		0.05	0.05	**1.49**		0.05	0.05
Total Organic Carbon (Rep2)	7440-44-0		%	**10.3**		0.05	0.05	**0.437**		0.05	0.05	**1.71**		0.05	0.05	**1.46**		0.05	0.05
Total Organic Carbon (Average)	7440-44-0		%	**9.49**		0.05	0.05	**0.478**		0.05	0.05	**1.72**		0.05	0.05	**1.48**		0.05	0.05

NOTES:
mg/kg - milligrams per kilogram
J - estimated concentration
Detections are **BOLDED**
Exceedances of Standards or Thresholds are HIGHLIGHTED
DNREC HSCA - Delaware Department of Natural Resources and Environmental Control
Hazardous Substance Cleanup Act Screening Level Table Guidance
HSCA Ecological Screening Level Table - October 2024
Ecological Sediment - Marine
Conc - Concentration
Q - Laboratory Qualifier
RL - Reporting Limit
MDL - Method Detection Limit

EXHIBIT 3

EXHIBIT 3
Comparison of Estimated Pore-Water Concentrations to DNREC Surface Water Quality Standards & HSCA Screening Levels

TABLE OF CONTENTS

I. Introduction

At the request of the Delaware Department of Natural Resources and Environmental Control ("DNREC"), this exhibit has been prepared to compare estimated pore-water concentrations from sediment samples collected from the Delaware portion of the Delaware River at the Project Site to the Delaware Surface Water Quality criteria (7 DE Admin. Code § 7401, last amended January 1, 2023) ("SWQ Standards") and screening levels established pursuant to the Delaware Hazardous Substance Cleanup Act ("HSCA") Regulations (7 DE Admin. Code § 1375).

In August 2024, TRC, environmental consultant to Silver Run Electric, LLC ("SRE"), conducted riverbed sediment sampling in the Delaware River along the route of SRE's proposed Silver Run Expansion Project ("Project") to obtain route-specific information on the sediment conditions along the Project's proposed submarine cable installation route. The nine sediment core samples, collected at depths up to 26 feet beneath the riverbed, were analyzed to assess the sediment's bulk physical and chemical properties, with results reported on a dry weight basis (TRC 2024).

Although SRE did not collect any surface water samples from the Delaware River for analysis, the results of the dry sediment analysis can be used to estimate chemical concentrations in the sediment pore-water beneath the riverbed that may have existed when that pore-water was at equilibrium with the sediments beneath the riverbed. Although the estimated pore-water quality in the buried riverbed sediments provides an indication of the existing conditions in the sediments beneath the river, the pore-water quality does not reflect or predict the water quality conditions in the Delaware River during Project construction, when the proposed in-water construction activities will disturb riverbed sediments and temporarily elevate turbidity levels. Nonetheless, SRE provides the requested information in this exhibit in accordance with DNREC's request.

The Project Site is located in the mesohaline zone (5 to 18 ppt) of the Delaware Estuary (PDE 2017). According to 2024 monthly water quality monitoring data[1] from the "Appoquinimink River @ Mouth" monitoring station (Station ID 109091), located approximately 1,000 feet west of the existing Silver Run Delaware transition structure (DE-15), the mean salinity level in this portion of the Delaware River in 2024 was 6.1 ppt. Therefore, in accordance with the definition of "marine

[1] DNREC Surface Water Quality Monitoring Program, General Assessment Monitoring Network: https://dnrec.delaware.gov/watershed-stewardship/assessment/water-quality-monitoring/

water" in the SWQ Standards, the criteria for marine waters in Table 1 of the SWQ Standards (Protection of Aquatic Life) and the HSCA ecological screening levels for marine waters were applied in this comparison.

II. Calculation of Sediment Pore-Water Concentrations

The laboratory results of chemical analysis of nine sediment samples collected from the Delaware River at the Project Site (TRC 2024) were used to calculate (estimate) sediment pore-water concentrations, as explained below.

As background, pore-water is the water in the tiny spaces between grains of sand, silt, clay, and organic matter particles comprising riverbed sediments. This interstitial water, being in close contact with the riverbed sediments, is subject to chemical exchange with those sediments. As such, pollutants may be transported between sediments and pore-water, and vice versa, depending on biogeochemical factors such as microbial activity, temperature, sediment type, and the solubility of the pollutant. In circumstances where pollutant concentrations within a sediment sample are known and are assumed to be in equilibrium with liquid water, pollutant concentrations in the pore-water can be estimated using sediment/pore-water equilibrium partition coefficients taken from reference literature. This approach was followed to calculate sediment pore-water concentrations for the sediment samples collected at the Project Site, as explained below.

For inorganic constituents, sediment/pore-water equilibrium partition coefficients (mean) were taken from Table 4 of Allison and Allison (2005), and pore-water concentrations were calculated using the following formula:

- (measured sediment concentration (mg/kg) x 1,000) / partition coefficient (log K_d) (kg/L) = estimated pore-water concentration (µg/L)

For semi-volatile organics, organochlorine pesticides, and PCBs, sediment/pore-water equilibrium partition coefficients were taken from U.S. Environmental Protection Agency (2024), "Chemical Specific Parameters" table, and pore-water concentrations were calculated using the following formula:

- [(measured sediment concentration (mg/kg) or method detection limit x 1,000) / fraction organic carbon] / organic carbon-water partition coefficient (K_{oc}) (kg/L) = estimated pore-water concentration (µg/L)

If non-detect was reported by the laboratory, the method detection limit was used to calculate the pore-water concentration, for the purpose of conservative comparison. In this document, reported pore-water concentrations based on the method detection limit are in italicized text.

The sediment pore-water concentrations reported herein are estimates based on scientifically-derived partition coefficients published by the U.S. Environmental Protection Agency (Allison and Allison 2005 and USEPA 2024), which provide an estimate of the fraction of a chemical that is likely to dissolve (transfer) from sediment into interstitial pore-water. There is a high level of uncertainty in the use of equilibrium speciation modeling to estimate chemical partitioning in

natural systems, as explained in Chapter 4.0 of Allison and Allison (2005). Further, this approach does not account for the effect of dilution, a major factor in a large tidal river such as the Delaware River. Consequently, while the estimated pore-water concentrations reported in this document may be representative of the existing conditions of the pore-water in the sediments beneath the riverbed at the sampling locations, these estimated concentrations likely do not represent the surface water concentrations that will be present in the river during Project construction due to a myriad of environmental factors, especially dilution.

The estimates reported herein are provided for regulatory screening purposes and must not be interpreted as site-specific, field-based measurements of sediment pore-water concentrations or as a reliable prediction of water quality conditions at the Project Site during the proposed in-water construction work. Actual water quality conditions during the proposed in-water construction work will depend on several site-specific environmental variables, such as, but not limited to, tidal currents (direction and velocity), water temperature, ambient water chemistry, and the geochemical characteristics and concentration of the riverbed sediments to be introduced into the water column. Further, the chemistry of pore-water (or interstitial water), as estimated in this exercise, within localized loads of suspended sediment does not indicate the chemistry of the larger water column.

III. Comparison to SWQ Standards

The SWQ Standards are the state regulations which establish designated uses, water quality criteria, and an antidegradation policy for surface waters in the State of Delaware. The water quality criteria in the SWQ Standards apply to surface waters. Direct comparison of the sediment concentrations to the SWQ Standards is not dimensionally consistent because the sediment concentrations (mg/kg) indicate the concentration of an analyte per dry mass of the sample (mass-to-mass ratio), whereas units used for a liquid matrix (µg/L), such as river water or sediment pore-water, indicate the concentration of an analyte per liquid volume of sample (mass-to-volume ratio). Comparison of estimated sediment pore-water concentrations (mass-to-volume ratio) to the SWQ Standards allows for dimensionally consistent comparison; however, as discussed above, the estimated pore-water concentrations do not represent the bulk water column in the river, under existing conditions or during the proposed in-water work. Considering the massive dilution effect of the bulk water column in the Delaware River, the actual pollutant concentrations in the water column during Project construction activities are expected to be several orders of magnitude lower than the pore-water concentration estimates presented herein.

Since the Delaware River is not designated as a "Public Water Supply" source per Section 3 of the SWQ Standards, the human health criteria for "consumption of organism only" were applied in this comparison, but not the criteria for "consumption of water + organism."

Tables E3.1 and E3.2 contain the estimated (calculated) pore-water concentrations for the nine sediment samples collected from Delaware waters and the corresponding water quality criteria from Table 1 and Table 2 of the SWQ Standards, respectively. The marine acute criteria from Table 1 of the SWQ standards are protective of short-term exposures (≤ 96 hours) by marine ecological receptors, such as exposures that could be experienced during dredging or installation of submarine cables. As documented in the Project's sediment dispersion modeling report (Attachment G of the Project's DNREC permit application), the localized suspended sediment concentrations at the

Project Site are predicted to return to baseline conditions within 24 hours after the completion of a jetting run. Considering the temporary nature of the proposed in-water work and the predicted short-term increase in localized turbidity levels above ambient conditions, only the acute SWQ Standards are presented for comparison with the pore-water concentration estimates derived from SRE's sediment sampling. The marine chronic criteria from Table 1 of the SWQ standards pertain to long-term exposures by marine ecological receptors. Since chronic exposure will not occur as a result of the Project, the chronic criteria are not listed in Table E3.1.

IV. Comparison to HSCA Screening Levels

DNREC requested that the chemistry analytical results from sediment samples collected in Delaware waters be compared to the applicable HSCA screening levels. Remediation of contaminated sites in the State of Delaware is regulated by DNREC under the HSCA (7 Del.C., Ch. 91) and its implementing regulations (7 DE Admin. Code § 1375). As defined in the HSCA Regulations, HSCA screening levels are "concentrations of hazardous substances in the environment that are (a) the background levels established by (DNREC), (b) risk-based levels associated with a target cancer risk of 1E-06 or a target hazard quotient of 0.1 in an unrestricted use exposure scenario, or (c) other regulatory levels adopted under the (HSCA) Act." In the context of risk assessment, HSCA screening levels are used to determine contaminants of potential concern or contaminants of potential ecological concern.

Exhibit 2 of the Section 401 Water Quality Certification documentation for this Project (Attachment B of the DNREC permit application) contains the bulk chemistry analytical results for the nine sediment samples collected from Delaware waters and the HSCA ecological screening levels for marine sediments, with values higher than the screening levels highlighted.

Table E3.3 below contains the estimated (calculated) sediment pore-water concentrations for the nine sediment samples collected from Delaware waters and the HSCA ecological screening levels for marine surface waters. As discussed above, the pore-water concentrations do not represent the bulk water column in the river. Considering the massive dilution effect of the bulk water column, the actual pollutant concentrations in the water column during Project construction activities are expected to be several orders of magnitude lower than the pore-water concentration estimates presented in Table E3.3.

Table E3.1. Comparison of Estimated Pore-Water Concentrations to DNREC Surface Water Quality Criteria, Protection of Aquatic Life (Table 1 of SWQ Standards).

Constituent	DNREC WQC Marine Acute* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Aldrin	1.3	*3.52E-05*	*3.15E-04*	*1.48E-04*	*0.001*	*1.58E-04*	*1.21E-04*	*1.32E-04*	*1.25E-04*	*1.19E-04*
Acrolein	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum pH6.5-9.0	NC	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC
Ammonia	NC	---	---	---	---	---	---	---	---	---
Arsenic (III)	69	21.26	27.07	31.21	13.26	29.30	32.17	34.71	36.63	34.99
Cadmium	33	*0.036*	0.020	0.036	0.029	0.036	0.044	0.039	0.047	0.046
Carbaryl	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	0.09	*0.002*	*0.019*	*0.009*	*0.076*	*0.010*	*0.007*	*0.008*	*0.008*	*0.007*
Chlorine	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos (Dursban)	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium (III)**	C	0.5	1.3	0.4	0.6	0.4	0.4	0.5	0.5	0.5
Chromium (VI)**	1100	0.5	1.3	0.4	0.6	0.4	0.4	0.5	0.5	0.5
Copper	4.8	1.79	0.72	2.66	1.01	2.50	2.77	3.14	3.45	3.57
Cyanide	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
DDT and Metabolites (DDD and DDE)#	0.13	*1.30E-04*	*0.0012*	*5.46E-04*	*0.0046*	*5.85E-04*	*4.49E-04*	*4.88E-04*	*4.62E-04*	*4.40E-04*
Demeton	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diazanon	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.71	*1.44E-04*	*0.001*	*6.06E-04*	*0.005*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Endosulfan^	0.034	*8.49E-04*	*0.0076*	*0.0036*	*0.0302*	*0.0038*	*0.0029*	*0.0032*	*0.0030*	*0.0029*
Endrin	0.037	*1.44E-04*	*1.29E-03*	*6.06E-04*	*5.14E-03*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Guthion	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	0.053	*7.04E-05*	*6.30E-04*	*2.95E-04*	*2.51E-03*	*3.16E-04*	*2.43E-04*	*2.64E-04*	*2.50E-04*	*2.38E-04*
Hexachloro-cylclohexane^^	0.16	*0.003*	*0.029*	*0.014*	*0.115*	*0.015*	*0.011*	*0.012*	*0.011*	*0.011*
Iron	NC	---	---	---	---	---	---	---	---	---
Lead	210	0.17	0.14	0.22	0.09	0.21	0.25	0.27	0.30	0.30

Constituent	DNREC WQC Marine Acute* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Malathion	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury (II)	1.8	1.637E-04	7.55E-05	1.89E-04	*2.52E-05*	1.89E-04	2.01E-04	2.14E-04	2.14E-04	2.27E-04
Methoxychlor	NC	*1.07E-03*	*9.57E-03*	*4.49E-03*	*0.04*	*4.80E-03*	*3.68E-03*	*4.01E-03*	*3.79E-03*	*3.61E-03*
Mirex	C	*8.02E-06*	*7.18E-05*	*3.36E-05*	*2.85E-04*	*3.60E-05*	*2.76E-05*	*3.00E-05*	*2.85E-05*	*2.71E-05*
Nickel	74	1.90	2.30	2.48	0.77	2.54	2.69	2.96	3.12	3.15
Nonylphenol	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total PCBs	NC	2.42E-05	2.30E-04	1.87E-04	8.62E-04	5.80E-05	7.22E-05	2.01E-05	8.24E-05	7.91E-05
Parathion	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	13	ND	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	290	1.02	0.46	0.99	0.29	1.01	1.05	1.22	1.31	1.38
Silver	1.9	*0.02*	*0.02*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*	*0.02*	*0.02*
Toxaphene	0.21	*1.89E-03*	*0.017*	*7.90E-03*	*0.067*	*8.45E-03*	*6.50E-03*	*7.04E-03*	*6.68E-03*	*6.36E-03*
Tributyltin (TBT)	0.42	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	90	2.81	6.95	4.36	1.96	4.26	4.70	5.04	5.14	5.29

* Water quality criteria from Table 1 of the Delaware Surface Water Quality Standards (7 DE Admin. Code § 7401), last amended January 1, 2023.
If non-detect was reported by the laboratory, the method detection limit (MDL) was used to calculate the estimated pore-water concentration. Values calculated based on the MDL are in italicized text.
NC = no criteria established pursuant to the Delaware Surface Water Quality Standards (7 DE Admin. Code § 7401).
ND = no data available; the laboratory analysis did not include this constituent.
NPC = sediment pore water concentration cannot be calculated because there is no partition coefficient.
**Estimated chromium concentrations are total chromium.
#The values for "DDT and Metabolites (DDD and DDE)" are the sum of the estimated concentrations of 2,4'-DDD; 2,4'-DDE; 2,4'-DDT; 4,4'-DDD; 4,4'-DDE; and 4,4'-DDT.
^The values for Endosulfan are the sum of the estimated concentrations of Endosulfan I and Endosulfan II.
^^The values for Hexachlorocyclohexane (HCH or BHC) are the sum of the estimated concentrations for alpha-, beta-, delta-, and gamma-HCH.

Table E3.2. Comparison of Estimated Pore-Water Concentrations to DNREC Surface Water Quality Criteria, Protection of Human Health (Table 2 of SWQ Standards).

Constituent	DNREC WQC Human Health, Consumption of Organism* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Acenaphthene	90	*0.001*	*0.009*	*0.004*	*0.036*	*0.005*	*0.004*	*0.004*	*0.004*	*0.004*
Acrolein	400	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0.00000077	*3.52E-05*	*3.15E-04*	*1.48E-04*	*1.25E-03*	*1.58E-04*	*1.21E-04*	*1.32E-04*	*1.25E-04*	*1.19E-04*
alpha-Hexachlorocyclohexane (HCH)	0.00039	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*
alpha-Endosulfan	30	*4.25E-04*	*3.80E-03*	*1.78E-03*	*0.015*	*1.91E-03*	*1.46E-03*	*1.59E-03*	*1.51E-03*	*1.44E-03*
Anthracene	400	*3.88E-04*	*3.32E-03*	4.53E-03	*0.013*	2.70E-03	2.12E-03	2.08E-03	*1.36E-03*	1.73E-03
Antimony	640	*0.093*	0.157	*0.056*	0.095	*0.064*	*0.066*	*0.065*	*0.057*	*0.056*
Arsenic	NC	21.26	27.07	31.21	13.26	29.30	32.17	34.71	36.63	34.99
Asbestos	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Barium	NC	95.50	17.27	148.94	32.89	118.90	124.59	160.01	171.08	171.71
Benzene	16	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzidine	0.011	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	0.18	*3.41E-05*	*2.92E-04*	3.77E-04	*1.16E-03*	*1.47E-04*	*1.18E-04*	*1.25E-04*	*1.20E-04*	*1.15E-04*
Benzo(a)pyrene	0.018	*1.46E-05*	*1.25E-04*	1.47E-04	*4.96E-04*	*6.29E-05*	*5.03E-05*	*5.32E-05*	*5.11E-05*	*4.93E-05*
Benzo(b)fluoranthene	0.18	*1.30E-05*	*1.12E-04*	2.10E-04	*4.44E-04*	9.01E-05	6.72E-05	1.24E-04	*4.57E-05*	8.28E-05
Beryllium	NC	1.25	0.95	0.97	0.57	1.02	1.09	1.21	1.23	1.27
beta-Hexachlorocyclohexane (HCH)	0.014	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*
beta-Endosulfan	40	*4.25E-04*	*3.80E-03*	*1.78E-03*	*0.015*	*1.91E-03*	*1.46E-03*	*1.59E-03*	*1.51E-03*	*1.44E-03*
Bis(2-Chloro-1-methylethyl) Ether	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl)Ether	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Ethylhexyl)Phthalate	0.37	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(Chloromethyl) Ether	0.017	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	120	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	DNREC WQC Human Health, Consumption of Organism* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Butylbenzyl Phthalate	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	NC	*0.036*	0.020	0.036	0.029	0.036	0.044	0.039	0.047	0.046
Carbon Tetrachloride	5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane	0.00032	*0.0021*	*0.0191*	*0.0089*	*0.0757*	*0.0096*	*0.0074*	*0.0080*	*0.0076*	*0.0072*
Chlorobenzene	800	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	21	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxy Herbicide (2,4-D)	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenoxy Herbicide (2,4,5-TP)	NC	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium (III)	NC	---	---	---	---	---	---	---	---	---
Chromium (VI)	NC	---	---	---	---	---	---	---	---	---
Chrysene	0.13	*3.38E-05*	*2.89E-04*	6.49E-04	*1.15E-03*	3.66E-04	3.39E-07	4.49E-04	1.84E-04	3.96E-04
Copper	NC	1.79	0.72	2.66	1.01	2.50	2.77	3.14	3.45	3.57
Cyanide	400	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)Anthracene	0.018	*4.28E-06*	*3.66E-05*	*1.70E-05*	*1.45E-04*	*1.85E-05*	*1.48E-08*	*1.56E-05*	*1.50E-05*	*1.45E-05*
Dichlorobromomethane	27	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.0000012	*1.44E-04*	*1.29E-03*	*6.06E-04*	*5.14E-03*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Diethyl Phthalate	600	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl Phthalate	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-Butyl Phthalate	30	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dinitrophenols	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan Sulfate	40	*2.95E-04*	*2.64E-03*	*1.24E-03*	*0.010*	*1.32E-03*	*1.02E-03*	*1.10E-03*	*1.05E-03*	*9.96E-04*
Endrin	0.03	*1.44E-04*	*1.29E-03*	*6.06E-04*	*5.14E-03*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Endrin Aldehyde	1	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC
Ethylbenzene	130	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	20	5.02E-04	*1.49E-03*	4.21E-03	*5.92E-03*	2.79E-03	2.67E-03	2.52E-03	1.28E-03	2.22E-03
Fluorene	70	1.86E-03	*7.47E-03*	0.014	*0.030*	0.013	0.013	0.011	4.70E-03	8.07E-03

Constituent	DNREC WQC Human Health, Consumption of Organism* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
gamma-Hexachlorocyclohexane (HCH) [Lindane]	4.4	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*
Heptachlor	0.0000059	*7.04E-05*	*6.30E-04*	*2.95E-04*	*2.51E-03*	*3.16E-04*	*2.43E-04*	*2.64E-04*	*2.50E-04*	*2.38E-04*
Heptachlor Epoxide	0.000032	*5.77E-04*	*5.17E-03*	*2.42E-03*	*0.020*	*2.59E-03*	*1.99E-03*	*2.16E-03*	*2.05E-03*	*1.95E-03*
Hexachlorobenzene	0.000079	*9.31E-04*	*8.33E-03*	*3.91E-03*	*0.033*	*4.18E-03*	*3.22E-03*	*3.49E-03*	*3.30E-03*	*3.15E-03*
Hexachlorobutadiene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclohexane (HCH) – Technical**	0.01	*0.003*	*0.03*	*0.01*	*0.115*	*0.02*	*0.01*	*0.01*	*0.01*	*0.01*
Hexachlorocyclopentadiene	4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ideno(1,2,3-cd)pyrene	0.0013	*4.09E-06*	*3.50E-05*	5.14E-05	*1.39E-04*	2.02E-05	*1.41E-05*	2.33E-05	*1.43E-05*	*1.39E-05*
Isophorone	1800	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl Mercury	0.3 mg/kg fish tissue	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methoxychlor	0.02	*1.07E-03*	*9.57E-03*	*4.49E-03*	*0.038*	*4.80E-03*	*3.68E-03*	*4.01E-03*	*3.79E-03*	*3.61E-03*
Methyl Bromide	10000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	4600	1.90	2.30	2.48	0.77	2.54	2.69	2.96	3.12	3.15
Nitrates	10,000 (MCL)	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrobenzene	600	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosodibutylamine	0.22	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosodiethylamine	1.24	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosopyrrolidine	34	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodimethylamine	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodi-n-Propylamine	0.51	ND	ND	ND	ND	ND	ND	ND	ND	ND
N-Nitrosodiphenylamine	6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.04	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	DNREC WQC Human Health, Consumption of Organism* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Phenol	300000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Polychlorinated Biphenyls (PCBs)	0.000064	2.42E-05	**2.30E-04**	**1.87E-04**	**8.62E-04**	5.80E-05	**7.22E-05**	2.01E-05	**8.24E-05**	**7.91E-05**
Pyrene	30	2.93E-04	1.77E-03	3.33E-03	*4.98E-03*	1.73E-03	1.77E-03	1.93E-03	1.13E-03	1.85E-03
Selenium	4200	1.02	0.46	0.99	0.29	1.01	1.05	1.22	1.31	1.38
Tetrachloroethylene	29	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.47	***7.668***	***7.468***	**6.365**	***2.907***	**6.064**	**7.067**	**3.107**	**7.919**	**6.515**
Toluene	520	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	0.00071	*1.89E-03*	*0.017*	*7.90E-03*	*0.067*	*8.45E-03*	*6.50E-03*	*7.04E-03*	*6.68E-03*	*6.36E-03*
Trichloroethylene	7	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	1.6	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	26000	2.81	6.95	4.36	1.96	4.26	4.70	5.04	5.14	5.29
1,1,1-Trichloroethane	200000	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	3	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	8.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	20000	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4,5-Tetrachlorobenzene	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	0.076	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	3000	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	650	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	31	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Diphenylhydrazine	0.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	4000	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	10	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,3-Dichloropropene	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	900	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,3,7,8-TCDD (Dioxin) (as TEQ)	5.10E-09	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	600	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	DNREC WQC Human Health, Consumption of Organism* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
2,4,6-Trichlorophenol	2.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dichlorophenol	60	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	3000	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	300	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrotoluene	1.7	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloronaphthalene	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	800	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Methyl-4,6-Dinitrophenol	30	ND	ND	ND	ND	ND	ND	ND	ND	ND
3,3'-Dichlorobenzidine	0.15	ND	ND	ND	ND	ND	ND	ND	ND	ND
3-Methyl-4-Chlorophenol	2000	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p′-Dichlorodiphenyldichloroethane (DDD)	0.00012	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p′-Dichlorodiphenyldichloroethylene (DDE)	0.000018	ND	ND	ND	ND	ND	ND	ND	ND	ND
p,p′-Dichlorodiphenyltrichloroethane (DDT)	0.00003	ND	ND	ND	ND	ND	ND	ND	ND	ND

* Water quality criteria from Table 2 of the Delaware Surface Water Quality Standards (7 DE Admin. Code § 7401), last amended January 1, 2023.
If non-detect was reported by the laboratory, the method detection limit (MDL) was used to calculate the estimated pore-water concentration. Values calculated based on the MDL are in italicized text.
A gray-highlighted cell denotes that the constituent was detected in the sediment sample and the estimated sediment pore-water concentration is greater than the corresponding SWQ Standard.
A blue-highlighted cell denotes that the constituent was not detected in the sediment sample and the estimated sediment pore-water concentration, based on the MDL, is greater than the corresponding SWQ Standard.
NC = no criteria established pursuant to the Delaware Surface Water Quality Standards (7 DE Admin. Code § 7401).
ND = no data available; the laboratory analysis did not include this constituent.
NPC = sediment pore water concentration cannot be calculated because there is no partition coefficient.
** The values for Hexachlorocyclohexane (HCH or BHC) are the sum of the estimated concentrations for alpha-, beta-, delta-, and gamma-HCH.

Table E3.3. Comparison of Estimated Pore-Water Concentrations to DNREC HSCA Ecological Screening Levels, Marine Surface Water.

Constituent	HSCA Ecological Screening Level, Surface Water Marine* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Acetone	564000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrolein	0.55	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	581	ND	ND	ND	ND	ND	ND	ND	ND	ND
Aldrin	0.13	*3.52E-05*	*3.15E-04*	*1.48E-04*	*1.25E-03*	*1.58E-04*	*1.21E-04*	*1.32E-04*	*1.25E-04*	*1.19E-04*
Antimony (metallic)	500	*0.093*	0.157	*0.056*	0.095	*0.064*	*0.066*	*0.065*	*0.057*	*0.056*
Arsenic, Inorganic	12.5	**21.26**	**27.07**	**31.21**	**13.26**	**29.30**	**32.17**	**34.71**	**36.63**	**34.99**
Azinphos-methyl	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	110	ND	ND	ND	ND	ND	ND	ND	ND	ND
Boron And Borates Only	1000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	640	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	120	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.12	*0.036*	0.020	0.036	0.029	0.036	0.044	0.039	0.047	0.046
Carbaryl	0.32	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	1500	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlordane (technical mixture)	0.004	*0.002*	*0.019*	*0.009*	*0.076*	*0.010*	*0.007*	*0.008*	*0.008*	*0.007*
Chlorine	7.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	815	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	2700	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorophenol, 2-	265	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorpyrifos	0.0056	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium(III), Insoluble Salts	56	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium(VI)	1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium, Total	57.5	0.5	1.3	0.4	0.6	0.4	0.4	0.5	0.5	0.5
Copper	3.1	1.79	0.72	2.66	1.01	2.50	2.77	**3.14**	**3.45**	**3.57**
Cresol, o-	1020	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	HSCA Ecological Screening Level, Surface Water Marine* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Cyanide (CN-)	1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Demeton	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diazinon	0.82	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,2-	42	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzene, 1,4-	19.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorobenzidine, 3,3'-	73	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodiphenyldichloroethane, p,p' (DDD)	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodiphenyldichloroethylene, p,p' (DDE)	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodiphenyltrichloroethane, p,p' (DDT)	0.0065	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethane, 1,2-	1130	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloroethylene, 1,1-	2240	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropane, 1,2-	2400	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloropropene, 1,3-	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dieldrin	0.0019	*1.44E-04*	*0.0013*	*6.06E-04*	*0.0051*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Dinitrobenzene, 1,4-	48.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dinitrophenol, 2,4-	48.5	ND	ND	ND	ND	ND	ND	ND	ND	ND
Endosulfan**	0.001	*8.49E-04*	*0.0076*	*0.0036*	*0.0302*	*0.0038*	*0.0029*	*0.0032*	*0.0030*	*0.0029*
Endrin	0.0023	*1.44E-04*	*1.29E-03*	*6.06E-04*	*5.14E-03*	*6.49E-04*	*4.97E-04*	*5.41E-04*	*5.12E-04*	*4.88E-04*
Ethylbenzene	25	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	65	ND	ND	ND	ND	ND	ND	ND	ND	ND
Heptachlor	0.0036	*7.04E-05*	*6.30E-04*	*2.95E-04*	*2.51E-03*	*3.16E-04*	*2.43E-04*	*2.64E-04*	*2.50E-04*	*2.38E-04*
Hexachlorobutadiene	0.3	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorocyclohexane, Alpha-	25	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*
Hexachlorocyclohexane, Beta-	0.16	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*

Constituent	HSCA Ecological Screening Level, Surface Water Marine* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Hexachlorocyclohexane, Gamma (Lindane)	0.16	*1.03E-03*	*9.23E-03*	*4.33E-03*	*0.037*	*4.63E-03*	*3.55E-03*	*3.86E-03*	*3.66E-03*	*3.49E-03*
Hexachlorocyclohexane, Technical^	0.16	*0.003*	*0.029*	*0.014*	*0.115*	*0.015*	*0.011*	*0.012*	*0.011*	*0.011*
Hexachlorocyclopentadiene	0.07	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hexachloroethane	9.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Hydrogen Sulfide	2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Isophorone	129	ND	ND	ND	ND	ND	ND	ND	ND	ND
Lead and Compounds	8.1	0.17	0.14	0.22	0.09	0.21	0.25	0.27	0.30	0.30
Malathion	0.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mercury (elemental)	0.016	1.637E-04	7.55E-05	1.89E-04	*2.52E-05*	1.89E-04	2.01E-04	2.14E-04	2.14E-04	2.27E-04
Methoxychlor	0.03	*1.07E-03*	*9.57E-03*	*4.49E-03*	*0.04*	*4.80E-03*	*3.68E-03*	*4.01E-03*	*3.79E-03*	*3.61E-03*
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	123000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methylene Chloride	2560	ND	ND	ND	ND	ND	ND	ND	ND	ND
Mirex	0.001	*8.02E-06*	*7.18E-05*	*3.36E-05*	*2.85E-04*	*3.60E-05*	*2.76E-05*	*3.00E-05*	*2.85E-05*	*2.71E-05*
Nickel Soluble Salts	8.2	1.90	2.30	2.48	0.77	2.54	2.69	2.96	3.12	3.15
Nitrobenzene	66.8	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosodimethylamine, N-	330000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosodiphenylamine, N-	33000	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nitrosodipropylamine, N-	120	ND	ND	ND	ND	ND	ND	ND	ND	ND
Parathion	0.178	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorobenzene	129	ND	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	7.9	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenol	58	ND	ND	ND	ND	ND	ND	ND	ND	ND
Butyl Benzyl Phthalate	29.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyl Phthalate	3.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Diethyl Phthalate	75.9	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	HSCA Ecological Screening Level, Surface Water Marine* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Polychlorinated Biphenyls (Total PCBs)	0.03	2.42E-05	2.30E-04	1.87E-04	8.62E-04	5.80E-05	7.22E-05	2.01E-05	8.24E-05	7.91E-05
Acenaphthene	6.6	*0.001*	*0.009*	*0.004*	*0.036*	*0.005*	*0.004*	*0.004*	*0.004*	*0.004*
Anthracene	0.18	*3.88E-04*	*3.32E-03*	4.53E-03	*0.013*	2.70E-03	2.12E-03	2.08E-03	*1.36E-03*	1.73E-03
Fluoranthene	1.6	5.02E-04	*1.49E-03*	4.21E-03	*5.92E-03*	2.79E-03	2.67E-03	2.52E-03	1.28E-03	2.22E-03
Fluorene	2.5	1.86E-03	*7.47E-03*	0.014	*0.030*	0.013	0.013	0.011	4.70E-03	8.07E-03
Methylnaphthalene, 2-	4.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	1.4	0.02	*0.05*	0.08	*0.20*	0.04	0.03	0.03	*0.02*	*0.02*
Phenanthrene	1.5	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC	NPC
Pyrene	0.24	2.93E-04	1.77E-03	3.33E-03	*4.98E-03*	1.73E-03	1.77E-03	1.93E-03	1.13E-03	1.85E-03
Selenium	71	1.02	0.46	0.99	0.29	1.01	1.05	1.22	1.31	1.38
Silver	0.23	*0.02*	*0.02*	*0.02*	*0.01*	*0.02*	*0.03*	*0.01*	*0.02*	*0.02*
Styrene	910	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorobenzene, 1,2,4,5-	129	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethane, 1,1,2,2-	90.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene	45	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium (Soluble Salts)	21.3	*7.668*	*7.468*	6.365	*2.907*	6.064	7.067	3.107	7.919	6.515
Toluene	215	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toxaphene	0.0002	*1.89E-03*	*0.017*	*7.90E-03*	*0.067*	*8.45E-03*	*6.50E-03*	*7.04E-03*	*6.68E-03*	*6.36E-03*
Tri-n-butyltin	0.001	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin Compounds	0.0074	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorobenzene, 1,2,4-	5.4	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethane, 1,1,1-	312	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethane, 1,1,2-	550	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene	1940	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorophenol, 2,4,5-	12	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorophenol, 2,4,6-	61	ND	ND	ND	ND	ND	ND	ND	ND	ND

Constituent	HSCA Ecological Screening Level, Surface Water Marine* (µg/L)	Calculated Pore-Water Concentration (µg/L)								
		VC-01 (0-4.3')	VC-01 (4.3'-17')	VC-02 (0-4.7')	VC-02 (4.7'-17')	VC-03 (0-17')	VC-04 (0-17')	VC-05 (0-17')	VC-06 (0-26.6')	VC-106
Trimethylbenzene, 1,2,4-	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trinitrotoluene, 2,4,6-	100	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	19	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc and Compounds	81	2.81	6.95	4.36	1.96	4.26	4.70	5.04	5.14	5.29

* DNREC Hazardous Substance Cleanup Act (HSCA) Ecological Screening Level, last revised October 2024.

If non-detect was reported by the laboratory, the method detection limit (MDL) was used to calculate the estimated pore-water concentration. Values calculated based on the MDL are in italicized text.

A gray-highlighted cell denotes that the constituent was detected in the sediment sample and the estimated sediment pore-water concentration is greater than the corresponding HSCA screening level.

A blue-highlighted cell denotes that the constituent was not detected in the sediment sample and the estimated sediment pore-water concentration, based on the MDL, is greater than the corresponding HSCA screening level.

NC = no screening level established pursuant to the DNREC HSCA.

ND = no data available; the laboratory analysis did not include this constituent.

NPC = sediment pore water concentration cannot be calculated because there is no partition coefficient.

**The values for Endosulfan are the sum of the estimated concentrations of Endosulfan I and Endosulfan II.

^The values for Technical Hexachlorocyclohexane (HCH or BHC) are the sum of the estimated concentrations for alpha-, beta-, delta-, and gamma-HCH.

V. Summary

This section summarizes the comparisons of estimated sediment pore-water quality values with the SWQ Standards and HSCA screening levels. In the vast majority of instances where an estimated pore-water concentration shown in the tables above is higher than a SWQ criterion or HSCA screening level, the pore-water concentration is based on a "non-detect" analytical result for a riverbed sediment sample. A "non-detect" result is reported when the test method looked for, but did not find, the presence of the pollutant in the sample at a concentration above the method detection limit.[2] In "non-detect" cases, the pollutant was assumed to be present in the sediment sample at a concentration equal to the sample-specific method detection level in order to calculate a highly-conservative estimate of the pollutant concentration in sediment pore-water.

None of the sediment samples from Delaware waters have an estimated sediment pore-water concentration greater than the DNREC marine acute criteria for protection of aquatic life (Table E3.1).

In cases where the laboratory analysis actually detected the presence of a pollutant in the sediment, the resulting pore-water concentration estimate is higher than the corresponding SWQ criterion (protection of human health) and/or HSCA ecological screening level for only four pollutants: arsenic, copper, polychlorinated biphenyls (PCBs), and thallium. Tables E3.4 and E3.5 below provide additional information regarding those sediment samples for which the estimated pore-water concentration of a detected pollutant is higher than the corresponding SWQ criterion and/or HSCA screening level. As noted previously, the pore-water concentration estimates do not represent the concentrations that will be present in the river during Project construction due to the massive dilution effect of the bulk water column.

For marine sediment, there are HSCA ecological screening levels for arsenic (7.24 mg/kg), copper (18.7 mg/kg), and total PCBs (0.04 mg/kg), but not thallium. Six of the nine sediment samples from Delaware waters had concentrations of arsenic higher than the HSCA ecological screening level (marine sediment), and none of the nine sediment samples exhibited exceedance of the HSCA ecological screening levels (marine sediment) for copper or total PCBs (Exhibit 2).

None of the organochlorine pesticides listed in the SWQ Standards and HSCA screening levels table were detected in the nine sediment samples collected from Delaware waters. Therefore, estimated sediment pore-water concentrations higher than criteria or screening levels for organochlorine pesticides (see blue-shaded cells in Tables E3.2 and E3.3) must be considered as highly conservative estimates, as they are based on estimated concentrations calculated using the sample-specific method detection limits, not actual laboratory detection. This situation applies to the following organochlorine pesticides:

- Aldrin;
- Chlordane;
- Dieldrin;

[2] The method detection limit is the minimum measured concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results. See https://www.epa.gov/cwa-methods/method-detection-limit-frequent-questions.

- Endosulfan;
- Endrin;
- Heptachlor;
- Heptachlor Epoxide;
- Hexachlorobenzene;
- Hexachlorocyclohexane (HCH or BHC), including alpha-, beta-, delta-, and gamma-;
- Methoxychlor; and
- Toxaphene.

Table E3.4. Evaluation of Pore-Water Concentrations > SWQ Standards, Table 2 Criteria (Protection of Human Health).

Constituent/ Parameter	Sediment Sample(s)	Activity Proposed at/near Sample Location(s)	Notes
PCBs	VC-01, 4.3'-17' VC-02, 0-4.7' VC-02, 4.7'-17' VC-04, 0-17' VC-06, 0-26.6' VC-106	Excavation/backfill at DE-15 and cable installation via vertical injector	Sheet pile walls ("current breaks") and turbidity curtains will be used to minimize the spread of turbidity during the excavation and backfill at DE-15. Cable installation via vertical injector minimizes turbidity compared to trenching. None of the nine sediment samples exhibited exceedance of the HSCA ecological screening levels (marine sediment) for total PCBs (Exhibit 2).
Thallium	All	Excavation/backfill at DE-15 and cable installation via vertical injector	Sheet pile walls ("current breaks") and turbidity curtains will be used to minimize the spread of turbidity during the excavation and backfill at DE-15. Cable installation via vertical injector minimizes turbidity compared to trenching.

Table E3.5. Evaluation of Pore-Water Concentrations > HSCA Ecological Screening Levels, Marine Surface Waters.

Constituent/ Parameter	Sediment Sample(s)	Activity Proposed at/near Sample Location(s)	Notes
Arsenic	All	Excavation/backfill at DE-15 and cable installation via vertical injector	Sheet pile walls ("current breaks") and turbidity curtains will be used to minimize the spread of turbidity during the excavation and backfill at DE-15. Cable installation via vertical injector minimizes turbidity compared to trenching.

Constituent/ Parameter	Sediment Sample(s)	Activity Proposed at/near Sample Location(s)	Notes
Copper	VC-05, 0-17’ VC-06, 0-26.6’ VC-106	Cable installation via vertical injector	The calculated (estimated) pore-water concentrations are slightly higher than the screening level. The estimated pore-water concentrations from the other four sediment samples are below the screening level. None of the nine sediment samples exhibited exceedance of the HSCA ecological screening levels (marine sediment) for copper (Exhibit 2).

VI. References

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EXHIBIT 4

Suspended Sediment Monitoring Plan

February 2025

Silver Run Expansion Project

Prepared For:

Silver Run Electric, LLC
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Prepared By:

TRC
404 Wyman Street, Suite 375
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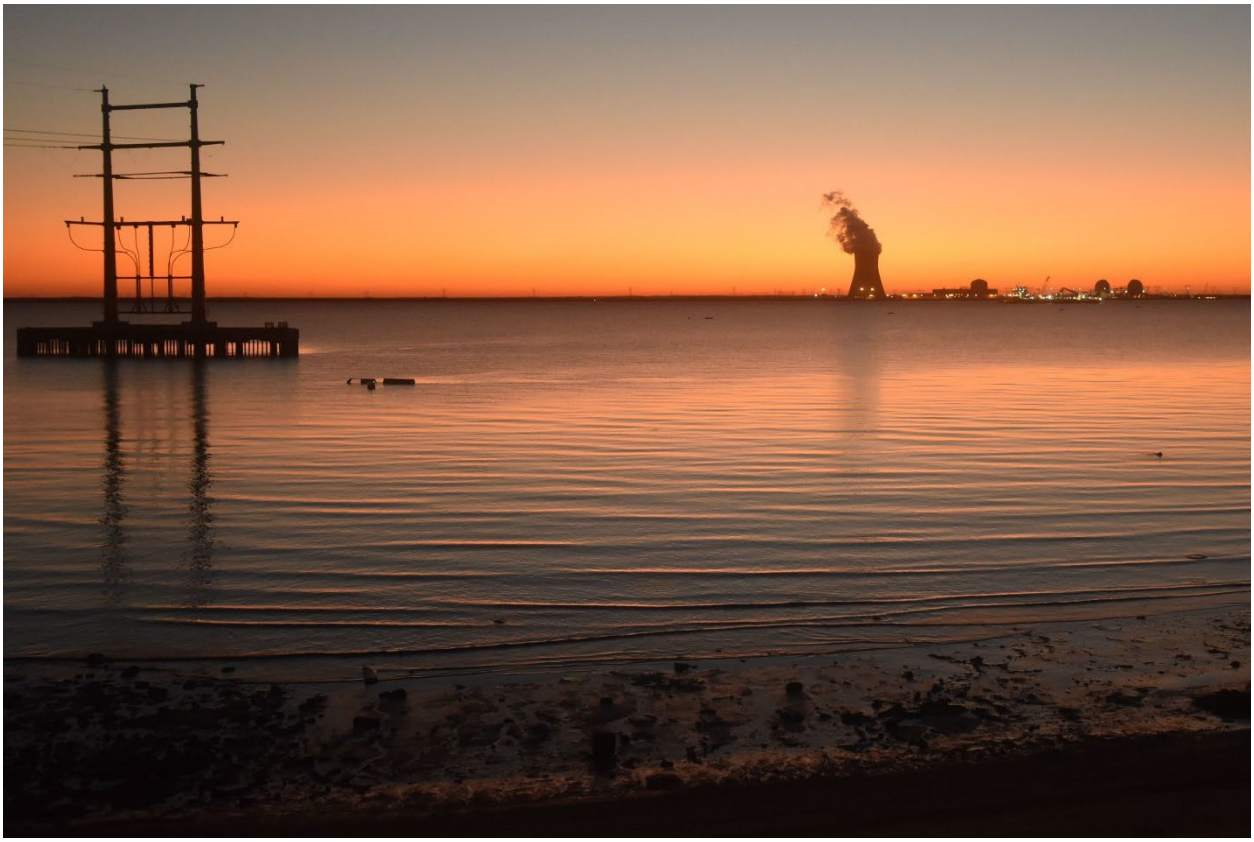

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FIGURES

ACRONYM LIST

ADCP	Acoustic Doppler Current Profiler
CTD-OBS	Conductivity Temperature Depth Optical Backscatter (Water Quality Sonde)
DNREC	Delaware Department of Natural Resources and Environmental Control
SRE	Silver Run Electric, LLC
TSS	Total Suspended Solids
USACE	United States Army Corps of Engineers

1.0 Introduction

This document presents the suspended sediment monitoring plan for the Silver Run Expansion Project ("Project") submarine cable jetting installation. The Project will add four submarine cables to the existing Silver Run Line, a 230 kV alternating current (AC) electric transmission line between Silver Run Electric's (SRE's) existing 230 kV Silver Run substation east of Odessa, Delaware and PSEG's Hope Creek substation in Lower Alloways Creek Township, New Jersey. The submarine cables will cross the Baker Reach of the Delaware River Federal Navigation Channel at approximately River Mile 51.5.

In Delaware State waters, this Project includes embedment of each cable, nominally 30 feet apart, primarily using water jetting technology. Modifications to the existing in-water transition structure facility in Delaware State waters will consist of a new standalone single tubular steel structure located within the bounds of the existing vessel allision protection system. The structure will be placed on top of a new driven pile foundation, including four approximately 24-inch diameter steel piles containing concrete pile plugs topped with a slab with anchor bolts to which the structure will be secured. Sediment will be excavated from the riverbed in an area between two temporary sheet pile walls adjacent to the existing transition structure facility using a clamshell bucket or jet pump. J-tubes and potentially a short length of cable protection system, that will serve as conduits for the submarine cables as they transition from the riverbed to the base of the new transition structure, will be placed in the excavated area and attached to the transition structure foundation. The excavated material will be temporarily stored on a scow and then replaced on the riverbed as cover material for the J-tubes and installed submarine cables next to the in-river transition structure, with the temporarily disturbed areas returned to original contours and the sheet pile walls removed. During cable installation, in the unlikely event that an area of sediments unsuitable for jetting is discovered and cannot be resolved with grapnel runs, SRE may conduct a limited amount of dredging to ensure the cables reach the target installation depth. Dredging would be limited to the area of unsuitable sediments.

This Suspended Sediment Monitoring Plan (the "Plan") describes the procedures, sampling criteria, and reporting to be implemented by SRE for the monitoring of Project-induced suspended sediment within Delaware State waters during the installation of the submarine cables via water jetting. Monitoring of suspended sediments during excavation activities adjacent to the in-river transition structure will not be performed since that excavation area will be between sheet pile walls and turbidity curtains will be used if operationally feasible.

2.0 Proposed Turbidity Monitoring Protocols

2.1 Mixing Zone

Quantitative modeling was conducted for the original Silver Run Line to predict jetting induced suspended sediment transport and deposition. The results of the modeling effort for the Silver Run Line are applicable to the proposed Project since the jetting methods and location are the same. A summary of the model predictions is included in the sections below, and the complete technical report is provided in Appendix 4.5-1 of the Project's USACE Section 10/404 Permit Application (see Attachment H of SRE's Delaware Department of Natural Resources and Environmental Control (DNREC) Application). Results from this sediment dispersion model predict that suspended sediment concentrations of 50 mg/L above ambient will typically occur within distances of approximately 1,310 feet upstream and downstream (depending on current

direction) of the jetting operation. The maximum displacement of 50 mg/L suspended sediment concentrations is predicted to be approximately 4,830 feet from the cable furrow. Suspended sediment concentrations of 200 mg/L above ambient are predicted to be limited to the portion of the jetting operation west of the Federal navigation channel, in Delaware State waters, typically within distances of approximately 670 feet upstream and downstream of the cable furrow (depending on current direction). The maximum displacement of 200 mg/L suspended sediment concentrations (above ambient) is predicted to be approximately 2,280 feet from the cable furrow. Suspended sediment concentrations are predicted to return to ambient conditions and sediment that was introduced into the water column is predicted to settle onto the riverbed within 24 hours of the passage of the jetting device.

The predicted maximum displacement of 200 mg/L suspended sediment concentrations (above ambient) of approximately 2,280 feet represents the maximum mixing zone for cable jetting installation methods in the Delaware River for the Project. Per 7 Del. Admin. Code § 7401 – 6.4.1.3, the maximum mixing zone for non-thermal pollutants "shall be no greater than twenty-five percent (25%) of the width of the tidal water at the point of discharge." At River Mile 51.5, the Delaware River is approximately 14,000 feet wide, corresponding to a 25% maximum mixing zone of approximately 3,500 feet. At approximately 2,280 feet, the predicted 200 mg/L mixing zone equals approximately 16% of the width of the river at the Project location. As such, the sediment dispersion modeling conducted for the Project indicates that the Project's water jetting cable installation activities are expected to comply with the maximum mixing zone requirement, with a wide margin of safety.

2.2 Proposed Compliance Thresholds

The Delaware River is a tidal estuary from its confluence with Delaware Bay to Trenton, New Jersey (RM 133.4). The entire length of the Project lies within the tidally influenced portion of the Delaware River, at approximately RM 51.5. Delaware River Basin Commission ("DRBC") Water Quality Regulations apply to all surface waters of the Delaware River Basin regardless of state jurisdiction and set the required water quality criteria that must be met to support the best use indicated. Section 3.30 of the DRBC Regulations applies to the Delaware River Estuary and Bay, including the tidal portions of their tributaries.

The submarine cable route laterally traverses Zone 5 of the DRBC waterbody zone classification scheme. Zone 5 is the portion of the Delaware River extending from RM 78.8 to RM 48.2 (Liston Point), including the tidal portions of its tributaries. Stream quality objectives for Zone 5 (DRBC Regulations Section 3.30.5.C) address the following factors: Dissolved Oxygen levels, Temperature, pH, Phenols, Threshold Odor Number, Synthetic Detergents, Radioactivity, Bacteria, Turbidity, Alkalinity, and Toxic Pollutants. The standard set for turbidity is a maximum 30-day average of 40 units with a maximum of 150 units, unless exceeded due to natural conditions.

Per Delaware's Surface Water Quality Standards, "Turbidity Measured as Nephelometric or Formazin Turbidity Units, in all waters of the State shall not exceed natural levels by more than 10 units" (7 Del. Admin. Code § 7401 – 4.5.5) during Monitored Construction Activities. To correlate suspended sediment monitoring with the model predictions, the monitoring and compliance thresholds will be based on total suspended solids (TSS) as a proxy for turbidity.

SRE proposes to use the following compliance thresholds during cable jetting installation operations:

- **Ambient Baseline TSS Value:** Ambient TSS will be measured daily prior to the start of Suspended Sediment Monitoring operations at established ambient measuring areas up current and down current of the work area. These ambient TSS measurement areas will be established approximately one mile away from the Project's submarine cable corridor in similar charted water depths to the cable route where possible. The average of the daily up current and down current ambient TSS measurements will establish the daily Ambient Baseline TSS Value for determining compliance during operations for each day of cable jetting operations.
- **TSS Compliance Threshold:** TSS concentrations at a distance of 3,500 feet down current of cable jetting installation shall not exceed 200 mg/L above the Ambient Baseline TSS Value established for that working day. This 3,500-foot distance represents 25% of the width of the river where the Project's submarine cable corridor is located, in keeping with 7 Del. Admin. Code § 7401 – 6.4.1.3.
- If monitoring indicates an exceedance of the TSS Compliance Threshold, then SRE will implement one or more of the following operational modifications as necessary to reduce project-induced suspended sediment levels: (i) changing the rate of advancement of the cable jetting equipment; (ii) modifying hydraulic pressures and/or positions of active jets on the burial tool; or (iii) implementing other reasonable operational controls that may reduce project-induced suspended sediment. It is acknowledged that implementing operational modifications during cable installation within the federal navigation channel may not be feasible due to the need to complete cable installation as quickly as possible in the channel to avoid disruptions to shipping traffic.

2.3 Methodology

SRE will conduct TSS monitoring while performing cable installation activities via jetting within Delaware State waters in the Delaware River in accordance with the procedures documented herein.

At a minimum, SRE will perform the TSS monitoring during installation of the first two submarine cables in Delaware State Waters. If there are no TSS Compliance Threshold exceedances detected after the first two cable installations, SRE will cease TSS monitoring. If an exceedance of the TSS Compliance Threshold is detected during the first two cable installations, TSS monitoring will continue for installation of the third and fourth cables.

TSS monitoring will be conducted daily (during daylight hours only) at the following tidal stages on the days cable jetting activities are conducted: max flood, high slack, max ebb, and low slack. Monitoring will involve acquisition of in-situ acoustic and optical data and collection of water samples from an onsite survey vessel during daylight hours. Monitoring activities will be conducted down-current of jetting operations at the TSS Compliance Threshold distance (3,500 feet), and Ambient Baseline TSS Values will be determined from measurements taken at background stations up current and down current of the jetting operations, as explained above in Section 2.2. TSS at the monitoring stations will be characterized by:

1) Documenting the three-dimensional current velocity and suspended sediment cross section of the water column using a vessel-mounted Acoustic Doppler Current Profiler (ADCP); and

2) Collecting in situ vertical profiles of the water column using a Conductivity-Temperature-Depth (CTD) profiler and Optical Backscatter Sensor (OBS).

2.3.1 Calibration Curve

Prior to cable jetting installation activities, water samples will be collected at multiple times and locations within a given tidal cycle to generate data necessary to develop a calibration curve to relate TSS and optical/acoustic backscatter that will be used during subsequent cable installation monitoring. The calibration process will utilize a statistical regression type analysis. Once calibration procedures have been completed, a working calibration curve will be generated. The calibration curve will be continuously updated based on data collected during TSS monitoring during cable jetting installation activities.

2.3.2 During Installation

Ambient TSS will be measured daily at established ambient monitoring areas up current and down current of the work area prior to the start of daily Suspended Sediment Monitoring operations. These areas would be established approximately one mile away from the Project's submarine cable corridor (River Mile 51.5) in similar charted water depths to the cable route where possible. The average of the daily up current and down current ambient TSS levels would establish the Ambient Baseline TSS Value for establishing compliance during operations for each working day.

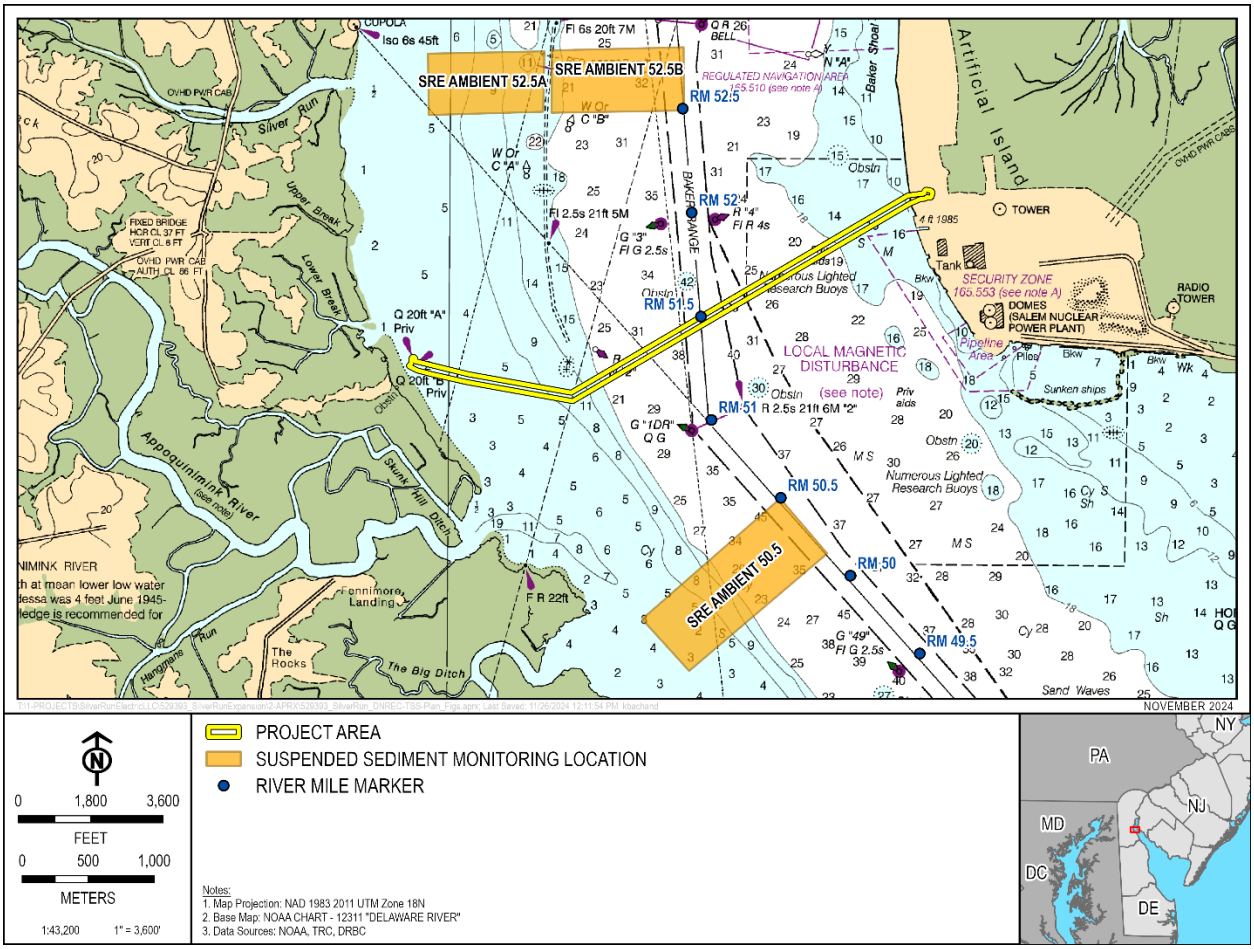


Figure 1. Ambient Monitoring Areas

To allow for real-time monitoring of TSS concentrations during cable jetting installation activities, a correlation will be established between acoustic backscatter intensity (as measured by an ADCP), optical backscatter (turbidity as measured by a water quality sonde), and laboratory determined TSS concentration. Comparisons between the optical and acoustic backscatter intensity measurements will provide a continuing check on system stability and calibration throughout the monitoring period.

The characteristics of the dispersing plume of sediment placed in suspension during cable jetting installation activities will be documented in real time using an ADCP. An onsite survey vessel will collect acoustic backscatter intensity data along transects located up current and down current of the operating jetting device during daylight hours. The length of these transects will depend on plume spatial characteristics and distances required to maintain a safe survey distance interval from the cable installation vessel and other objects at the time of survey. The ADCP will provide acoustic backscatter intensity and current velocity at 1-meter vertical bins throughout the water column.

A water quality sonde capable of acquiring conductivity, temperature, depth, and optical backscatter data (CTD-OBS) will be deployed to collect a vertical profile of backscatter intensity, water temperature, and salinity at a selected location along each survey transect that corresponds

to the highest observed acoustic backscatter intensity. OBS readings will then be related to TSS levels using the established calibration curve.

Grab water samples for laboratory analysis of TSS will be collected at three depths (near-surface, mid-depth, and near-bottom) at the location of maximum acoustic backscatter intensity. Collected water samples will be delivered to a certified laboratory within 48 hours after collection. TSS levels will be determined through laboratory analysis of water samples by vacuum filtration through dried and pre-weighed filters (0.47 µm pore size). To allow for quicker turnaround of laboratory data, TSS samples will not be batched, as the results will be used during cable jetting installation activities to update the calibration curve.

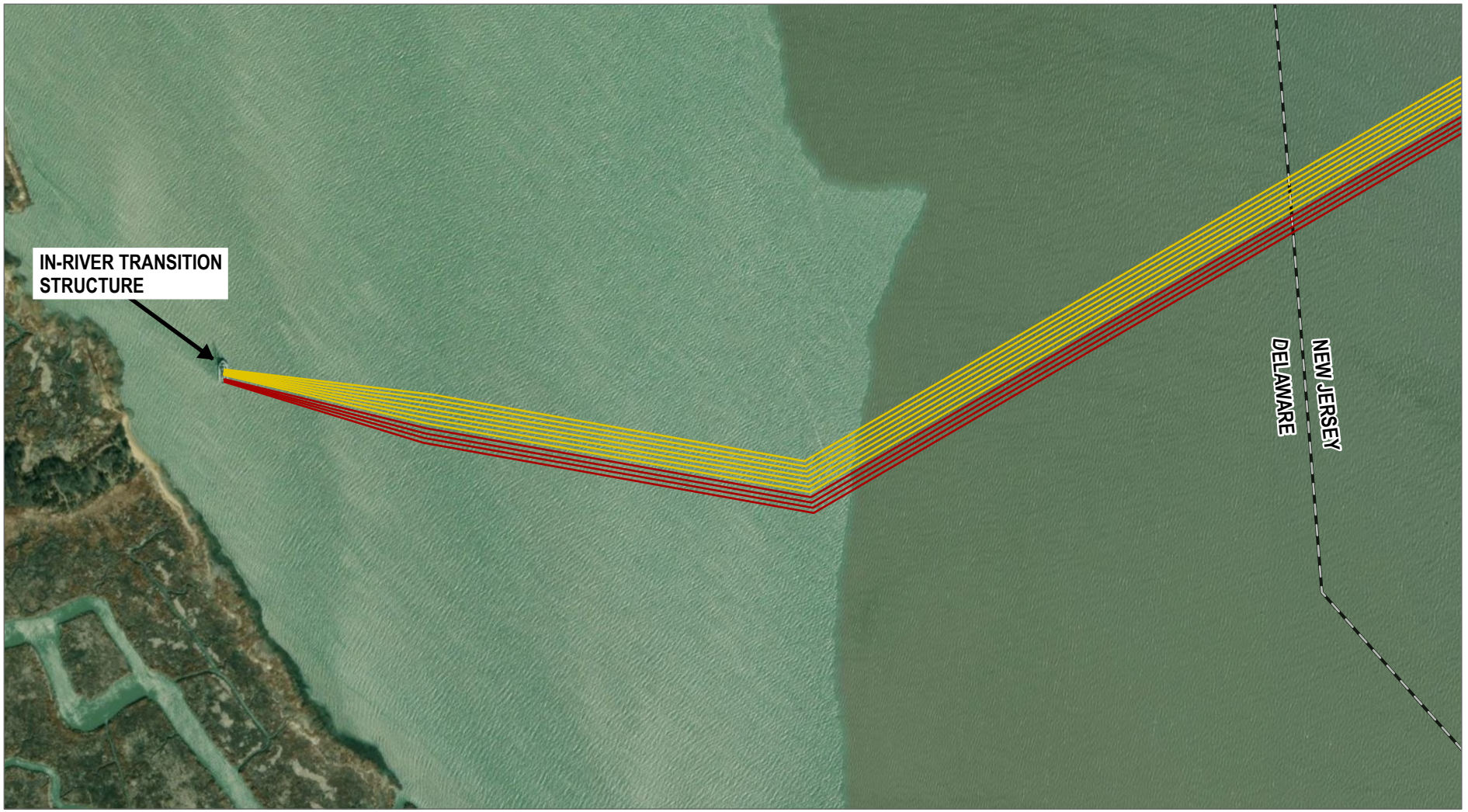
Monitoring will be conducted from a smaller vessel (or vessels) than will be used for cable installation. Therefore, weather conditions may prevent the safe TSS monitoring operations during time periods when conditions remain acceptable for cable installation. To avoid material delay of installation activities and minimize risk of damage to the cable, SRE may suspend TSS monitoring operations, but continue installation activities, during such periods of adverse weather. Monitoring operations will be resumed promptly once weather conditions allow.

3.0 Reporting

SRE will use commercially reasonable efforts to request the most expedited turnaround time available for laboratory sample analysis. Once samples are received at the laboratory, the total turnaround time, including laboratory analysis, data entry, and data processing will typically take up to ten (10) days.

Initial results will be forwarded to the DNREC within five (5) business days of receipt from the laboratory, to allow SRE and its consultant to complete initial quality assurance checks prior to submittal to DNREC. Original laboratory data will be submitted to DNREC with accompanying discussion regarding quality assurance checks. A final monitoring report will be submitted to DNREC within four months after completion of cable installation.

ATTACHMENT C



SILVER RUN EXPANSION PROJECT PROPOSED CABLE

SILVER RUN EXISTING CABLE

STATE BOUNDARY

PROJECT: **SILVER RUN EXPANSION PROJECT**

LOWER DELAWARE RIVER

TITLE: **PROJECT LOCATION**

DRAWN BY:	K. BACHAND	PROJ. NO.:	529393
CHECKED BY:	A. CHASE		
APPROVED BY:	P. WHITNEY		
DATE:	NOVEMBER 2024		

FIGURE 1

BASE MAP: ESRI WORLD IMAGERY, 2020
DATA SOURCES: TRC

N

0 500 1,000 FEET

1:12,000 1" = 1,000'

TRC
404 WYMAN STREET
SUITE 375
WALTHAM, MA 02451
PHONE: 781.419.7696

FILE: 529393_SILVERRUNEXPANSION_FIGS

COORDINATE SYSTEM: NAD 1983 2011 UTM ZONE 18N; MAP ROTATION: 0
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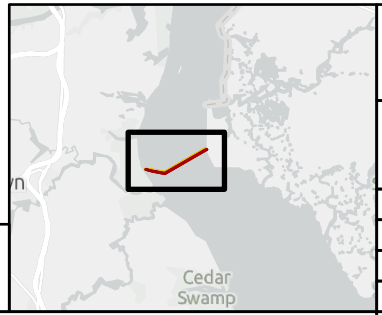
ATTACHMENT D

Photos (clockwise from top left): *View toward northeast from behind Delaware transition structure toward Salem and Hope Creek Nuclear Power Plant, View from Delaware riverbank east toward Project area in 2019 during construction of the Silver Run Line, View looking east at Delaware transition structure, GIS aerial photography map showing existing cables and proposed cables.*

SILVER RUN EXISTING CABLE

SILVER RUN EXPANSION PROJECT PROPOSED CABLE



BASE MAP: ESRI LIGHT GRAY BASEMAP, 2023
TRC/ESS GROUP, FIELD PHOTOS, 2019
SRE, FIELD PHOTOS, 2020/2021

N

0 20,000 40,000 FEET

1:480,000 1" = 40,000'

PROJECT: **SILVER RUN EXPANSION PROJECT**

LOWER DELAWARE RIVER

TITLE: **PHOTO LOG**

DRAWN BY:	K. BACHAND	PROJ. NO.:	529393
CHECKED BY:	A. CHASE		
APPROVED BY:	P. WHITNEY		
DATE:	DECEMBER 2024		

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FILE: 529393_SILVERRUNEXPANSION_FIGS

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ATTACHMENT E

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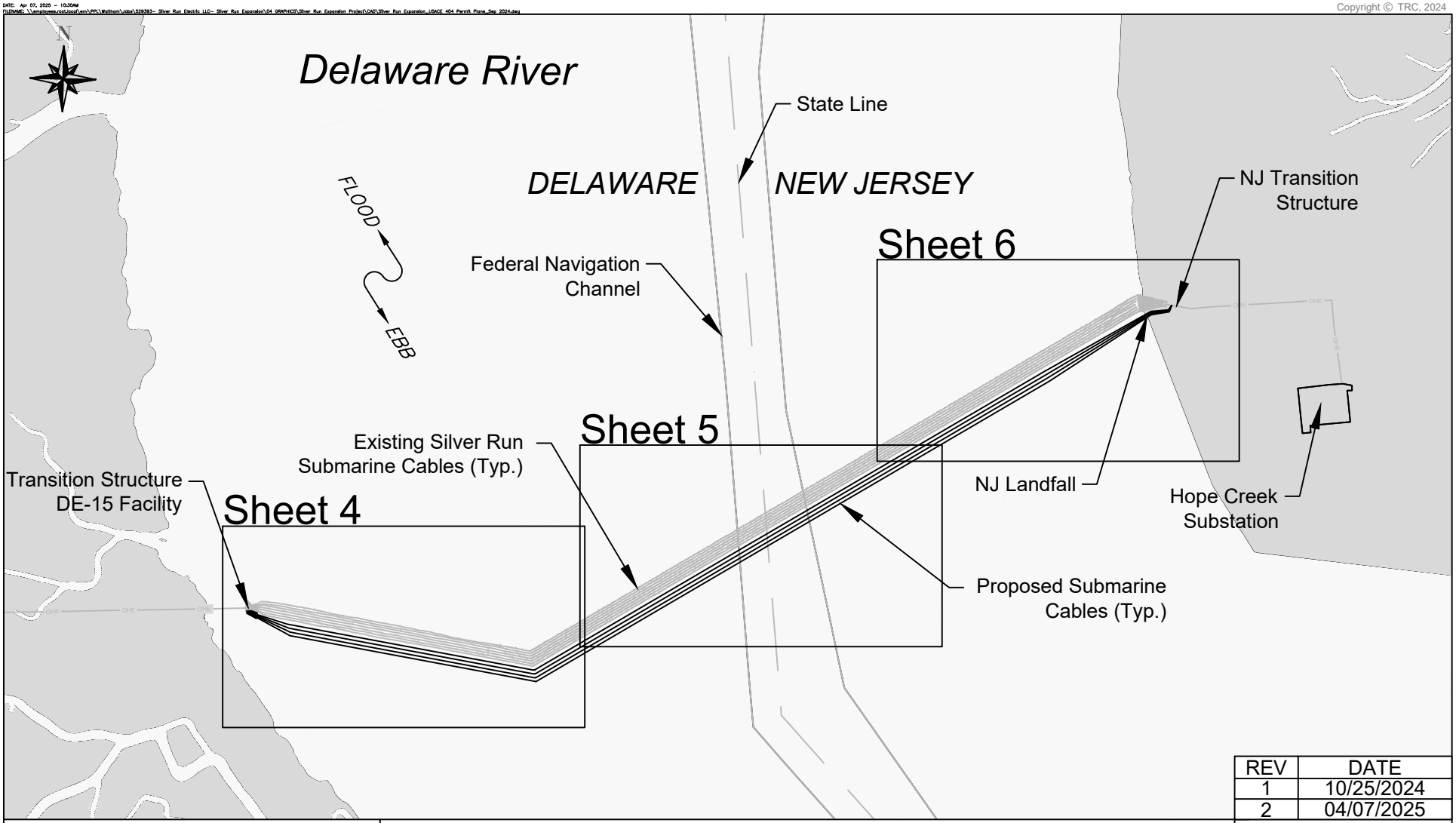

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

0 1000 2000 4000

1" = 2000'
Scale in Feet

Silver Run Expansion Project
Key Plan

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
1

DATE:
September 27, 2024

PROJECT NO.
529393.0001

TRC

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NOTES:

1. Horizontal Datum: UTM Zone 18N, NAD83, U.S. Survey Feet.
2. Elevations referenced to NAVD88 in Feet, unless otherwise noted.
3. Tidal data from NOAA tidal benchmark at Reedy Point (8551910) [39°33.5'N; 75°34.4'W] and verified using NOAA's VDATUM model (version 4.7).
4. Land Survey Source - Land and Mapping Services, Clearfield, PA
5. Marine Survey - Ocean Surveys, Inc., Old Saybrook, CT and Alpine Oceanic Seismic Survey, Inc., Norwood, NJ.
6. Soundings shown in project area based on field measurements taken during the period 19 March to 22 March 2024 and can only be considered as indicating the conditions existing at that time.
7. Wetlands extend beyond Project boundaries.
8. Boundaries of wetlands and waters at the PSEG Artificial Island property, as depicted hereon, taken from map entitled, "Wetlands Location Map (Figure 5), New Jersey Wind Port, Salem County, New Jersey;" prepared by AKRF; dated January 2023. These wetlands and waters boundaries were established by AKRF, as explained in AKRF's report entitled, "Wetland Delineation Report, PSEG Nuclear LLC, Salem and Hope Creek Generating Stations;" dated June 2020. These wetlands and waters boundaries were verified by the USACE and NJDEP in conjunction with permit decisions for the New Jersey Wind Port (NAP-2019-01084-39, dated March 21, 2022; NJDEP File No. 1704-02-0001.10 LUP210002, dated July 23, 2021).
9. NJ Upper Wetlands Boundary digitized from NJDEP Coastal Wetlands Map No.231-1752.
10. Spring High Water Elevation obtained from USACE Philadelphia District Jurisdictional Determination for PSEG Nuclear, dated February 24, 2014.
11. High tide line elevation (5.9 FT, NAVD88) from plans (Figures 55, 55A, 55C) provided with the USACE Public Notice, dated September 4, 2014, for the PSEG nuclear power plant/reactor site at Artificial Island (CENAP-OP-R-2009-0157).
12. Existing Silver Run Line components depicted hereon, including the Delaware transition structure, New Jersey transition structure, and seven submarine/underground cables, were authorized by USACE Permit dated October 1, 2018 (CENAP-OP-R-2016-00542-75).

Estimated Disturbance Table

Activity	Permanent (SF)		Temporary (SF)	
	Open Water (Waterward of MHW Line)	Wetland	Open Water (Waterward of MHW Line)	Wetland
In-River Transition Structure DE-15	13 [1]	0	6,642 [2]	0
Vertical Injector[3]	0	0	105,946	0
Jet Plow[4]	0	0	15,718	50
NJ Shore Landing Excavation[5]	0	0	11,256	830 [6]
Total*	13	0	128,306	50

[1]Area associated with the four proposed piles for In-River Transition Structure DE-15.
[2]Approximate area associated with excavation adjacent to In-River Transition Structure DE-15.
[3]Disturbance associated with cable burial between DE-15 excavation and NJ Shore Landing Excavation (Approx. 13,200 LF per cable).
[4]Disturbance associated with cable burial from 450 FT waterward of the NJ shoreline to the NJ shoreline.
[5]Area only to be disturbed if field conditions do not allow for Jet Plow Method.
[6]Impacts to Wetland R.
*NJ Shore Landing Excavation disturbance excluded from total due to it being considered an alternative method to the Jet Plow.

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Notes

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 2

DATE: September 27, 2024

PROJECT NO. 529393.0001

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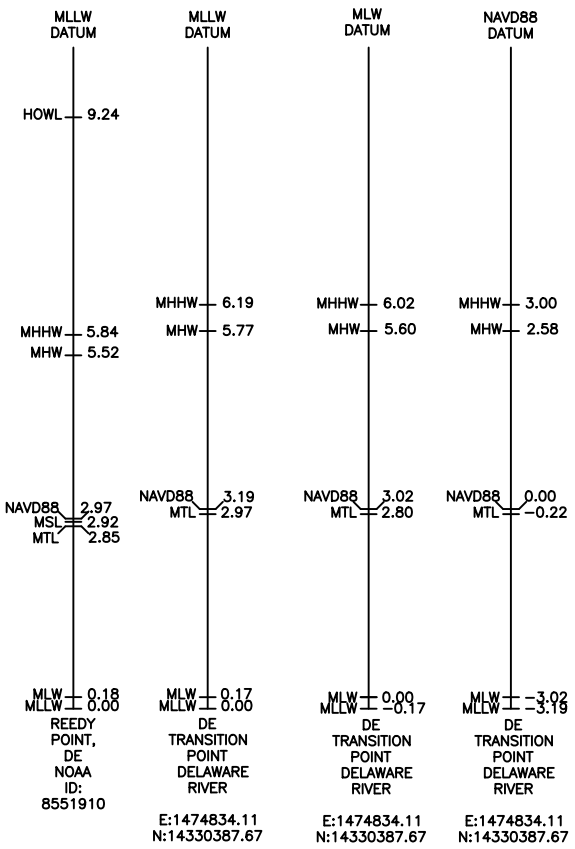
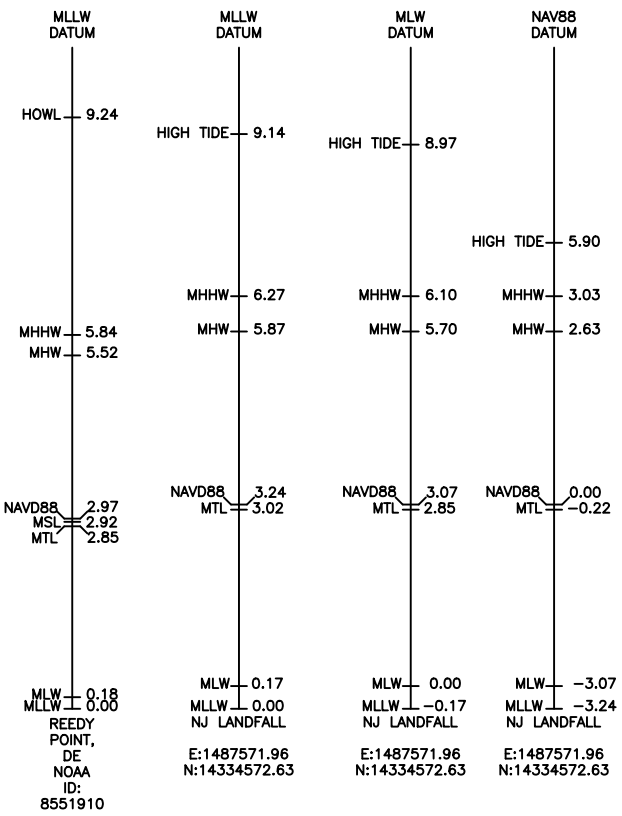
VERTICAL DATUM RELATIONSHIPS DELAWARE TRANSITION STRUCTURE



VERTICAL DATUM RELATIONSHIPS NEW JERSEY LANDFALL



Notes:

1. Tidal data from NOAA tidal benchmark at Reedy Point (8551910) [39°33.5'N; 75°34.4'W] and verified using NOAA's VDATUM model (version 4.7).

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Datum Relationships

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 3

DATE: September 27, 2024

PROJECT NO. 529393.0001

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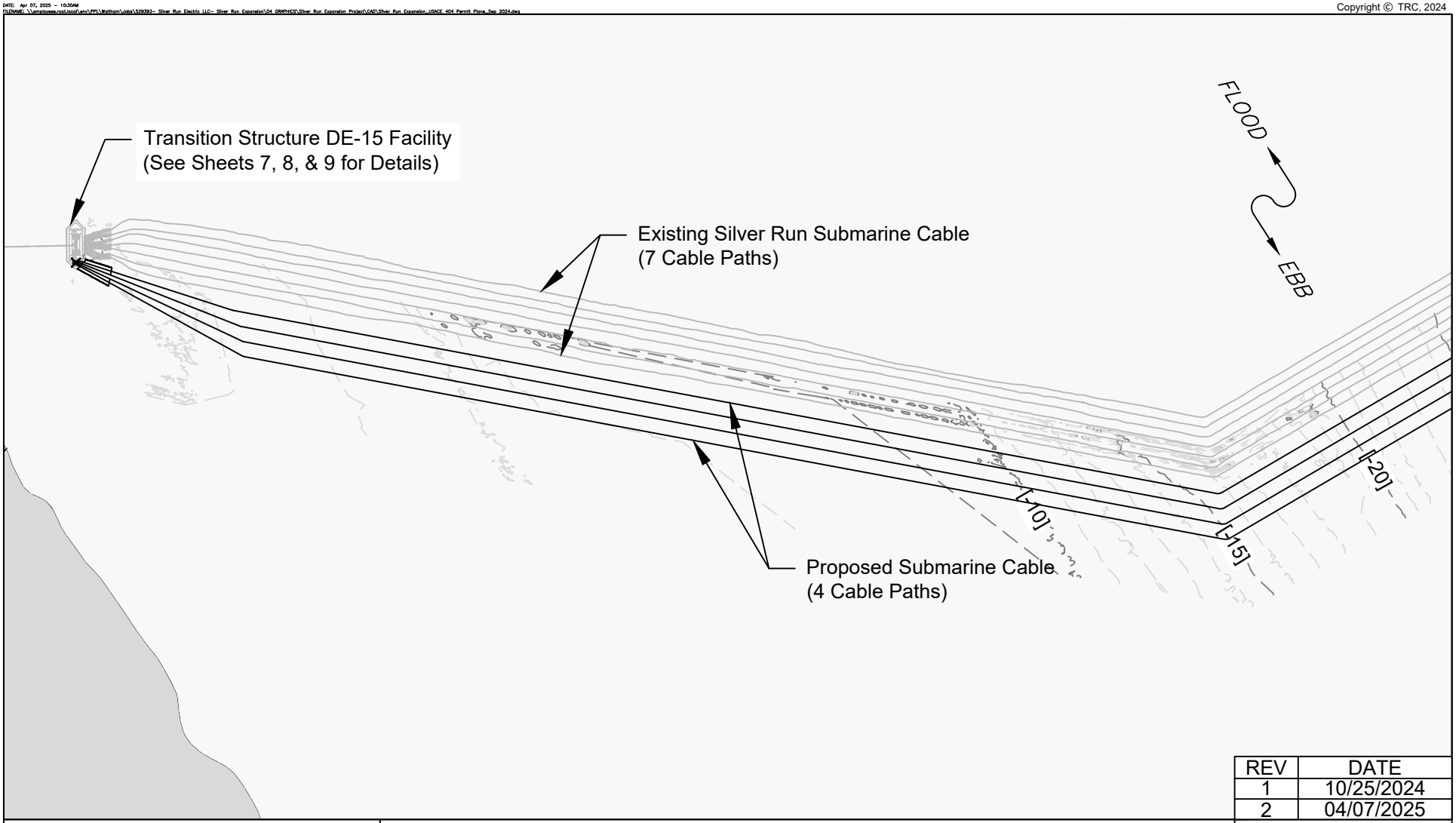

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

0 250 500 1000
1" = 500'
Scale in Feet

Silver Run Expansion Project
Submarine Cable

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
4

DATE:
September 27, 2024

PROJECT NO.
529393.0001

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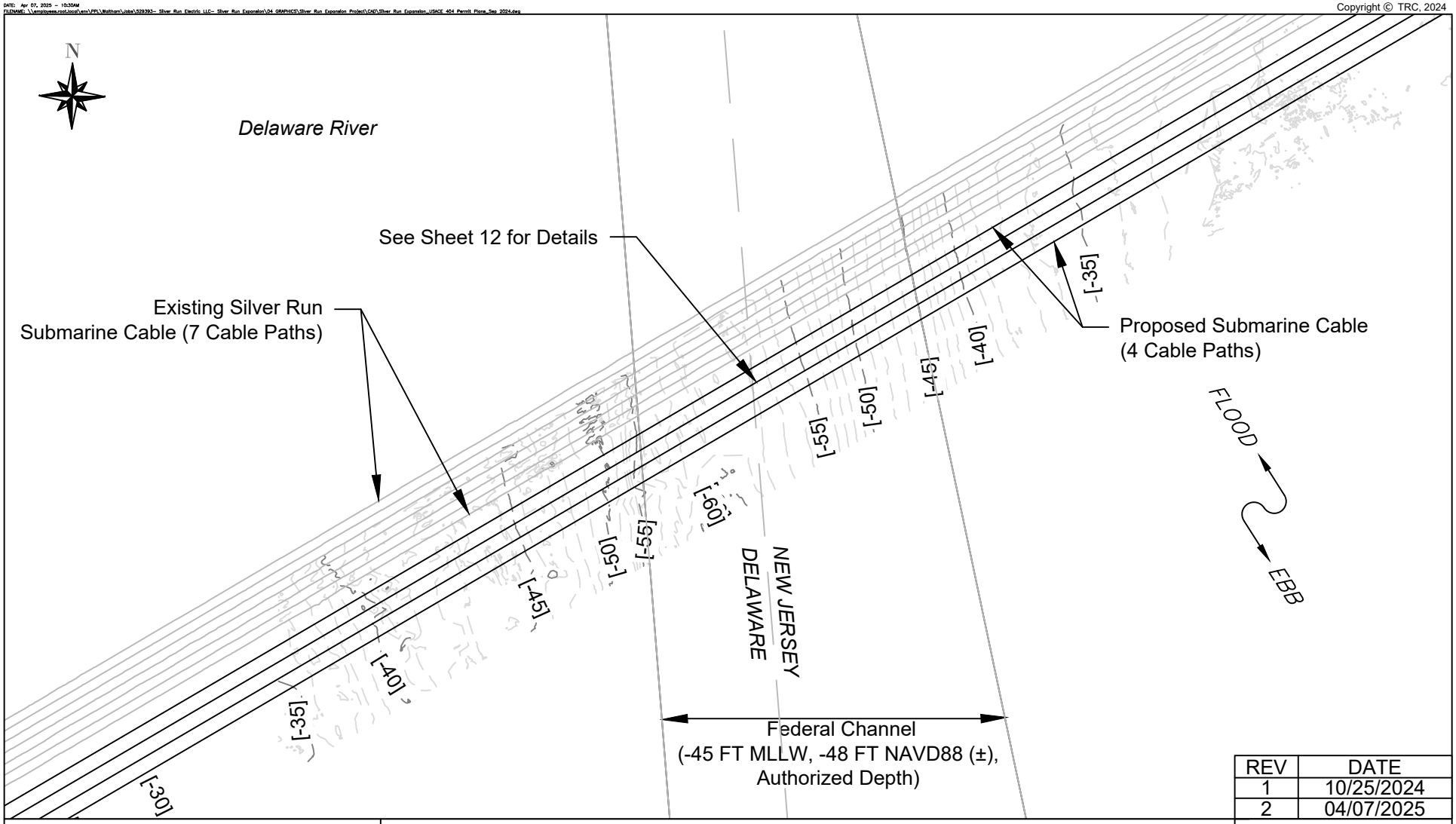

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Submarine Cable

0 250 500 1000
1" = 500'
Scale in Feet

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
5

DATE:
September 27, 2024

PROJECT NO.
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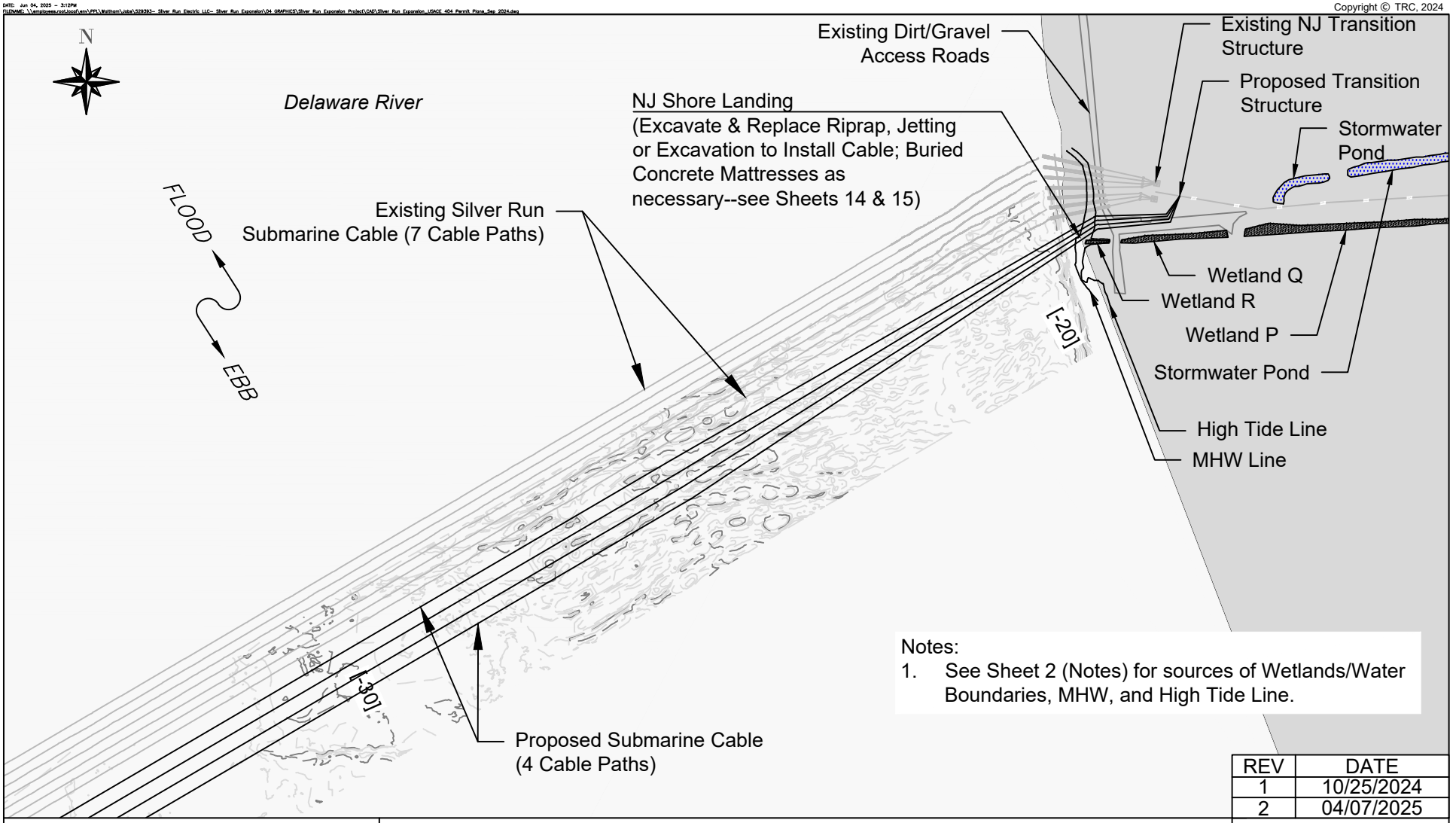

Notes:
1. See Sheet 2 (Notes) for sources of Wetlands/Water Boundaries, MHW, and High Tide Line.

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Submarine Cable

0 250 500 1000
1" = 500'
Scale in Feet

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 6

DATE: September 27, 2024

PROJECT NO. 529393.0001

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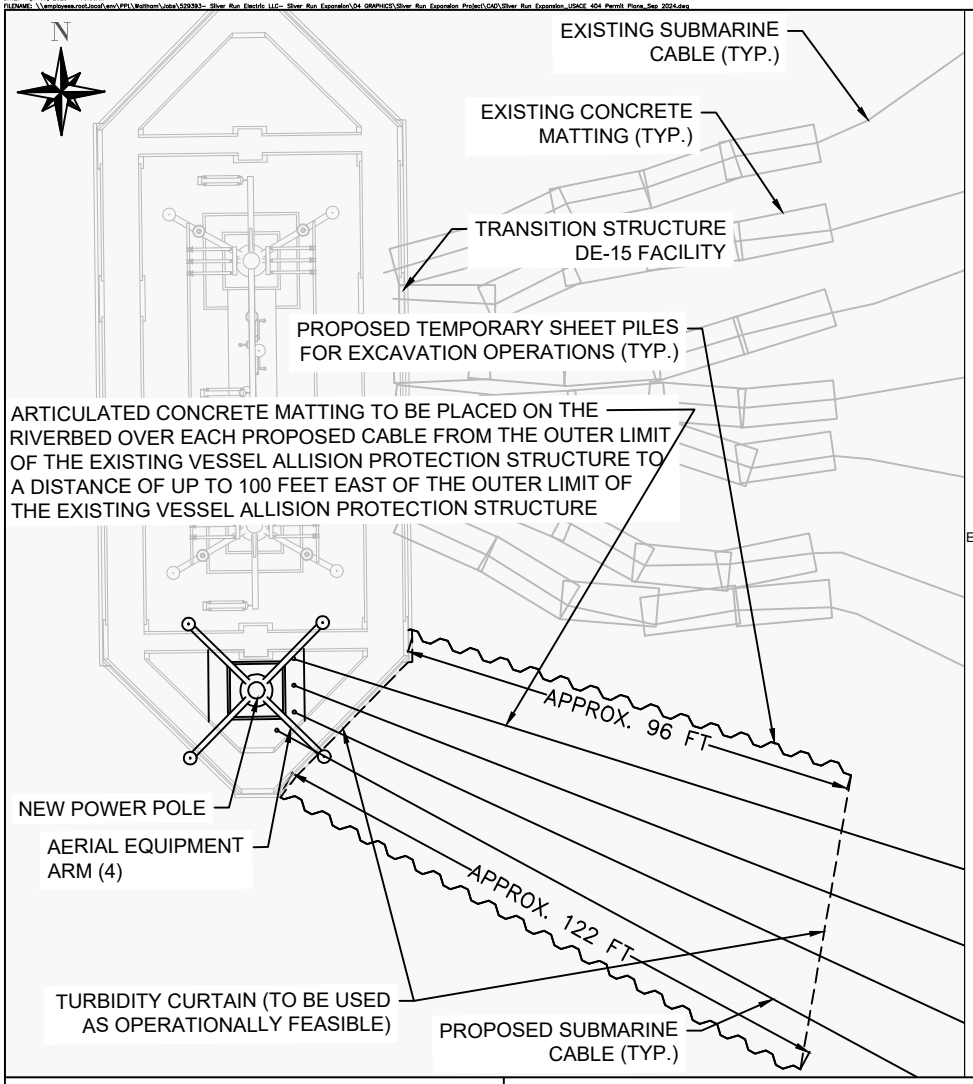

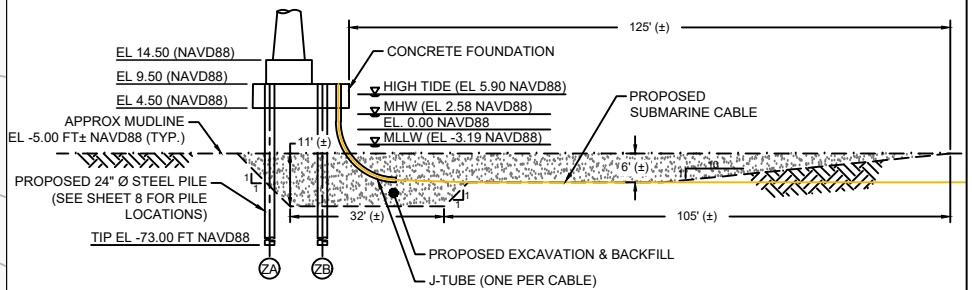

TRANSITION STRUCTURE SOUTH ELEVATION VIEW
N.T.S.

REV	DATE
1	10/25/2024
2	11/07/2024
3	11/22/2024
4	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Delaware In-River Transition Structure Modifications

0 20 40 80
1" = 40'
Scale in Feet

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 7

DATE: September 27, 2024

PROJECT NO. 529393.0001

TRC

DATE: Apr 07, 2025 - 10:30AM
FILENAME: \\employees.root.local\emi\FFL\Waltham\Jobs\529393- Silver Run Electric LLC- Silver Run Expansion\04 GRAPHICS\Silver Run Expansion Project\CAD\Silver Run Expansion_USACE 404 Permit Plans_Sep 2024.dwg

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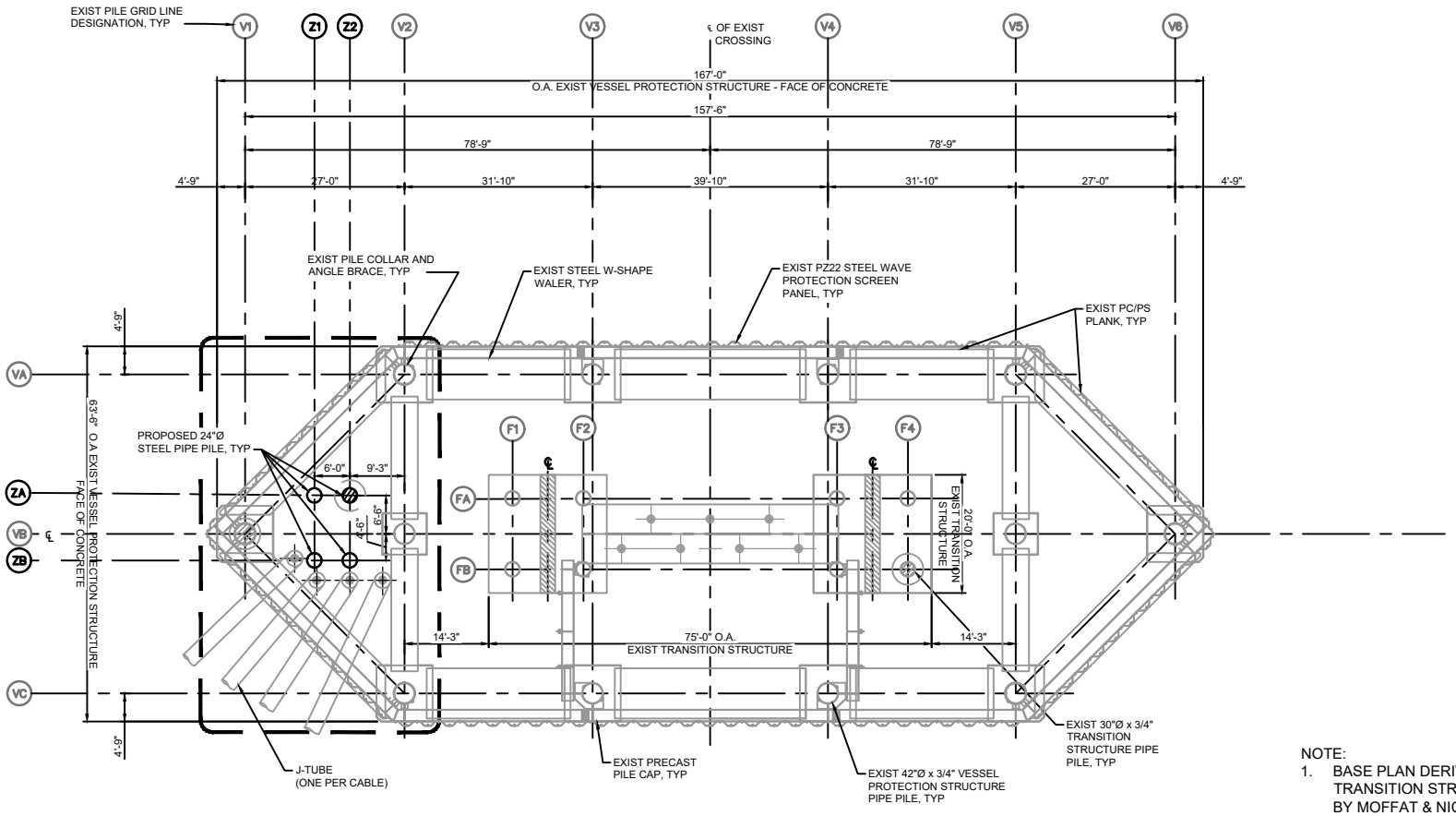

NOTE:
1. BASE PLAN DERIVED FROM ADDITIONAL TRANSITION STRUCTURE PLANS, PREPARED BY MOFFAT & NICHOL, DATED MARCH 22, 2024.

TRANSITION STRUCTURE TOP VIEW
N.T.S.

REV	DATE
1	10/25/2024

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

0 20 40 80
1" = 40'
Scale in Feet

Silver Run Expansion Project
Delaware In-River Transition Structure Modifications

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 8

DATE: September 27, 2024

PROJECT NO. 529393.0001

TRC

DATE: Apr 07, 2025 - 10:51AM
FILENAME: \\employees.root.local\emi\PPL\Waltham\Jobs\529393- Silver Run Electric LLC- Silver Run Expansion\04 GRAPHICS\Silver Run Expansion Project\CAD\Silver Run Expansion_USACE 404 Permit Plans_Sep 2024.dwg

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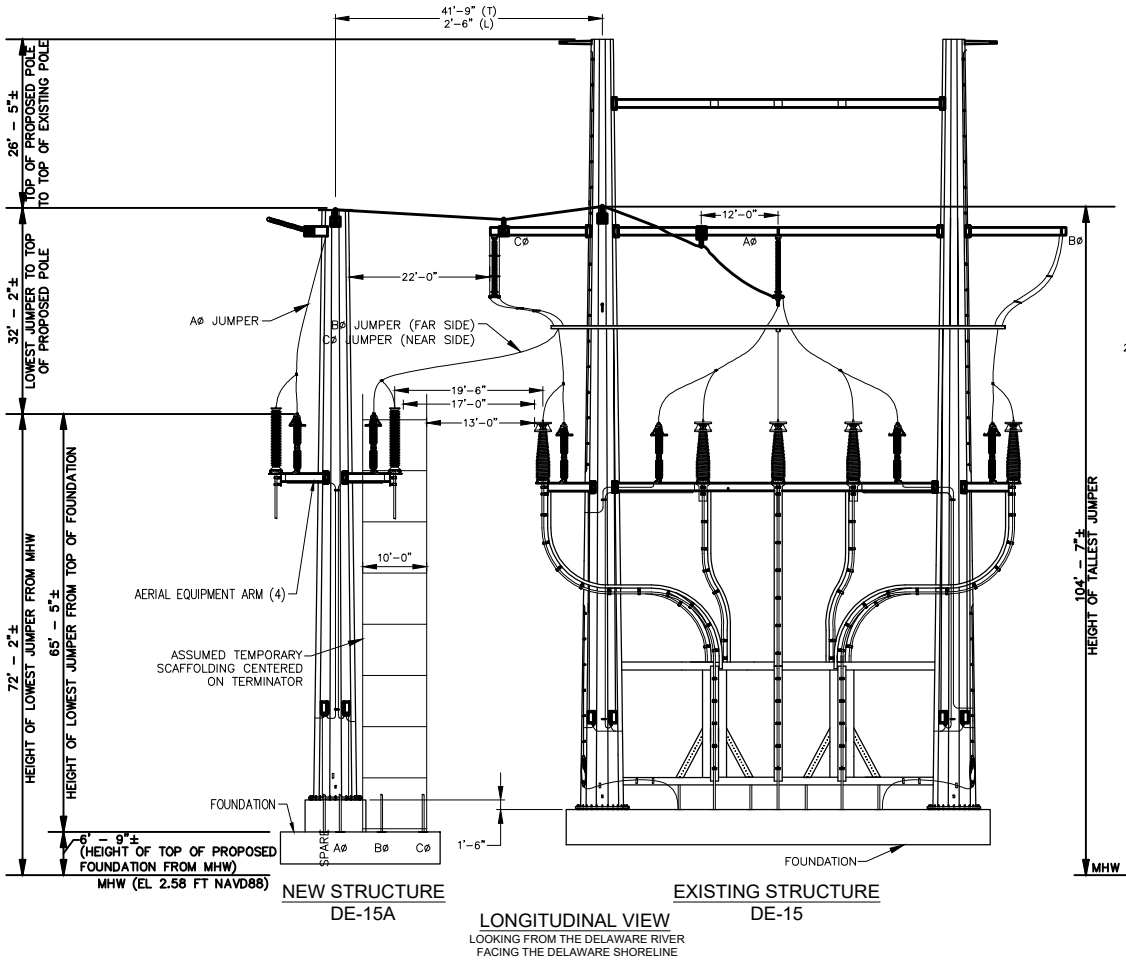

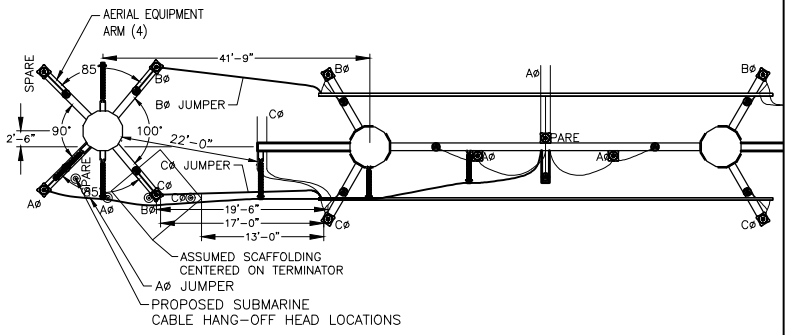

NOTE:
1. BASE PLAN DERIVED FROM SUBMARINE RISER STRUCTURE 15A CLEARANCE EXHIBIT, PREPARED BY TRC, DATED JANUARY 31, 2025.

REV	DATE
1	10/25/2024
2	11/07/2024
3	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Delaware In-River Transition Structure Modifications

SHEET NO. 9

DATE: September 27, 2024

NOT TO SCALE

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

PROJECT NO. 529393.0001

TRC

DATE: Apr 07, 2025 - 10:51AM
FILENAME: \\employees.root.local\em\FFL\Waltham\Jobs\529393- Silver Run Electric LLC- Silver Run Expansion\04 GRAPHICS\Silver Run Expansion Project\CAD\Silver Run Expansion_USACE 404 Permit Plans_Sep 2024.dwg

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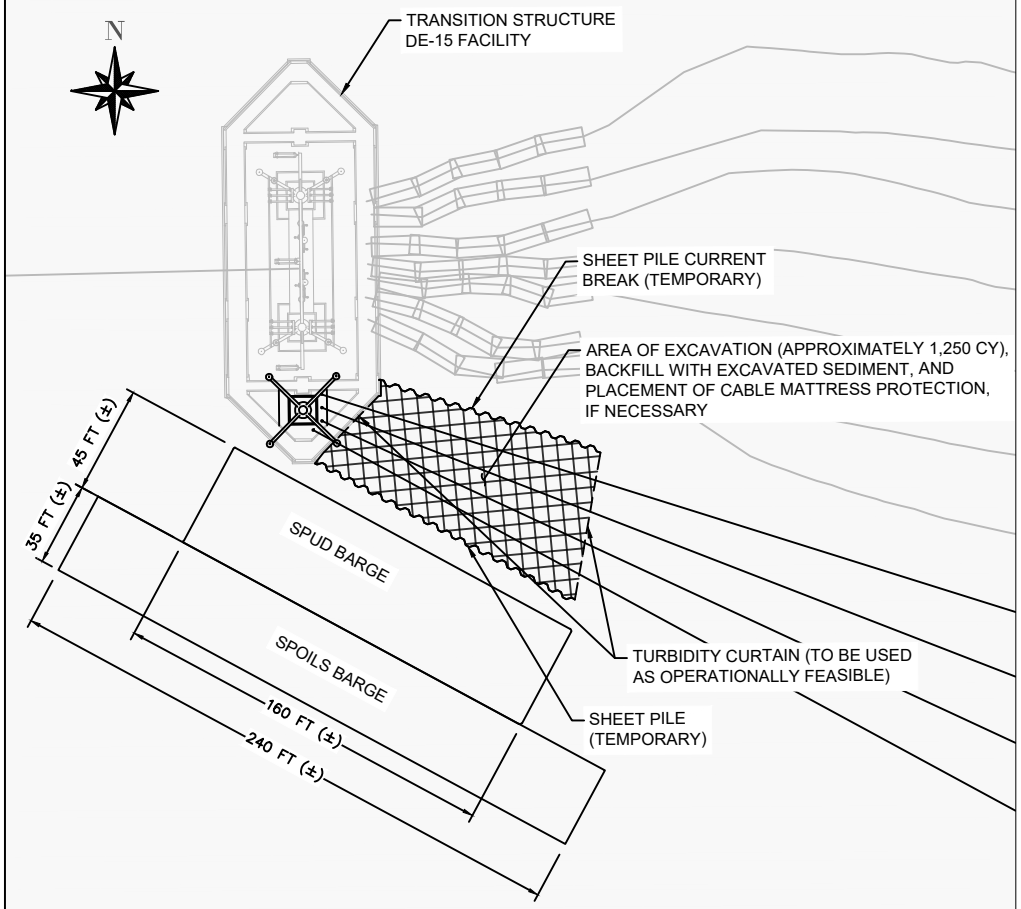
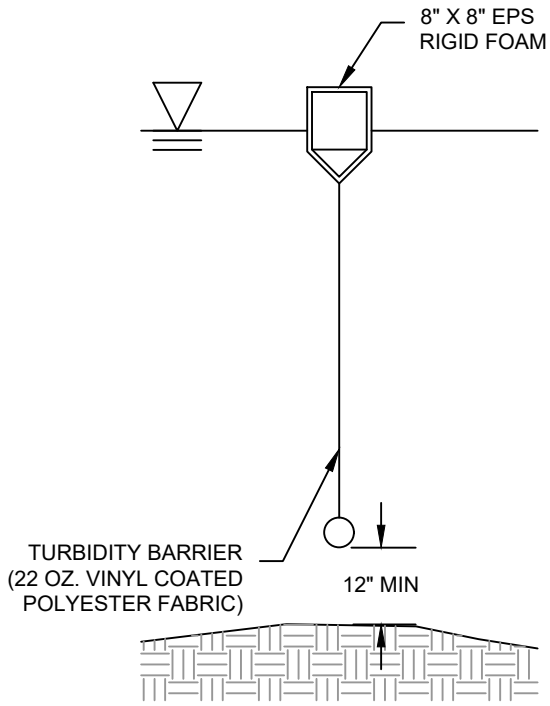
Note: Excavated material to be temporarily stored on the spoils barge, then replaced on the riverbed as cover material for the J-tubes and installed submarine cables beneath/adjacent to the in-river transition structure; area of temporary excavation to be restored to pre-construction contours.





NOTES:

1. TURBIDITY BARRIER AND ANCHORING SYSTEM TO BE DESIGNED FOR PROJECT SITE.
2. TURBIDITY BARRIER SHALL NOT BE ANCHORED TO DAM WITHOUT WRITTEN AUTHORIZATION BY OWNER.

TURBIDITY CURTAIN TYPICAL DETAIL
N.T.S.

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

0 40 80 160
1" = 80'
Scale in Feet

Silver Run Expansion Project
Excavation Plan for Delaware Transition Structure

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
10

DATE:
September 27, 2024

PROJECT NO.
529393.0001

TRC

DATE: Apr 07, 2025 - 10:51AM
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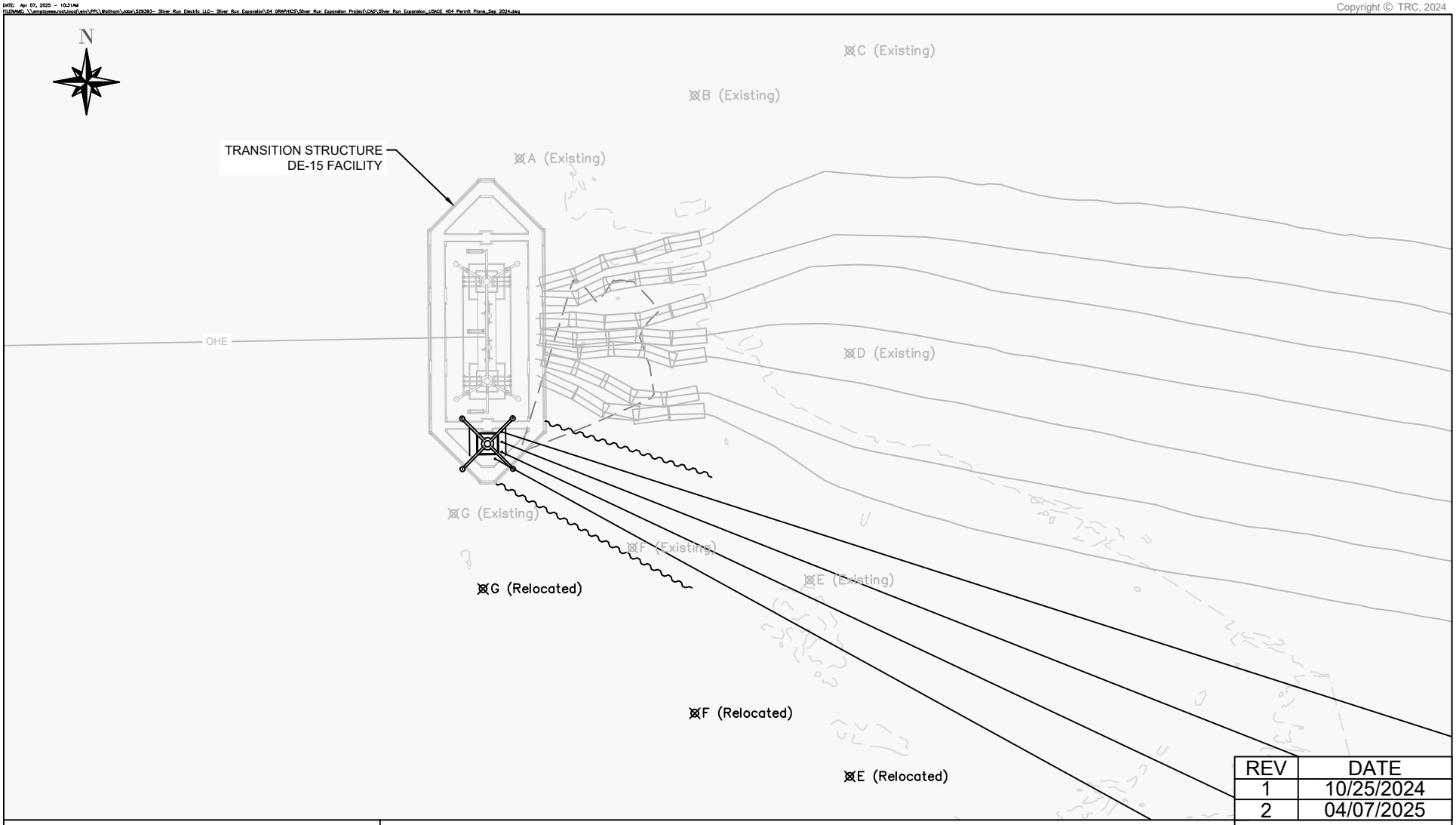

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

0 40 80 160
1" = 80'
Scale in Feet

Silver Run Expansion Project
Buoy Relocation Plan

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
11

DATE:
September 27, 2024

PROJECT NO.
529393.0001

TRC

DATE: Apr 08, 2025 - 8:28AM
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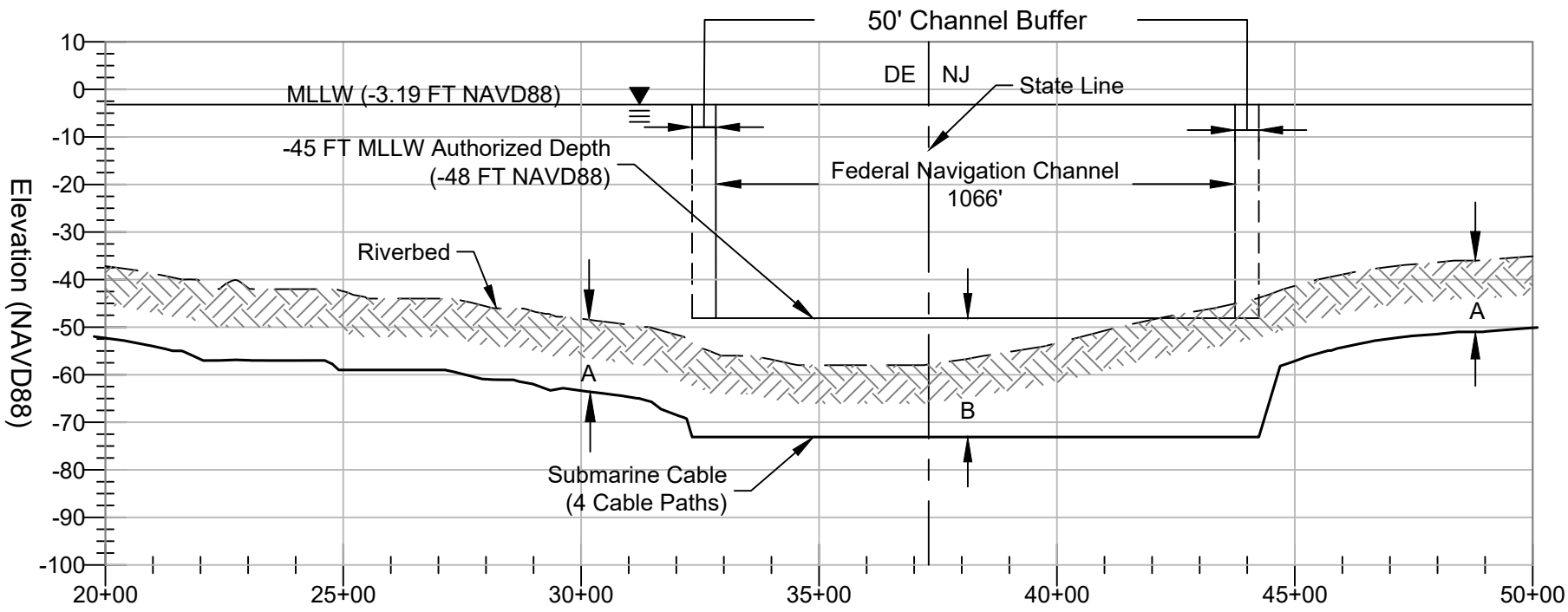

0 350 700 HORIZONTAL

0 35 70 VERTICAL

SCALE IN FEET

TARGET CABLE BURIAL DEPTH
A= 15' below present bottom
B= 25' below authorized channel depth or 15' below present bottom (whichever is deeper)

REV	DATE
1	10/25/2024
2	11/22/2024
3	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Federal Channel Crossing

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
12

DATE:
September 27, 2024

PROJECT NO.
529393.0001

TRC

DATE: Apr 07, 2025 - 10:51AM
FILENAME: \\employees.root.local\em\PPL\Waltham\Jobs\529393- Silver Run Electric LLC- Silver Run Expansion\04 GRAPHICS\Silver Run Expansion Project\CAD\Silver Run Expansion_USACE 404 Permit Plans_Sep 2024.dwg

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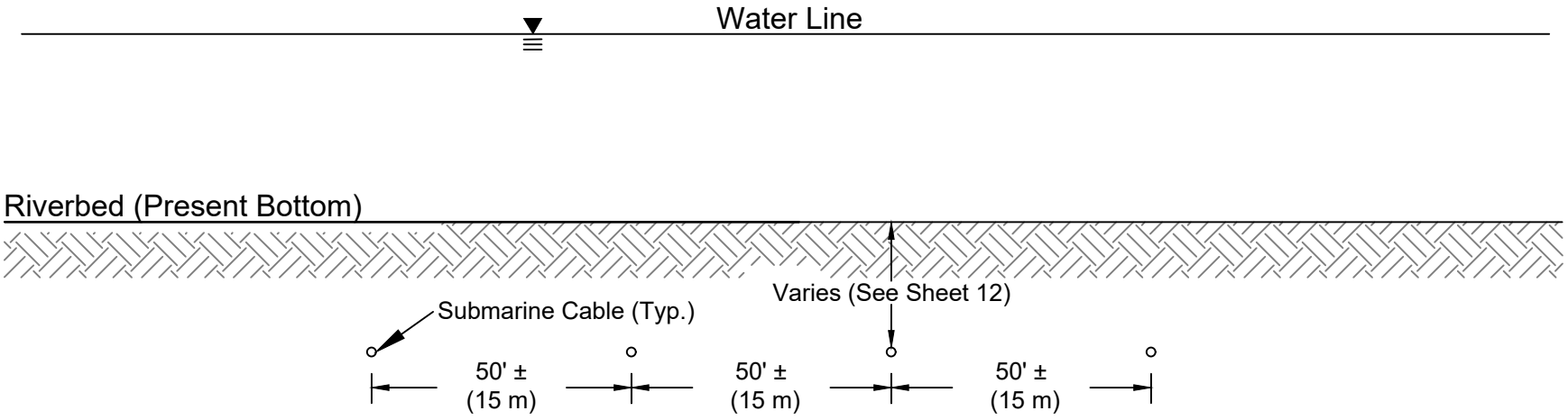

REV	DATE
1	10/25/2024
2	04/07/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Typical Submarine Cable Corridor Cross-Section

NOT TO SCALE

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO.
13

DATE:
September 27, 2024

PROJECT NO.
529393.0001

TRC

DATE: Jun 04, 2025 - 3:14PM
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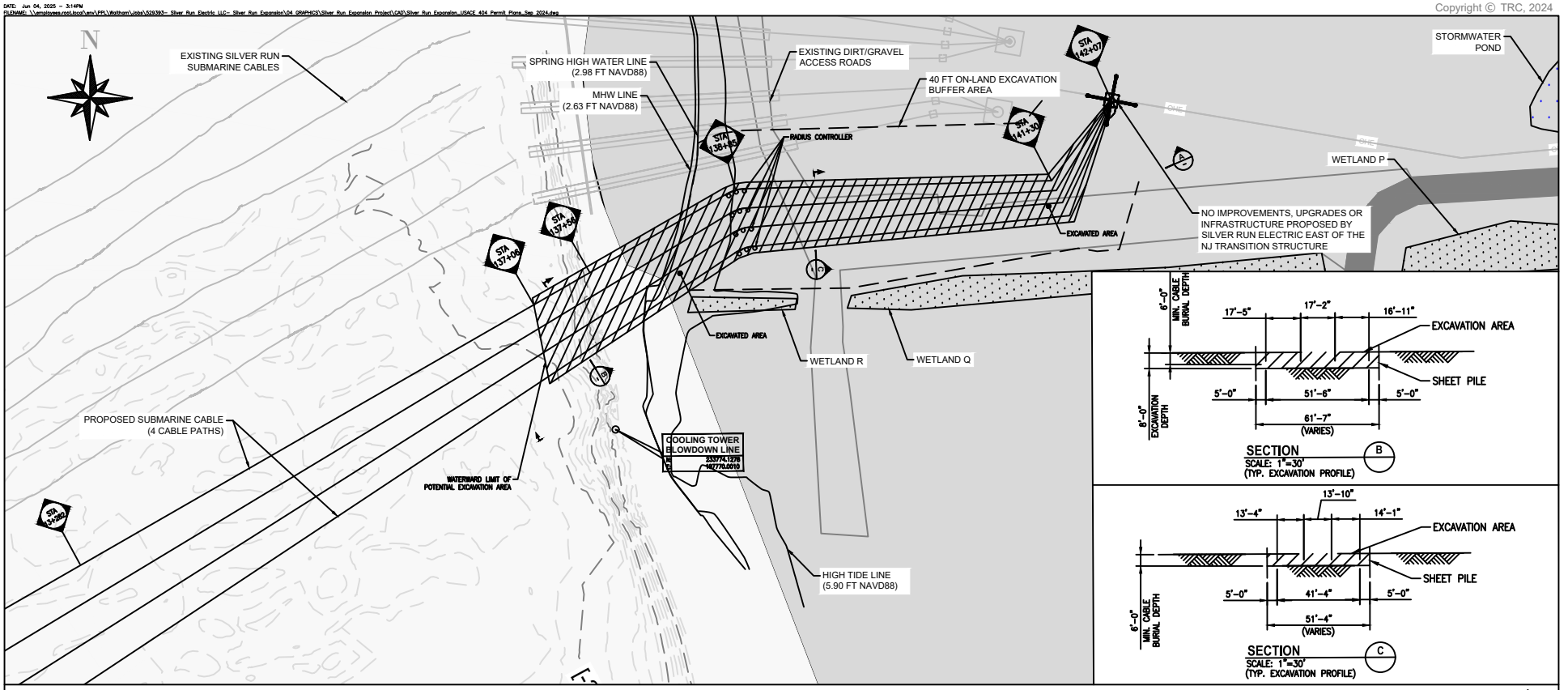

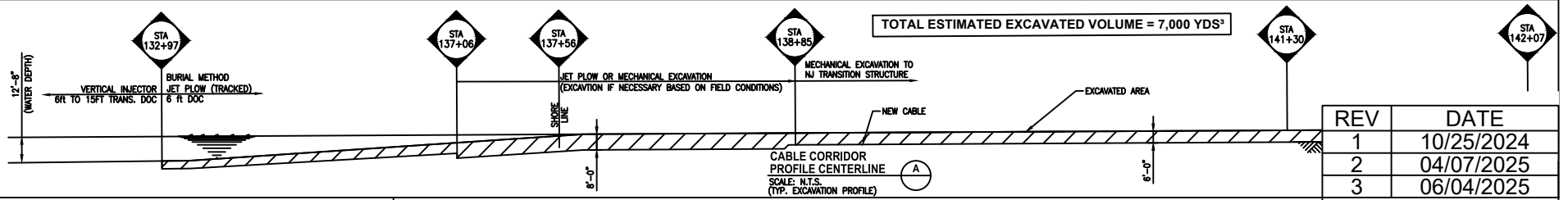

REV	DATE
1	10/25/2024
2	04/07/2025
3	06/04/2025

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
NJ Shore Landing Plan & Profiles

0 60 120 240
1" = 120'
Scale in Feet

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

SHEET NO. 14

DATE: September 27, 2024

PROJECT NO. 529393.0001

TRC

DATE: Apr 07, 2025 - 10:51AM
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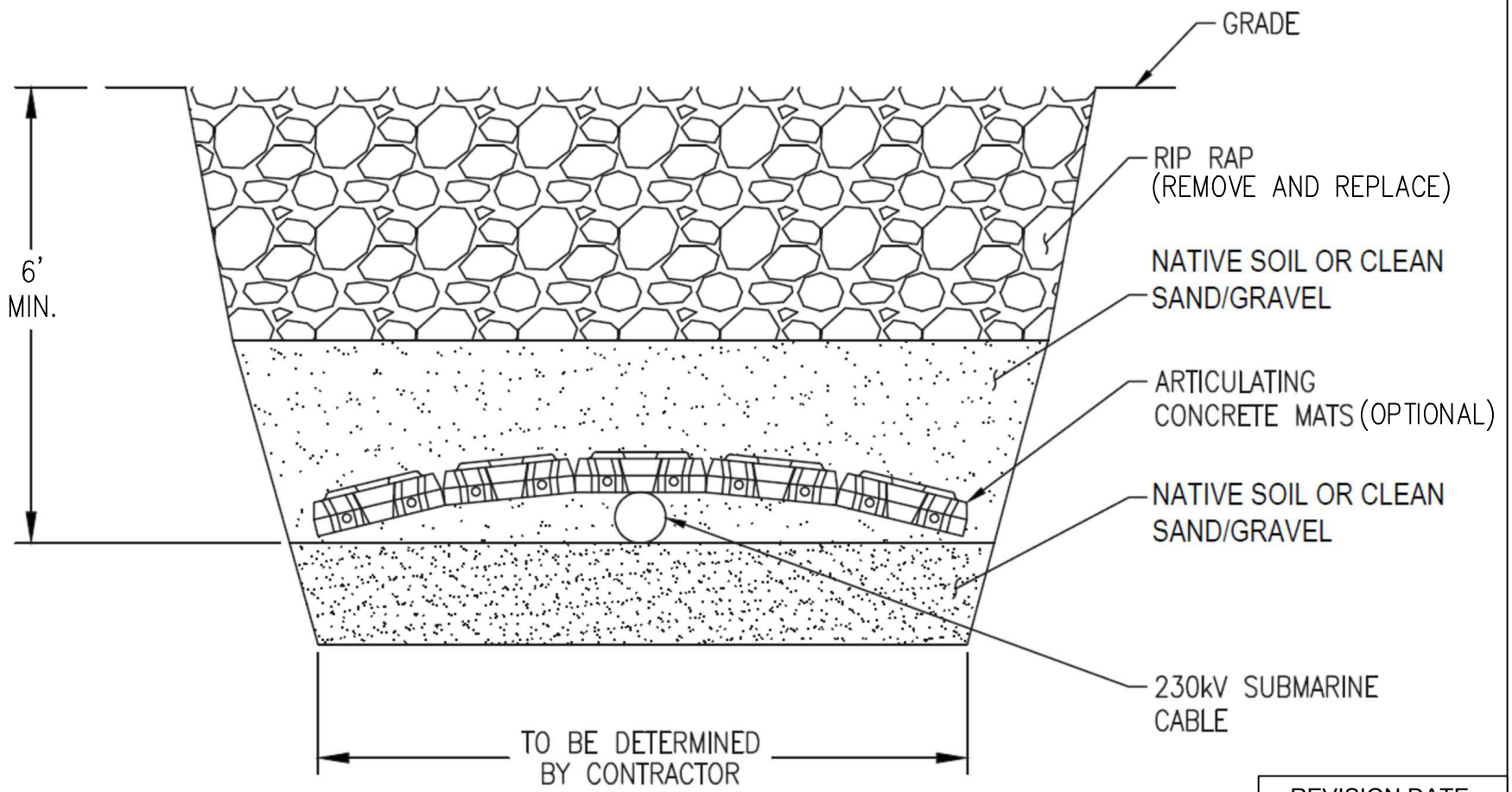

Note:
Typical details provided by Silver Run Electric, LLC.

REVISION DATE:
October 25, 2024

Purpose: Construct, Interconnect, and Commission Upgrades to the Existing Silver Run Transmission Line

Silver Run Expansion Project
Typical NJ Shore Landing Detail

SHEET NO.
15

DATE:
September 27, 2024

NOT TO SCALE

At: Lower Alloways Creek Township, New Jersey and New Castle County, Delaware
In: Delaware River
Applicant: Silver Run Electric, LLC

PROJECT NO.
529393.0001

TRC