TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

APPENDIX K – OFFSHORE SAMPLING AND ANALYSIS PLAN/QUALILTY ASSURANCE PROJECT PLAN VERSION 3.0A (SEPTEMBER 2018)

NORTHEAST SUPPLY ENHANCEMENT PROJECT

January 2020

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NEW JERSEY DREDGING PROJECTS
SEDIMENT SAMPLING AND ANALYSIS PLAN (SSAP) TEMPLATE

VERSION 3.0

Before completing this SSAP template, please determine if the proposed project qualifies for any of the testing exclusions identified in N.J.A.C. 7:7 Appendix G and contact the Department's Office of Dredging and Sediment Technology to receive a confirmation that the testing exclusion is applicable to the project.

The major objective of a SSAP is to accurately characterize the horizontal and vertical distribution of the physical/geotechnical properties and contaminant concentrations of the sediment to be dredged.

This document serves as the template to develop the SSAP for a proposed dredging project. It identifies the information required by the Department to review, and ultimately approve, the SSAP for the project. The required information must be provided to the Department by entering it into the spaces provided on this template, and submitting two hard copies and one CD of the additional required documents.

The SSAP for a dredging project must be approved by the Department prior to the collection and analysis of any sediment samples. Once the final SSAP has been approved by the Department, the applicant may conduct sampling in conformance with the plan. **If the applicant collects and analyzes any sediment samples without the approval of NJDEP-ODST, it is done at risk, as any such samples may or may not be considered by the Department in making regulatory decisions regarding the proposed project.**

For additional information, see *The Management and Regulation of Dredging Activities and Dredged Material in New Jersey's Tidal Waters* found in Appendix G of the Coastal Zone Management Rules (N.J.A.C. 7:7). Appendix G can be accessed at: http://www.nj.gov/dep/landuse/lawsregs.html. This SSAP template incorporates much of what is required to be submitted by applicants in Appendix G as part of the permit application for a dredging project; however, additional information may be required on a project-specific basis.

Complete pages 2-6, 11-12 of the SSAP template, attach any additional required documents, and send the complete draft SSAP package to 501 E. State Street, Mail Code 501-02A, P.O. Box 420, Trenton, NJ 08625-0420. Please include an electronic (MS Word) copy in the CD requested on page 3 of this document.

Approval of the SSAP will be indicated by the signature of Department staff on page 12 of the completed template.

If you have any questions, please contact the Department's Office of Dredging and Sediment Technology at (609) 984-6216.

Office of Dredging and Sediment Technology
Division of Land Use Regulation
Sediment Sampling and Analysis Plan (SSAP) File Number Request Form

Site Info:

Project Description: Transco Pipeline **Location:** Raritan Bay NJ/NY

Applicant Info:

Applicant Name: Williams Transcop		
Phone Number: 713/215-200	**Email Address:**	
Address: 2800 Post Oak Boulevard (77056) P.O. Box 1396		
City: Houston	**State:** Texas	**Zip:** 77251

Agent Info (if any):

Agent Name: Scott Horner		
Phone Number: 713-215-4953	**Email Address:** Scott.Horner@williams.com	
Address: same as applicant		
City:	**State:**	**Zip:**

Proposed Dredging Plan

Method of dredging: ☐ Hydraulic ☒ Mechanical

Type of dredging: ☐ Maintenance (N.J.A.C. 7:7-12.6) ☒ New Dredging (N.J.A.C. 7:7-12.7)

Proposed Dredged Material & Water Management Alternative(s)

Check applicable box(es) and identify location(s) in the space provided.

Upland Placement:

☐ Confined Disposal Facility

☒ Processed Dredged Material Facility (Mixed with Portland Cement)

☐ Beneficial Use at Site Remediation Project or Landfill

☐ Other Beneficial Use: _____

_____

Dewatering Method:

☐ Upland Temporary Dewatering Area (Ex; hay bales/silt fences)

☐ Confined Disposal Facility

☒ Barge/Scow Dewatering

☐ Geotubes

☐ Filter Press

☐ Other Dewatering Method: _____

_____

Dredge Material Management Location (street address and provide State plane coordinates): (Please any relevant information for identifying the site such as CDF name if applicable)

This SSAP is designed to characterize sediments for the placement of dredge material at an upland disposal facility using the structural fill protocol. The applicant has identified areas along the route of the proposed pipeline that may be placed at HARS based on previous analytical data. However, this SAP was designed to characterize all material that would be dredged to install the pipeline. If desired, the applicant may run the analysis for all samples labeled *UPL* in the table listed on pages 7-12 and hold the samples labeled *HARS* within the limits identified in the Dredge Manual conducted in accordance with a certified New Jersey Laboratory.

Sediment Core Sample Locations

* Depth of Collection is project depth (plus proposed overdredge) in Normal Water Surface equivalent.

Provide the information in the following table (expand as needed):

Sample ID Number	Location: Planned X	Location: Planned Y	Project Depth NWSL	Potential Placement
VC204	559550.629806	595338.948463	15	UPL
VC205	559590.648787	595408.245732	15	UPL
VC301	561772.826385	596644.744655	7.5	HARS
VC303	562618.248188	597132.744924	7.5	HARS
VC304	563462.968023	597620.335247	7.5	HARS
DEP 3	564323.202420	598116.881437	7.5	HARS
DEP 4	565183.873023	598613.669860	7.5	HARS
DEP 5	566157.415679	599175.618399	7.5	HARS
VC219	569095.774839	600871.698819	7.5	UPL
VC220	569618.427696	601173.384634	7.5	UPL
VC221	570138.907597	601473.816174	7.5	UPL
VC307	571908.423668	602495.216689	7.5	HARS
VC308	572672.605817	602936.318103	7.5	HARS
VC309	573440.499747	603379.562032	7.5	HARS
VC310	574852.703357	604194.714558	7.5	HARS
VC311	575633.267246	604645.271844	7.5	HARS
DEP2	574218.90026	603828.870574	7.5	HARS
VC312	576325.961551	605045.113894	7.5	HARS
VC313	577187.105958	605542.179020	7.5	HARS
VC314	577969.844235	605993.991406	7.5	HARS
VC225	581859.210557	608169.708297	7.5	UPL
VC227	582047.170652	608278.202026	14	UPL
VC228	582235.155614	608386.710004	20.5	UPL
VC230	582611.125261	608603.725963	27	UPL
VC230B	582671.917787	608570.680814	27	UPL
VC230A	582550.529264	608645.566177	27	UPL
VC232	582970.334191	608811.067499	22.5	UPL
VC232B	582896.223342	608849.153036	22.5	UPL
VC232A	583033.723342	608781.097480	22.5	UPL
VC237	583552.863930	609147.313179	25	UPL
VC237B	583467.056675	609174.153036	25	UPL
VC237A	583635.806675	609115.819703	25	UPL
VC239	583929.571435	609363.030975	23	UPL
VC240	584121.010298	609465.307837	16	UPL
VC242	584314.980419	609562.278032	9	UPL

VC315	615069.706267	617935.130151	10.5	HARS
VC316	615879.634266	617869.379296	10.5	HARS
VC317	616877.672845	617685.194434	10.5	HARS
VC326	640094.420549	608813.866100	21	HARS
VC327	640110.173372	608777.087341	21	HARS
VC328	643993.208187	610449.086679	25	HARS
VC329	644008.056736	610411.928734	25	HARS
VC216	567506.131802	599954.124662	7.5	UPL
VC217	568069.106725	600279.085190	7.5	UPL
VC218	568580.995405	600574.557703	7.5	UPL
VC222	570647.026687	601767.112804	7.5	UPL
VC223	571072.770934	602012.871605	7.5	UPL
VC247	618900.543817	617198.246094	UPL 0-4' HARS 4'-21.5'	UPL & HARS
VC251	621315.259702	616620.301787	7.5	UPL
VC252	621982.211495	616410.508872	7.5	UPL
VC253	622616.191475	616139.477531	7.5	UPL
VC318	619363.082789	617089.549202	21.5'	HARS
VC320	619723.604466	617003.148193	19.0'	HARS
VC323	620443.396551	616830.644747	22.0'	HARS
VC321	620083.774073	616916.830682	20.5'	HARS
VC235	583432.274157	609077.706663	24	UPL
VC229	582423.140265	608495.217982	28	UPL
VC238	583740.848697	609255.821168	28	UPL
VC208	559958.784091	595597.643046	7.5	UPL
VC211	560363.343455	595831.163798	7.5	UPL
VC214	560767.036074	596064.184256	7.5	UPL
DEP1	561251.102735	596343.595197	7.5	UPL
DEP6	582790.423327	608707.219767	27	UPL
DEP7	583164.035862	609010.188347	20	UPL
VC244	617291.452925	617586.029376	UPL 0-4' HARS 4'-10.5'	UPL & HARS
VC245	617877.707061	617445.529499	UPL 0-4' HARS 4'-10.5'	UPL & HARS
VC246	618364.370963	617328.898045	UPL 0-4' HARS 4'-10.5'	UPL & HARS
VC255	659962.694326	616596.019066	7.5	UPL
VC256	660925.778309	616963.942792	7.5	UPL

Note: The latitude and longitude of the planned sample locations can be approximated using NJ Geoweb or a similar mapping application. All coordinates shall be in the **NJ State Plane Coordinate System**.

Planned Core Sample Compositing Scheme

Request Department to identify core sample compositing scheme? ☒ Yes ☐ No

Please refer to Section D of Chapter III of Appendix G for core composite guidance and rationale.

Provide the information in the following table (expand table as needed):

Composite Sample ID Number	Core Sample ID Numbers
A	VC204, VC205
D	VC301, VC303, VC304
E	DEP 3, DEP 4, DEP 5
G	VC219, VC220, VC221
I	VC307, VC308, VC309
J	VC310, VC311, DEP2
K	VC312, VC313, VC314
L	VC225, VC227, VC228
M	VC230, VC230A, VC230B
N	VC232, VC232A, VC232B
O	VC237, VC237A, VC237B
P	VC239, VC240, VC242
Q	VC315, VC316, VC317
R – HARS Layer	VC244, VC245, VC246
S	VC326, VC327
T	VC328, VC329
DISCRETE	VC208 - VC211 – VC214 - VC216 - VC217 - VC218 – VC222 – VC223 - VC229 - VC235 - VC238 VC247 - VC251 - VC252 - VC253 - VC255 – VC256 – VC318 - VC320 – VC321 – VC323 - DEP1 – DEP6 – DEP7 VC244 – UPL Layer, VC245 – UPL Layer, VC246 – UPL Layer

Required Sediment Sampling Tests

Tier I - Physical/geotechnical (Required for all projects)

- ☒ Grain size distribution (ASTM D422 or D4381)
- ☒ Total Organic Carbon (USEPA 440.0)
- ☒ Water Content (ASTMD653, D2216, or D4643)

Representative subsamples of each homogenized core sample (or distinct strata) and composite analytical sample are collected and analyzed for grain size distribution, Total Organic Carbon (TOC), and percent moisture. Samples are also subjected Bulk Sediment Chemistry, Elutriate, Effluent (Modified) Elutriate, SPLP, and/or biological testing as specified below.

Excluding the cores listed below, individual sediment core samples comprised of greater than **90% sand** (analyzed using the **hydrometer** method) are excluded from **Tier II Testing** (chemical and biological testing), and must not be composited with other sediment samples.

Cores to undergo Tier II testing regardless of grain size:
VC204, VC205, VC208, VC211, VC214, DEP1

Tier II - Bulk Sediment Chemistry	☒
Tier II - Effluent (Modified) Elutriate	☐
Tier II - Elutriate	☐
Tier III - Sequential Batch Leaching Test	☐
Tier III - Synthetic Precipitation Leaching Procedure	☐
Tier III - Biological – Toxicity	☐
Tier III - Biological – Bioaccumulation	☐

Structural Fill Protocol (addition of Portland cement to raw dredge material and analysis for bulk sediment chemistry and SPLP) ☒

- Note that all compounds identified on the following page for Bulk Sediment Chemistry must also be performed for amended material and SPLP. Please see Sampling Plan Implementation Requirement #20 for additional information.

Notes:

Transco may hold samples for analysis of EPH or dioxins at all location at their own discretion.

**** It is the responsibility of the applicant to determine any additional testing requirements for any proposed management site that is not included in this sampling plan. ****

Bulk Sediment Chemistry Analysis

☒ Semi-Volatile Compounds
☒ Volatiles (VOCs)
☐ Polychlorinated dibenzo dioxins and furans (PCDDs and PCDFs; 17 congeners)
☒ Polychlorinated biphenyls (PCBs): ☒ Aroclors or ☐ PCB Congeners (209)
☒ Organochlorine Pesticides
☒ Inorganics (including hexavalent and trivalent chrome)

Effluent (Modified) Elutriate Analysis

☐ Semi-Volatile Compounds
☐ Volatiles (VOCs)
☐ Polychlorinated dibenzo dioxins and furans (PCDDs and PCDFs; 17 congeners)
☐ Polychlorinated biphenyls (PCBs): ☐ Aroclors or ☐ PCB Congeners (209)
☐ Organochlorine Pesticides
☐ Inorganics (including hexavalent and trivalent chrome)

Analytical Requirements

All analytical procedures must be conducted by a laboratory certified by the Department to conduct that procedure pursuant to the Regulations Governing the Certification of Laboratories and Environmental Measurements (N.J.A.C. 7:18) or the National Environmental Laboratory Accreditation Program (NELAP). Current certification status should be verified with the Office of Quality Assurance (609) 292-3950.

The achieved analytical detection limits for all contaminants in the Target Analyte List must be less than the applicable regulatory criteria and guidance values to which the data will be compared when evaluating the potential impacts of the proposed project. Where the Practical Quantitation Limit (PQL) for a contaminant is greater than the applicable regulatory criteria, the analytical detection limit must not exceed the PQL.

-Bulk Sediment Chemistry/Upland Placement – NJDEP Residential Soil Remediation Standards
http://www.nj.gov/dep/rules/rules/njac7_26d.pdf

-Bulk Sediment Chemistry/Aquatic Placement – NJDEP Ecological Screening Criteria
http://www.nj.gov/dep/srp/guidance/ecoscreening/

-Elutriate and Effluent (Modified) Elutriate – NJDEP Surface Water Quality Standards (acute and chronic; saline and/or freshwater, as appropriate)
http://www.nj.gov/dep/rules/rules/njac7_9b.pdf

-Leaching tests – NJDEP Ground Water Quality Standards
http://www.nj.gov/dep/rules/rules/njac7_9c.pdf

Sampling Plan Implementation Requirements

If implementation of the approved SSAP does not provide data that are representative of, or fully characterizes, the sediment to be dredged, the Department may require the collection and analyses of additional sediment samples.

Sediment core sampling collection procedures must be consistent with those in the NJDEP Field Sampling Procedures Manual (2005), available at http://www.state.nj.us/dep/srp/guidance/fspm/ .

(1) The Department must be notified of any deviations from the approved SSAP prior to the homogenizing, compositing, and analysis of the collected sediment samples.

(2) All sediment core sample collection activities must be properly documented. Detailed field notes/observations during sampling must be documented in a field sampling log book.

(3) NJDEP GPS Data Collection Standards must be used for positioning methods when locating all sampling points. *New Jersey Department of Environmental Protection, 2011. NJDEP GPS Data Collection Standards for GIS Data Development, June 8, 2011, 11 pp.*

(4) All sampling equipment must be properly cleaned before and after the collection of each individual sediment core sample.

(5) An inert plastic liner must be used in conjunction with each sediment core sampling device; this plastic liner must not be reused.

(6) All individual sediment core samples are to be taken to the sediment characterization depth, as specified in this document, and not any deeper.

(7) When collecting sediment core samples, the project applicant must ensure that a sufficient volume of sediment is collected to conduct all of the tests (physical and geotechnical, chemical, biological) specified in the approved SSAP.

(8) Individual sediment core samples must be photographed prior to homogenization, with the sample identification number, a length scale, and date included in the photograph.

(9) Provide core logs showing the depth of sampling (below the sediment surface and Mean Low Water) and a qualitative description of the sediment for each individual sediment core sample.

(10) Only sediment core samples collected correctly may be homogenized, composited, and analyzed.

(11) Individual sediment core samples may be homogenized in their entirety for analysis provided that there no distinct strata (apparent grain size distribution, composition, and visual characteristics) present that are greater than two (2) feet in depth. The Department shall be notified of any sediment core samples that show grain size stratification prior to homogenizing.

(12) The entire sediment core sample (or distinct strata, when present) must be homogenized – "representative" sub-samples of a non-homogenized sediment core sample must not be collected, composited, and analyzed.

(13) Individual sediment core samples may be composited only if the grain size distribution of the sediment is similar. Individual samples should not be composited if the percentage clay, silt, or sand differ by more than 20%. The Department shall be notified of any sediment core samples that show varying grain size distribution prior to compositing samples.

(14) Representative subsamples of each homogenized core sample (or distinct strata) are combined in equal proportions (by mass) to form the composite analytical sample.

(15) The sample preservation requirements and holding times for each analysis, as specified in the analytical methods used, must be adhered to, or proposed alternatives approved by the Department prior to analysis.

(16) Sample Chain of Custody requirements must be consistent with those specified in the NJDEP Field Sampling Procedures Manual (2005).

(17) If implementation of the approved SSAP does not provide data that are representative of, or fully characterizes, the sediment to be dredged, the Department may require the collection and analyses of additional sediment samples.

(18) Analytical laboratories must follow all of the required QA/QC procedures specified in the analytical methods used. Any deviations from these procedures must be documented and justified in the Analytical Data Report.

(19) All routine procedures associated with the sampling, handling, transport, storage, preservation, and analysis of the sediment should be specified in Standard Operating Procedure (SOP) documents maintained by the parties actually collecting and analyzing the sediment.

(20) For Structural Fill Protocol, each core/composite sample/vertically stratified sample, a sample of the processed dredged material product will be created by combining measured amounts of proposed additive with a pre-weighed sample of the sediments to be dredged. The mixing time will, to the greatest extent possible, replicate the residence time in the blending facility/operation to be used in the actual full-scale project. The ratio of proposed additive to composite sediment sample, by weight, will be recorded. The dredged material product to be tested will be formed using the "recipe" (proportions of dredged material and proposed additive) which replicates the actual dredged material product to be used as structural fill on the site. The dredged material product will be pulverized, and each composite sample will be subjected to bulk sediment analyses.

The dredged material product samples will be pulverized, and each sample subjected to a Synthetic Precipitation Leaching Procedure (SPLP) using the USEPA Method 1312.

A final report, including the results of the raw sediment and dredged material product testing, will be submitted to the Department in a series of three (3) summary data tables: Raw sediment bulk sediment chemistry, Dredged material product bulk sediment chemistry, Dredged material product SPLP results.

Sample Collection/Homogenization/Composition

Identify the organizations that will conduct the following activities (if known):

Sediment samples will be collected by: To Be Determined – By Applicant

Sediment samples will be homogenized by: To Be Determined – By Applicant

Sediment samples will be composited by: To Be Determined – By Applicant

Reporting Requirements

The sediment data package must be included in the Waterfront Development Permit application. Any data package submitted to the Department shall comply with the QA/QC requirements outlined in Appendix B of the Dredging Manual. The package must be provided to the Department on a CD, or be made available electronically.

In addition, a data summary table of the results in a spreadsheet must be provided with the data package. The data summary table must present a comparison of the bulk sediment chemistry results to the Department's Residential and Non-residential Soil Remediation Standards. Where required, modified elutriate results shall be compared to the New Jersey Surface Water Quality Criteria and SPLP results shall be compared to the New Jersey Ground Water Quality Standards. The summary tables must present data with identical units and highlight all results that exceed applicable criteria. **Units for bulk sediment chemistry must be presented in milligrams per kilogram (mg/kg).**

- Dioxin data must be presented using current World Health Organization Toxic Equivalency Factors (WHO TEFs) with the calculated Toxic Equivalency (TEQ).
- PCB aroclor data must provide a summation for detected analytes.
- PCB congener data must be presented individually and summed.

One (1) hard copy of the data summary tables and one (1) FULL electronic copy of the QA/QC must be provided.

SSAP Certifications

☑ I certify that I provided accurate information and will comply with the requirements listed in the approved Sediment Sampling and Analysis Plan.

Printed Name: JOSEPH E DEAL

Signature:

Date: 10 OCTOBER 2018

Department Review and Approval (Department signature upon approval)

☒ The Department hereby approves the Sediment Sampling and Analysis Plan dated for implementation.

NJDEP File No.	0000-01-1001.3 DRG180001
Department Staff:	Magda Usarek-Witek
Date:	October 9, 2018
Signature: