APPENDIX C EROSION AND SEDIMENT CONTROL PLAN

SOIL EROSION AND SEDIMENT CONTROL PLAN

Site 016 Remediation Project 45 Linden Avenue East Jersey City, Hudson County, New Jersey

Prepared for:

PPG Industries Allyson Park, Pennsylvania

Hudson, Essex, Passaic Soil Conservation District 15 Bloomfield Avenue North Caldwell, New Jersey 07006

Prepared by:



Shaw Environmental, Inc. *A CB&I Company* 200 Horizon Center Boulevard Trenton, New Jersey 08691

Project No. 146429 April 2013

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Soil Erosion and Sediment Control Plan Narrative Site 016 Remediation Project Jersey City, Hudson County, New Jersey April 2013

This Soil Erosion and Sediment Pollution Control Plan (SESCP) has been prepared in accordance with the New Jersey Soil Erosion and Sediment Control Act, Chapter 251, P.L. 1975 as amended (New Jersey Administrative Code [NJSA] 4:24-39 et. seq.) for the Site 016 Remediation Project located at 45 Linden Avenue East in Jersey City, Hudson County, New Jersey (Figure 1). The site is designated as Block 1507, Lot 4L on the city tax maps. Block 1507, Lot 4L is comprised of an area of approximately 12.9 acres. This SESCP describes the best management practices and measures to be implemented for storm water runoff management and erosion and sediment control during the remediation project.

Site 016 will undergo environmental remediation activities under the jurisdiction of the New Jersey Department of Environmental Protection (NJDEP). The remediation activities to be implemented involve excavation of soil for off-site disposal and restoration of the site to preconstruction site conditions. Implementation of the remedial activities will involve earth disturbance over an aggregate area of approximately 3.5 acres (Figure 2), which will require issuance of an SESCP Certification by the Hudson, Essex, Passaic County Soil Conservation District (HEPSCD) and a New Jersey Pollutant Discharge Elimination System Discharge to Surface Water General Permit for Construction Activity Stormwater (5G3) (NJ0088323).

The earth disturbance activities will generally involve shallow excavations to remove contaminants in the specific subsurface areas identified during site characterization activities. These areas include Soil Remediation (SR) areas SR-1 through SR-5. The locations of these remediation areas are shown on Sheet C-1. The excavation depths in the areas to be remediated will range from approximately one foot to approximately six feet below existing ground surface. Following completion of the excavations to remove contaminants, the disturbed areas will be graded to the pre-excavation lines and grades shown on Sheet C-1 and restored by installing the asphalt or gravel surface cover to match the existing pre-construction cover.

The format of this SESCP follows the requirements of the Soil Erosion and Sediment Control Act Rules, NJAC 2:90-1.4(a) through 2:90-1.4(g), as applicable and the requirements of the HEPSCD. It has been prepared based on preliminary design information and shall be refined, as necessary, upon completion of the final remedial design. Additionally, a site meeting with a representative of HEPSCD is strongly recommended before submittal of the SESCP.

HEPSCD Requirements per NJAC 2:90-1.4(a) through 2:90-1.4(g)

1. Application for SESCP Certification - 2:90 - 1.4(a)

Upon completion of the final remediation design, the Application for Soil Erosion and Sediment Control Plan Certification (Application) will be completed and submitted to HEPSCD for approval. This SESCP will be prepared by Shaw Environmental, Inc. (Shaw), a CB&I company, under the direction of Ronald W. Grapin, P.E., a New Jersey licensed engineer with experience in remediation projects that involve earth disturbance.

2. Required Information – Site Plan - 2:90 – 1.4(b)(1)

The required Site Plan is enclosed with this SESCP as Sheet C-1. The information required by 2:90-1.4(b)(1) is provided in the following sections:

The Location of Present and Proposed Drains and Culverts and their Discharge Capacities and Velocities and Supporting Computations and Identification of Conditions Below Outlets - 2:90 – 1.4(b)(1)(i)

There are no existing drains known to be on the property and no drains or culverts are proposed for installation during this remediation project. Any drains or culverts identified as part of the final remediation design will be included in the SESCP submittal along with discharge capacities and velocities and supporting computations and identification of conditions below outlets.

A Delineation of any Area Subject to Flooding from the 100-Year Storm in Compliance with the Flood Hazard Control Map - 2:90 – 1.4(b)(1)(ii)

Figure 3 is a map that shows the 100-year floodplain of the Hudson River as mapped by the Federal Emergency Management Administration. As shown on Figure 3, areas in which remediation will occur in the northern and eastern portions of the property are located within the special flood hazard area or floodway of the one percent annual flood chance.

A Delineation of Streams and Wetlands Pursuant to N.J.S.A. 13:9A-1 et seq. and 13:9B-1 et seq., and Other Significant Natural Features within the Project Area - 2:90 – 1.4(b)(1)(iii)

No mapped wetland areas are shown to be present at the site upon review of the NJDEP Geographic Information System. Figure 4 provides a map of Site 016 and the surrounding area indicating the presence of mapped wetlands located in the vicinity of the site. The map was developed using NJDEP Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not state-authorized.

Additionally, there are no streams or other significant natural features within the project area.

The Soils and Other Natural Resource Information Used - 2:90 – 1.4(b)(1)(iv)

Figure 5 is a Soil Map that identifies the type and distribution of soil units that are mapped for the site as indicated by the Natural Resource Conservation Service. No other natural resources have been identified or are known to exist on Site 016 property.

The Land Cover and Use of Area Adjacent to the Land Disturbance - 2:90 – 1.4(b)(1)(v)

Site 016 is located at 45 Linden Avenue East, Jersey City, Hudson County, New Jersey. The area around Site 016 is mainly industrial, commercial, and recreational. Site 016 is approximately 12.9 acres; the warehouse covers approximately 7.5 acres, a paved area (asphalt parking lot) covers approximately 2.0 acres, and the remaining 3.4 acres is unpaved area. Site 016 is bounded on the north by athletic fields and a drainage ditch, on the south by Linden Avenue, on the east by Site 112A and the Liberty National Golf Course, and on the west by Caven Point Road and the New Jersey Turnpike Extension.

Site 016 was originally part of the Upper New York Area, which is a large area (more than 5 acres) containing historic fill for industrial development, according to the New Jersey Geological Survey Historic Fill of the Jersey City Quadrangle (2004). The fill most likely came from material dredged by Morris & Cummings Dredging Company. A transformer house was previously located at Site 016. The east side of Site 016 was occupied by the Lehigh Valley Railroad (LVRR) Warehouse and the west side was occupied by a junk yard. The LVRR occupied the majority of the area in Site 016, as well as the area to the east of Site 016. Standard Oil reportedly occupied the area to the north of Site 016. The warehouse was constructed by Lawrence Construction and is currently used as a storage facility. It is unknown whether the warehouse was ever used to store hazardous waste or hazardous materials.

The topography of Site 016 and adjacent area is typical of the area with topographic elevation ranging between 5 and 10 feet above mean sea level. The pre-existing topography and natural drainage associated with Site 016 have been modified during development of the property for industrial/warehouse usage. The topography is depicted on Sheet C-1.

Surface drainage occurs as sheet flow runoff generally from the south-southwest to northnortheast towards the drainage channel bordering the site to the northeast.

The remediation project will occur entirely within the boundary of Site 016 such that no earth disturbance activities will occur on neighboring properties.

All Hydraulic and Hydrologic Data Describing Existing and Proposed Watershed Conditions and a Completed Copy of the Hydraulic and Hydrologic Data Base Summary Form SSCC251 HDF1 - 2:90 – 1.4(b)(1)(vi)

Hydraulic and hydrologic data for existing and proposed watershed conditions are contained in Appendix A. As storm water management basins are not required for this project given the hydraulic and hydrologic calculations, Form SSCC HDF1, which is used for storm water basin design, is not included with this SESCP. Appendix A contains the computer generated output for the hydraulic and hydrologic calculations using the computer program HydroCAD[®] Version 8.5. The table presented below contains a summary of the HydroCAD[®] pre-construction and post-construction total and peak flow rates and total runoff for the 2-year, 24-hour storm event; 10-year, 24-hour storm event; and 100-year, 24-hour storm event. As noted, the pre-construction grade and surface cover type will be restored following completion of remediation activities. Therefore, the calculation of pre- and post-construction flow and volume are anticipated to be approximately equivalent.

Total Pre	al Pre-Construction and Post-Construction Storm Water Runoff Calculations				
	Area 1 W	atershed	Area 2 W	atershed	
Storm Event	Pre-Construction Runoff Volume (af) ¹	Pre-Construction Peak Flow (cfs) ²	Pre-Construction Runoff Volume (af) ¹	Pre-Construction Peak Flow (cfs) ²	
2-year, 24-hour	0.746	12.13	0.098	2.18	
10-year, 24-hour	1.303	20.95	0.172	3.76	
100-year, 24-hour	1.746	27.99	0.230	5.02	

¹ af = acre feet.

 2 cfs = cubic feet per second.

3. Four Copies of the SESCP at the Same Scale as the Site Plan Submitted to the Municipality or Other Land Use Approval Agency which Includes the Following Information Detailed at the Plat – 2:90-1.4(b)(2)

HEPSCD requires a single set of signed and sealed plans for review and reference in lieu of the four copies requested in state regulations. The information requested under NJAC 2:90-1.4(b)(2), however, is consistent with HEPSCD and is provided below in the following sections.

The Proposed Sequence of Development Including Duration of Each Phase in the Sequence - 2:90 – 1.4(b)(2)(i)

A proposed general Sequence of Construction is contained in Appendix B. The Sequence of Construction will be refined and further detail provided for submittal of the SESCP to HEPSCD upon completion of the final remedial design.

A Site Grading Plan Delineating the Areas to be Disturbed Including Proposed Cut and Fill Areas Together with Existing and Proposed Profiles of these Areas - 2:90 – 1.4(b)(2)(ii)

Sheet C-1 in Appendix C shows the excavation plans and current topographic contours of the grade for the areas that will be remediated. Proposed soil erosion and sediment control measures

that will be implemented during the remediation activities are shown on this drawing. Sheet C-2 contains the requested profiles and also shows details for the installation of the soil erosion and sediment control measures. General notes and the sequence of construction related to the SESCP are shown on Sheet C-2.

A post-construction grading plan is not included as the pre-construction grade and surface cover type will be restored following completion of remediation activities.

Contours at a Two-Foot Interval, Showing Present and Proposed Ground Elevations - 2:90 – 1.4(b)(2)(iii)

Sheet C-1 represents the existing ground surface elevations have contour lines with an interval of one foot. The pre-construction grade and surface cover type will be restored following completion of remediation activities.

The Locations of All Streams and Existing and Proposed Drains and Culverts - 2:90 – 1.4(b)(2)(iv)

The location of the drainage channel located adjacent to the northeast of Site 016 is shown on Sheet C-1. There are currently no drains or culverts known to exist within the Limit of Disturbance for this activity and there are none proposed for installation.

A Stability Analysis of all Channels below all Points of Storm Water Discharge which Demonstrates that a Stable Condition will Exist or there will be no Degradation of the Existing Conditions - 2:90 – 1.4(b)(2)(v)

Currently, runoff from the project area is by sheet flow in all proposed remediation areas. As pre-construction grade and surface cover type will be restored following completion of remediation activities, no concentration of runoff flow will occur. Therefore, a stability analysis for points of storm water discharge was not conducted for Site 016.

The Location and Detail of all Proposed Erosion and Sediment Control Structures Including Profiles, Cross Sections, and Appropriate Notes, and Supporting Computations - 2:90 – 1.4(b)(2)(vi)

The locations of the soil erosion and sediment control structures are shown on Sheet C-1. These structures include a stabilized construction entrance and filter fabric fence. These structures are proposed given the minimal grades at Site 016. The details of the erosion and sediment control measure are shown on Sheet C-2 along with the general notes and the sequence of construction.

The Location and Detail of all Proposed Nonstructural Methods of Soil Stabilization Including Types and Rates of Lime, Fertilizer, Seed, and Mulch to be Applied - 2:90 – 1.4(b)(2)(vii)

This requirement is not applicable because vegetation is not an existing surface cover within the proposed Limit of Disturbance for the Site 016 remediation activity and is not proposed as a final stabilization measure. Therefore, location or detail for vegetative soil stabilization is not included.

Erosion Control Measures for Non-Growing Season Stabilization of Exposed Areas where the Establishment of Vegetation is Planned as the Final Control Measure - 2:90 – 1.4(b)(2)(viii)

This requirement is not applicable because vegetation is not an existing surface cover within the proposed Limit of Disturbance for the Site 016 remediation activity and is not proposed as a final stabilization measure. Therefore, erosion control measures for non-growing season stabilization of exposed areas are not included.

For Residential Development, Erosion Control Measures which Apply to Dwelling Construction or Individual Lots with Notation on the Final Plat that Requirement for Installation of Such Control Measures shall Apply to Subsequent Owners if Title is Conveyed - 2:90 – 1.4(b)(2)(ix)

This requirement is not applicable because the remediation project does not involve the construction of residential dwellings.

Plans for Maintenance of Permanent Soil Erosion and Sediment Control Measures and Facilities During and After Construction, which Include the Designation of Persons or Entity Responsible for Such Maintenance - 2:90 – 1.4(b)(2)(x)

The erosion and sediment control measures that will be installed are temporary rather than permanent. Therefore, after the site has been stabilized and certified as such by the HEPSCD, all temporary erosion and sediment control measures will be removed and properly disposed at a landfill permitted to accept these materials.

4. Ownership Disclosure Affidavit Form - 2:90 – 1.4(b)(3)

The Ownership Disclosure Affidavit Form will be completed and submitted upon completion of the final SESCP.

5. Appropriate Fees - 2:90 – 1.4(b)(4)

The application fee of \$1,125 is estimated to be required for submittal of the SESCP based on the HEPSCD Fee Schedule effective April 1, 2013. The actual application fee will be calculated based on the final remedial design and submitted to HEPSCD with the SESCP.

6. Additional Information as May be Required by the District Depending upon the Scope Topography and Complexity of the Project – 2:90 – 1.4(b)(5)

The project involves site remediation that is being performed at Site 016 under the auspices of the NJDEP. All earth disturbance activities associated with this remediation project will comply with the requirements of NJAC 2:90.

7. Applicant Certifications – 2:90 – 1.4(c)

2:90 - 1.4(c)(1) This is to certify that all erosion and sediment control measures are designed in accordance with current Standards for Erosion and Sediment Control in New Jersey as promulgated by the Committee and found at NJAC 2:90-1.3 and will be installed in accordance with the plans as approved by HEPSCD.

2:90 - 1.4(c)(2) Only non-structural measures are proposed for erosion and sediment control measures for this project.

2:90 - 1.4(c)(3) This is to certify that PPG Industries, Inc. (PPG) will retain full responsibility for any damages which may result from any construction activity notwithstanding district certification of the SESCP.

2:90 - 1.4(c)(4) This is to certify that all engineering related items of this SESCP have been prepared under the direction of and have been sealed by a professional engineer licensed in the State of New Jersey in accordance with NJAC 13:27-6.

2:90 - 1.4(c)(5) This is to certify that any conveyance of the project or portion thereof to a subsequent owner shall include transfer of full responsibility for compliance with the certified SESCP.

2:90 - 1.4(c)(6) This is to certify that a copy of the certified SESCP shall be maintained on the project site during construction.

2:90 - 1.4(c)(7) This is to certify that PPG and any agents acting on behalf of PPG will allow HEPSCD agents and representatives on the project lands for the purpose of performing an inspection through the course of the project and after completion of the project.

2:90 - 1.4(c)(8) This is to certify that PPG or any agent acting on behalf of PPG will notify HEPSCD in writing at least 48 hours in advance of any land disturbance activity and upon completion of the remediation project.

8. Notarized Authorization - 2:90 – 1.4(d)

A notarized authorization indicating that Shaw was authorized to prepare this SESCP on behalf of PPG will be included in the final SESCP submittal.

9. Exemption Request – 2:90 – 1.4(e)

This remediation project does not meet the requirements for an exemption request. Therefore, an exemption is not being requested.

10. Initially Exempt Land Disturbance Activity that Subsequently Falls within the Definition of a Project Shall be Subject to the Rules of this Subchapter – 2:90 – 1.4(f)

This remediation project is not seeking an exemption under the rules of this subchapter.

11. Any Application for Development for a Project that was Approved by the State, any County, Municipality, or any Instrumentality thereof, without the Condition that the Application for Development Comply with the Act Pursuant to N.J.S.A. 4:24-43 and this Subchapter, shall not be Relieved of the Obligations to Conform to the Act and this Subchapter – 2:90 – 1.4(g)

PPG acknowledges this regulatory requirement, will comply with it, and will ensure that any successors in title to this project also comply with this regulatory requirement.

Figures





1 in = 400 ft

Shaw Environmental, Inc. (A CB&I Company) 2790 Mosside Boulevard Monroeville, PA 15146

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Project Area

FIGURE

2

B



Boundary

Project Area

1 in = 1,500 ft

Source: FEMA Coordinate System: GCS NAD 1983 StatePlane NJ Date Saved: 3/28/2013 Document Path: G:\PPG\GIS_Documents\Project_Maps\Site016\Fig3_100yrFlood_Site016.mxd PPG Industries, Inc. Site 016

100 Year Flood



FIGURE

Shaw Environmental, Inc. (A CB&I Company) 2790 Mosside Boulevard Monroeville, PA 15146 www.CBI.com



Herbaceous Wetlands

Boundary

Project Area

1 in = 425 ft Source: New Jersey Department of Environmental Protection Coordinate System: GCS NAD 1983 StatePlane NJ Date Saved: 3/28/2013 Document Path: G:\PPG\GIS_Documents\Project_Maps\Fig4_Wetlands.mxd

PPG Industries, Inc.



Monroeville, PA 15146 www.CBI.com



Appendix A

Hydrology and Hydraulic Calculations

Hydraulic and Hydrologic Data Summary Site 016 Remediation Project Jersey City, Hudson County, New Jersey

Purpose

To determine the storm water runoff for the Site 016 Remediation Project located in Hudson County, New Jersey.

References

- New Jersey Department of Transportation Soil Erosion and Sediment Control Standards 2008 Edition
- Hudson County, New Jersey, Custom Soil Resource Report (U.S. Department of Agriculture)
- TR-55 (Urban Hydrology for Small Watersheds)
- HydroCAD[®] Version 8 Storm Water Modeling System
- Technical Release Paper 40 (Rainfall Frequency Atlas of the United States)

Runoff Calculations

Runoff calculations for existing site conditions were performed utilizing the HydroCAD[®] Version 8 Storm Water Modeling System. This version of the program was released in 2006. A summary of input information is presented below.

Input	Value	Comments
Storm Event (inches): - 2 year – 24 hour - 10 year – 24 hour - 100 year – 24 hour	3.5" 6.0" 8.0"	Technical Release Paper No. 40
Storm Type	II	TR-55
Curve Number (CN)	98	Paved parking & roofs - Impervious
Manning's Number (n): - Sheet Flow	0.011	Smooth Surfaces
Velocity Factors : - Shallow Concentrated	20.3	Paved

Tahlo	1٠	Storm	Wator	Runoff	Calcula	ations	Innute
able	١.	Storm	water	RUHUH	Calcula	1110115	inputs

The following areas that were used in the computations are shown on the site plan included in Appendix A. These areas were determined by the site's pre-construction gradation and include the following watersheds:

- Area 1 Watershed = 129,266 square feet
- Area 2 Watershed = 17,032 square feet

The main building was not taken into consideration in the model given that storm water runoff from roof drains and downspouts is assumed to be drained directly into an existing off-site storm water drainage system.

Flows were determined using the 2-year, 10-year, and 100-year 24-hour storm events as interpreted for the local area from the Technical Release Paper 40 (Rainfall Frequency Atlas of the United States) as shown in Appendix B.

Storm Water Runoff Volumes and Peak Flows

The results of the storm water runoff calculations are summarized in the tables presented below The computer-generated HydroCAD[®] Version 8 Storm Water Modeling System outputs are provided in Appendix C.

Watershed	Runoff Volume (acre-feet)	Peak Flow (cfs)*
Area 1 Watershed	0.746	12.13
Area 2 Watershed	0.098	2.18
TOTAL	0.844	14.31

Table 2: 2-Year, 24-Hour Storm Event

Table 3: 10-Year, 24-Hour Storm Event

Watershed	Runoff Volume (acre-feet)	Peak Flow (cfs)*
Area 1 Watershed	1.303	20.95
Area 2 Watershed	0.172	3.76
TOTAL	1.475	24.71

Table 4: 100-Year, 24-Hour Storm Event

Watershed	Runoff Volume (acre-feet)	Peak Flow (cfs)*
Area 1 Watershed	1.746	27.99
Area 2 Watershed	0.230	5.02
TOTAL	1.976	33.01

*cfs – cubic feet per second.

Summary

The HydroCAD[®] Version 8 Storm Water Modeling System was used to compile storm water runoff and peak flow data for the pre-construction conditions at Site 016. The resulting pre-construction volume and flow values are assumed to be representative of post-construction conditions given that the preliminary design includes site restoration to existing grade utilizing the same surface cover types. Therefore, the proposed soil remediation is not anticipated to alter the storm water flow characteristics of the site following completion of the excavation and site restoration activities.

Appendix A: Site Plan





Appendix B: Technical Release Paper 40 (Rainfall Frequency Atlas of the United States)



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Chart 46

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UD44 17

Appendix C: HydroCAD[®] Output



Area Listing (all nodes)

Area	CN	Description
(acres)		(subcatchment-numbers)
3.359	98	Water Surface (1S,2S)
3.359		TOTAL AREA

Soil Listing (all nodes)

Area	Soil	Subcatchment
(acres)	Goup	Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
3.359	Other	1S, 2S
3.359		TOTAL AREA

Linden Ave, Hudson County NJ	Type II 24-hr 2 year Rainfall=3.50"
Prepared by {enter your company name here}	Printed 3/13/2013
HydroCAD® 8.50 s/n 005172 @ 2007 HydroCAD Software Solutions LLC	Page 4

nted 3/13/2013 Page 4

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points Runoff by SCS TR-20 method, UH=SCS Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=129,266 sf 100.00% Impervious Runoff Depth>3.02" Flow Length=723' Tc=11.7 min CN=98 Runoff=12.13 cfs 0.746 af
Subcatchment 2S: Area 2	Runoff Area=17,032 sf 100.00% Impervious Runoff Depth>3.02" Flow Length=50' Slope=0.0400 '/' Tc=0.5 min CN=98 Runoff=2.18 cfs 0.098 af

Total Runoff Area = 3.359 ac Runoff Volume = 0.844 af Average Runoff Depth = 3.02" 0.00% Pervious = 0.000 ac 100.00% Impervious = 3.359 ac

Summary for Subcatchment 1S: Area 1

	Runoff	=	12.13 cfs @	12.03 hrs, Volume=	0.746 af, Depth>	3.02'
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Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 2 year Rainfall=3.50"

_	A	rea (sf)	CN E	Description		
_	1	29,266	98 V	Vater Surfa	ace	
	1	29,266	lr	npervious	Area	
	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	2.5	150	0.0067	1.01		Sheet Flow, Sheet Flow
	9.2	573	0.0026	1.04		Smooth surfaces n= 0.011 P2= 3.50" Shallow Concentrated Flow, Shallow Concentrated Paved Kv= 20.3 fps
_	11.7	723	Total			

Subcatchment 1S: Area 1



Summary for Subcatchment 2S: Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 2.18 cfs @ 11.89 hrs, Volume=

0.098 af, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 2 year Rainfall=3.50"



Linden Ave, Hudson County NJ	Type II
Prepared by {enter your company name here}	
HydroCAD® 8.50 s/n 005172 © 2007 HydroCAD Software Solutions LLC	2

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points Runoff by SCS TR-20 method, UH=SCS Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=129,266 sf 100.00% Impervious Runoff Depth>5.27" Flow Length=723' Tc=11.7 min CN=98 Runoff=20.95 cfs 1.303 af
Subcatchment 2S: Area 2	Runoff Area=17,032 sf 100.00% Impervious Runoff Depth>5.27" Flow Length=50' Slope=0.0400 '/' Tc=0.5 min CN=98 Runoff=3.76 cfs 0.172 af

Total Runoff Area = 3.359 ac Runoff Volume = 1.474 af Average Runoff Depth = 5.27" 0.00% Pervious = 0.000 ac 100.00% Impervious = 3.359 ac

Summary for Subcatchment 1S: Area 1

Runoff = 20.95 cfs @ 12.03 hrs, Volume= 1.303 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 10 year Rainfall=6.00"

	A	rea (sf)	CN D	Description		
	1	29,266	98 V	Vater Surfa	ace	
,	1	29,266	ıl	mpervious	Area	
(Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	2.5	150	0.0067	1.01		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 3.50"
	9.2	573	0.0026	1.04		Shallow Concentrated Flow, Shallow Concentrated Paved Kv= 20.3 fps
	11.7	723	Total			

Subcatchment 1S: Area 1



Summary for Subcatchment 2S: Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 3.76 cfs @ 11.89 hrs, Volume=

0.172 af, Depth> 5.27"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 10 year Rainfall=6.00"



Linden Ave, Hudson County NJ	Type II 24-hr 100 year Rainfall=8.00"
Prepared by {enter your company name here}	Printed 3/13/2013
HydroCAD® 8.50 s/n 005172 © 2007 HydroCAD Software Solutions L	LC Page 10

Page 10

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points Runoff by SCS TR-20 method, UH=SCS Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Area 1	Runoff Area=129,266 sf 100.00% Impervious Runoff Depth>7.06" Flow Length=723' Tc=11.7 min CN=98 Runoff=27.99 cfs 1.746 af
Subcatchment 2S: Area 2	Runoff Area=17,032 sf 100.00% Impervious Runoff Depth>7.06" Flow Length=50' Slope=0.0400 '/' Tc=0.5 min CN=98 Runoff=5.02 cfs 0.230 af

Total Runoff Area = 3.359 ac Runoff Volume = 1.976 af Average Runoff Depth = 7.06" 0.00% Pervious = 0.000 ac 100.00% Impervious = 3.359 ac

Summary for Subcatchment 1S: Area 1

Runoff = 27.99 cfs @ 12.03 hrs, Volume= 1.746 af, Depth> 7.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 100 year Rainfall=8.00"

	A	rea (sf)	CN E	Description		
	1	29,266	98 V	Vater Surfa	ace	
	1	29,266	1l	mpervious	Area	
-	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	2.5	150	0.0067	1.01		Sheet Flow, Sheet Flow Smooth surfaces n= 0.011 P2= 3.50"
	9.2	573	0.0026	1.04		Shallow Concentrated Flow, Shallow Concentrated Paved Kv= 20.3 fps
	11.7	723	Total			

Subcatchment 1S: Area 1



Summary for Subcatchment 2S: Area 2

[49] Hint: Tc<2dt may require smaller dt

Runoff = 5.02 cfs @ 11.89 hrs, Volume=

0.230 af, Depth> 7.06"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs Type II 24-hr 100 year Rainfall=8.00"



Appendix B: Technical Release Paper 40 (Rainfall Frequency Atlas of the United States)

Appendix B

Proposed Sequence of Construction

Appendix B Preliminary Construction Sequence Site 016 Remediation Project Jersey City, Hudson County, New Jersey April 2013

Chronological Timeline (Days)	Activity			
-4	Call New Jersey One Call (811) for subsurface utility location.	1		
-2	Submit Start Notice to HEPSCD.	1		
0-1	Construct Stabilized Construction Entrance.	1		
1-3	Install silt fence adjacent to Soil Remediation areas SR-1, SR-2, and SR-3 as shown on the soil erosion and sediment control plans.	2		
3-4	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-1 and live load soil into trucks for transportation to off-site disposal location.	1		
4-5	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-2 and live load soil into trucks for transportation to off-site disposal location.	1		
5-6	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-3 and live load soil into trucks for transportation to off-site disposal location.	1		
3-6	Backfill Soil Remediation areas SR-1, SR-2, and SR-3 and grade to proposed subgrade elevations	4		
6	Install silt fence adjacent to Soil Remediation area SR-4 as shown on the soil erosion and sediment control plans.	1		
7-37	Excavate impacted soil at SR-4 progressing from northeast to southwest and live load soil into trucks for transportation to off-site disposal location. Asphalt surface cover to be stripped as excavation progresses northeast to southwest to minimize soil contact and track out.	30		
10-40	Backfill Soil Remediation area SR-4 and grade to proposed subgrade elevations.	30		
40-41	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-5 and live load soil into trucks for transportation to off-site disposal location.	1		
41	Backfill Soil Remediation area SR-5 and grade to proposed subgrade elevations.	1		
41-45	Restore surface cover at Soil Remediation areas SR-1 through SR-5 to pre- construction grade elevations.	4		
45	Schedule Final Inspection with HEPSCD to obtain Report of Compliance.	1		
60-62	Receive HEPSCD Report of Compliance. Remove silt fence and stabilized construction entrance.	3		

Appendix C

Drawings



U.S.G.S. TOPOGRAPHIC MAP, 7.5 MINUTE SERIES; JERSEY CITY, NEW JERSEY-NEW YORK DUADRANGLE, DATED 1967

146492-T

DRAWING NUMBER

SITE LOCATION MAP

SOIL EROSION AND SEDIMENT CONTROL PLAN PPG INDUSTRIES, SITE 016 LINDEN AVENUE, HUDSON COUNTY, NEW JERSEY

PREPARED FOR **PPG INDUSTRIES, INC.** JERSEY CITY, NEW JERSEY

	INDEX	OF DRAWINGS	
CB&I DRAWING NUMBER	SHEET REFERENCE NUMBER	DESCRIPTION	
146492-T1	T-1	TITLE SHEET	
146492-D1	C-1	SITE PLAN	

DETAILS

C-2

146492-D2

Lincoln Park Paterson Sadd	le Mt Vernon
ton Woodland Brook	Englewood Polham
Fairfield Little Park Garfield	d Hackaneach
Falls Clifton	Hackensack
46 North Caldwell - W Passaic	Ridgefield High Fastchester Sands
Caldwell Cedar East	Bridge
East Grove Rutherford	Ridgerield // Park / Mar
Hanover Fells Montclair	Cliffside Park Point
West Orange Belleville	North Bergen 678 Plandom
rham Livingston Bloomfield	West New York
Brk Fact Orange Kearny Weeha	wken
East Orange Reamy	Lake
Last Newark	Hoboken
Maplewood Newark	Meadows-
w Summit Irvington Inrev Cit	Corona Park Bellerose
lence_Springfield Hillside	INCOMENT AND Hem
TIMISIGE	York
inside Kenilworth Flizabeth Bayonn	
estfield Roselle	ner New Linden B
Garwood	rk Bay
Clark	lamaica Rockawa
ainfield Rahway BALLALON	Bay Lawrence
	Bear
uth Plainfield	Atlantic Beach
Port Reading	UIK Day
Sewaren D. Great	Limit and the second
Metuchen (9) Kills Park	
Edison	i
Perth Amboy	i
Brunswick Raritan	Catalan
Amboy Bay	National
Sayreville	Pocreation
	Area
Union Konschurg	Alea
<u>REFERENCE:</u>	





CB	Shaw Environmental, Inc. (A CB&I Company)			
DESIGNED BY:				
J. Fronczek	+	TITLE SHEET SOIL EROSION AND SEDIMENT CONTROL PLAN SITE 016		
DRAWN BY:				
E. Schlegel	SOIL E			
CHECKED BY:				
J. Fronczek	LINDEN AVENUE HUDSON COUNTY, NEW JERSEY			
APPROVED BY:	DATE:	SCALE:	DRAWING NO.	SHEET NO.
	3/13/13	AS SHOWN	146492-T1	T-1
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	SITE 016 BOUNDARY
	REMEDIATED AREA WITH NO FURTHER ACTION ("NFA") DETERMINATION
	REMEDIATED – PENDING NJDEP RESPONSE
SR-1	AREAS REQUIRING REMEDIATION
19199999	STONE CONSTRUCTION ENTRANCE
SF	SILT FENCE

LIMITS OF DISTURANCE

SILT FENCE ON PAVEMENT

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. All soil erosion and sediment control practices on this plan will be constructed in accordance with the <u>"New Jersey Standards for Soil Erosion and Sediment Control"</u> last revised July 1999. These measures will be installed prior to any major soil disturbance or in their proper sequence and maintained until permanent protection is established.

2. All soil to be exposed or stockpiled for a period of greater than 60 days, and not under active construction, will be temporarily seeded and hay mulched or otherwise provided with vegetative cover. This temporary cover shall be maintained until such time whereby permanent restabilization is established.

3. <u>Seeding Dates:</u> The following seeding dates are best recommended to establish permanent vegetative cover within most locations in the HEPSCD: <u>Spring - 3/1-5/15</u> and Fall - 8/15 - 10/1

4. Sediment fences are to be properly trenched and maintained until permanent vegetative cover is established

5. All storm drainage inlets shall be protected by one of the practices accepted in the Standards, and protection shall remain until permanent stabilization has been established. Storm drainage outlet points shall be protected as required before they become functional.

6. Mulch materials shall be un-rotted salt hay or small grain straw applied at the rate of 70-90 pounds per 1000 square feet (1.5-2.0 tons/acre). Additional required mulch practices are prescribed in the Standards.

7. All erosion control devices shall be periodically inspected, maintained and corrected by the contractor. Any damage incurred by erosion shall be rectified immediately.

8. The Hudson-Essex-Passaic Soil Conservation District will be notified in writing at least 48 hours prior to any soil disturbing activities. Fax - (973) 364-0784 email - INFORMATION@HEPSCD.ORG

9. The applicant must obtain a District issued Report-of-Compliance prior to applying for the Certificate of Occupancy or Temporary Certificate of Occupancy from the respective municipality, NJ - DCA or any other controlling agency. Contact the District at 973-364-0786 to request a Final Inspection, giving advanced notice upon completion of the restabilization measures. A performance deposit may be posted with the District when winter weather or snow cover prohibits the proper application of seed, mulch, fertilizer or hydro-seed.

10. Paved roadways must be kept clean at all times. Do not utilize a fire or garden hose to clean roads unless the runoff is directed to a properly designed and functioning sediment basin. All pump dewatering operations shall be directed toward a functioning sediment basin.

11. All surfaces are to be provided with 6 inches of topsoil prior to re-seeding.

12. All plan revisions must be submitted to the District for proper review and approval.

13. A crushed stone wheel cleaning tracking-pad is to be installed at all site exits using 2 1/2" crushed stone to a minimum length of 50 feet. All driveways must be provided with crushed stone until paving is complete.

14. Maximum soil slopes shall not exceed 2:1 unless additional measures are taken and approved by the Soil Conservation District. These "special" measures shall be designed by the applicant's engineer.

15. The Hudson-Essex-Passaic Soil Conservation District shall be notified, in writing, for the sale of any portion of the project or for the sale of individual lots. New owners' information shall be provided. Additional measures deemed necessary by District officials shall be implemented as conditions warrant.



Shaw Environmental, Inc. (A CB&I Company)

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DESIGNED BY:					
J. Fronczek	HUDSON COUNTY, NEW JERSEY				
DRAWN BY:					
E. Schlegel	SITE PLAN SOIL EROSION AND SEDIMENT CONTROL PLAN				
CHECKED BY:	SITE 016				
J. Fronczek	LINDEN AVENUE HUDSON COUNTY, NEW JERSEY				
APPROVED BY:	DATE:	SCALE:	DRAWING NO.	SHEET NO.	
	3/13/13	AS SHOWN	146429-D1	C-1	

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APPENDIX B Preliminary Construction Sequence Site 016 Remediation Project Jersey City, Hudson County, New Jersey

March 20	13

Chronological Timeline (Days)	Activity	Duration (Days)
-4	Call New Jersey One Call (811) for subsurface utility location	1
-2	Submit Start Notice to HEPSCD	1
0-1	Construct Stabilized Construction Entrance	1
1-3	Install silt fence adjacent to Soil Remediation areas SR-1, 2 and 3 as shown on the Soil Erosion and Sediment Control plans.	2
3-4	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-1 and live load soil into trucks for transportation to offsite disposal location.	1
4-5	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-2 and live load soil into trucks for transportation to offsite disposal location.	1
5-6	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-3 and live load soil into trucks for transportation to offsite disposal location.	1
3-6	Backfill Soil Remediation areas SR-1, 2 and 3 and grade to proposed subgrade elevations	4
6	Install silt fence adjacent to Soil Remediation area SR-4 as shown on the Soil Erosion and Sediment Control plans.	1
7-37	Excavate impacted soil at SR-4 progressing from northeast to southwest and liveload soil into trucks for transportation to offsite disposal location. Asphalt surface cover to be stripped as excavation progresses northeast to southwest to minimize soil contact and track out.	30
10-40	Backfill Soil Remediation area SR-4 and grade to proposed subgrade elevations	30
40-41	Remove existing asphalt surface cover in area of excavation. Excavate impacted soil at SR-5 and live load soil into trucks for transportation to offsite disposal location.	1
41	Backfill Soil Remediation area SR-5 and grade to proposed subgrade elevations	1
41-45	Restore surface cover at Soil Remediation areas SR-1 through SR-5 to pre- construction grade elevations.	4
45	Schedule Final Inspection with HEPSCD to obtain Report of Compliance	1
60-62	Receive HEPSCD Report of Compliance. Remove silt fence and stabilized construction entrance	3

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Shaw Environmental, Inc. (A CB&I Company)				
DESIGNED BY:				
J. Fronczek	HUDSON COUNTY, NEW JERSEY			
DRAWN BY:				
E. Schlegel	DETAILS SOIL EROSION AND SEDIMENT CONTROL PLAN			
CHECKED BY:	SITE 016			
J. Fronczek	LINDEN AVENUE HUDSON COUNTY, NEW JERSEY			
APPROVED BY:	DATE:	SCALE:	DRAWING NO.	SHEET NO.
	3/13/13	AS SHOWN	146429-D2	C-2

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