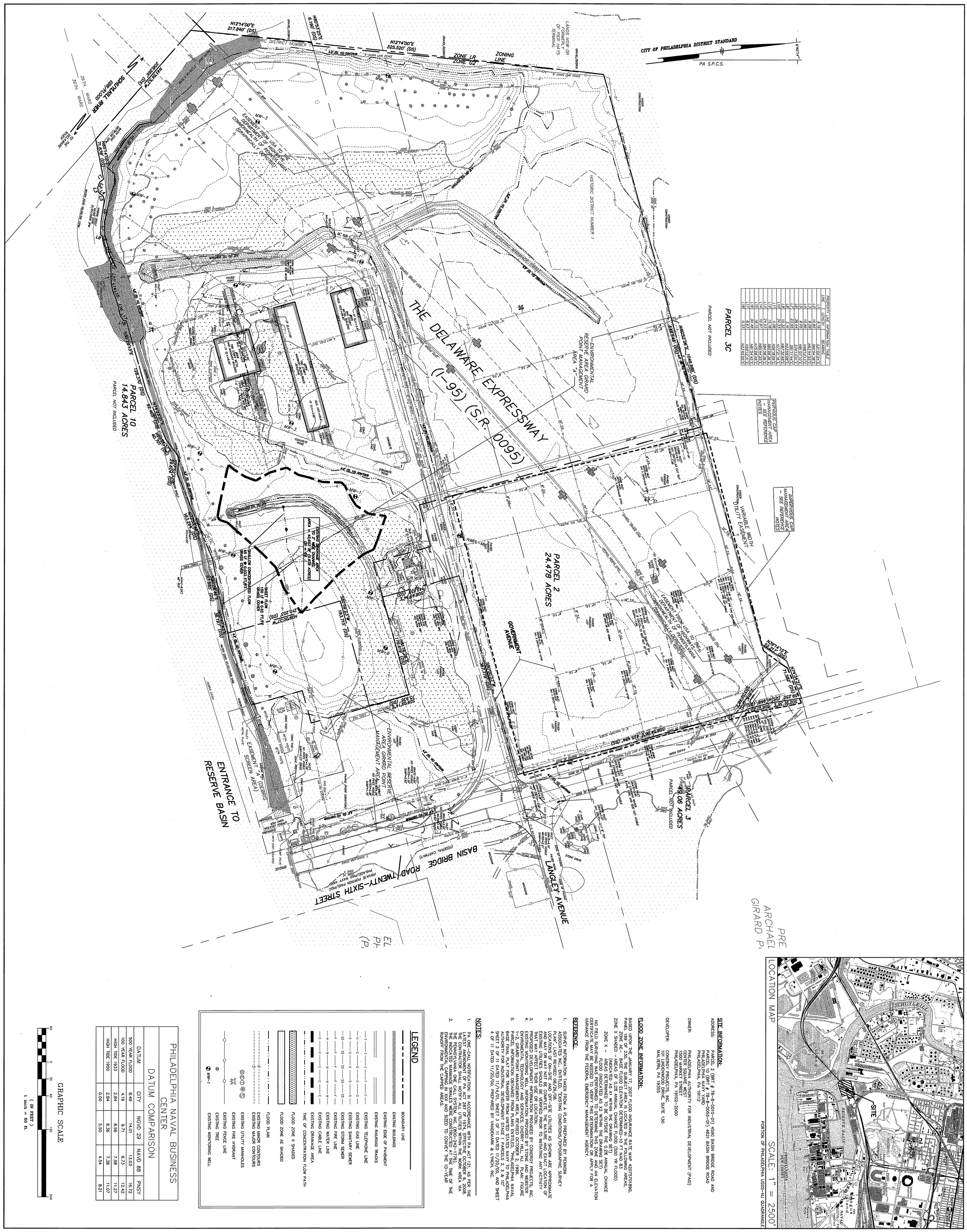
Appendix 1



PROPERTY LINE INFORMATION TABLE		
LINE	LENGTH	BEARING
L1	8.19	S31°00'24"E
L2	10.82	S80°54'38"E
L3	8.09	N83°44'55"E
L4	10.96	N48°12'13"E
L5	8.00	N17°17'10"E
L6	38.44	S81°11'07"E
L7	23.55	S81°11'44"E
L8	3.16	N23°09'08"E
L9	10.32	N87°30'48"E
L10	34.33	N77°27'16"E
L11	15.18	S85°08'38"E
L12	15.18	S85°08'38"E
L13	24.53	S84°58'35"E
L14	10.97	N85°44'52"E
L15	18.15	N75°28'43"E
L16	10.36	N75°28'43"E
L17	8.63	N85°32'13"E
L18	5.33	N23°45'05"E

SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01) 4590 BASIN BRIDGE ROAD AND PARCEL 10 (BRT # 78-8-0055-01) 4621 BASIN BRIDGE ROAD PHILADELPHIA NAVY YARD PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID) CENTER SQUARE WEST 1500 MARKET STREET PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC. 101 LINDENWOOD DRIVE, SUITE 130 MALVERN, PA 19355

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 42075701896, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,
ZONE AE- BASE FLOOD ELEVATION DETERMINED-10 FT NAD 83
ZONE X SHADED - AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD)
ZONE X - (INDICATED AS X1 WITHIN THE DRAWING SET) AREAS OUTSIDE OF 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)
NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

REFERENCE:

1. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
2. LOCATIONS OF ON-SITE AND OFF-SITE UTILITIES AS SHOWN ARE APPROXIMATE AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EACH SHOULD BE ASCERTAINED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
3. PROPOSED DEVELOPMENT INFORMATION PROVIDED BY CONERGY PROJECTS, INC.
4. EXISTING MONITORING WELL INFORMATION PROVIDED BY STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES, CHERRY HILL, NJ. PLAN: FIGURE 1-2, GIRARD POINT MANAGEMENT AREA, REVISED OCTOBER 2, 1996.
5. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE I PARCELS 2, 3 & 10" DATED 11/20/00, AND SHEET 3 OF 11 DATED 11/20/00, PREPARED BY VANDERMARK & LYNCH, INC.

NOTES:

1. PA. ONE-CALL NOTIFICATION: IN ACCORDANCE WITH PA ACT 121, AS PER THE UTILITY LINE PROTECTION ACT, EFFECTIVE OCTOBER 6, 2008, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776).
2. THE INDICATED MANMADE SWALES WERE CONSTRUCTED AT THE TIME OF THE ENVIRONMENTAL CAPPING IN XXX AND SIZED TO CONVEY THE 10-YEAR RUNOFF FROM THE CAPPED AREAS.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- EXISTING RAILROAD TRACKS
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING FIRE LINE
- EXISTING WATER LINE
- EXISTING CABLE LINE
- EXISTING DRAINAGE AREA
- TIME OF CONCENTRATION FLOW PATH
- FLOOD ZONE X SHADED
- FLOOD ZONE AE SHADED
- FLOOD PLAIN
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS
- EXISTING UTILITY MANHOLES
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING TREE
- MW-1 EXISTING MONITORING WELL

PHILADELPHIA NAVAL BUSINESS CENTER DATUM COMPARISON

DATUM	CITY	NGVD 29	NAVD 88	PNSY
500 YEAR FLOOD	8.49	14.01	13.03	16.72
100 YEAR FLOOD	4.19	9.71	8.73	12.42
HIGH TIDE 1933	2.84	8.56	7.58	11.27
HIGH TIDE 1950	0.00	5.50	4.54	8.21

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

LOCATION MAP

SCALE: 1" = 2500'

PORTION OF PHILADELPHIA USGS-NJ QUADRANGLE

Pennoni Associates Inc.

One Drexel Plaza, 3001 Market Street
Philadelphia, PA 19104

Engineers • Surveyors • Planners • Landscape Architects

PHOTOVOLTAIC FACILITY–PHILADELPHIA NAVAL YARD PARCELS 2 & 10

4590 BASIN BRIDGE ROAD AND 4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD – PHILADELPHIA, PA 19112

EXISTING CONDTIONS PLAN

CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

PATRICK M. FOLEY
ENGINEER
No. PE-070573
PENNSYLVANIA

DATE	NO.	REVISIONS	BY
02/18/11	3	PERMIT SUBMISSION	SMD
07/29/10	2	PERMIT SUBMISSION	JKI
07/21/10	1	PRELIMINARY ISSUANCE	JKI

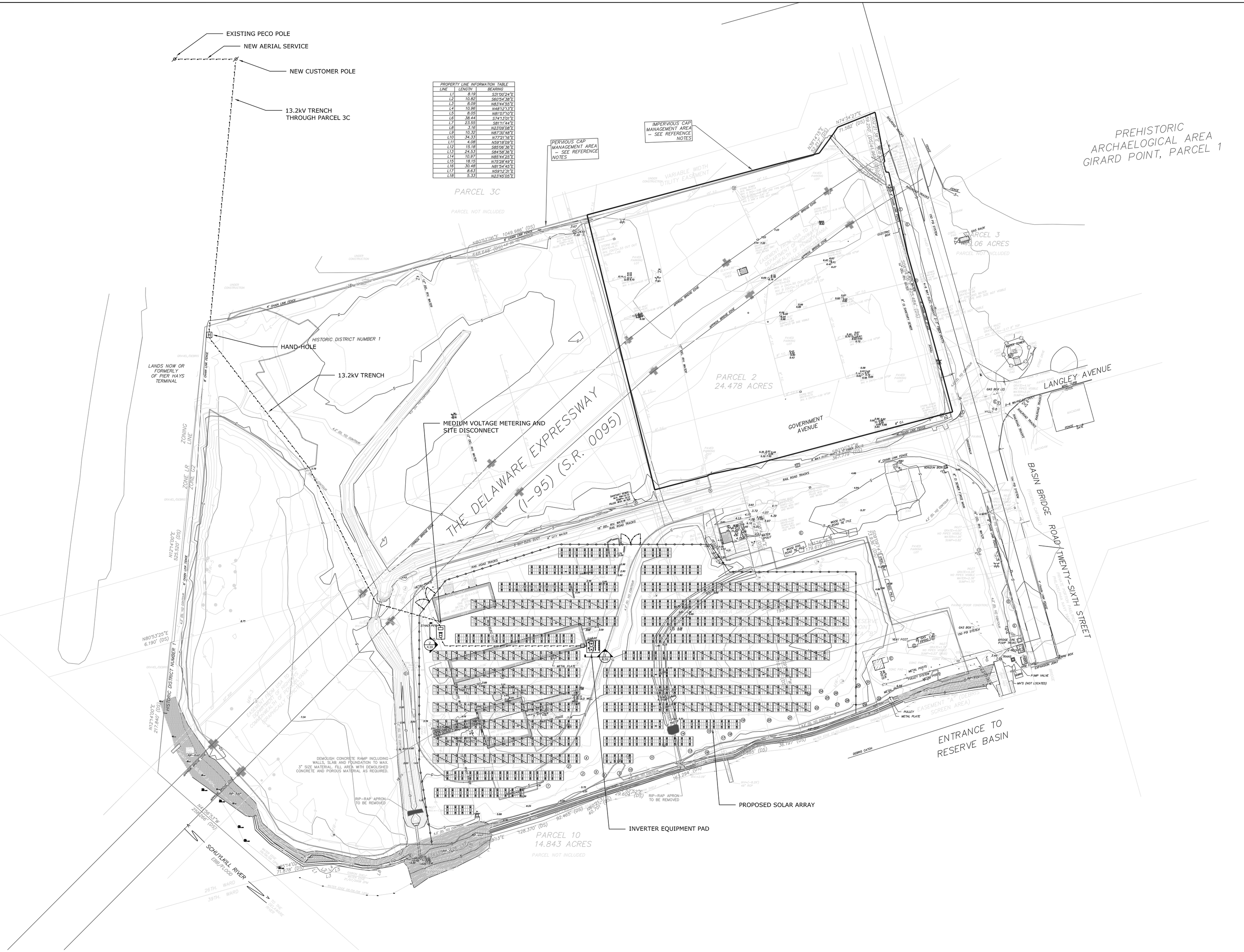
Pennoni

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

SCALE	1"=60'
DRAWN BY	J.M.D.
DATE	06/09/10
APPROVED	PMF
DRAWING NO.	CS-0201

EPUR 0801

SHEET 1 OF 10



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L5	8.05	N81°07'10"E
L6	38.44	S74°13'01"E
L7	23.55	S81°11'44"E
L8	3.16	N23°09'08"E
L9	10.72	N87°30'48"E
L10	34.33	N77°21'16"E
L11	4.08	N59°18'09"E
L12	15.18	S85°06'36"E
L13	24.53	S84°58'36"E
L14	10.97	N85°44'25"E
L15	18.15	N75°28'49"E
L16	30.48	N81°54'45"E
L17	8.63	N59°12'31"E
L18	5.33	N23°55'55"E

1 OVERALL SITE PLAN
SCALE: 1" = 75'-0"

ENGINEERS STAMP:

GENERAL NOTES:

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REV	DATE	DESCRIPTION	BY	CHKD	APPR	APPR
A	TBD	RELEASE FOR PERMIT	COK			
1	01/04/2011	CREATED	COK			

REVISIONS

REFERENCED MODEL FILES:
FILENAME

CONERGY
CONERGY PROJECTS GROUP
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA, 19355
TEL: (610) 251-3800
FAX: (866) 436-6114

CONSULTANT PROJ. NO.
CONSULTANT DWG. NO. PV 1.00

4590 BASIN BRIDGE ROAD
PHILADELPHIA, PA, 19112-1607

CONFIDENTIAL
THIS DRAWING IS THE PROPERTY OF CONERGY PROJECTS, INC. THE INFORMATION CONTAINED HEREON MAY NOT BE USED OR DUPLICATED IN ANY MANNER WITHOUT WRITTEN PERMISSION BY OWNER.

FACILITY NAME: PHILADELPHIA NAVAL YARD
FACILITY LOCATION: PHILADELPHIA, PA
CONERGY PROJECT NO. EXELON-CONERGY SOLAR CENTER II

OVERALL SITE PLAN

SIZE: D
DRAWING NO.: PV 1.0
REV.: A
FILENAME:
SCALE:
SHEET 3 OF 17

Appendix 2

Site Photographs

1. "Birds Eye View" of the Project Site.

2. Ground View of the Project Sitefrom the Southwest looking to the Northeast

3. Vegetation currently on Project Site, looking South

4. Ground View of the Project Site from the Northeast looking to the Southwest

5. Southwestern part of the Project Site

6. Southeastern part of the Project Site

7. Northwestern part of the Project Site

8. Northern part of the Project Site

9. Existing inlet at man made swale

Appendix 3

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

23 August 2010

Andy Welsh
Conergy
101 Lindenwood Drive
Suite 130
Malvern, PA 19355

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

RE: ER# 10-1539-101-C
DOE: Exelon-Conergy Solar Center II Project, Philadelphia Naval Ship Yard, Philadelphia

Dear Mr. Welsh:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999 and 2004. These regulations require consideration of the project's potential effect upon both historic and archaeological resources.

Thank you for providing the additional information on the above referenced project. It is our understanding that there is no adaptive reuse possible for the two buildings on the project site that contribute to the significance of the National Register listed **Philadelphia Naval Ship Yard Historic District**. Therefore your intention is to demolish these buildings prior to developing the solar panel installations.

In our opinion this project will have an effect on the Philadelphia Naval Ship Yard Historic District. Furthermore, it is our opinion that the demolition of Buildings 668 and 548, contributing buildings in the Historic District, will adversely affect the historic and architectural qualities that make the property eligible. To comply with the regulations of the Advisory Council on Historic Preservation, the follow the procedures outlined in 36 CFR 800.6, must be followed when the effect is adverse. The Department of Environmental Protection will need to notify the Advisory Council of the effect finding and continue to consult with the Bureau for Historic Preservation to seek ways to avoid or reduce the effects on historic properties.

The next step in the process is the development of a Memorandum of Agreement. We agree that recordation of Buildings 548 and 668 is appropriate mitigation for these buildings and should be stipulated in the Memorandum of Agreement.

If you need further assistance in this matter, contact Ann Safley at (717) 787-9121.

Sincerely

Douglas C. McLearen, Chief
Division of Archaeology & Protection

cc: Andrew Place, DEP, P.O. Box 2063, Harrisburg, PA 17105-2063

DMcL/ras

Appendix 4

Pennsylvania Historical & Museum Commission
Bureau for Historic Preservation

BHP Use Only
ER #

Request to Initiate Consultation in Compliance with the State History Code and Section 106 of the National Historic Preservation Act

Applicant Information (print neatly, this will be used in the return envelope)

Applicant Name	CONERGY PROJECTS INC.		
Street Address	222 W. LANCASTER AVE., STE 200		
City	PAOLI	Phone Number	610-251-3829
State/ZIP	PA 19301		

Contact Person to Receive Response (if applicable) (print neatly, this will be used in the return envelope)

Name/Company	ATTN: ANDREW WELSH CONERGY PROJECTS		
Street Address	222 W. LANCASTER AVE STE 200		
City	PAOLI	Phone Number	610-251-3829
State/ZIP	PA 19342		

Project Information

Project Title	The Exelon-Conergy Solar Center II		
Project Location and/address	Basin Bridge Road and Langley Avenue		
Municipality	Philadelphia, PA	**County Name**	Philadelphia

If this project was ever reviewed before, include previous ER #

Project Type (Check all that apply)

Government Funded/Sponsored or On Government Land?

☒ **Yes** ☐ **No** **Specify Agency and/or Program Name Below**

State Agency:	DEP - PEDA GRANT	Local:	
Federal Agency:		Other:	

Permits or Approvals Required

☒ **Yes** ☐ **No** **Specify Agency and/or Program Name Below**

Anticipated Permits:	Building Permit		
State Agency:	PEDA	Program:	
Federal Agency:		Program:	

Agency Office to Receive Response (Check all that apply)

Army Corps of Engineers: ☒ Philadelphia ☐ Baltimore ☐ Pittsburgh

DEP Office: ☐ Central Office ☒ Regional Office:

☐ District Mining Office: ☐ Oil & Gas Office:

☐ Other: (provide address)

Pennsylvania Historical & Museum Commission
Bureau for Historic Preservation

BHP Use Only
ER #

Required Project Information for BHP/SHPO Review

☐ Total Acres in the property under review: 19.3 acres

☐ Total acres of earth disturbance for this proposed activity: 6.5 acres

☐ Are there any buildings or structures within the project area? ☒ Yes ☐ No

Approximate age of buildings:

☐ Project located in or adjacent to a historic district? ☐ Yes ☐ No ☒ Unsure

Name of Historic District Philadelphia Naval Yard

Submissions Must Also Include:

☐ MAP LOCATION: A 7.5 USGS Map showing the project boundary and the Area of Potential Effect (APE). The APE should include indirect effects, such as visual and audible impacts. Federal Projects must provide an explanation of how the APE was determined.

☐ PHOTOS: Photos of all buildings or structures in the APE over 50 years old. If the property is over 50 years old submit a Historic Resource Form with this initial request. The forms are available at http://www.phmc.state.pa.us/bhp/inventories.

☒ PROJECT DESCRIPTION NARRATIVE: Provide a detailed project description describing the project, any ground disturbance, any previous land use, and age of all effected buildings in the project area. Attach a site map showing the location of all buildings in the project area.

The Exelon-Conergy Solar Center II is a project that will be on the Philadelphia Naval Base east of the intersection of Langley Avenue and Basin Bridge Road in Philadelphia, PA. The project is planned to be a 1.5 megawatt photovoltaic system. The site is to be graded down flat and existing buildings that are within the project's plan are to be demolished and all the material to be removed off site to a designated location. The site will then be restored to a state that is agreed upon and that will appear in the contract documents and drawings.

☒ I have reviewed all DEP Permit Exemptions listed on the DEP website www.dep.state.pa.us.

In addition, federal agencies must provide:

☐ Measures that will be taken to identify consulting parties including Native Americans.

☐ Measures that will be taken to notify and involve the public.

The information on this form is needed to determine whether potential historic or archaeological resources are present. Additional historic information or investigation may be requested to determine the significance of the resources or the effects of the project on those resources. ***Form and attachments must be submitted by mail. Submissions via e-mail will not be accepted.***

Signature Block

Applicant's Signature — Date: 6/1/10

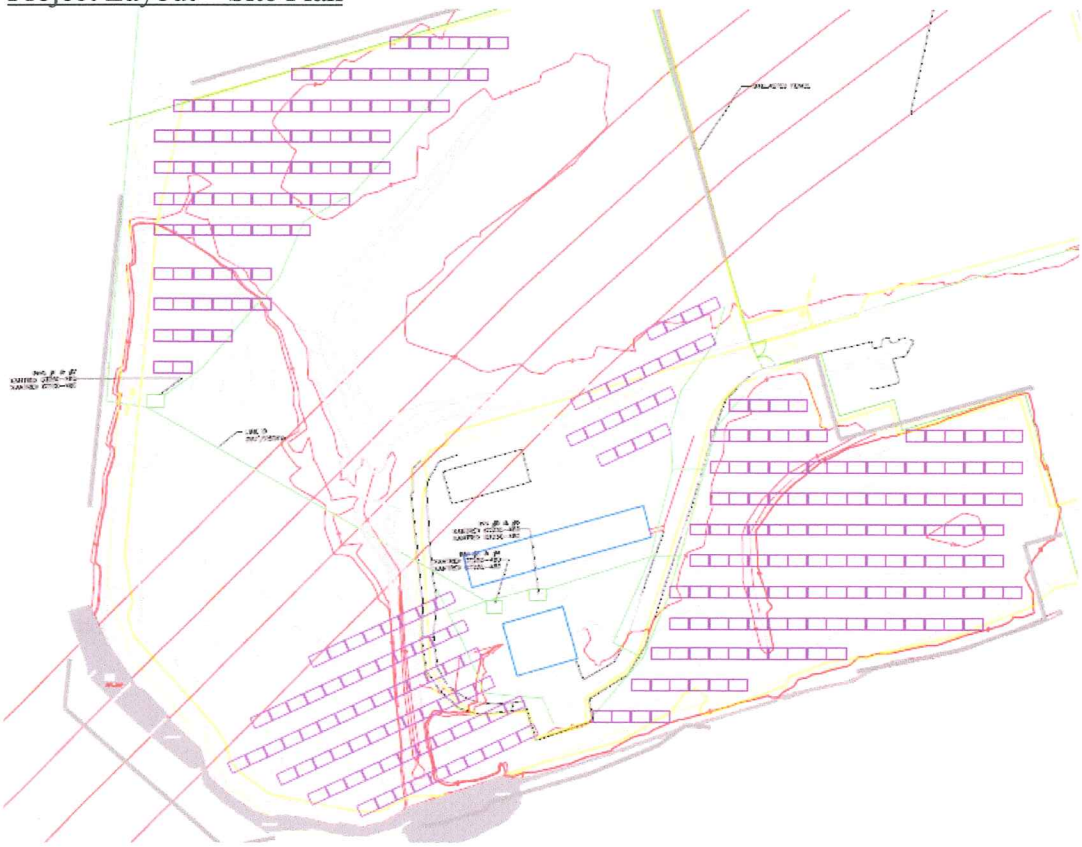
Please Print and Mail Completed Form and Required Information to:

PA Historical & Museum Commission
Bureau for Historic Preservation
400 North Street
Commonwealth Keystone Building 2nd Floor
Harrisburg, PA 17120-0093

Site Plan and Photo Attachments
Conergy
The Exelon-Conergy Solar Center II

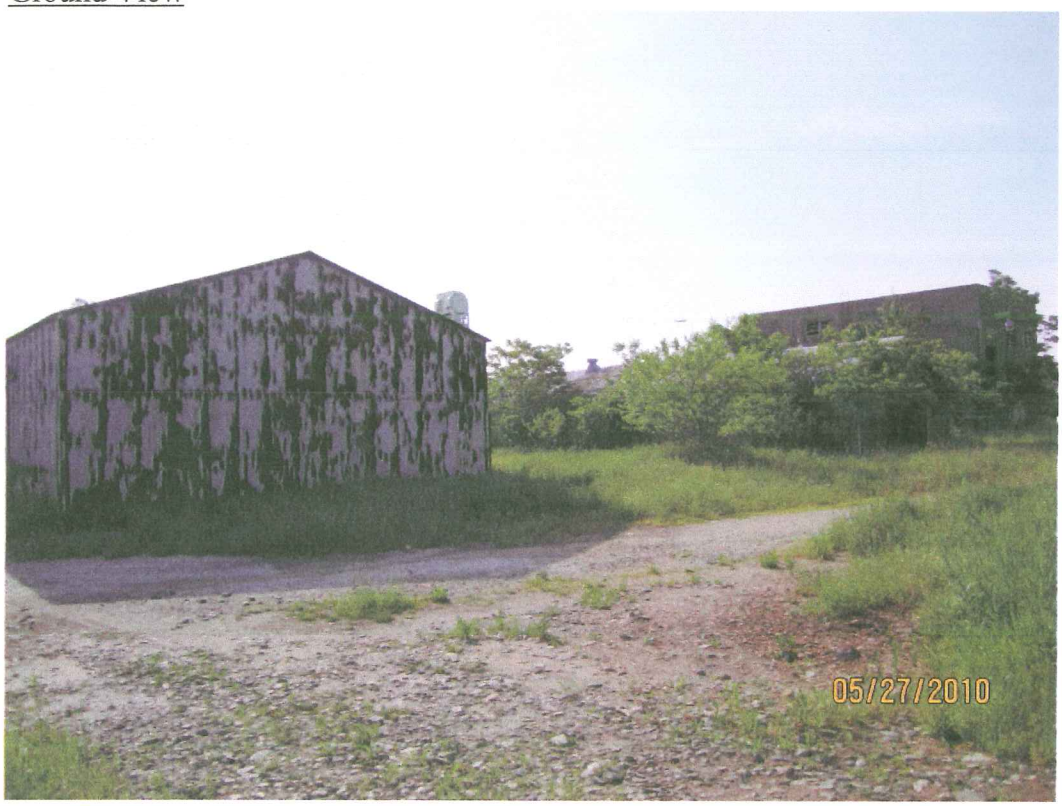
Solar Center Site Overview

Project Layout – Site Plan



Structures to be Demolished

Ground View

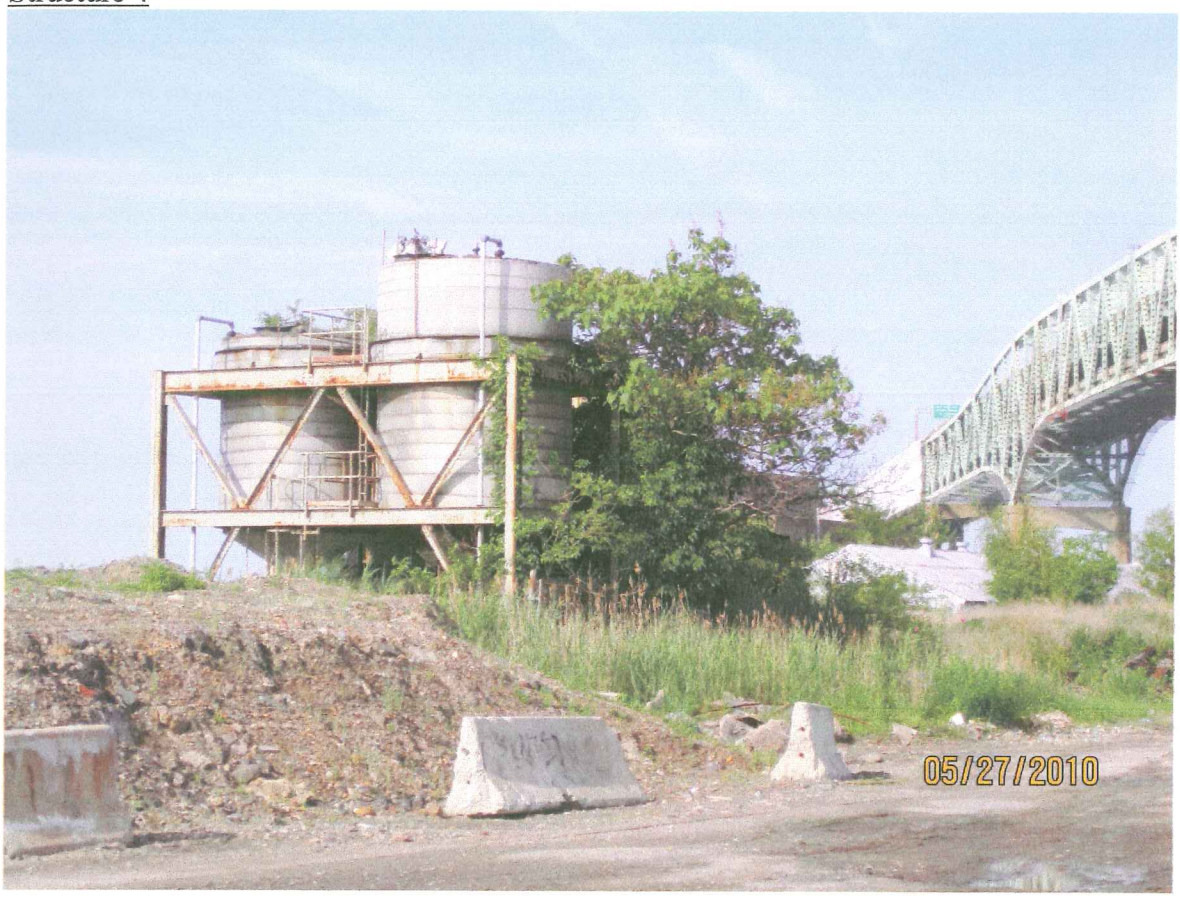


Structure 1

Structure 2

Structure 3

Structure 4



Appendix 5

ALLIANCE ENVIRONMENTAL SYSTEMS, INC.
550 East Union St • West Chester, PA 19382 • Phone: (610) 701-9000 • Fax: (610) 701-9990

Work Plan
Building Demolition
Philadelphia Naval Yard
Philadelphia, PA

The following is a description of the work practices for the demolition work at the Philadelphia Naval Yard in Philadelphia, PA:

In accordance with Pennsylvania Law, an asbestos survey will be taken before any demolition work can begin. **Conergy** will arrange for this survey with a third party firm to complete this prior to demolition. Alliance is fully insured and licensed to handle any asbestos containing materials that may be found during the survey.

Alliance will make the required ten (10) day notification to the DEP and EPA and will also make the PA One Call.

All of Alliance's workers will be given an overview of the project along with any concerns or hazards that may exist before beginning the work. Alliance workers will be equipped with hard hats, safety glasses, gloves and proper work shoes at all times during the project.

Two Story Concrete Structure

A track mounted excavator equipped with a pneumatic hammer will begin by breaking the concrete walls into smaller pieces starting from the top of the structure moving around the structure in order to maintain the building's integrity and continuing down in a systematic fashion. A Second machine will clear out the rubble as the work progresses. Workers will plan and review each day's tasks prior to the start of work.

The buildings elevated floor slabs will be demolished using the same method of wrecking as the concrete walls, starting at the roof elevation and completing the uppermost level first and continuing down in a systematic fashion. No work will begin that can not be safely completed by end of the work day in order to ensure that a collapse of any part of the structure will not occur prematurely.

Below grade slabs will be broken to allow for drainage prior to filling void areas, pits and basements with processed rubble from the building. The concrete and masonry will be processed down to a one (1) foot minus product.

The roofing material, insulation and all other C&D materials will be separated from the recyclable concrete and loaded into debris containers and disposed at legal facility.

Metal components as well as piping, conduit, and other metals generated by our operations will be placed in metal containers for off-site recycling.

ALLIANCE ENVIRONMENTAL SYSTEMS, INC.
550 East Union St • West Chester, PA 19382 • Phone: (610) 701-9000 • Fax: (610) 701-9990

One Story Block and Wood Structure

A track mounted excavator equipped with a grapple will demolish this structure by inducing the roof to the ground in a controlled manner. The masonry walls will be demolished from the top down using the excavator with the grapple and continuing through the structure systematically. No work will begin that can not be safely completed by end of the work day in order to ensure that a collapse of any part of the structure will not occur prematurely. Ceilings, partitions and all other C&D materials that are not integral to the structure will be removed prior to building demolition and legally disposed of at a licensed facility. Masonry will be segregated form C&D materials and processed to a one (1) foot minus product for re-use at the site.

Steel Building with Metal Siding

A track mounted excavator equipped with a shear will demolish this structure by cutting through the steel roof members and lowering them to the ground in a controlled manner. The steel will be demolished from the top down using the excavator with the shear and continuing through the structure systematically. No work will begin that can not be safely completed by end of the work day in order to ensure that a collapse of any part of the structure will not occur prematurely.

Appendix 6

Construction Equipment Expected Onsite

The following list of construction equipment is expected onsite during the construction of the Conergy-Exelon Solar Energy Center II. The equipment will not all be used at the same time, but will vary usage throughout the different phases of the installation.

Equipment Type	Size
Dump Truck	Large
Excavator Attachments: Scrap Shear, Pneumatic Hammer, Bucket	Medium
Bulldozer	Medium
Skid Steer	Small
Skid Loader	Small
Mini Excavator	Small
Backhoe	Small

Appendix 7

3930-PM-WM0035 Rev. 12/2009

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED MANAGEMENT

OFFICIAL USE ONLY
ID # _____
Date Received _____

PERMIT APPLICATION
NOTICE OF INTENT FOR COVERAGE
UNDER THE GENERAL (PAG-02) NPDES PERMIT
OR
APPLICATION FOR AN INDIVIDUAL NPDES
PERMIT FOR STORMWATER DISCHARGES
ASSOCIATED WITH CONSTRUCTION ACTIVITIES

PLEASE READ THE PERMIT SUMMARY SHEET AND INSTRUCTIONS PROVIDED IN THIS PERMIT APPLICATION PACKAGE BEFORE COMPLETING THIS FORM. COMPLETE THE ATTACHED CHECKLIST AND WORKSHEETS 1 THROUGH 5 REFERENCED AFTER APPENDIX C OF THIS PERMIT APPLICATION. COMPLETE ALL OTHER APPLICABLE WORKSHEETS REFERENCED IN THE APPLICATION CHECKLIST.

☐ **1 acre to less than 5 acres of disturbance with a point source discharge** ☒ **5 acres or larger disturbance**

PLEASE PRINT OR TYPE INFORMATION IN BLACK OR BLUE INK.

CHECK APPROPRIATE BOX	GENERAL ☒	INDIVIDUAL ☐		
APPLICATION TYPE	NEW ☐	RENEWAL ☐	MAJOR MODIFICATION ☒	PHASED ☐

SECTION A. APPLICANT INFORMATION

Applicant's Last Name	First Name	MI	Phone	(610) 251-3829
Welsh	Andrew		FAX	(866) 436-6114
Email Address a.welsh@conergy.us				
Organization Name or Registered Fictitious Name			Phone	(610) 251-3823
Conergy Projects Inc			FAX	(866) 436-6114
Mailing Address	City		State	ZIP + 4
101 Lindenwood Drive	Malvern		PA	19355
Suite 130				
Co-Applicant's Last Name (if applicable)	First Name	MI	Phone	(215)218-2848
Zappile	Carmen	G	FAX	
Email Address				
Organization Name or Registered Fictitious Name			Phone	(215)218-2848
Philadelphia Authority for Industrial Development c/o Philadelphia Indisutral Development Corporation			FAX	(215)551-1014
Mailing Address	City		State	ZIP + 4
Quarters A - 1413 Langley Avenue	Philadelphia		PA	19112

SECTION B. PROJECT INFORMATION AND SITE ANALYSIS

1. Project Name: Photovoltaic Facility - Philadelphia Navy Yard

2. Project Description

The developer, Conergy, proposed to construct a photovoltaic facility on portions of parcels 2 and 10 at former Philadelphia Navy Yard. This new development is to produce renuable solar energy with the installation of photovoltaic appurturance arrays on portions of the permeable cap from the Girard Point Management Area with the installation of photovoltaic arrays. The project consists of installing a graded material above the existing surface ~~at areas~~ of the photovoltaics and appurtenances. The material will assist with leveling the foundations and photovoltaic arrays to desired elevations. The arrays will be connected to sheltered inverters with non penetrating concrete foundations. Utility (electric) connections will be run on the existing surface and concrete encased. Fill material will installed on the existing surface to allow vehicular/pedestrian crossings. A new fence will be installed to secure the facility and be installed on a precast concrete "Jersey" barrier.

☐ Residential Subdivision ☐ Sewerage/Water System ☐ Private Road/Residence

☒ Commercial/Industrial ☐ Public Road ☐ Government Facility

☐ Utility Facility/Transmission ☐ Recreational ☐ Remediation/Restoration

3. Total Project Area (Acres): ~~13.7~~ 8.05

4. Project Location or Physical Address (if available):

4590 Basin Bridge Road

4621 Basin Bridge Road

5. County	Municipality	City	Boro	Twp
Philadelphia	City of Philadelphia	☒	☐	☐
		☐	☐	☐

6. Latitude: N 39 °/ 53 '/ 38.25 " Longitude: W 75 °/ 11 '/ 38.75 "

Collection Method: ☒ EMAP ☐ HGIS ☐ GISDR ☐ ITPMP ☐ GPS ☐ WAAS ☐ LORAN

Check the horizontal reference datum (or projection datum) employed in the collection method. EMAP and HGIS (PNDI) have known datum and do not require checking here. ☐ NAD27 ☐ NAD83 ☐ WGS84 (GEO84)

Enter the date of collection if the lat and long coordinates were derived from GPS, WAAS or LORAN. _____ mm _____ dd _____ yyyy

7. U.S.G.S. Quad Map Name Philadelphia, PA-NJ

8. Existing and Previous Uses of the Land Proposed for Construction (use separate sheet if necessary):

Existing Land Uses: ☐ Agriculture ☐ Forest/Woodland ☐ Barren ☐ Urban ☒ Brownfield ☐ Other

Description: Landfill

Previous Land Uses: ☐ Agriculture ☐ Forest/Woodland ☐ Barren ☐ Urban ☐ Brownfield ☒ Other

Description: Incinerator Plant for Navy Yard

9. **Site Analysis**

a. Describe how Natural Resources features on the site (Worksheets 2 and 3 referenced in the Pa. Stormwater BMP Manual) were considered in: Location and Design of the project, E & S Plan Design, PCSM Plan Design. (attach additional sheet if necessary)

There are three drainage swales on the property, ~~that~~ One swale will be filled in with a ~~perious~~ pervious clean fill material and perforated pipe to convey stormwater in its original manner away from the property. ~~The drainage swale north of the I-95 Bridge wil receive check dams.~~

b. Identify naturally occurring geologic formations or soil conditions that may have the potential to cause pollution during earth disturbance activities and include BMPs to avoid or minimize potential pollution and its impacts from the formation.

There will be limited earth disturbance associate with this project. The landfill has a permeable membrane that is covered with roughly 2' of fill. A minimum of 6" of a pervious clean fill material will be placed and the photovoltaic arrays will be mounted on concrete foundations on top of the stone.

10. Potential Toxic or Hazardous Pollutants: (Submit the following data if soil contaminant, geology or past or present land use provides a potential for contaminated runoff from the project site) N/A ☐ Use additional sheets if necessary.

Pollutant	Concentration w/Units	Source	Sample Type	Date(s) / Number of Samples

11. **Fill Material**

Based on a cut/fill analysis of the project site, will the site need to import fill, export fill or will the site balance? Be sure to read the instructions before completing this section. Clean Fill can not be placed in or on waters of the Commonwealth.

Check the appropriate box

☒ Import fill – the Operator will, in most situations, be responsible to perform environmental due diligence and determine that all fill imported to the site meets the department's definition of clean fill. The plan designer must include a note on the drawings to identify the operator(s) responsibility and provide the definition of Clean Fill and Environmental Due Diligence.

☐ Export fill – the Applicant is responsible for performing environmental due diligence at the time this application was submitted to determine that any fill exported from the site will be certified as clean fill.

☐ Balance all cuts and fills with the amount of rock and soil available on the site.

12. Total Disturbed Area (Acres) to be permitted: ~~13.7~~ 8.05 4-4-11 09-02-11

13. Estimated Timeframe for completion of project: Project Start Date 09-01-10 Project End Date 06-01-11

14. Estimated Timetable for Phased Projects Build Out (Complete for phased projects only)

Phase No. or Name	Proposed Type of Activity	Total Area	Disturbed Area	Start Date	End Date
1	Installation of PV Arrays & Inverter Stations	~~13.72~~ 8.05	~~13.72~~ 8.05	09-01-10	12-31-10
				4-4-11	09-02-11

15. Stormwater Discharges to (during construction): Impaired Waters According to Chapter 303(d) List ☐

Waters of the Commonwealth ☒ Municipal Separate Storm Sewer ☐ Private Storm Sewer ☐ Non Surface Waters ☐

Receiving Water/Watershed Name:	Chapter 93 Receiving Water Classification:	Existing Use (if different from the Designated use)
Schyulkill River	(Designated use) WWF, MF	
Name of Municipal Storm Sewer Operator:	**Name of Private Storm Sewer Operator:**	**Other: (including off-site discharges)**
City of Philadelphia	N/A	N/A

SECTION C. E & S AND POST CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLAN

Note: For projects involving multiple watershed boundaries, please submit a complete, separate Section C for each additional watershed.

1. Provide a brief summary of proposed BMPs and their performance to manage E & S for the project. If E & S BMPs and their application do not follow the guidelines referenced in the Pa. Erosion and Sediment Pollution Control Program Manual, provide documentation to demonstrate peformance equivalent to, or better than, the BMPs in the Manual.

E & S BMPs

During construction on the project the contractor will install ~~silt fence~~ filtersock along all downslope areas to prevent runoff from entering the river. ~~Within the existing drainage swales check dams will be installed every fifty feet to reduce the speed of flow~~. In the areas where the arrays are to be installed within the swale areas ~~24"~~ perforated HDPE pipe will be installed wrapped in geo-textile fabric and then a pervious clean fill material will be used to fill in the swale and bring it to grade. The amount of flow through the swales will be equivalent to the existing flows. A rock construction entrance will be used at the main point of egress into the site.

PCSM Plan Information - The PCSM Plan should be designed to maximize volume reduction technologies, eliminate (where possible) or minimize point source discharges to surface waters, preserve the integrity of stream channels, and protect the physical, biological and chemical qualities of the receiving surface water. **The DEP recommends the use of Control Guideline 1 (CG1) referenced in the Pa. Stormwater BMP Manual to achieve this goal.**

Design standards applied to develop the PCSM Plan. Check those that apply.

☐ Act 167 Plan - The attached PCSM plan is consistent with an applicable approved Act 167 Plan. **A letter of consistency from the Municipal or County Engineer should be provided with the application.** Complete and submit all applicable worksheets referenced in the application checklist as part of the permit application for each approved Act 167 Plan.

Complete the following table for all applicable approved Act 167 Stormwater Management Plans. (use additional sheets if necessary)

ACT 167 Plan Name	Date Adopted	Consistency Letter Included
		☐

☐ The attached PCSM plan is consistent with all applicable local stormwater management ordinances, including MS4 (NPDES Permit to Discharge Stormwater Through a Municipal Separate Storm Sewer System) ordinances. **A letter of consistency from the Municipal or County Engineer must be provided with the application.** Complete and submit all applicable worksheets referenced in the application checklist as part of the permit application.

Complete the following table for all applicable Municipalities. (use additional sheets if necessary)

Municipality Name	Ordinance Number	Consistency Letter Included
		☐

The PCSM Plan must satisfy either subparagraph a **or** b below. Check those that apply.

A. ☐ Act 167 Plan approved on or after January 2005 – The attached PCSM Plan, in its entirety, is consistent with all requirements pertaining to rate, volume, and water quality from an Act 167 Stormwater Management Plan approved by DEP on or after January 2005.

OR

B. The PCSM Plan must satisfy one or both of the following requirements:

☒ PA Stormwater BMP Manual - The attached PCSM plan is consistent with water quality design features and BMPs as presented in the Pennsylvania Stormwater BMP Manual. CG 1 has been met.

☐ Other Design Standard – The attached PCSM plan was developed using partial compliance with the above standards or other standard. Demonstrate/explain in the space provided how this standard meets the criteria described in the PA Comprehensive Stormwater Management Policy Document 392-0300-002.

This should Remain the same....

Are the Ch. Buildings counted in the BMP

2. **SUMMARY TABLE FOR SUPPORTING CALCULATION AND MEASUREMENT DATA** **Please reference the Stormwater Methodology used (i.e. SCS Method)** _____			
	Pre-construction	**Post Construction**	**Net Change**
Design storm frequency 2-yr Rainfall amount 3.20 inches			
Impervious area (acres) 1.28	1 0.86	2 0.86 1.31	3 0.00 0.03
Volume of stormwater runoff ☐ acre-feet or ☒ cubic feet without planned stormwater BMPs (check appropriate box)	4 112,470 24326	5 112,470 27355	6 0.00 3029
Volume of stormwater runoff ☐ acre-feet or ☒ cubic feet with planned stormwater BMPs (check appropriate box)		7 112,470 27355	8 0.00 3029
Stormwater peak discharge rate for the design frequency storm (cubic feet per second)	9 48.09 5.48	10 48.09 5.73	11 0.00 0.25

Box 1. **Pre-construction impervious area**: The total acres of impervious area on the project site before construction activities begin, based on land use for five years preceding the planned project.

Box 2. **Post construction impervious area**: The total acres of impervious area on the project site after construction activities have been completed.

Box 3. **Net change of impervious area**: The difference between the acres of impervious area listed in Box 1 and Box 2. Zero or negative values are acceptable.

Box 4. **Pre-construction stormwater runoff volume without planned BMPs**: The amount of stormwater runoff volume from the project site that would result from the design storm occurrence before construction activities begin, based on land use for five years preceding the project.

Box 5. **Post construction stormwater runoff volume without planned BMPs**: The amount of stormwater runoff volume from the project site that would result from the design storm occurrence after construction activities have finished assuming that no stormwater infiltration or retention BMPs have been installed.

Box 6. **Net change in stormwater volume without planned BMPs**: The difference between the amounts of stormwater runoff volume listed in Box 4 and Box 5.

Box 7. **Post construction stormwater runoff volume with planned BMPs**: The amount of stormwater runoff volume from the project site that would result from the design storm occurrence after construction activities have finished and the planned stormwater infiltration or retention BMPs have been installed.

Box 8. **Net change in stormwater runoff volume with planned BMPs**: The difference between the amounts of stormwater runoff volume listed in Box 4 and Box 7.

Box 9. **Pre-construction stormwater discharge rate**: The stormwater runoff discharge rate for the design frequency storm as determined by the land use for the past five years.

Box 10. **Post construction stormwater discharge rate**: The stormwater runoff discharge rate for the design frequency storm event after all planned stormwater BMPs are installed.

Box 11. **Net change stormwater discharge rate**: The difference between the stormwater runoff discharge rates listed in Box 9 and Box 10.

3. **SUMMARY DESCRIPTION OF POST CONSTRUCTION STORMWATER BMPs (consistent with Worksheets 3 and 5 referenced in the Pa. Stormwater BMP Manual)**

Key: **RC = Rate Control** **VC = Volume Control** **WQ = Water Quality**

In the lists below, check the BMPs identified in the PCSM Plan, and their function(s) using the above Key. More than one function may be checked for a BMP. List the stormwater volume and area of runoff to be treated by each BMP type. If any BMP in the PCSM Plan is not listed below, describe it in the space provided after "Other".

BMP	Function(s)	Volume of stormwater treated	Acres treated
☐ Wet ponds	☐ VC ☐ RC ☐ WQ		
☐ Constructed wetlands	☐ VC ☐ RC ☐ WQ		
☐ Retention basins	☐ VC ☐ RC ☐ WQ		
☐ Detention basin	☐ VC ☐ RC ☐ WQ		
☐ Underground detention	☐ VC ☐ RC ☐ WQ		
☐ Dry Extended detention basin	☐ VC ☐ RC ☐ WQ		
☐ Sediment fore bay	☐ VC ☐ RC ☐ WQ		
☐ Infiltration trench	☐ VC ☐ RC ☐ WQ		
☐ Infiltration Berm/Retentive Grading	☐ VC ☐ RC ☐ WQ		
☐ Subsurface Infiltration bed	☐ VC ☐ RC ☐ WQ		
☐ Infiltration basin	☐ VC ☐ RC ☐ WQ		
☐ Pervious pavement	☐ VC ☐ RC ☐ WQ		
☐ Dry well/Seepage pit	☐ VC ☐ RC ☐ WQ		
☐ Bio-infiltration areas	☐ VC ☐ RC ☐ WQ		
☐ Rain gardens/Bio-retention	☐ VC ☐ RC ☐ WQ		
☒ Vegetated swales	☐ VC ☐ RC ☒ WQ	~~49,200~~	~~5.82~~
☐ Constructed filters	☐ VC ☐ RC ☐ WQ		
☐ Protect Sensitive & Special Value Features	☐ VC ☐ RC ☐ WQ		
☐ Protect/Conserve/Enhance Riparian areas	☐ VC ☐ RC ☐ WQ		
☐ Restoration: Buffers/ Landscape/Floodplain	☐ VC ☐ RC ☐ WQ		
☐ Disconnection from storm sewers	☐ VC ☐ RC ☐ WQ		
☐ Rooftop disconnection	☐ VC ☐ RC ☐ WQ		
☐ Vegetated roofs	☐ VC ☐ RC ☐ WQ		
☐ Runoff capture/Reuse	☐ VC ☐ RC ☐ WQ		
☐ Oil/grit separators	☐ WQ		
☐ Water quality inserts/inlets	☐ WQ		
☐ Street sweeping	☐ WQ		
☒ Other ~~Check Dam~~	☐ VC ☐ RC ☒ WQ	~~49,200~~	~~5.82~~
☒ Other Sand Filter Underdrain	☐ VC ☐ RC ☒ WQ	~~46,918~~ 7,207 SF	~~5.55~~ 0.978

4. **OFF SITE DISCHARGE ANALYSIS**

Does the project propose any off-site discharges to areas other than surface waters? ☐ **Yes** ☒ **No**

If yes, has the applicant obtained the type of easement that provides the legal authority for this discharge? ☐ **Yes** ☐ **No**

Applicant must provide a demonstration that the discharge will not cause erosion, damage, or nuisance to off-site properties.

5. **THERMAL IMPACTS ANALYSIS**

Please explain how thermal impacts associated with this project were avoided. Thermal impacts will be avoided by routing the existing stormwater through perforated pipe through the existing swales. The amount of proposed discharge will be equal or less than the existing discharge.

If thermal impacts cannot be avoided, describe how impacts were minimized and the BMPs that will mitigate such impacts in a manner that will protect and maintain water quality in receiving surface waters in accordance with 25 Pa. Code Chapter 93.

SECTION D. ANTIDEGRADATION ANALYSIS MODULE

This Section is to be completed for Special Protection Watershed Only. (HQ/EV and EV Wetlands)

PART 1 NON-DISCHARGE ALTERNATIVES EVALUATION

The applicant must consider and describe any and all non-discharge alternatives for the entire project area which are environmentally sound and will:

- **Minimize accelerated erosion and sedimentation during the earth disturbance activity**
- **Achieve no net change from pre-development to post-development volume, rate and concentration of pollutants in water quality**

E & S Plan	Official Use Only	PCSM Plan	Official Use Only
Check off the environmentally sound non-discharge Best Management Practices (BMPs) listed below to be used prior to, during, and after earth disturbance activities that have been incorporated into your E & S Plan based on your site analysis. For BMPs not checked, provide an explanation of why they were not utilized. (attach additional sheets if necessary)		Check off the environmentally sound non-discharge Best Management Practices (BMPs) listed below to be used after construction that have been incorporated into your PCSM Plan based on your site analysis. For BMPs not checked, provide an explanation of why they were not utilized. (attach additional sheets if necessary)	
Non-discharge BMPs ☐ Alternative Siting ☐ Alternative location ☐ Alternative configuration ☐ Alternative location of discharge ☐ Limited Disturbed Area ☐ Limiting Extent & Duration of Disturbance (Phasing, Sequencing) ☐ Vegetated Riparian Buffers (100 ft min) ☐ Other _____		**Non-discharge BMPs** ☐ Alternative Siting ☐ Alternative location ☐ Alternative configuration ☐ Alternative location of discharge ☐ Low Impact Development (LID / BSD) ☐ Vegetated Riparian Buffers (100 ft min) ☐ Infiltration ☐ Water Reuse ☐ Other _____	

Part 2 Antidegradation Best Available Combination of Technologies (ABACT)

If the net change in stormwater discharge from or after construction is not fully managed by non-discharge BMPs, the applicant must utilize ABACT BMPs to manage the difference. The Applicant must specify whether the discharge will occur during construction, post-construction or both, and identify the technologies that will be used to ensure that the discharge will be a non-degrading discharge. ABACT BMPs include but are not limited to:

E & S Plan	Official Use Only	PCSM Plan	Official Use Only
☐ **Treatment BMPs:** ☐ Sediment basin with skimmer ☐ Sediment basin ratio of 4:1 or greater (flow length to basin width) ☐ Sediment basin with 4-7 day detention ☐ Flocculants ☐ **Land disposal:** ☐ Vegetated filters ☐ Vegetated Riparian buffers <100ft. ☐ Immediate stabilization ☐ **Pollution prevention:** ☐ PPC Plans ☐ Street sweeping ☐ Channels, collectors and diversions lined with permanent vegetation, rock, geotextile or other non-erosive materials ☐ **Stormwater reuse technologies:** ☐ Sediment basin water for dust control ☐ Sediment basin water for irrigation ☐ **Other** _____		☐ **Treatment BMPs:** ☐ Infiltration Practices ☐ Wet ponds ☐ Created wetland treatment systems ☐ Vegetated swales ☐ Manufactured devices ☐ Bio-retention/infiltration ☐ Green Roofs ☐ **Land disposal:** ☐ Vegetated filters ☐ Vegetated Riparian Buffers <100ft. ☐ Disconnection of roof drainage ☐ Bio-retention/bio-infiltration ☐ **Pollution prevention:** ☐ Street sweeping ☐ Nutrient, pesticide, herbicide or other chemical application plan alternatives ☐ PPC Plans ☐ Non-structural Practices ☐ Land Preservation ☐ Restoration BMPs ☐ **Stormwater reuse technologies:** ☐ Cisterns ☐ Rain barrels ☐ Dry hydrant with underground storage ☐ Spray/Drip Irrigation ☐ **Other** _____	
Are the ABACT BMPs selected sufficient to minimize E & S discharges to the extent that existing or designated surface water uses are protected? ☐ Yes ☐ No. If no, and the project is located in a HQ water, proceed to Part 3.		Are the ABACT BMPs selected sufficient to achieve no net change to the extent that existing or designated surface water uses are protected? ☐ Yes ☐ No. If no, and the project is located in a HQ water, proceed to Part 3.	

Part 3 Social or Economic Justification (SEJ) (for projects in high quality waters only)

If the applicant cannot demonstrate that the net change in discharge will protect the existing quality of the receiving surface waters, for projects in HQ waters, the applicant may pursue the SEJ process for demonstrating that lowering water quality is necessary to accommodate important economic or social development in the area in which the waters are located, in accordance with Chapter 10 of the Water Quality Antidegradation Implementation Guidance Manual, DEP Document ID No. 391-0300-002.

SECTION E. CONSULTANT FOR THIS PROJECT

Last Name	First Name	MI
Foley	Patrick	M

Title	Consulting Firm
Project Engineer	Pennoni Associates Inc.

Mailing Address

3001 Market Street, Suite 200

City	State	ZIP+4
Philadelphia	PA	19104-2897

Email	Phone	2152223000	Ext	3518
pfoley@pennoni.com	FAX	2152220598		

SECTION F. COMPLIANCE HISTORY REVIEW

Is/was the applicant(s) in violation of any permits issued by DEP or any regulated activities within the past five years?

☐ Yes ☒ No

If yes, list each permit or project that is/was in violation and provide compliance status of the activity (use additional sheets to provide information on all permits).

Permit Program or Activity: Permit Number (if applicable):

Brief description of non-compliance:

Steps taken to achieve compliance	Date(s) Compliance Achieved

Current Compliance Status: ☐ In-Compliance ☐ In Non-Compliance

If the applicant is not in compliance with any permit requirement of DEP Regulations or regulated activity, provide a narrative description of how the applicant will achieve compliance with the permit requirement or activity, including the schedule for achieving compliance with appropriate milestones.

SECTION G. PERMIT COORDINATION

Does the applicant (owner and/or operator) have, have pending, or require any other environmental permits for this project and any additional planning requirements?

☐ Yes ☒ No If yes, list each permit or approval, permit number, and description.

Coordination Questions

1. Does the project involve any of the following: Placement of fill, excavation within or a placement of a structure located in, along, across, or projecting into a water course, floodway or body of water (including wetlands)?

   ☐ Yes ☒ No If yes, identify which authorization under Chapter 105 is applicable.

   ☐ Joint Permit ☐ General Permit ☐ Waiver

2. What is your 537 Plan status? Please note that 537 Plan approval is required prior to permit issuance.
   The Act 537 has been submitted. The project is an unmanned facility and no sanitary sewers are proposed.

3. Is your project associated with a Brownfield's Remediation? ☒ Yes ☐ No If yes, please indicate any coordination to date with the Environmental Cleanup Program (Act 2 or Superfund). The existing site is a part of the SIA Agreement with Girard Point Management Area.

4. Are there any additional permits or approvals that may be required for this project? ☒ Yes ☐ No If yes, please list them. City of Philadelphia Building and Zoning Permits.

SECTION H. CERTIFICATION

Applicant Certification

I certify under penalty of law that this application and all related attachments were prepared by me or under my direction or supervision by qualified personnel to properly gather and evaluate the information submitted. Based on my own knowledge and on inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. The responsible official's signature also verifies that the activity is eligible to participate in the NPDES permit, and that BMP's, E&S Plan, PPC Plan, PCSM Plan, and other controls are being or will be, implemented to ensure that water quality standards and effluent limits are attained. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment or both for knowing violations pursuant to Section 309(c)(4) of the Clean Water Act and, 18 Pa. C.S. §§4903-4904.

Applicant	**Co-Applicant (if applicable)**
Andrew Welsh	Carmen ~~Zapille~~ Zappile, VICE President
Print Name and Title of Person Signing	Print Name and Title of Person Signing
(610) 251-3829	(215) ~~231-8~~020 218-2048
Telephone Number of Person Signing	Telephone Number of Person Signing
Andrew D. Welsh	Carmen G. Zappile
Signature of Applicant	Signature of Co-Applicant
7/29/10	7/29/10
Date Signed	Date Signed

Please note below the name, address and telephone number of the individual that should be contacted in the event additional information is required.

Name: Patrick Foley

Address: 3001 Market Street, Suite 200, Philadelphia, PA 19104-2897

Telephone: (215) 222-3000 ext. 3518 FAX: (215) 222-0598

Notarization: Andrew Welsh

Commonwealth of Pennsylvania

County of Philadelphia

Sworn to and Subscribed to Before Me This

29th Day of July, 2010

NOTARY SEAL

Jaime Spingler

Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Jaime Spingler, Notary Public
City of Philadelphia, Philadelphia County
My Commission Expires Feb. 21, 2012
Member, Pennsylvania Association of Notaries

My Commission Expires: Feb 21, 2012

Notarization: ~~Carmen Zapille~~ GINA D. MORGAN

Commonwealth of Pennsylvania

County of Philadelphia

Sworn to and Scribed ~~to~~ Before Me this

29th Day of July, 2010,

NOTARY SEAL

Gina D. Morgan

Notary Public

My Commission Expires:

NOTARIAL SEAL
GINA D MORGAN
Notary Public
PHILADELPHIA CITY, PHILADELPHIA COUNTY
My Commission Expires Mar 11, 2013

3930-PM-WM0035 Rev. 12/2009
Checklist

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERSHED MANAGEMENT

APPLICATION CHECKLIST
GENERAL NPDES PERMIT FOR STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Please check the following list to make sure that you have included all the required information. Place a check mark in the column provided for all items completed and/or provided. Failure to provide all of the requested information will delay the processing of the application and may result in the application being placed ON HOLD with NO ACTION, or being considered withdrawn and the application file closed.

THIS CHECKLIST MUST BE COMPLETED AND ENCLOSED WITH YOUR GENERAL PERMIT APPLICATION FORM

	✓CHECKLIST FOR NEW GENERAL NPDES PERMIT APPLICATION			Applicant Check √ If Included	Official Use Only
1.	Fully completed, properly signed and notarized Notice of Intent Form (1 original and 2 copies).			☐	☐
2.	Complete Erosion and Sediment Control Plans. (3 copies) Location: Drawings (D), Narrative (N).			☐	☐
	a. Written Narrative *(Must be labeled "E&S Plan" or "Erosion & Sediment Control Plan", be complete & legible, and be the final plan for construction)* Written Narrative Includes the following:	Location N	Page See All	☒	☐
	i. 8.5" X 11" USGS map with outline of project area	Location N	Page 85	☒	☐
	ii. Soils information (including hydric soils) Types, depth, slope and locations of soils	Location N	Page 3	☒	☐
	iii. Physical characteristics and limitations of soils	Location N	Page 3	☒	☐
	iv. Supporting calculations to show anticipated peak flows for the design storms	Location N	Page 67	☒	☐
	v. Analysis of the impact that runoff from the project site will have on existing downstream watercourses resistance to erosion	Location N	Page 4	☒	☐
	vi. Provide supporting calculations, standard worksheet, and narrative description of the location for all proposed E&S Control BMPs used before, during and after earth disturbance including but not limited to the following:				
	A. Channels	Location N	Page na	☐	☐
	B. Sediment Basins	Location N	Page na	☐	☐
	C. Sediment Traps	Location N	Page na	☐	☐
	D. Filter Fabric Fencing	Location N	Page C8001	☒	☐
	E. Outlet Protection	Location N	Page	☐	☐
	F. Other BMPs (Specify) Construction Entrance	Location N	Page C8001	☒	☐

				Applicant Check √ If Included	Official Use Only
	G. Other BMPs (Specify) _____	Location N	Page na	☐	☐
b.	Plan Drawings *(Must be labeled "E&S Plan" or "Erosion & Sediment Control Plan", be complete & legible, and be the final plan for construction)* Drawings include the following:	Location D	Page See All	FORMCHECKBOX	☐
	i. Legend for any symbols that may be used on the drawing	Location D	Page C8001	☒	☐
	ii. Topographic Features including existing contours, improvements, streams, wetlands, watercourses, etc. and sufficient surrounding area	Location D	Page C8001	☒	☐
	iii. Soil types and locations	Location D	Page C8001	☒	☐
	iv. Construction techniques or special considerations to address soil limitations	Location D	Page C8001	☒	☐
	v. Limits of project area, NPDES boundary	Location D	Page C8001	☒	☐
	vi. Limits of earth disturbance	Location D	Page C8001	☒	☐
	vii. Proposed alteration including proposed contours and proposed improvements	Location D	Page C8001	☒	☐
	viii. Maximum during construction drainage areas to hydraulic BMPs	Location D	Page C8001	☒	☐
	ix. Location of water which may receive runoff and receiving water classification pursuant to Chapter 93 and the "statewide existing use listing"	Location D	Page C8001	☒	☐
	x. Standard Construction Details for all proposed E&S Control BMPs used before, during and after earth disturbance	Location D	Page C8501	☒	☐
	xi. Location of BMPs showing final contours are identified	Location D	Page C8001	☒	☐
	xii. Complete and site specific sequence of BMP installation and removal including activities planned to limit exposed areas	Location D	Page C8001	☒	☐
	xiii. Procedures or Note requiring the proper recycling or disposal of waste materials associated with the project site	Location D	Page C8501	☒	☐
	xiv. Maintenance Program including inspection schedule, sediment cleanout levels, repair parameters and time frames, and directions for sediment removal	Location D	Page C8501	☒	☐
	xv. Note explaining responsibilities for fill materials including definition of environmental due diligence and clean fill	Location D	Page na	☐	☐

				Applicant Check √ If Included	Official Use Only
3.	Permit filing fee of $500 payable to the appropriate Clean Water Fund.			☒	☐
4.	Notifications to the local municipality and county governments that specify Acts 67 and 68 Coordination, and that the application is for a general NPDES stormwater permit authorizing the discharge of stormwater during construction activities. A "sample" notification letter is provided in Appendices B and C.			☒	☐
5.	Proof of receipt of municipal notifications; copies of certified mail receipts or acknowledgment letters from the local municipality and county government. (3 copies)			☒	☐
6.	The PNDI Review receipt for the project area. Include impact clearance letters if proof of agency coordination is required. (3 copies)			☒	☐
7.	Complete Post Construction Stormwater Management Plan. (3 copies) Location: Drawings (D), Narrative (N).			☒	☐
	a. Written Narrative *(Must be separate from E&S Plan and labeled "PCSM" or Post-Construction Stormwater Management"" and be the final plan for construction)* Written Narrative Includes the following:	Location N	Page See All	☒	☐
	i. Site Description & Analysis	Location N	Page 2-4	☒	☐
	ii. Soil types and descriptions (including hydric soils)	Location N	Page 3	☒	☐
	iii. Pre-development and post-development drainage area runoff calculations for each drainage area	Location N	Page 78	☒	☐
	iv. Routing Analysis to demonstrate peak control for the 1-year through 100-year storm events *(Routing should consider the benefits of BMPs)*	Location N	Page 78	☒	☐
	v. Calculations for permanent stormwater BMPs *(including volume of water treated through BMPs)*	Location N	Page 95	☒	☐
	vi. Curve Numbers and/or land use coefficients	Location N	Page 79	☒	☐
	vii. Infiltration/Geotechnical report and soil infiltration test pit results	Location N	Page na	☐	☐

				Applicant Check √ If Included	Official Use Only
	b. Additional Worksheets **Note: Required Worksheets 1 through 5 are attached after Appendix B. Complete the following worksheets as applicable.**				
	i. Worksheet 6 – Small Site/Small Impervious Area Exception for peak rate Mitigation Calculations ***(If worksheet 6 is not applicable, rate control is required)***	Location N	Page 97A	☒	☐
	ii. Worksheet 10 – Water Quality Compliance for Nitrate ***(Required if using CG 1)***	Location N	Page 97B	☒	☐
	iii. Worksheet 11 – BMPs for Pollution Prevention ***(Required if not using CG1 or if applicant is not meeting Nitrate requirements)***	Location N	Page 97C	☒	☐
	iv. Worksheet 12 – Water Quality Analysis of Pollutant Loading from all Disturbed Areas ***(Required if not using CG1 or if applicant is not meeting Nitrate requirements)***	Location N	Page 97D	☒	☐
	v. Worksheet 13 – Pollutant Reduction Through BMP Applications ***(Required if not using CG 1 or if applicant is not meeting Nitrate requirements)***	Location N	Page 97E	☒	☐
	c. Plans/Drawings *(Must be a stand alone separate plan from the E&S Plan and labeled "PCSM" or Post-Construction Stormwater Management"" and be the final plan for construction)*	Location D	Page C9001	☒	☐
	i. Construction Details for permanent stormwater BMPs including permanent stabilization	Location D	Page C9001	☒	☐
	ii. Location of BMPs showing final contours are identified	Location D	Page C9001	☒	☐
	iii. Location of soil types are identified (including hydric soils)	Location D	Page C9001	☒	☐
	iv. Location and depths of test pits / infiltration testing sites are identified	Location D	Page na	☐	☐
	d. Ownership, Operations, and Maintenance Procedures *(Must be included on drawings)*	Location D	Page C9001	☒	☐
	i. Applicant or entity (association, company, agency, etc.) listed as responsible party	Location D	Page C9001	☒	☐

8.	Consistency letter from Municipal or County Engineer (where applicable)			☒	☐
9.	Appendix A Land Use Questions			☒	☐
10.	Complete Required Worksheets 1 – 5 (see worksheets **at the end of** the NPDES Individual Permit Application Checklist)			☒	☐
11.	Checklist for Subsequent Phases (of permitted projects)				
	a Estimated time frame for phased project build-out (update as necessary)			☒	☐
	b Complete E & S Plans for specific phase (3 copies)			☒	☐
	c New Section C and complete PCSM Plan for specific phase (3 copies)			☒	☐
	d Consistency letter from municipal or county engineer (where applicable)			☒	☐
	CHECKLIST FOR GENERAL NPDES PERMIT RENEWALS ONLY			**Applicant Check √ If Included**	**Official Use Only**
1.	Administratively complete, signed, and notarized Notice of Intent Form, including items 1-7. (1 signed original and 2 copies of the NOI/application)			☐	☐

Worksheet 1. General Site Information

INSTRUCTIONS: Fill out Worksheet 1 for each watershed

Date: ~~7-21-10~~ 2-17-11

Project Name: Naval Yard Photovoltaic Site

Municipality: Philadelphia

County: Philadelphia

Total Area (acres): ~~13.72~~ 8.05

Major River Basin: Delaware

http://www.dep.state.pa.us/river/Maps/PAbasins.htm

Watershed: Delaware

Sub-Basin: Schuylkill

Nearest Surface Water(s) to Receive Runoff: Schuylkill

Chapter 93 – Designated Water Use: WWF, MF

http://www.pacode.com/secure/data/025/chapter93/chap93toc.html

Impaired according to Chapter 303(d) List? Yes ☐ No ☒

http://www.depweb.state.pa.us/watersupply/cwp/view.asp?a=1261&q=480056

List Causes of Impairment:

Is there an established TMDL that applies: Yes ☐ No ☒

Total Maximum Daily Loads (TMDLS)

http://www.dep.state.pa.us/watermanagement_apps/tmdl/.

http://www.epa.gov/reg3wapd/tmdl/pa_tmdl/index.htm

Is project subject to, or part of:

Municipal Separate Storm Sewer System (MS4) Requirements? Yes ☐ No ☒
http://www.depweb.state.pa.us/watershedmgmt/cwp/view.asp?a=1437&q=519543&watershedmgmtNav=|

Existing or planned drinking water supply? Yes ☐ No ☒

If yes, distance from proposed discharge (miles):

Approved Act 167 Plan? Yes ☐ No ☒
http://www.depweb.state.pa.us/watershedmgmt/cwp/view.asp?a=1437&q=519879

Existing River Conservation Plan? Yes ☐ No ☒

http://www.dcnr.state.pa.us/brc/rivers/riversconservation/registry/

Worksheet 2. Sensitive Natural Resources

INSTRUCTIONS

1. Provide Sensitive Resources Map according to non-structural BMP 5.4.1 in Chapter 5. This map should identify wetlands, woodlands, natural drainage ways, steep slopes, and other sensitive natural areas.

2. Summarize the existing extent of each sensitive resource in the Existing Sensitive Resources Table (below, using Acres). If none present, insert 0.

3. Summarize Total Protected Area as defined under BMPs in Chapter 5.

4. Do not count any area twice. For example, an area that is both a floodplain and a wetland may only be considered once.

EXISTING NATURAL SENSITIVE RESOURCE	MAPPED? Yes/no/n/a	TOTAL AREA (Ac.)	PROTECTED AREA (Ac.)
Waterbodies	na		
Floodplains	na		
Riparian Areas	na		
Wetlands	na		
Woodlands	na		
Natural Drainage Ways	na		
Steep Slopes, 15% - 25%	na		
Steep Slopes, over 25%	na		
Other:			
Other:			
TOTAL EXISTING:			

Worksheet 3. Nonstructural BMP Credits

PROTECTED AREA

1.1 Area of Protected Sensitive/Special Value Features (see WS 2) 0.00 **Ac.**

1.2 Area of Riparian Forest Buffer Protection 0.00 **Ac.**

3.1 Area of Minimum Disturbance/Reduced Grading 0.00 **Ac**

TOTAL 0.00 **Ac**

Site Area	Minus	Protected Area	=	Stormwater Management Area
~~13.72~~ 8.05	-	0.00	=	~~13.72~~ 8.05

This is the area that requires stormwater management

VOLUME CREDITS

3.1 Minimum Soil Compaction (See Chapter 8, page 22 – SW BMP Manual)

Lawn _____ ft^2 x 1/4" x 1/12 = _____ ft^3

_____

Meadow _____ ft^2 x 1/3" x 1/12 = _____ ft^3

3.3 Protect Existing Trees (See Chapter 8, page 23 – SW BMP Manual)

For Trees within 100 feet of impervious area:

Tree Canopy _____ ft^2 x 1/2" x 1/12 = _____ ft^3

_____ _____

5.1 Disconnect Roof Leaders to Vegetated Areas (See Chapter 8 page 25 – SW BMP Manual)

For runoff directed to areas protected under 5.8.1 and 5.8.2

Roof Area _____ ft^2 x 1/3" x 1/12 = _____ ft^3

For all other disconnected roof areas

Roof Area _____ ft^2 x 1/4" x 1/12 = _____ ft^3

5.2 Disconnect Non-Roof impervious to Vegetated Areas (See Chapter 8, page 26 – SW BMP Manual)

For Runoff directed to areas protected under 5.8.1 and 5.8.2

Impervious Area _____ ft^2 x 1/3" x 1/12 = _____ ft^3

For all other disconnected roof areas

Impervious Area 12,712 ft^2 x 1/4" x 1/12 = 265 ft^3

TOTAL NON-STRUCTURAL VOLUME CREDIT* 265 ft

**For use on Worksheet 5*

Worksheet 4. Change in Runoff Volume for 2-YR Storm Event

PROJECT: Naval Yard Photovoltaic Site
Drainage Area: 8.05
2-Year Rainfall: 3.20 in

Total Site Area: 8.05 acres
Protected Site Area: 8.05 acres
Managed Area: 8.05 acres

All changed from previous.

Existing Conditions:

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Woodland								
Meadow	Ub	294,646	6.76	58	7.24	1.45	0.34	8,364
Impervious	Ub	55,840	1.28	98	0.20	0.04	2.97	13,829
TOTAL:		350,486	8.05					22,193

*20% OF EXISTING IMPERVIOUS AREA IS CALCULATED AS MEADOW.

Developed Conditions

Cover Type/Condition	Soil Type	Area (sf)	Area (ac)	CN	S	Ia (0.2*S)	Q Runoff[1] (in)	Runoff Volume[2] (ft^3)
Grass	Ub	293,234	6.73	61	6.39	1.28	0.44	10,840
Impervious	Ub	57,252	1.31	98	0.20	0.04	2.97	14,179
TOTAL:		350,486	8.05					25,019

2-Year Volume Increase (ft3):

2-Year Volume Increase = Developed Conditions Runoff Volume – Existing Conditions Runoff Volume

1. Runoff (in) = $Q = (P-0.2S)^2 / (P+0.8S)$ where
   P = 2-Year Rainfall (in)
   S = (1000/ CN)-10
2. Runoff Volume (CF) = Q x Area x 1/12
   Q = Runoff (in)
   Area = Land use area (sq. ft)

Note: Runoff Volume must be calculated for EACH land use type/condition and HSGI.
The use of a weighted CN value for volume calculations is not acceptable.

Worksheet 5. Structural BMP Volume Credits

PROJECT: NAVAL YARD PHOTOVOLTAIC SITE
SUB-BASIN: NPDES BOUNDARY

Required Control Volume (ft^3) – *from Worksheet 4*: 0.00

Non-structural Volume Credit (ft^3) – *from Worksheet 3*: - 0.00
(maximum is 25% of required volume)

Structural Volume Reqmt (ft^3) 0.00

(Required Control Volume minus Non-structural Credit)

Proposed BMP		Area (ft^2)	Volume Reduction Permanently Removed (ft^3)
6.4.1	Porous Pavement		
6.4.2	Infiltration Basin		
6.4.3	Infiltration Bed		
6.4.4	Infiltration Trench		
6.4.5	Rain Garden/Bioretention		
6.4.6	Dry Well / Seepage Pit		
6.4.7	Constructed Filter		
6.4.8	Vegetated Swale		
6.4.9	Vegetated Filter Strip		
6.4.10	Berm		
6.5.1	Vegetated Roof		
6.5.2	Capture and Re-use		
6.6.1	Constructed Wetlands		
6.6.2	Wet Pond / Retention Basin		
6.7.1	Riparian Buffer Restoration		
6.7.2	Landscape Restoration / Reforestation		
6.7.3	Soil Amendment		
6.8.1	Level Spreader		
6.8.2	Special Storage Areas		
Other			

Total Structural Volume (ft^3): 0.00
Structural Volume Requirement (ft^3): 0.00
DIFFERENCE 0.00

Pennoni
PENNONI ASSOCIATES INC.
CONSULTING ENGINEERS

EPUR 0801

June 23, 2010

VIA UPS

Bureau of Land Management
Pennsylvania Game Commission
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue
Harrisburg, PA, 17110-9797
Fax Number: (717) 787-6957

Re: PNDI Search (20100610247874)
Conergy Photovoltaic Site at the Navy Yard, Philadelphia
North 26th Street
Philadelphia, PA 19112

To Whom It May Concern:

We are writing on behalf of the developer, Conergy, for review and comment on the enclosed PNDI search. Three (3) potential impacts have been found notifying us to send the entire PNDI Search Review Receipt.

The project is located at The Philadelphia Naval Yard on South 26th Street within the City of Philadelphia, Philadelphia County. As part of the land transfer of the Philadelphia Navy Yard to Philadelphia Authority for Industrial Development (PAID) the Navy capped the existing landfill. The site is currently not in use; however the developer proposes to construct a photovoltaic site with associated site improvements on the pervious cap. Conergy leases the 19.23 acre project site within the 1,200 acre Navy Yard. This leased area is included in the 29.0 acre project area used for the PNDI search. The site is bounded by the Reserve Basin to the south, the Tastybaking Facility to the north, the Schuylkill River to the west and 26th Street to the east.

This new development is to produce renewable solar energy on portions of the permeable cap from the Girard Point Management Area with the installation of photovoltaic arrays. A graded material will be placed above the existing surface at areas of the photovoltaics and appurtenances. The material will assist with leveling the foundations and photovoltaic arrays to desired elevations. The arrays will be connected to sheltered electric inverters with non penetrating concrete foundations. Utility (electric) connections will be run on the existing surface and concrete encased. A new fence will be installed to secure the facility and be installed on a precast concrete "Jersey" barrier. All work is to be done beyond the top of the existing Schuylkill River/Reserve Basin Banks.

Due to the nature of the project, the installation of a renewable energy source and the lack of overall development, it is our belief that project will not cause any adverse impacts to the three (3) potential impact species. We are therefore requesting a letter from your agency clearing the site of any potential impacts.

One Drexel Plaza • 3001 Market Street, 2nd Floor • Philadelphia, PA 19104 • Tel: 215-222-3000 • Fax: 215-222-0384
www.pennoni.com

We have enclosed; a USGS quadrangle map depicting the project site, a Preliminary Site Plan Exhibit, Sheet C1001 and a photo of an example array installation. Please do not hesitate to contact me if you have any questions or require additional information.

Very truly yours,

PENNONI ASSOCIATES INC.

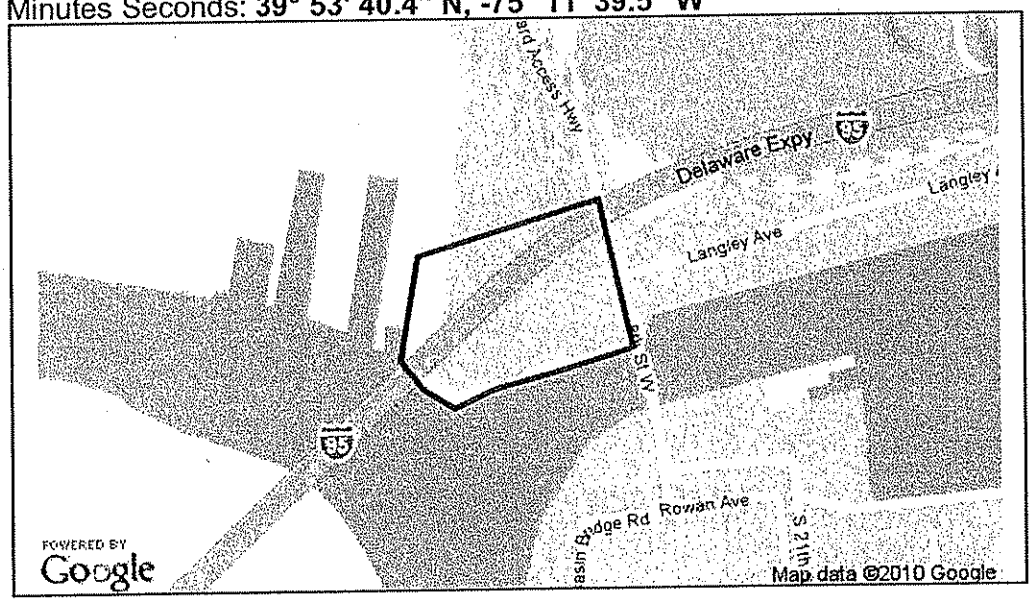
Patrick M. Foley, P.E.
Project Engineer

cc: Andy Welsh., Conergy
Mark Seltzer, PAID

Enclosures

1. PROJECT INFORMATION

Project Name: **James Inabinet**
Date of review: **6/10/2010 1:39:24 PM**
Project Category: **Development,New commercial/industrial development (store, gas station, factory)**
Project Area: **29.0** acres
County: **Philadelphia** Township/Municipality: **Philadelphia**
Quadrangle Name: **PHILADELPHIA** ~ ZIP Code: **19145,19112**
Decimal Degrees: **39.894559 N, -75.194292 W**
Degrees Minutes Seconds: **39° 53' 40.4" N, -75° 11' 39.5" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Department of Conservation and Natural Resources	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
PA Fish and Boat Commission	**Potential Impact**	**FURTHER REVIEW IS REQUIRED, See Agency Response**
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .
Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats
Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for one year** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt.

PA Game Commission

PGC Species:
Scientific Name: Casmerodius albus
Common Name: Great Egret
Current Status: Endangered
Proposed Status: Endangered

Scientific Name: Falco peregrinus
Common Name: Peregrine Falcon
Current Status: Endangered
Proposed Status: Endangered

Scientific Name: Pandion haliaetus
Common Name: Osprey
Current Status: Threatened

Proposed Status: Threatened

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

PA Department of Conservation and Natural Resources

DCNR Species:
Scientific Name: Echinochloa walteri
Common Name: Walter's Barnyard-grass
Current Status: Endangered
Proposed Status: Endangered

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

PA Fish and Boat Commission

PFBC Species:
Scientific Name: Sensitive Species**
Common Name:
Current Status: Threatened
Proposed Status: Special Concern Species*

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.* is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.
** Sensitive Species - Species identified by the jurisdictinal agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum* Materials to be submitted:

✓ **SIGNED** copy of this Project Environmental Review Receipt
✓ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
✓ Project location information (name of USGS Quadrangle, Township/Municipality, and County)
✓ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.
✓ A basic site plan(particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
✓ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
N/A Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams
N/A The DEP permit(s) required for this project

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt, a completed PNDI form and a USGS 7.5 minute quadrangle map with the project boundaries delineated on the map. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at http://www.naturalheritage.state.pa.us.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a **preliminary** screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA. 17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA. 16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

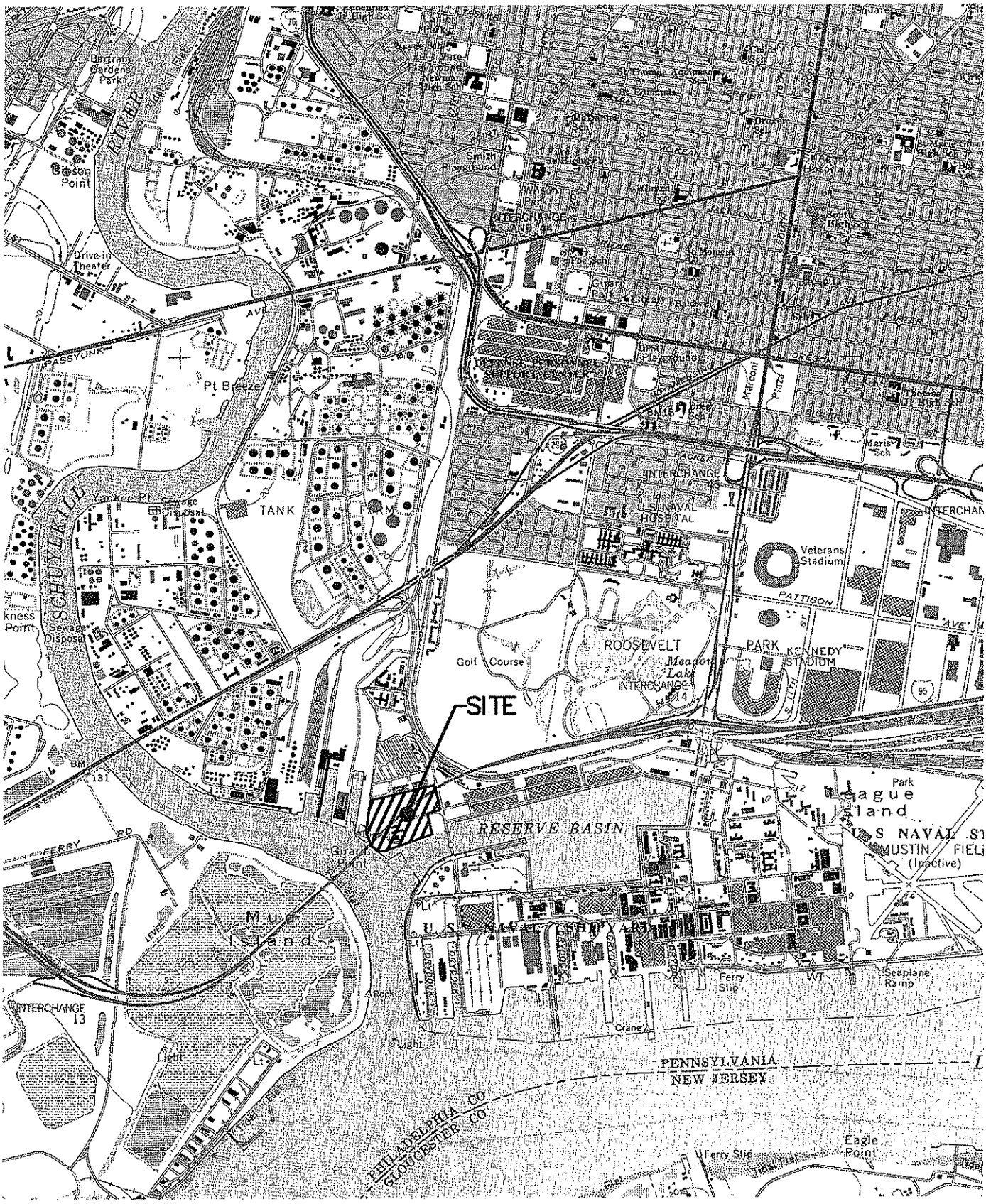
Name: JAMES INABINET
Company/Business Name: PENNONI ASSOCIATES INC.
Address: 3001 MARKET STREET, SUITE 200
City, State, Zip: PHILADELPHIA, PA 19104
Phone: (215) 222-3000 EXT. 3505 Fax: (215) 222-0598
Email: JINABINET@PENNONI.COM

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

James K. Inabinet — 06-19-10

applicant/project proponent signature — date



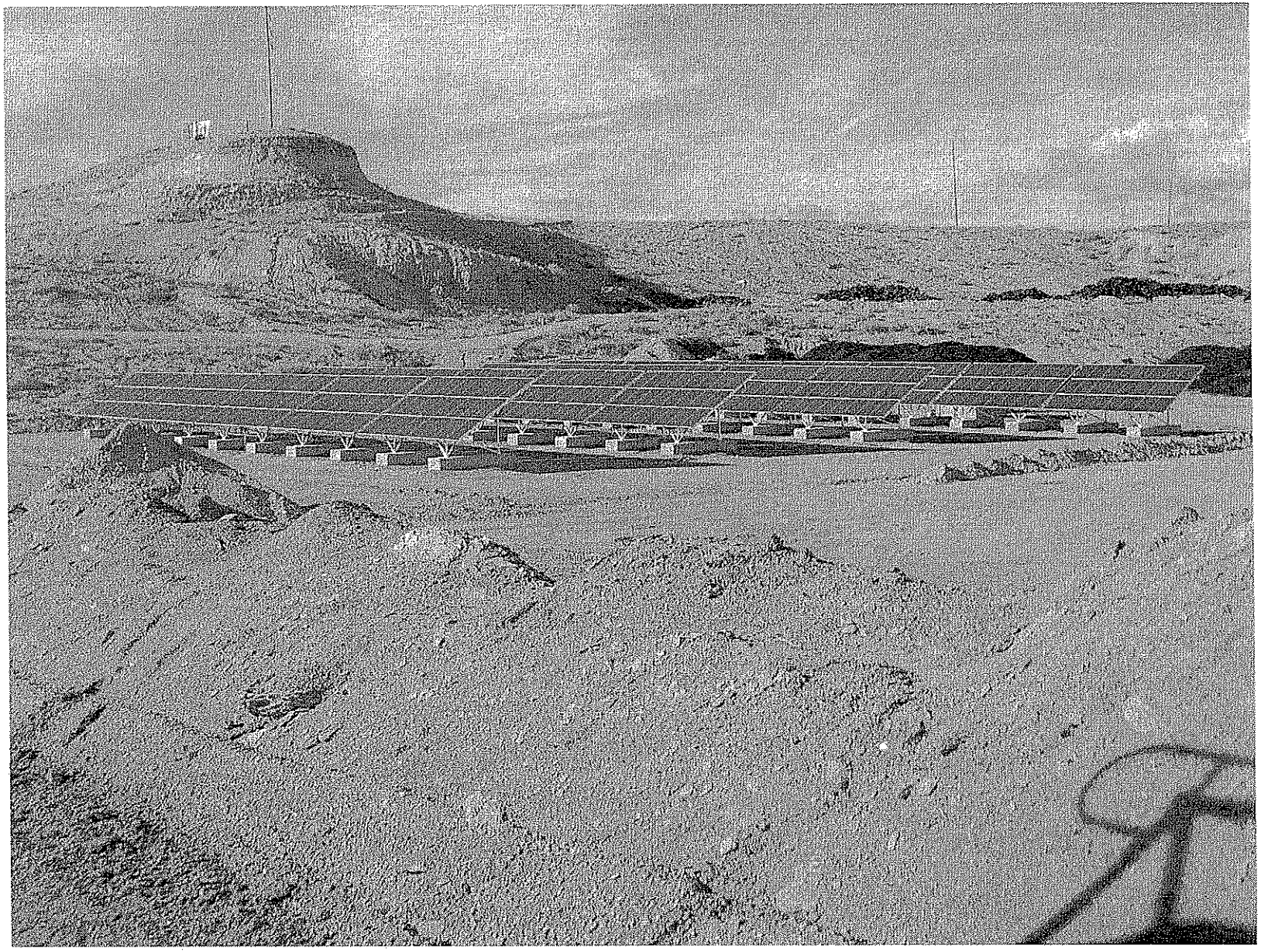
Pennoni

Pennoni Associates Inc.
3001 Market Street, Suite 200
Philadelphia, PA 19104

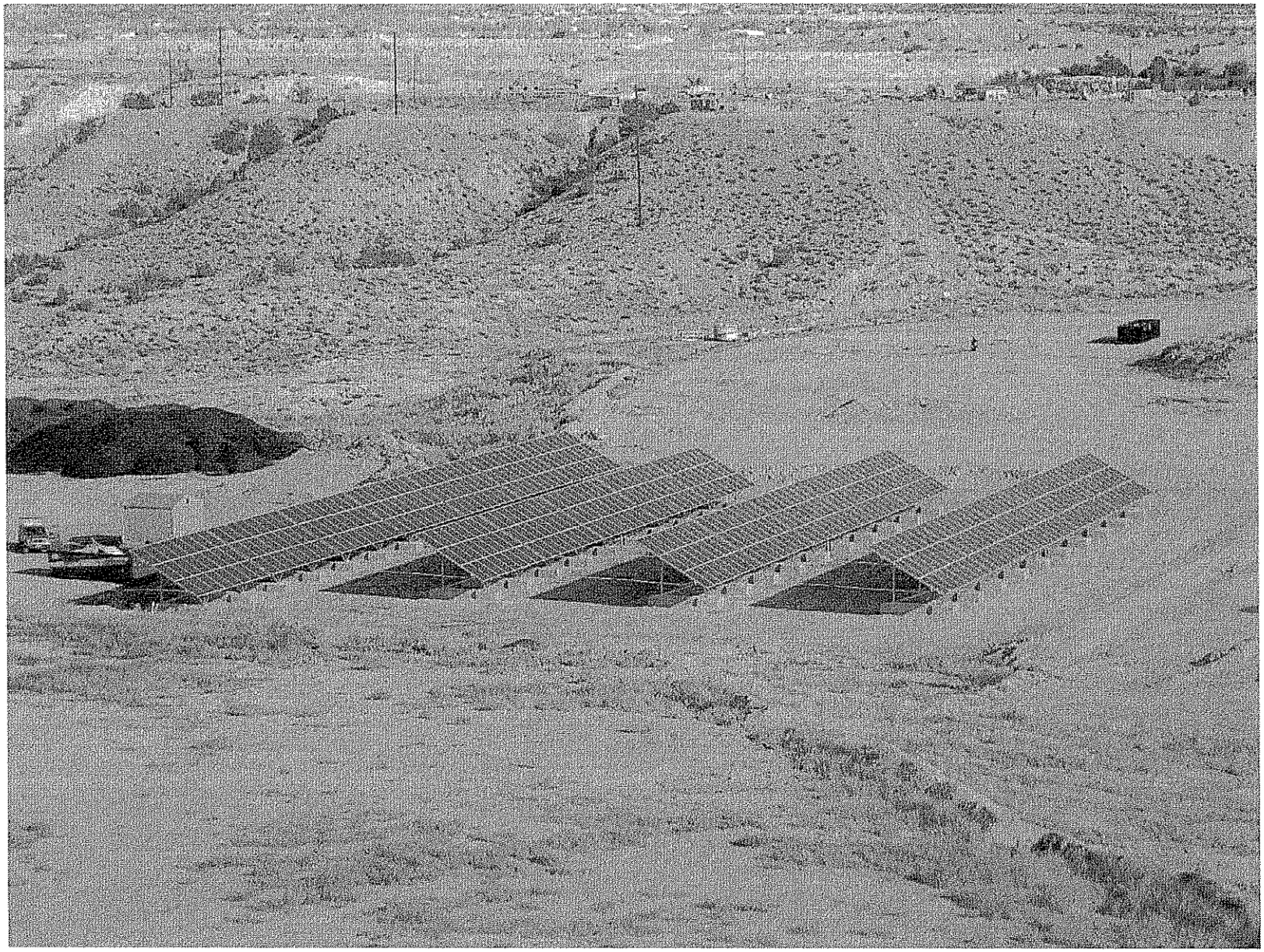
ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

DRAWN BY: SRA	SCALE: 1"=2500'	DATE: 06/23/10
CHECKED BY:	SKETCH No.	
JOB No. EPUR 0802	LOC-MAP	

LOCATION MAP - PHILADELPHIA QUADRANGLE



EXAMPLE PHOTOVOLTAIC ARRAY
NOT PROJECT SITE



EXAMPLE PHOTOVOLTAIC ARRAY
NOT PROJECT SITE

Appendix 8

pennsylvania
DEPARTMENT OF CONSERVATION
AND NATURAL RESOURCES

BUREAU OF FORESTRY

July 14, 2010

PNDI Number: 20100610247874

Patrick M. Foley
Pennoni
One Drexel Plaza
3001 Market Street, 2nd Floor
Philadelphia, PA 19104
Fax: 215-222-0384 (hard copy will not follow)

Re: Conergy Photovoltaic Site at the Navy Yard
Philadelphia, Philiadelphia County

Dear Mr. Foley,

Thank you for your submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number **20100610247874** for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on-site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered. Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map).

This finding applies to impacts to DCNR only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure the U.S. Fish and Wildlife Service, PA Game Commission, and the Pennsylvania Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

Rebecca H. Bowen

Rebecca H. Bowen, Environmental Review Manager FOR Chris Firestone, Wild Plant Program Mgr.
Ph: 717-772-0258 ~ c-rbowen@state.pa.us

Pennsylvania Fish & Boat Commission

established 1866

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5237 Fax: (814) 359-5175

RECEIVED
JUL 19 2010
PENNONI ASSOCIATES

July 15, 2010

IN REPLY REFER TO
SIR # 34517

PATRICK FOLEY
PENNONI
One Drexel Plaza
3001 MARKET ST, 2ND FLOOR
PHILADELPHIA, PA 19104

RE: Species Impact Review (SIR) - Rare, Candidate, Threatened and Endangered Species
CONERGY PHOTOVOLTAIC FACILITY
PNDI Search Number (if available): 20100610247874
City of PHILADELPHIA, PHILADELPHIA County, Pennsylvania

This responds to your inquiry about a Pennsylvania Natural Diversity Inventory (PNDI) Internet Database search "potential conflict" or a threatened and endangered species impact review. These projects are screened for potential conflicts with rare, candidate, threatened or endangered species under Pennsylvania Fish & Boat Commission jurisdiction (fish, reptiles, amphibians, aquatic invertebrates only) using the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files. These species of special concern are listed under the Endangered Species Act of 1973, the Wild Resource Conservation Act, and the Pennsylvania Fish & Boat Code (Chapter 75), or the Wildlife Code. The absence of recorded information from our files does not necessarily imply actual conditions on site. Future field investigations could alter this determination. The information contained in our files is routinely updated. A Species Impact Review is valid for one year only.

_X_ ***NO ADVERSE IMPACTS EXPECTED FROM THE PROPOSED PROJECT***

____ Except for occasional transient species, rare, candidate, threatened or endangered species under our jurisdiction are not known to exist in the vicinity of the project area. Therefore, no biological assessment or further consultation regarding rare species is needed with the Commission. Should project plans change, or if additional information on listed or proposed species becomes available, this determination may be reconsidered.

_X_ An element occurrence of a rare, candidate, threatened, or endangered species under our jurisdiction is known from the vicinity of the proposed project. However, given the nature of the proposed project, the immediate location, or the current status of the nearby element occurrence(s), no adverse impacts are expected to the species of special concern.

If you have any questions regarding this review, please contact the biologist indicated below:

____	Chris Urban	814-359-5113	_X_	Kathy Gipe	814-359-5186
____	Nevin Welte	814-359-5234	____	Bob Morgan	814-359-5129

Thank you in advance for your cooperation and attention to this important matter of species conservation and habitat protection.

SIGNATURE: Christopher A. Urban DATE: July 15, 2010
Christopher A. Urban
Chief, Natural Diversity Section

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
2001 ELMERTON AVENUE, HARRISBURG, PA 17110

"TO MANAGE ALL WILD BIRDS, MAMMALS AND THEIR HABITATS FOR CURRENT AND FUTURE GENERATIONS."

August 18, 2010 PNDI Number: 20100610247874

James Inabinet
Pennoni Associates Inc.
3001 Market Street Suite 200
Philadelphia, PA 19104

RECEIVED
AUG 24 2010
PENNONI ASSOCIATES

PNDI Number: 20100610247874
Re: Conergy Photovoltaic Site at the Navy Yard
City of Philadelphia, Philadelphia County, PA

Dear Mr. Inabinet,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20100610247874 for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

Potential Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. The PGC has received and thoroughly reviewed the information that you provided to this office as well as PNDI data, and has determined that potential impacts to threatened, endangered, and species of special concern birds and mammals may be associated with your project. Therefore, additional measures are necessary to avoid potential impacts to the species listed below.

Scientific Name	Common Name	PA Status
Falco peregrinus	Peregrine Falcon	ENDANGERED

Next Steps

The following Conservation Measure should be performed to minimize impacts to nesting peregrine falcons located on the Girard Point Bridge:

- *No construction/installation activities associated with the above reference project should occur within 1000 feet of the peregrine falcon nest located on the Girard Point Bridge during nesting season, March 1 – June 30.*

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for an additional year.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

Tracey Librandi Mumma

Tracey Librandi Mumma
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3614
Fax: 717-787-6957
E-mail:tlibrandi@state.pa.us

A PNHP Partner

PNHP
Pennsylvania Natural Heritage Program

TLM/tlm

cc: DuBrock
Brauning
McMorris

Appendix 9

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): JUN 24 2009

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Douglas McLaughlin, Conergy Projects Group, 222 W. Lancaster Avenue Suite 200, Paoli, Pennsylvania 19301

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CENAP-OP-R-2009-0052

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION: Tax parcel #45-5-24-0002 in the City and County of Philadelphia, PA. The property is located along the shoreline of the Schuylkill River at the entrance to the Reserve Basin of the former Philadelphia Naval Shipyard.
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: Pennsylvania County: Philadelphia City: Philadelphia
Center coordinates of site (lat/long in degree decimal format):
Lat. 39.8939781° N, Long. 75.1949704° W

Universal Transverse Mercator: Easting (x) Northing (y)

Name of nearest waterbody: Schuylkill River

Identify (estimate) amount of waters in the review area:
Non-wetland waters: 0 linear feet: 0 width (ft) and/or 0 acres.
Cowardin Class: Riverine
Stream Flow: Perennial
Wetlands: 0 acres.
Cowardin Class:

Name of any water bodies on the site that have been identified as Section 10 waters:
Tidal: Schuylkill River and Nval Reserve Basin
Non-Tidal: None

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): 4 March 2009

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.
This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA: **Data reviewed for preliminary JD** (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

☐ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  ☐ Office concurs with data sheets/delineation report.
  ☐ Office does not concur with data sheets/delineation report.
☐ Data sheets prepared by the Corps: .
☐ Corps navigable waters' study: .
☐ U.S. Geological Survey Hydrologic Atlas: .
  ☐ USGS NHD data.
  ☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name: Phila quad, 7.5 min.
☐ USDA Natural Resources Conservation Service Soil Survey. Citation: .
☐ National wetlands inventory map(s). Cite name: .
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Google Earth.
  ☒ Other (Name & Date): site photographs 4 March 2009.
☒ Previous determination(s). File no. and date of response letter: CENAP-OP-R-1995-0868-1(JD), CENAP-OP-R-1996-2669-1 (NWP38).
☒ Other information (please specify): Frshwater Wetlands Absence/Presence Determination by Pennoni Associates, dated October 7, 2008.

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Edward C. Ronner

Signature and date of
Regulatory Project Manager
(REQUIRED)

Douglas McLaughlin 6/22/2009

Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining the
signature is impracticable)

TABLE 1

Site number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
1	39.89397	-75.19497	N/A	none	N/A
2					
3					
4					
5					
6					
7					
8					
9					
10					

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Conergy Projects Group	File Number: CENAP-OP-R-2009-0052	Date: JUN 24 2009
Attached is:		See Section below
☐	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
☐	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
☐	PERMIT DENIAL	C
☐	APPROVED JURISDICTIONAL DETERMINATION	D
☒	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://usace.army.mil/inet/functions/cw/cecwo/reg or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the Philadelphia District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations (JD) associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the Philadelphia District Engineer. Your objections must be received by the Philadelphia District Engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the Philadelphia District Engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the Philadelphia District Engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the Philadelphia District Engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Philadelphia District Engineer.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Philadelphia District Engineer.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the North Atlantic Division Engineer, ATTN: CENAD-PD-PSD-O, Fort Hamilton Military Community, Building 301, General Lee Avenue, Brooklyn, NY 11252-6700. This form must be received by the North Atlantic Division Engineer within 60 days of the date of this notice with a copy furnished to the Philadelphia District Engineer.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

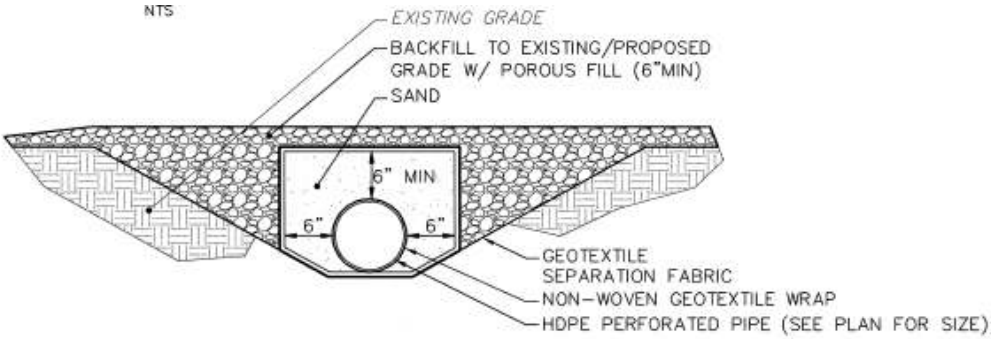
If you have questions regarding this decision and/or the appeal process you may contact: U.S. Army Corps of Engineers, Philadelphia District ATTN: CENAP-OP-R Wanamaker Building, 100 Penn Square East Philadelphia, PA 19107-3390 Telephone:	If you only have questions regarding the appeal process you may also contact: Mr. Michael G. Vissichelli Administrative Appeals Review Officer North Atlantic Division, Corps of Engineers Fort Hamilton Military Community Bldg. 301, General Lee Avenue Brooklyn, NY 11252-6700 Telephone: (718) 765-7163 Email: Michael.G.Vissichelli@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

Appendix 10

NTS



NOTE: SATISFACTORY FILL: ASTM D 2487 SOIL CLASSIFICATION GROUPS GP, GC, GM, SP, SC, AND SM, OR A COMBINATION OF THESE GROUPS; WITH A PLASTICITY INDEX LESS THAN 8 PERCENT (PER ASTM D 4318) AND FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER, INCLUDING RECYCLED CONCRETE. SOIL SHALL HAVE NO MORE THAN 20% PASS THE # 200 SIEVE. MOISTURE CONTENTS ABOVE THE LABORATORY DETERMINED OPTIMUM MOISTURE CONTENTS DO NOT CONSTITUTE SOILS BEING CLASSIFIED AS UNSATISFACTORY.

NOTE: SAND SHALL BE ASTM-C-33 (OR TO FINE SAND, NO ORGANIC MATERIAL AASHTO M-6) SIZE (0.02" - 0.04"), CONCRETE SAND, CLEAN, MEDIUM

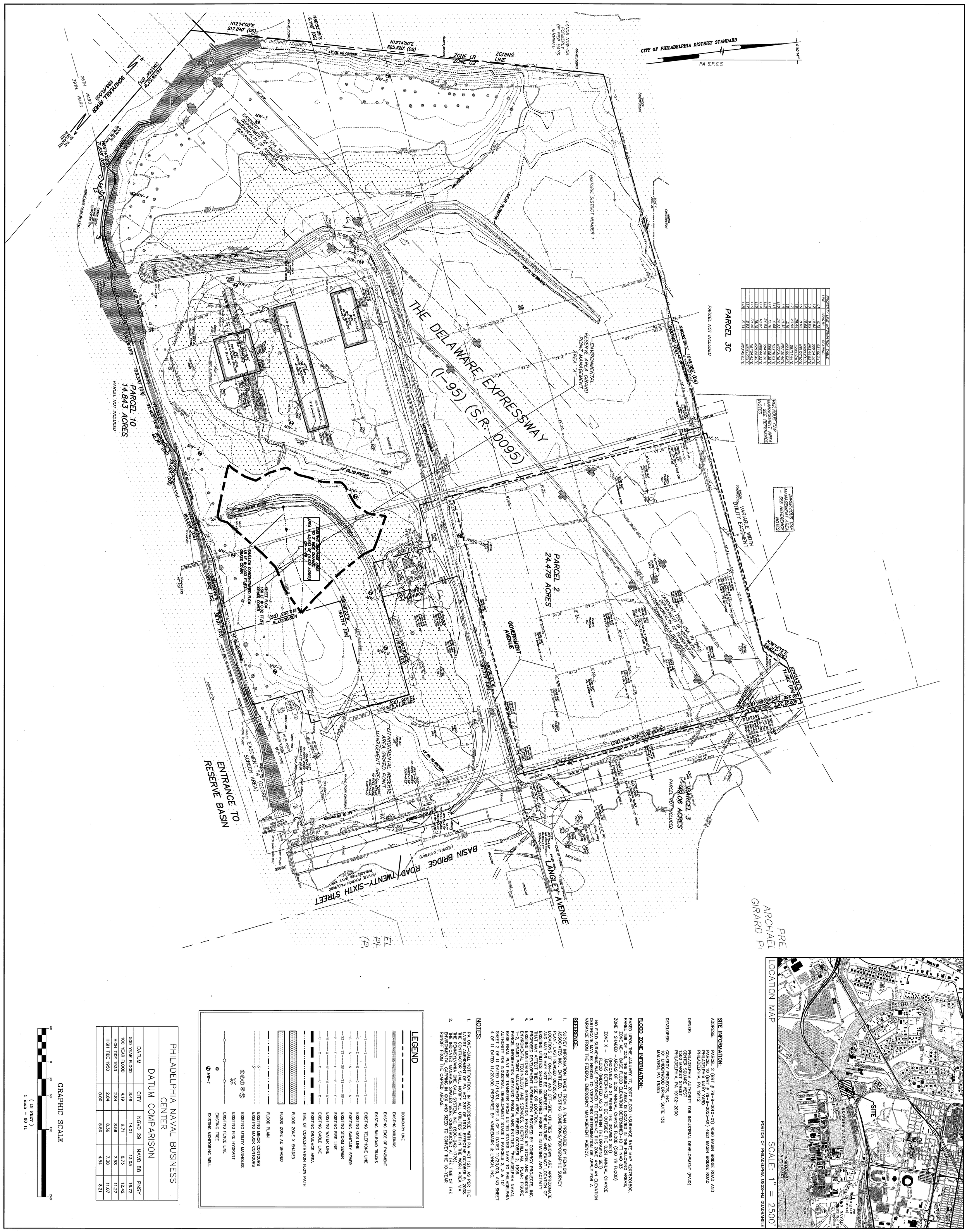
NOTE: GEOTEXTILE SHALL CONSIST OF NEEDLED NON-WOVEN POLYPROPYLENE FIBERS AND MEET THE FOLLOWING PROPERTIES:

a. GRAB TENSILE STRENGTH (ASTM-D4632) $\geq$ 120 LBS
b. MULLEN BURST STRENGTH (ASTM-D3786) $\geq$ 225 PSI
c. FLOW RATE (ASTM-D4491) $\geq$ 95 GAL/MIN/FT2
d. UV RESISTANCE AFTER 500 HRS (ASTM-D4355) $\geq$ 70%
e. HEAT-SET OR HEAT-CALENDARED FABRICS ARE NOT PERMITTED

UNDERDRAIN SECTION

NTS

Appendix 11



PROPERTY LINE INFORMATION TABLE		
LINE	LENGTH	BEARING
L1	8.19	S31°00'24"E
L2	10.82	S80°54'38"E
L3	8.09	N83°44'55"E
L4	10.96	N48°12'13"E
L5	8.00	N17°17'10"E
L6	38.44	S81°11'07"E
L7	23.55	S81°11'44"E
L8	3.16	N23°09'08"E
L9	10.32	N87°30'48"E
L10	34.33	N77°27'16"E
L11	15.18	S85°08'38"E
L12	15.18	S85°08'38"E
L13	24.53	S84°58'35"E
L14	10.97	N85°44'52"E
L15	18.15	N75°28'43"E
L16	10.36	N75°28'43"E
L17	8.63	N85°32'13"E
L18	5.33	N23°45'05"E

SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01) 4590 BASIN BRIDGE ROAD AND PARCEL 10 (BRT # 78-8-0055-01) 4621 BASIN BRIDGE ROAD PHILADELPHIA NAVY YARD PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID) CENTER SQUARE WEST 1500 MARKET STREET PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC. 101 LINDENWOOD DRIVE, SUITE 130 MALVERN, PA 19355

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 42075701896, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,
ZONE AE- BASE FLOOD ELEVATION DETERMINED-10 FT NAD 83
ZONE X SHADED - AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD)
ZONE X - (INDICATED AS X1 WITHIN THE DRAWING SET) AREAS OUTSIDE OF 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)
NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

REFERENCE:

1. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
2. LOCATIONS OF ON-SITE AND OFF-SITE UTILITIES AS SHOWN ARE APPROXIMATE AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EACH SHOULD BE ASCERTAINED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
3. PROPOSED DEVELOPMENT INFORMATION PROVIDED BY CONERGY PROJECTS, INC.
4. EXISTING MONITORING WELL INFORMATION PROVIDED BY STONE AND WEBSTER ENVIRONMENTAL TECHNOLOGY AND SERVICES, CHERRY HILL, NJ. PLAN: FIGURE 1-2, GIRARD POINT MANAGEMENT AREA, REVISED OCTOBER 2, 1996.
5. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE I PARCELS 2, 3 & 10" DATED 11/20/00, AND SHEET 3 OF 11 DATED 11/20/00, PREPARED BY VANDERMARK & LYNCH, INC.

NOTES:

1. PA. ONE-CALL NOTIFICATION: IN ACCORDANCE WITH PA ACT 121, AS PER THE UTILITY LINE PROTECTION ACT, EFFECTIVE OCTOBER 6, 2008, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776).
2. THE INDICATED MANMADE SWALES WERE CONSTRUCTED AT THE TIME OF THE ENVIRONMENTAL CAPPING IN XXX AND SIZED TO CONVEY THE 10-YEAR RUNOFF FROM THE CAPPED AREAS.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- EXISTING RAILROAD TRACKS
- EXISTING TELEPHONE LINE
- EXISTING GAS LINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING FIRE LINE
- EXISTING WATER LINE
- EXISTING CABLE LINE
- EXISTING DRAINAGE AREA
- TIME OF CONCENTRATION FLOW PATH
- FLOOD ZONE X SHADED
- FLOOD ZONE AE SHADED
- FLOOD PLAIN
- EXISTING MINOR CONTOURS
- EXISTING MAJOR CONTOURS
- EXISTING UTILITY MANHOLES
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING TREE
- MW-1 EXISTING MONITORING WELL

PHILADELPHIA NAVAL BUSINESS CENTER DATUM COMPARISON

DATUM	CITY	NGVD 29	NAVD 88	PNSY
500 YEAR FLOOD	8.49	14.01	13.03	16.72
100 YEAR FLOOD	4.19	9.71	8.73	12.42
HIGH TIDE 1933	2.84	8.56	7.58	11.27
HIGH TIDE 1950	0.00	5.50	4.54	8.21

GRAPHIC SCALE

(IN FEET)
1 inch = 60 ft.

LOCATION MAP

SCALE: 1" = 2500'

PORTION OF PHILADELPHIA USGS-NJ QUADRANGLE

Pennoni Associates Inc.

One Drexel Plaza, 3001 Market Street
Philadelphia, PA 19104

Engineers • Surveyors • Planners • Landscape Architects

PHOTOVOLTAIC FACILITY–PHILADELPHIA NAVAL YARD PARCELS 2 & 10

4590 BASIN BRIDGE ROAD AND 4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD – PHILADELPHIA, PA 19112

EXISTING CONDTIONS PLAN

CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

PATRICK M. FOLEY
ENGINEER
No. PE-070573
PENNSYLVANIA

DATE	NO.	REVISIONS	BY
02/18/11	3	PERMIT SUBMISSION	SMD
07/29/10	2	PERMIT SUBMISSION	JKI
07/21/10	1	PRELIMINARY ISSUANCE	JKI

Pennoni

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES, AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

SCALE	1"=60'
DRAWN BY	J.M.D.
DATE	06/09/10
APPROVED	PMF
DRAWING NO.	CS-0201

EPUR 0801

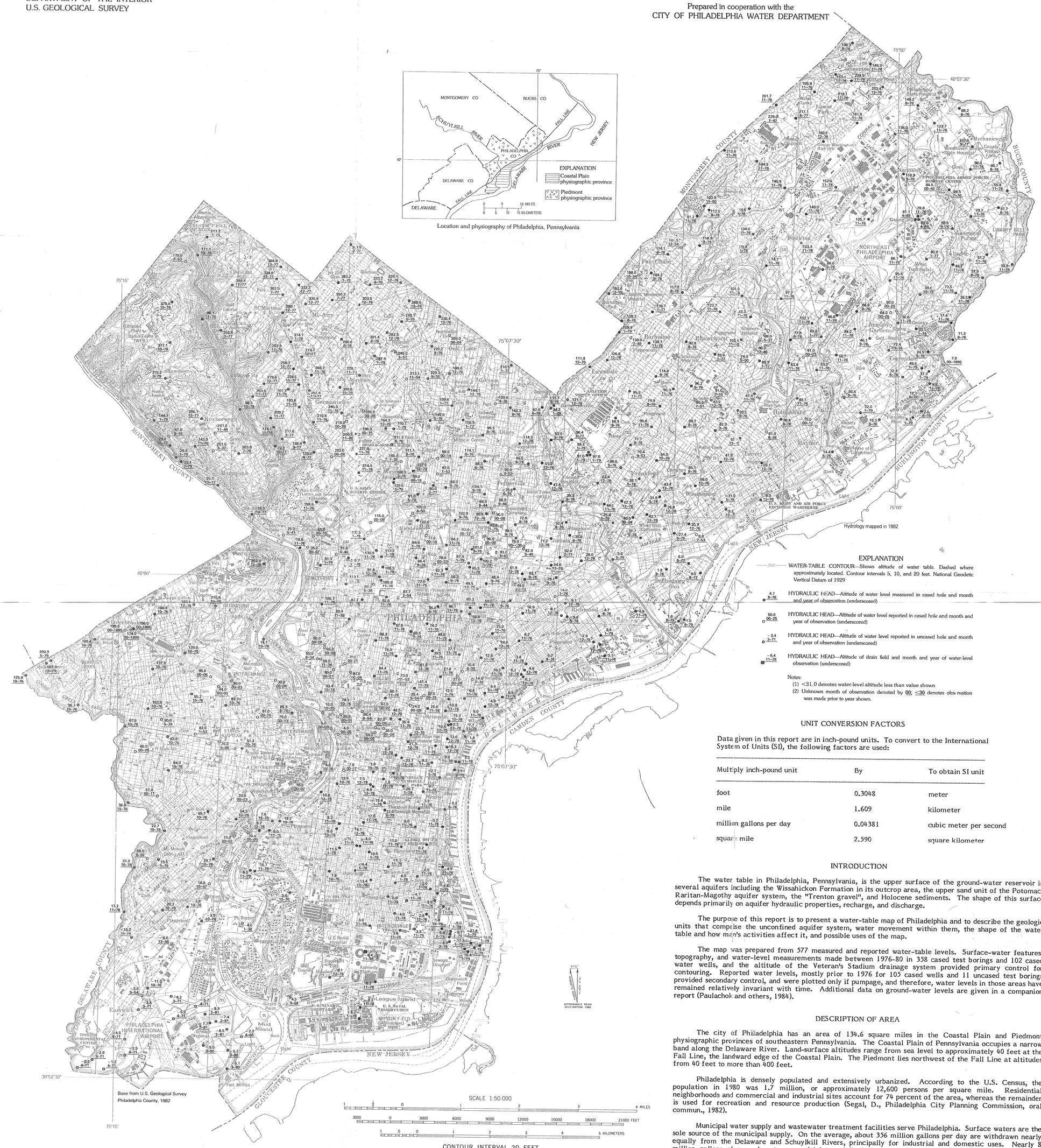
SHEET 1 OF 10

Appendix 12

DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

Prepared in cooperation with the
CITY OF PHILADELPHIA WATER DEPARTMENT

Location and physiography of Philadelphia, Pennsylvania



Base from U.S. Geological Survey
Philadelphia County, 1982

SCALE 1:50 000

CONTOUR INTERVAL 20 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

EXPLANATION

WATER-TABLE CONTOUR—Shows altitude of water table. Dashed where approximately located. Contour intervals 5, 10, and 20 feet. National Geodetic Vertical Datum of 1929

HYDRAULIC HEAD—Altitude of water level measured in cased hole and month and year of observation (underscored)

HYDRAULIC HEAD—Altitude of water level reported in cased hole and month and year of observation (underscored)

HYDRAULIC HEAD—Altitude of water level reported in uncased hole and month and year of observation (underscored)

HYDRAULIC HEAD—Altitude of drain field and month and year of water-level observation (underscored)

Notes:
(1) <31.0 denotes water-level altitude less than value shown
(2) Unknown month of observation denoted by 00; ≤30 denotes observation was made prior to year shown.

UNIT CONVERSION FACTORS

Data given in this report are in inch-pound units. To convert to the International System of Units (SI), the following factors are used:

Multiply inch-pound unit	By	To obtain SI unit
foot	0.3048	meter
mile	1.609	kilometer
million gallons per day	0.04381	cubic meter per second
square mile	2.590	square kilometer

INTRODUCTION

The water table in Philadelphia, Pennsylvania, is the upper surface of the ground-water reservoir in several aquifers including the Wissahickon Formation in its outcrop area, the upper sand unit of the Potomac-Raritan-Magothy aquifer system, the "Trenton gravel", and Holocene sediments. The shape of this surface depends primarily on aquifer hydraulic properties, recharge, and discharge.

The purpose of this report is to present a water-table map of Philadelphia and to describe the geologic units that comprise the unconfined aquifer system, water movement within them, the shape of the water table and how man's activities affect it, and possible uses of the map.

The map was prepared from 577 measured and reported water-table levels. Surface-water features, topography, and water-level measurements made between 1976-80 in 358 cased test borings and 102 cased water wells, and the altitude of the Veteran's Stadium drainage system provided primary control for contouring. Reported water levels, mostly prior to 1976 for 105 cased wells and 11 uncased test borings provided secondary control, and were plotted only if pumpage, and therefore, water levels in those areas have remained relatively invariant with time. Additional data on ground-water levels are given in a companion report (Paulachok and others, 1984).

DESCRIPTION OF AREA

The city of Philadelphia has an area of 134.6 square miles in the Coastal Plain and Piedmont physiographic provinces of southeastern Pennsylvania. The Coastal Plain of Pennsylvania occupies a narrow band along the Delaware River. Land-surface altitudes range from sea level to approximately 40 feet at the Fall Line, the landward edge of the Coastal Plain. The Piedmont lies northwest of the Fall Line at altitudes from 40 feet to more than 400 feet.

Philadelphia is densely populated and extensively urbanized. According to the U.S. Census, the population in 1980 was 1.7 million, or approximately 12,600 persons per square mile. Residential neighborhoods and commercial and industrial sites account for 74 percent of the area, whereas the remainder is used for recreation and resource production (Segal, D., Philadelphia City Planning Commission, oral commun., 1982).

Municipal water supply and wastewater treatment facilities serve Philadelphia. Surface waters are the sole source of the municipal supply. On the average, about 356 million gallons per day are withdrawn nearly equally from the Delaware and Schuylkill Rivers, principally for industrial and domestic uses. Nearly 8 million gallons of ground water are withdrawn daily by municipal and private concerns, mainly for site dewatering and industrial uses. A 3,000-mile network of sewers transports waste surface and ground waters to three treatment plants. Ultimately, treated wastewater is discharged to the Delaware River.

DESCRIPTION OF AQUIFERS

Philadelphia is underlain by crystalline rocks and by the younger unconsolidated sediments of the Coastal Plain. The crystalline rocks, chiefly of the Wissahickon Formation of Late Proterozoic and early Paleozoic age, crop out in the Piedmont and their surface slopes southeastward, forming the basement beneath the Coastal Plain sediments. The deepest Coastal Plain sediments in ascending order are the Potomac Group and Raritan and Magothy Formations of Cretaceous age, which form the Potomac-Raritan-Magothy aquifer system. The Potomac-Raritan-Magothy aquifer system has been subdivided into the following units: lower sand, lower clay, middle sand, middle clay, upper sand, and upper clay. Generally, the Cretaceous sediments are overlain by Pleistocene sediments, chiefly the informally-named "Trenton gravel" (as used by Owens and Minard, 1979), which in turn may be veneered by fine-grained Holocene sediments.

The Potomac-Raritan-Magothy aquifer system is the stratigraphic equivalent of the Raritan Formation, and the Trenton gravel is the equivalent of Pleistocene sediments of Wisconsin age described by Greenman and others (1961) in their report on the ground-water resources of the Philadelphia area.

The water table occurs within the geologic units that comprise the unconfined aquifer system. This system has two principal components: (1) The Wissahickon Formation in its outcrop area; and (2) unconsolidated sediments including the upper sand unit of the Potomac-Raritan-Magothy aquifer system, the Trenton gravel, and Holocene sediments. Water levels presented in this report represent conditions specifically in these geologic units.

The Wissahickon Formation consists chiefly of schist that is believed to represent a thick accumulation of arkosic and argillaceous sediments that were metamorphosed into dense hard foliated rock. These rocks typically exhibit well-developed cleavage and jointing.

The upper sand unit of the Potomac-Raritan-Magothy aquifer system is composed of medium to coarse sand and minor amounts of very fine to fine sand. In parts of south Philadelphia, the upper sand unit attains a thickness of over 50 feet, but generally the thickness does not exceed 35 feet (Greenman and others, 1961, p.42).

The Trenton gravel consists of sand and gravel and minor amounts of clay. The water-bearing properties of the sediments vary greatly from place to place according to their thickness and physical character. The Trenton gravel attains a maximum thickness of about 80 feet; the typical thickness, however, is about 40 feet (Greenman and others, 1961, p.44).

The Holocene sediments are composed of mud, silt, and fine sand. These sediments are nearly 80 feet thick in parts of south Philadelphia near the Delaware and Schuylkill Rivers, but elsewhere the thickness rarely exceeds 28 feet, and is usually less than 10 feet (Greenman and others, 1961, p.48).

In the outcrop area of the Wissahickon Formation, ground water commonly occurs under unconfined conditions in openings along bedding and schistosity planes, and fractures.

In Philadelphia, the upper clay unit of the Potomac-Raritan-Magothy aquifer system has limited areal extent. Consequently, the upper sand unit commonly forms a hydraulically continuous unit with the overlying Trenton gravel and Holocene sediments, and these three geologic units function as a single aquifer. The Holocene sediments are generally much less permeable than the underlying sediments and locally may constitute a leaky confining bed.

RECHARGE AND DISCHARGE

The unconfined aquifers are recharged by precipitation, surface-water sources, and leakage from sewers and water pipes. Fifty-two percent of the collector system consists of brick sewers which commonly have deteriorated mortar joints. When the water table is below the sewers, leakage from sewers adds to recharge. The quantity of such leakage, however, is unknown. Leakage from water pipes averages about 80 million gallons per day (Romano, R., City of Philadelphia Water Department, oral commun., 1982) and provides some additional recharge, although most of this leakage is thought to infiltrate directly into sewers that lie beneath the water pipes.

Water from the unconfined aquifers discharges to the atmosphere and to surface-water bodies and deeper aquifers. Local infiltration to sewers and withdrawals for site dewatering also drain the aquifers. When the water table is above the sewers, ground water drains into them through cracks and defective joints. Infiltration to sewers averages about 135 million gallons per day during periods of high water table (City of Philadelphia Water Department, 1975, sec. 13). Continuous dewatering of tunnels for three subway systems and pumping of sumps for foundation dewatering in central and south Philadelphia removes about 3.6 million gallons daily and controls water-table levels within the area of dewatering influence.

THE WATER TABLE

The water table in Philadelphia is represented by the contour map. The map shows the water table as of 1976-80, and is based principally on measurements made during that period.

The accuracy of the water-table contours is such that 80 percent of all water-table levels can be expected to fall within one-half of the contour interval except in areas of very high topographic relief.

In unstressed ground-water systems, the water-table profile generally resembles the land-surface profile. Consequently, the altitude of the water table is highest under the highest areas of land surface, such as hilltops and ridges, and is lowest in valleys where it may intersect the land surface at streams, ponds, or marshes. In Philadelphia, however, the altitude and shape of the water table has been altered significantly by human activities. Water-table levels throughout much of the area are influenced more by dewatering and leakage from sewers and water pipes than by topography; consequently, short-term and seasonal fluctuations are dampened to a narrow range in areas affected by dewatering and leakage.

Although pumpage and water-table levels were fairly stable during 1976-80, any significant change in the location or intensity of pumping can cause a commensurate change in the altitude and shape of the water table. The altitude of the water table can also change when leaky brick sewers are replaced by relatively watertight sewers constructed of other materials.

Several prominent hydrologic features in south Philadelphia are shown on the map. The widespread area of negative head results from pumping, principally in New Jersey, from the lower sand unit of the Potomac-Raritan-Magothy aquifer system. This sustained withdrawal has produced significant vertical differences in head between aquifers. Due to these head differences, water flows downward from the unconfined aquifers through the intervening clay units to the lower sand unit, causing head to decline locally below sea level in the unconfined aquifers. Where ground-water levels are lower than surface-water levels, streams commonly lose water to the aquifers.

Two localized cones of depression are also shown. The cone near Greenwich Point results from intensive pumping of the Coastal Plain aquifers by local industries; consequently, heads in observation wells have been lowered to approximately 20 feet below sea level. The cone near Eastwick is caused by several factors including ground-water flow to sewers and pumping of nearby dewatering wells, and is also influenced by the water level in Mingo Creek, which is continually maintained by pumping at about 6 feet below sea level. An earthen dam at the mouth of Mingo Creek hydraulically separates the Creek from the Schuylkill River, in which water levels average about 1 foot above sea level.

The elongated mound north of the U. S. Naval Base is about 10 feet above the regional water table and may be due to hydraulic effects produced by underlying low-permeability layers, or caused by leakage from sewers and water pipes.

Beyond the area of negative head, ground-water levels are typically at or above water-surface levels in adjoining streams, so that most streams receive ground-water discharge. Tidal streams receive ground-water discharge during low tide when stream levels are lower than ambient ground-water levels; some surface water flows to aquifers, however, and is retained as bank storage during high tide when stream levels are higher than ambient ground-water levels.

POSSIBLE USES OF THIS REPORT

This map provides information on water-table levels useful in identifying the source of seepage to structures and for delineating areas of high water table that may cause excessive infiltration to sewers. The map may be used to estimate the depth of the water table at an excavation site by subtracting the local hydraulic head from the prevailing land-surface altitude. The map also provides information useful for determining flow directions (and therefore, paths followed by transported contaminants); for estimating aquifer hydraulic properties and the quantity of ground-water flow; and for locating recharge and discharge areas.

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Owens, J. P., and Minard, J. P., 1979, Upper Cenozoic sediments of the lower Delaware Valley and the northern Delmarva Peninsula, New Jersey, Pennsylvania, Delaware, and Maryland: U.S. Geological Survey Professional Paper 1067-D, 47 p.

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WATER-TABLE MAP OF PHILADELPHIA, PENNSYLVANIA, 1976–1980

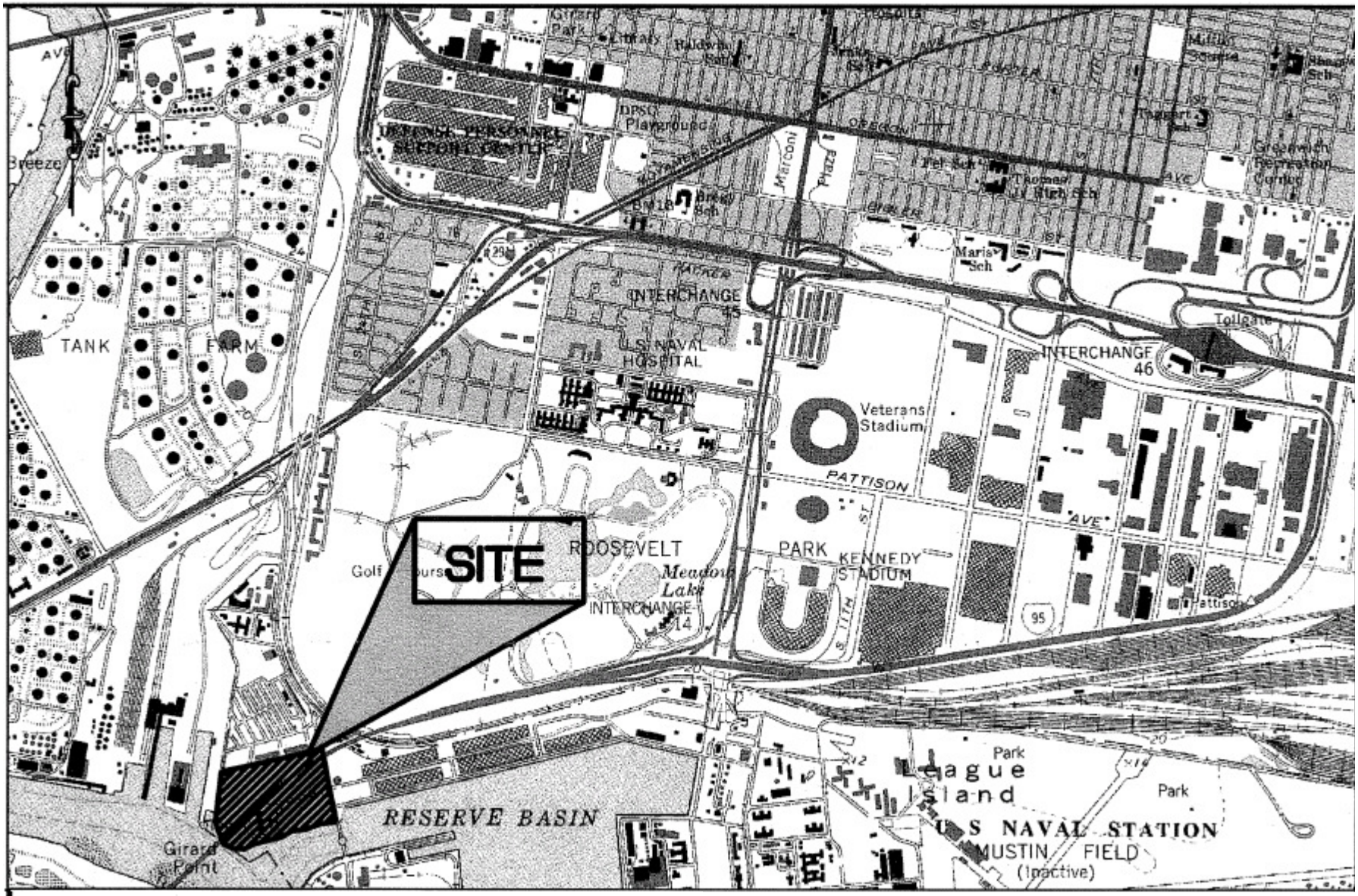
By
Gary N. Paulachok and Charles R. Wood

1984

INTERIOR—GEOLOGICAL SURVEY, RESTON, VA.—1984—W84068

For sale by Branch of Distribution, U.S. Geological Survey, 1200 South Eads Street, Arlington, VA 22202

Appendix 13



LOCATION MAP

PORTION OF U.S.G.S. QUADRANGLE
PHILADELPHIA, PA–NJ

Appendix 14

LINE	LENGTH	BEARING
L1	8.19	S31°00'24"E
L2	10.82	S60°54'38"E
L3	8.09	N83°44'55"E
L4	10.96	N48°21'13"E
L5	8.05	N81°07'10"E
L6	38.44	S74°13'01"E
L7	23.55	S81°11'44"E
L8	3.16	N23°09'08"E
L9	10.32	N87°30'48"E
L10	34.33	N77°21'16"E
L11	4.08	N59°18'09"E
L12	15.18	S85°06'36"E
L13	24.53	S84°58'36"E
L14	10.97	N85°44'25"E
L15	18.15	N75°28'49"E
L16	30.48	N81°54'45"E
L17	8.63	N59°12'31"E
L18	5.33	N23°45'05"E

FLOOD ZONE INFORMATION:

BY GRAPHIC PLOTTING ONLY, PORTIONS OF SUBJECT PARCEL AREA AS SHOWN ARE LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN). PORTIONS OF SUBJECT PARCEL AREA AS SHOWN ARE LOCATED IN ZONE X-SHADED (AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD). PORTIONS OF SUBJECT PARCEL AREA AS SHOWN ARE LOCATED IN ZONE AE (FLOODWAY AREAS ELEV=10 (NGVD29)). OF THE FLOOD INSURANCE RATE MAP (FIRM) NO. 42017C0189 G, PANEL NO. 189 OF 230, WHICH BEARS AN EFFECTIVE DATE OF JANUARY 17, 2007. NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

GENERAL NOTES:

1. A FIELD SURVEY OF THE SITE WAS PERFORMED BY PENNONI ASSOCIATES IN JULY OF 2008.
2. UNLESS SPECIFICALLY STATED OR SHOWN HEREON TO THE CONTRARY, THIS SURVEY IS MADE SUBJECT TO AND DOES NOT LOCATE OR DELINEATE:
   A. RIGHTS OR INTERESTS OF THE UNITED STATES OF AMERICA OR COMMONWEALTH OF PENNSYLVANIA OVER LANDS NOW OR FORMERLY FLOWED BY TIDEWATER BUT NO LONGER VISIBLE OR PHYSICALLY EVIDENT, OR LANDS CONTAINING ANY ANIMAL, MINERAL OR MINERAL DEPOSIT OWNED BY THE UNITED STATES OR THE JURISDICTION OF ANY FEDERAL STATE OR LOCAL AGENCY.
   B. BUILDING SETBACK LINES, ZONING REGULATIONS OR LINES ESTABLISHED BY ANY FEDERAL, STATE OR LOCAL AGENCY WHICH MAY AFFECT THE BUILDING OR DEVELOPMENT
   C. ANY SUBSURFACE OR SUBTERRANEAN CONDITION, EASEMENTS OR RIGHTS, INCLUDING BUT NOT LIMITED TO MINERAL OR MINING RIGHTS, OR THE LOCATION OF OR RIGHTS TO ANY SUBSURFACE STRUCTURES, CONTAINERS OR FACILITIES OR ANY OTHER NATURAL OR MAN-MADE SUBSURFACE CONDITION WHICH MAY AFFECT THE USE OR DEVELOPMENT POTENTIAL OF THE SUBJECT PROPERTY.
3. LOCATIONS OF ON AND OFF SITE UTILITIES AS SHOWN ARE APPROXIMATE AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
4. A. THE LOCATION OF THE EXISTING UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE.
   B. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.

GENERAL NOTES (CONT.):

   C. IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 1996, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA PENNSYLVANIA ONE CALL SYSTEM (1-800-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
   D. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK.
5. THE WORD "CERTIFY" AS USED IN ITS VARIOUS FORMS HEREON, IS UNDERSTOOD TO BE AN EXPRESSION OF PROFESSIONAL OPINION BY THE SURVEYOR, WHICH IS BASED ON HIS BEST KNOWLEDGE, INFORMATION AND BELIEF. AS SUCH, IT CONSTITUTES NEITHER A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
6. THIS SITE IS CURRENTLY ZONED G2 - INDUSTRIAL DISTRICT IN THE CITY OF PHILADELPHIA. FOR COMPLETE ZONING INFORMATION PLEASE REFER TO THE ZONING CODE OF THE CITY OF PHILADELPHIA AS CURRENTLY AMENDED.
7. REFERENCE IS MADE TO PENNSYLVANIA ONE CALL SYSTEM, ASSIGNED SERIAL NUMBER 18563541 IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187 OF 1996. (1-800-242-1776)
8. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT
9. ALL DIMENSIONS SHOWN ARE IN CITY OF PHILADELPHIA DISTRICT STANDARD MEASURE (DS) UNLESS DESIGNATED (US) TO DENOTE U.S. STANDARD MEASURE.
10. ATTENTION IS CALLED TO THE ZONING REQUIREMENTS IN THE PHILADELPHIA CODE AS AMENDED.
11. THIS PLAN WAS PREPARED IN ACCORDANCE WITH INSTRUCTIONS OF THE CLIENT EPURON, LLC.

ADDRESS:
PARCEL 3
BASIN BRIDGE ROAD
PHILADELPHIA, PA 19112

OWNER:
PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID)
4413 LANGLEY AVENUE, QUARTERS A
PHILADELPHIA, PA 19112

CLIENT:
EPURON, LLC
1500 WALNUT STREET
SUITE 1501
PHILADELPHIA, PA 19102

Pennoni Associates Inc.
One Drexel Plaza, 3001 Market Street
Philadelphia, PA 19104 – Tel: (215) 222-3000 – Fax: (215) 222-0598
Engineers • Surveyors • Planners • Landscape Architects

SOLAR PHOTOVOLTAIC PROJECT – PHILADELPHIA NAVY YARD PARCEL 2

CITY OF PHILADELPHIA
COUNTY OF PHILADELPHIA – COMMONWEALTH OF PENNSYLVANIA

EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN

EPURON, LLC
1500 WALNUT STREET, SUITE 1501
PHILADELPHIA, PA 19102

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
GRANT C. HARRINGTON
SURVEYOR
No. 056070

DATE	NO.	REVISIONS	BY
08/26/08	2	GENERAL	HH
08/08/08	1	GENERAL	HH

Pennoni

SCALE 1"=50'
DRAWN BY HH
DATE 08/01/08
APPROVED
DRAWING NO. S0401

EPUR 0801
SHEET 1 OF 1

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Appendix 15

United States
Environmental Protection
Agency

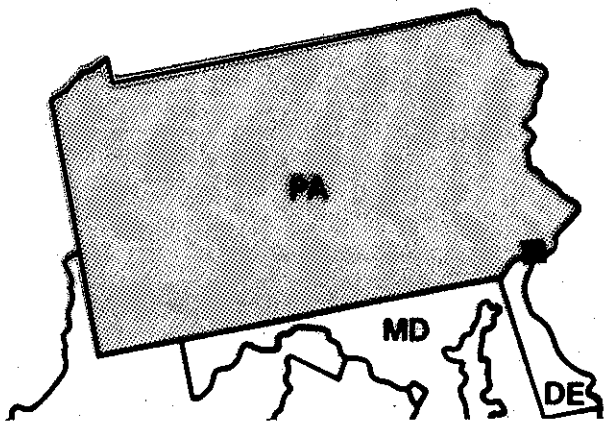
Environmental Monitoring
Systems Laboratory
P.O. Box 93478
Las Vegas NV 89193-3478

TS-PIC-94134
May 1994

Research and Development

EPA Aerial Photographic Site Analysis Philadelphia Naval Complex Philadelphia, Pennsylvania

EPA Region 3
and OERR



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TS-PIC-94134
May 1994

Aerial Photographic Site Analysis
Philadelphia Naval Complex
Philadelphia, Pennsylvania

by
Nancy R. Bronson, Imagery Analyst
Hughes STX Corporation
Warrenton, Virginia 22186

Contract No. 68-C3-0367

Work Assignment Manager
E. Terrence Slonecker
Environmental Photographic Interpretation Center
Environmental Monitoring Systems Laboratory
Warrenton, Virginia 22186

ENVIRONMENTAL MONITORING SYSTEMS LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
LAS VEGAS, NEVADA 89193-3478

INTRODUCTION

An analysis of aerial photography was performed on the Philadelphia Naval Complex, located in Philadelphia, Pennsylvania. The site was analyzed to support the Environmental Protection Agency's (EPA) Region 3 in its remedial investigation by documenting past waste disposal practices and other activities of environmental significance.

The facility was constructed in the early 1800's and underwent periods of rapid expansion during the Civil War and in 1939. During its history, the Naval Complex has functioned as a shipyard, airfield, aircraft factory, catapult design and test facility, and a research and development facility. Collateral data supplied by EPA Region 3 categorizes the facility by zones (Zones I-IV). The shipyard was analyzed in addition to all four Zones.

Figure 1 shows the site location, the four Zones, and the shipyard, keyed to a copy of a U.S. Geological Survey (USGS) 1:24,000-scale topographic map. The site, excluding the Reserve Basin, covers 450 hectares (1,113 acres). Surface runoff from the site flows into the Reserve Basin, the Schuylkill River, and the Delaware River, which flows south into Delaware Bay. Site boundaries or areas used in this analysis were determined from collateral data supplied by EPA Region 3 and do not necessarily denote legal property lines or ownership.

The analysis of ten years of aerial photography for the time period 1944 to 1992[1] revealed frequent staining and/or spills; drum storage with associated staining; and landfilling in Zone I. Stains and spills were observed from 1953 to 1979 in Zone II and from 1953 to 1992 in both the shipyard and Zone III. The aircraft engine test facility in Zone III and the aircraft overhaul and assembly building in Zone IV were locations of persistent staining. Extensive filling in Zone IV was observed from 1944 through 1979. Waste disposal in Zone IV appears to have occurred during the 1970's.

The EPA's Environmental Photographic Interpretation Center in Warrenton, Virginia, a branch of the Advanced Monitoring Systems

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[1]A complete listings of maps and photography used in this report is provided in the References section.

Division of the Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, performed this analysis at the request of the Superfun Support Section of EPA Region 3 in Philadelphia, Pennsylvania, and th Office of Emergency and Remedial Response in Washington, D.C.

METHODOLOGY

A search of government and commercial sources was undertaken to obtain large scale aerial photography of the site spanning the desired time frame. The photography and other sources of information used in this report are listed in the References section.

The analysis was performed by viewing backlit transparencies of aerial photography through stereoscopes. Stereoscopic viewing creates a perceived three-dimensional effect which, when combined with viewing at various magnifications, enables the analyst to identify signatures associated with different features and environmental conditions. The term "signature" refers to a combination of visible characteristics (such as color, tone, shadow, texture, size, shape, pattern, and association) which permit a specific object or condition to be recognized on aerial photography.

The terms "possible" and "probable" are used to indicate the degree of certainty of signature identification. "Possible" is used when only a few characteristics are discernible or these characteristics are not unique to a signature. "Probable" is used when incrementally more characteristics are discernible. No qualifying terms are used when the characteristics of a signature allow for a definite feature identification.

Photographic prints were made from those years of aerial photographic coverage that reveal significant information about the site. Overlays to the prints and/or base maps serve to locate significant features; additional observations and analysis are discussed in the text.

Site boundaries or areas used in this analysis were determined from collateral data supplied by EPA Region 3 and do not necessarily denote legal property lines or ownership.

Due to factors inherent in the photographic printing process, prints do not exhibit the level of detail that is visible in the original aerial photography. Therefore, some features identified from the aerial photography may not be clearly discernible, or even visible, on the photographic prints presented in this report.

AERIAL PHOTO SITE ANALYSIS

ZONE I

Zone I comprises 32 hectares (80 acres) and is located north of the Reserve Basin, along the west side of Bridge Street. According to collateral data provided by Region 3, this portion of the Naval Complex includes the damage control training center, the heating plant, hazardous waste storage buildings, a scrap yard, an incinerator, and an industrial waste treatment plant.[1]

MAY 6, 1960 (FIGURE 2)

Photography from 1944 and 1953 was analyzed but not reproduced for this report due to few significant findings. Features noted during those years are included in the analysis for 1960.

Buildings in the north part of Zone I, the damage control training center, were under construction in 1944. Coverage of the northern portion was not available for 1953; spills, stains (ST), and standing liquid (SL) are visible there in 1960.

A scrap yard and open storage area (OS) occupy the central portion of Zone I. Scrap yard fencing is shown to differentiate its contents from items in the open storage area. Stains are consistently seen on the ground of the open storage area and have not been annotated unless associated with drum storage (DS). A large area of standing liquid is visible near a possible drum storage area in 1960. A possible pit is located along the west boundary.

Filling (FA) of the south part of Zone I was visible in 1944. The incinerator (INC)* was also present; fill materials include light- and dark-toned mounded material (possibly incinerator waste). Material not used as fill appears to have been removed by barge and rail. Disposal appeared to be taking place along the water's edge between 1944 and 1953 when probable waste materials (WM) were observed. By 1960, probable crates or containers (C) and probable debris had been deposited west of the incinerator. Mounded material, a stain or standing liquid, and disturbed ground (DG) or a possible pit are noted in the southeast portion of the Zone.

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[1]Information provided by EPA Region 3 is referenced throughout this report and denoted with an asterisk (*).

MARCH 23, 1979 (FIGURE 3)

Photography from 1965, 1973, and 1975 was analyzed but not reproduced due to few significant findings. Those findings are discussed with the analysis for 1979.

Spills were observed in the north portion of Zone I between 1965 and 1979. Light-toned (LT) material (M) and disturbed ground were also noted during this period. Drum storage areas with associated stains and standing liquid are present in the northwest part of the open storage area. Stains surrounding crates or containers, a spill, and light-toned material are noted in 1979 south of the open storage area.

Light- and dark-toned mounded materials were observed in the southern portion of Zone I during this period and were used as fill material in the southwest portion. Interstate 95 was built between 1965 and 1973. A small building, identified as the treatment plant,* was added before 1965. An addition on its east side was noted between 1975 and 1979. Coarse-textured mounded materials, possible drum storage with standing liquid, crates or containers, and debris were all noted during the 1970's.

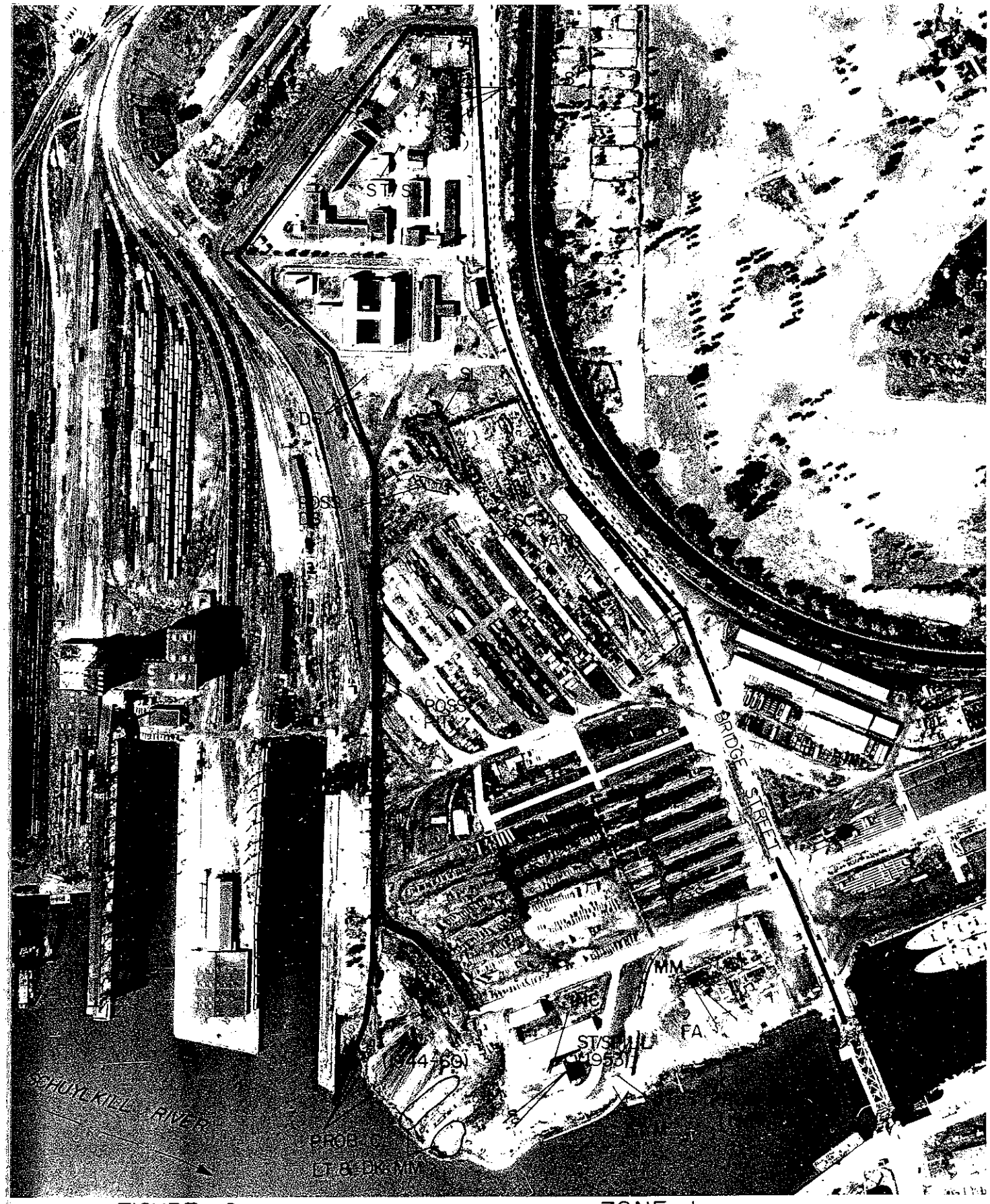
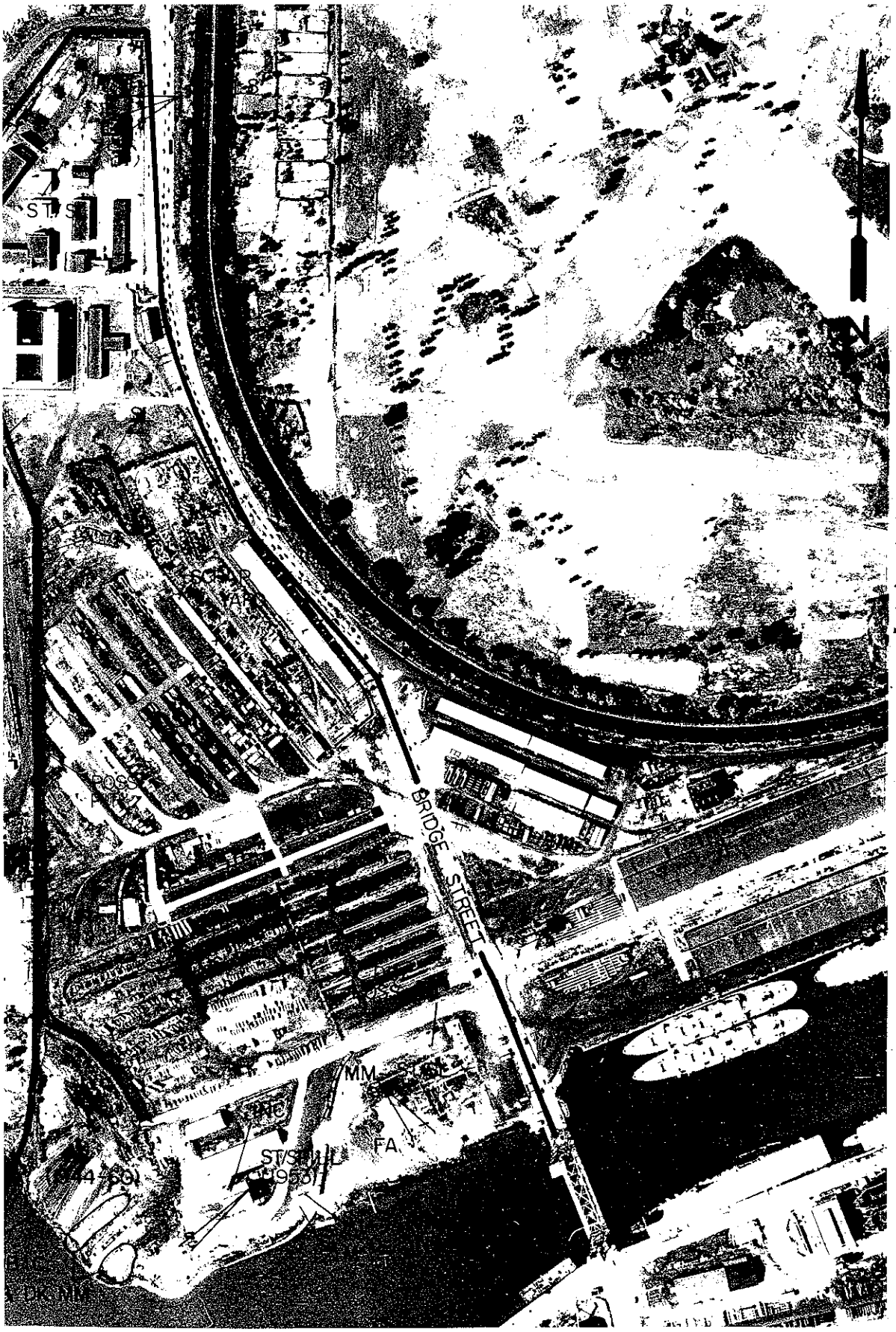


FIGURE 2 ZONE I
PHILADELPHIA NAVAL COMPLEX MAY 6, 1960 APPROX. SCALE



LEGEND

B	- Building
BR	- Breach
C	- Crates/Containers
DB	- Debris
DG	- Disturbed Ground
DK	- Dark-Toned
DS	- Drum Storage
EX	- Excavation
FA	- Fill Area
HT	- Horizontal Tank
IM	- Impoundment
INC	- Incinerator
LT	- Light-Toned
M	- Material
MM	- Mounded Material
OS	- Open Storage
SL	- Standing Liquid
ST	- Stain
VT	- Vertical Tank
WM	- Waste Materials

- - - - - - Access Road
- Berm
- Channelized Drainage
- Edge of Slope
- Feature Boundary
- Fence
- Historical Boundary
- Natural Drainage
- Site/Zone Boundary
- Vertical Tank

ZONE I

VAL COMPLEX MAY 6, 1960 APPROX. SCALE 1:4,900

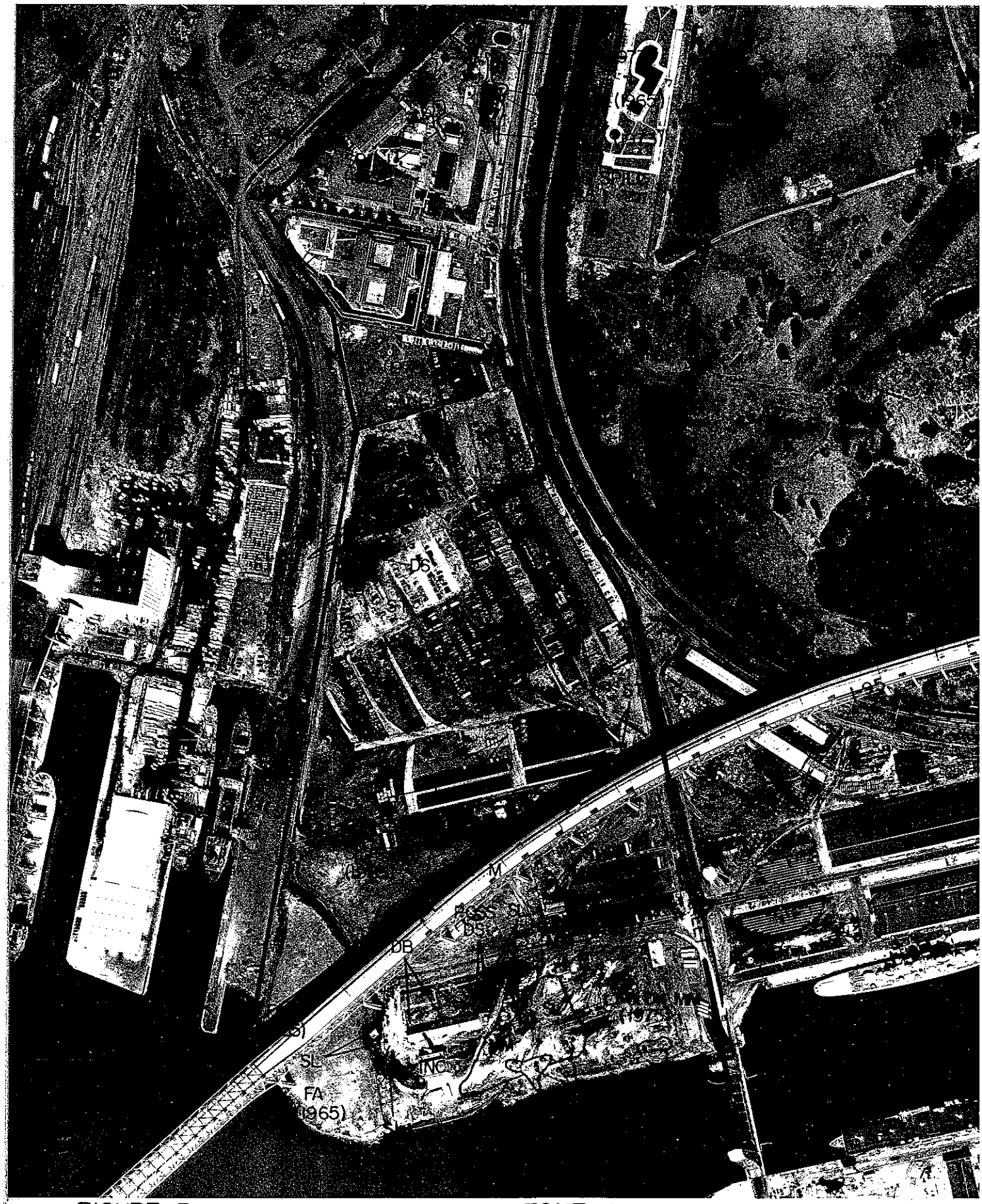


FIGURE 3 ZONE I
PHILADELPHIA NAVAL COMPLEX MARCH 23, 1979 APPROX. SCALE 1

LEGEND

B	- Building
BR	- Breach
C	- Crates/Containers
DB	- Debris
DG	- Disturbed Ground
DK	- Dark-Toned
DS	- Drum Storage
EX	- Excavation
FA	- Fill Area
HT	- Horizontal Tank
IM	- Impoundment
INC	- Incinerator
LT	- Light-Toned
M	- Material
MM	- Mounded Material
OS	- Open Storage
SL	- Standing Liquid
ST	- Stain
VT	- Vertical Tank
WM	- Waste Materials

- - - - - Access Road
Berm
Channelized Drainage
Edge of Slope
Feature Boundary
Fence
Historical Boundary
Natural Drainage
Site/Zone Boundary
Vertical Tank

ZONE 1
OMPLEX MARCH 23, 1979 APPROX. SCALE 1:4700

Appendix 16

MAP 7

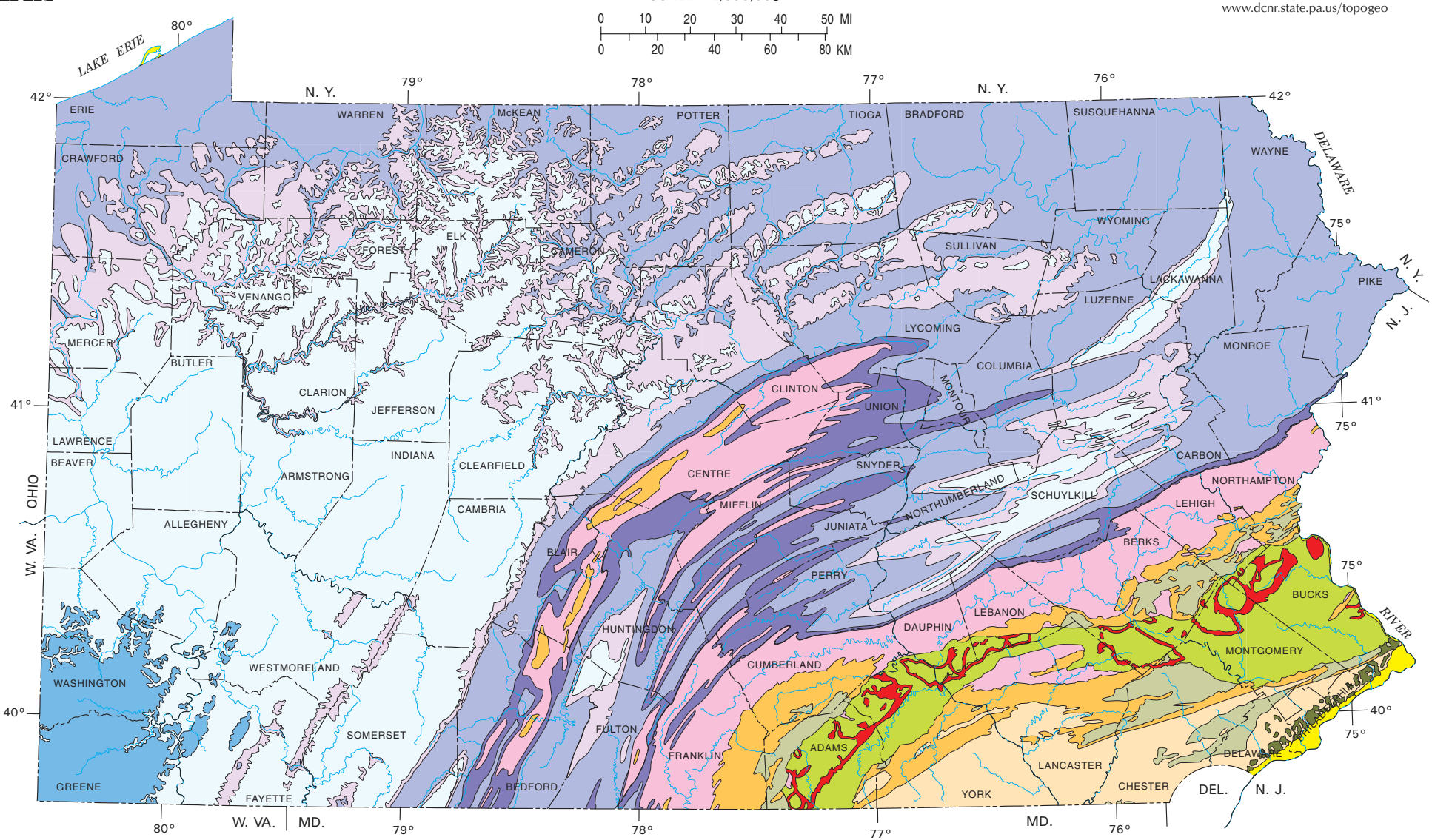
GEOLOGIC MAP OF PENNSYLVANIA

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF
CONSERVATION AND NATURAL RESOURCES
BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY
www.dcnr.state.pa.us/topogeo

SCALE 1:2,000,000

0 10 20 30 40 50 MI

0 20 40 60 80 KM



EXPLANATION

QUATERNARY (0–1.8 mil. yrs.)
Sand, gravel, and silt.
Sand and gravel.

TERTIARY (1.8–65 mil. yrs.)
Sand, gravel, silt, and clay.
Sand and gravel.

* **JURASSIC AND TRIASSIC** (144–248 mil. yrs.)
Red sandstone, shale, and conglomerate (green), intruded by diabase (red).
Building stone, iron.

PERMIAN (248–290 mil. yrs.)
Cyclic sequences of shale, sandstone, limestone, and coal.
Lime, clay.

PENNSYLVANIAN (290–323 mil. yrs.)
Cyclic sequences of sandstone, red and gray shale, conglomerate, clay, coal, and limestone.
Coal, clay, lime, building stone.

MISSISSIPPIAN (323–354 mil. yrs.)
Red and gray sandstone, shale, and limestone.
Flagstone, limestone, clay.

DEVONIAN (354–417 mil. yrs.)
Red sandstone, gray shale, black shale, limestone, and chert.
Flagstone, silica sand, clay, lime.

SILURIAN (417–443 mil. yrs.)
Red and gray sandstone, conglomerate, shale, and limestone.
Lime, building stone.

ORDOVICIAN (443–490 mil. yrs.)
Shale, limestone, dolomite, and sandstone.
Slate, limestone, zinc, clay.

CAMBRIAN (490–570 mil. yrs.)
Limestone, dolomite, sandstone, shale, quartzite, and phyllite.
Lime, building stone.

LOWER PALEOZOIC (443–570 mil. yrs.)
Metamorphic rocks (metasedimentary and meta-igneous); schist, gneiss, quartzite, serpentine, slate, and marble.
Building stone, talc.

PRECAMBRIAN (older than 570 mil. yrs.)
Gneiss, granite, anorthosite, metadiabase, metabasalt, metarhyolite, and marble.
Building stone, graphite, sericite.

*Cretaceous rocks, which are present in small areas of southern Montgomery County, cannot be shown at the scale of this map.

Prepared by Bureau of Topographic and Geologic Survey. Third Edition, 1990; Fourth Printing, Slightly Revised, 2007.

2200–MP–DCNR0498
Printed on Recycled Paper

Appendix 17

COMMONWEALTH OF PENNSYLVANIA
PENNSYLVANIA GAME COMMISSION
2001 ELMERTON AVENUE, HARRISBURG, PA 17110

"TO MANAGE ALL WILD BIRDS, MAMMALS AND THEIR HABITATS FOR CURRENT AND FUTURE GENERATIONS."

August 18, 2010 PNDI Number: 20100610247874

James Inabinet
Pennoni Associates Inc.
3001 Market Street Suite 200
Philadelphia, PA 19104

RECEIVED
AUG 24 2010
PENNONI ASSOCIATES

PNDI Number: 20100610247874
Re: Conergy Photovoltaic Site at the Navy Yard
City of Philadelphia, Philadelphia County, PA

Dear Mr. Inabinet,

Thank you for submitting the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20100610247874 for review. The Pennsylvania Game Commission (PGC) screened this project for potential impacts to species and resources of concern under PGC responsibility, which includes birds and mammals only.

Potential Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. The PGC has received and thoroughly reviewed the information that you provided to this office as well as PNDI data, and has determined that potential impacts to threatened, endangered, and species of special concern birds and mammals may be associated with your project. Therefore, additional measures are necessary to avoid potential impacts to the species listed below.

Scientific Name	Common Name	PA Status
Falco peregrinus	Peregrine Falcon	ENDANGERED

Next Steps

The following Conservation Measure should be performed to minimize impacts to nesting peregrine falcons located on the Girard Point Bridge:

- *No construction/installation activities associated with the above reference project should occur within 1000 feet of the peregrine falcon nest located on the Girard Point Bridge during nesting season, March 1 – June 30.*

This response represents the most up-to-date summary of the PNDI data files and is valid for one (1) year from the date of this letter. An absence of recorded information does not necessarily imply actual conditions on site. Should project plans change or additional information on listed or proposed species become available, this determination may be reconsidered.

Should the proposed work continue beyond the period covered by this letter, please resubmit the project to this agency as an "Update" (including an updated PNDI receipt, project narrative and accurate map). If the proposed work has not changed and no additional information concerning listed species is found, the project will be cleared for PNDI requirements under this agency for an additional year.

This finding applies to impacts to birds and mammals only. To complete your review of state and federally-listed threatened and endangered species and species of special concern, please be sure that the U.S. Fish and Wildlife Service, the PA Department of Conservation and Natural Resources, and/or the PA Fish and Boat Commission have been contacted regarding this project as directed by the online PNDI ER Tool found at www.naturalheritage.state.pa.us.

Sincerely,

Tracey Librandi Mumma

Tracey Librandi Mumma
Division of Environmental Planning & Habitat Protection
Bureau of Wildlife Habitat Management
Phone: 717-787-4250, Extension 3614
Fax: 717-787-6957
E-mail:tlibrandi@state.pa.us

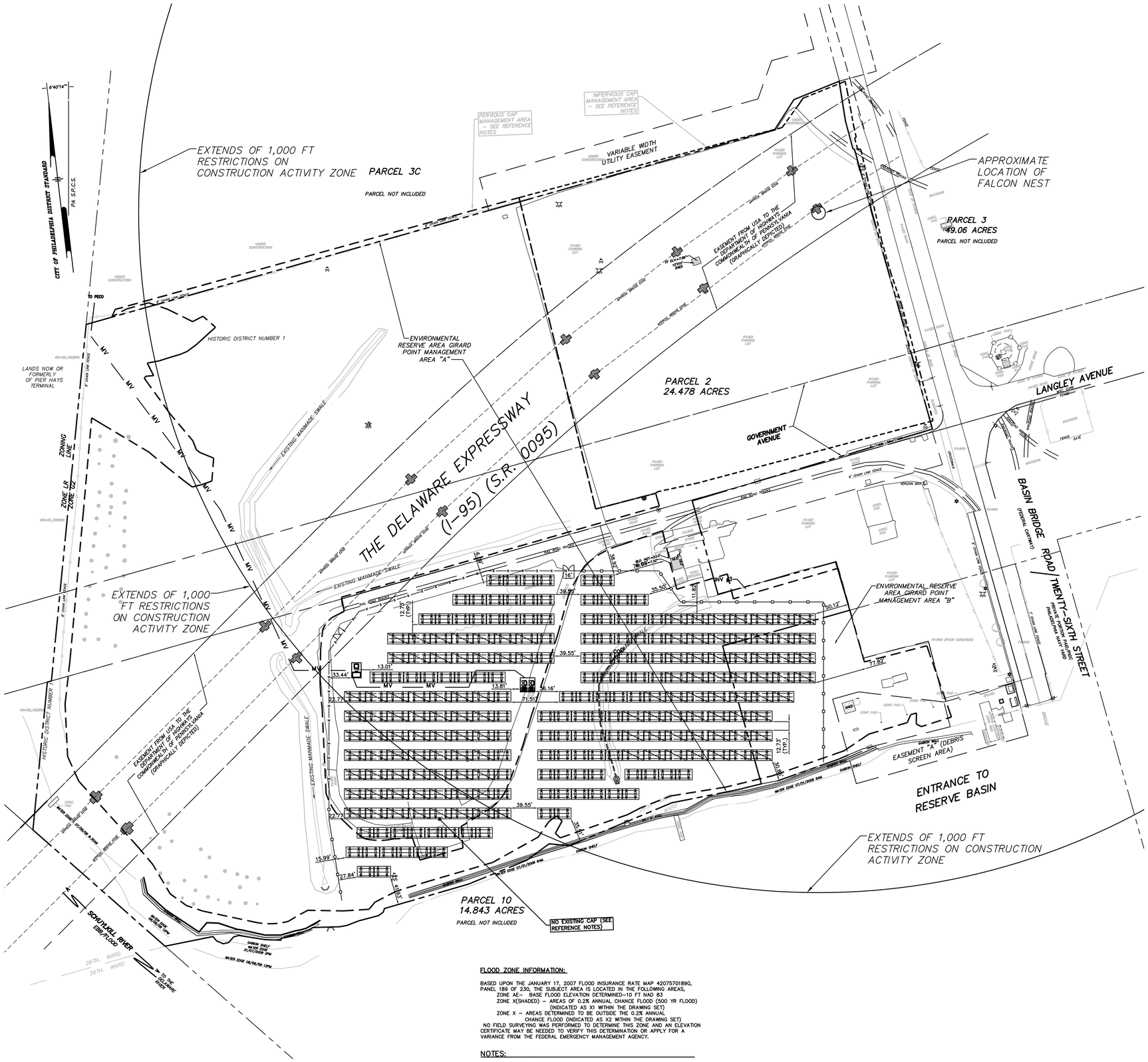
A PNHP Partner

PNHP
Pennsylvania Natural Heritage Program

TLM/tlm

cc: DuBrock
Brauning
McMorris

Appendix 18



GENERAL NOTES:

1. THE VERTICAL DATUM IS CITY OF PHILADELPHIA VERTICAL DATUM.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT THE CONSTRUCTION OF A 1.5MW PHOTOVOLTAIC ARRAY SYSTEM. REFER TO "E" SERIES DRAWINGS FOR ELECTRICAL IMPROVEMENTS. REFER TO "S" SERIES DRAWINGS FOR STRUCTURAL IMPROVEMENTS.
3. UTILITY NOTES
   - 3.1. THE LOCATION OF THE EXISTING ON AND OFF SITE UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE.
   - 3.2. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
   - 3.3. IN ACCORDANCE WITH PA ACT 187, THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800–242–1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
   - 3.4. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
   - 3.5. IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
4. ALL DIMENSIONS ARE IN UNITED STATES MEASUREMENT UNLESS OTHERWISE INDICATED AS PHILADELPHIA DISTRICT STANDARD (DS) MEASUREMENTS.
5. ACCORDING TO THE SOIL SURVEY OF PHILADELPHIA COUNTY, PENNSYLVANIA ALL LANDS LOCATED WITHIN THE BOUNDARY OF THIS PROJECT ARE CLASSIFIED AS URBAN LAND (UB).

SITE NOTES:

1. WHERE NOT OTHERWISE SPECIFIED IN THE PLANS OR IN THE ACCOMPANYING DETAILS, THE REFERENCED MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS OF P.A. D.O.T. PUBLICATION 408 OR CITY SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
2. NO SEWER OR WATER PROPOSED FOR THIS PROJECT.
3. THE VERTICAL DATUM IS CITY VERTICAL DATUM.
4. ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES, AND ALL NECESSARY LICENSES AND PERMIT SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER/DEVELOPER.
5. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS HE DISCOVERS IN THE PLAN.
6. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
7. ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER AND TENANT.
8. NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC, SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION.
9. HIGH INTENSITY LIGHTING FACILITIES SHALL BE SO ARRANGED THAT THE SOURCE OF ANY LIGHT IS CONCEALED FROM PUBLIC VIEW AND FROM ADJACENT RESIDENTIAL PROPERTY AND DOES NOT INTERFERE WITH TRAFFIC.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES AROUND AND TO ALL BUILDINGS NEAR CONSTRUCTION; I.E. IN TIMES OF RAIN OR MUD, ROADS SHALL BE ABLE TO CARRY A FIRE TRUCK BY BEING PAVED OR HAVING A CRUSHED STONE BASE, ETC. WITH A MINIMUM WIDTH OF 20 FEET. ACCESS TO BUILDINGS THAT HAVE SPRINKLER OR STANDPIPE SYSTEMS SHALL BE WITHIN 40 FEET OF THE FIRE DEPARTMENT CONNECTOR. (NFPA 1141 3–1).

SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78–8–0010–01) 4590 BASIN BRIDGE ROAD AND PARCEL 10 (BRT # 78–8–0055–01) 4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD
PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID)
CENTER SQUARE WEST
1500 MARKET STREET
PHILADELPHIA, PA 19102–2000

DEVELOPER: CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

REFERENCE:

1. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/28/08.
2. LOCATIONS OF ON–SITE AND OFF–SITE UTILITIES AS SHOWN ARE APPROXIMATE AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
3. PROPOSED DEVELOPMENT INFORMATION PROVIDED BY CONERGY PROJECTS, INC.
4. EXISTING MONITORING WELL INFORMATION PROVIDED BY STONE AND WEBSTER ENVIROMENTAL TECHNOLOGY AND SERVICES, CHERRY HILL, NJ. PLAN: FIGURE 1–2, GIRARD POINT MANAGEMENT AREA, REVISED OCTOBER 2, 1996.
5. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE 1 PARCELS 2, 3 & 10" SHEET 2 OF 11 DATED 11/14/01, SHEET 3 OF 11 DATED 11/20/00, AND SHEET 4 OF 11 DATED 11/20/00, PREPARED BY VANDEMARK & LYNCH, INC.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- EXISTING RAILROAD TRACKS
- EXISTING MANHOLE
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- 3X9 PHOTOVOLTAIC ARRAYS WITH FOUNDATION
- 3X7 PHOTOVOLTAIC ARRAYS WITH FOUNDATION
- MW–1 MONITORING WELL
- X — X PROPOSED FENCE LINE

PHILADELPHIA NAVAL BUSINESS CENTER				
DATUM COMPARISON				
DATUM	CITY	NGVD 29	NAVD 88	PNSY
500 YEAR FLOOD	8.49	14.01	13.03	16.72
100 YEAR FLOOD	4.19	9.71	8.73	12.42
HIGH TIDE 1933	2.84	8.56	7.58	11.27
HIGH TIDE 1950	2.84	8.36	7.38	11.07
	0.00	5.50	4.54	8.21

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 42075701890, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,
ZONE AE– BASE FLOOD ELEVATION DETERMINED–10 FT NAD 83
ZONE X(SHADED) – AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD) (INDICATED AS X1 WITHIN THE DRAWING SET)
ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)
NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NOTES:

1. PA ONE–CALL NOTIFICATION: IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187, OF 1996. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800–242–1776).
2. DEVELOPER IS IN THE PROCESS OF OBTAINING DEMOLITION PERMITS FOR BUILDING WITHIN PROPOSED LEASE AREA FOR ALTERNATE PHOTOVOLTAIC ARRAY LOCATIONS.

Pennoni Associates Inc.

One Drexel Plaza, 3001 Market Street
Philadelphia, PA 19104

Engineers • Surveyors • Planners • Landscape Architects

Pennoni

DATE	NO.	REVISIONS	BY

ALL DIMENSIONS MUST BE VERIFIED BY THE CONTRACTOR AND ANY DISCREPANCIES NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

PHOTOVOLTAIC FACILITY–PHILADELPHIA NAVAL YARD PARCELS 2 & 10

4590 BASIN BRIDGE ROAD AND 4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD – PHILADELPHIA, PA 19112

PNDI – FALCON NEST LOCATION AND CONSTRUCTION RESTRICTION LIMITS

CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNER'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM.

EPUR 0801

SHEET 1 OF 1

SCALE	DRAWING NO.
1"=60'	CS-9804
DRAWN BY: LEL	
DATE: 03/03/11	
APPROVED: PMF	

Appendix 19

Pennsylvania
Historical & Museum
Commission

Bureau for Historic Preservation
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120-0093

FAX TRANSMITTAL SHEET

DATE: 7/23/10

ORGANIZATION: Conergy

ATTENTION: Andrew Walsh

FAX NUMBER: (866) 436-6114

From: Ann Scholly *Telephone Number:*

Fax Number: 717/772-0920

NUMBER OF PAGES (including Cover Sheet): 2

COMMENTS: ER# 10-1539-101-B

Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

23 July 2010

Andrew Welsh
Conergy Projects
101 Lindenwood Drive
Suite 130
Malvern, PA 19355

TO EXPEDITE REVIEW USE
BHP REFERENCE NUMBER

RE: ER# 10-1539-101-B
DOE: Exelon-Conergy Solar Center II Project, Naval Shipyard, Philadelphia

Dear Mr. Welsh:

The Bureau for Historic Preservation (the State Historic Preservation Office) has reviewed the above named project in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999 and 2004. These regulations require consideration of the project's potential effect upon both historic and archaeological resources.

In our opinion no archaeological resources will be affected by this project.

The above referenced project is located in the National Register listed **Philadelphia Naval Shipyard Historic District.** In our opinion the placement of a photovoltaic system in the proposed area should have no adverse effect upon this historic resource. However, this finding is conditional upon retention of the existing buildings in the project area, which contribute to the significance of the historic property. We look forward to discussing the feasibility of developing the proposed project while retaining these buildings.

If you need further assistance in this matter, contact Ann Safley at (717) 787-9121.

Sincerely

Ann Safley for

Douglas C. McLearen, Chief
Division of Archaeology & Protection

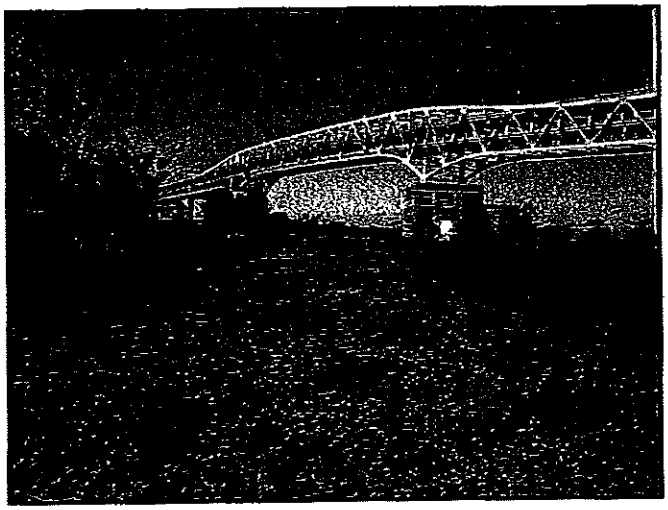
DMcL/ras

Appendix 20

Pennoni

PHASE I ENVIRONMENTAL SITE ASSESSMENT

1413 Langley Avenue, Parcels 2 and 10 (portion of)
Philadelphia Naval Business Center
Philadelphia, Philadelphia County, Pennsylvania 19112



Submitted To:

Mr. Peter Alyanakian
EPURON
1500 Walnut Street, Suite 1501
Philadelphia, Pennsylvania 19102

Submitted By:

Pennoni Associates Inc.
One Drexel Plaza
3001 Market Street
Philadelphia, Pennsylvania 19104

Jeffrey M. Ham
Associate Environmental Scientist

William F. Schmidt, P.E.
Associate Vice President

Proj. No. EPUR 0801

October 28, 2008

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY iii
Findings and Opinion iv
Conclusions iv

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Scope of Work 2
1.3 Limitations, Exceptions, Special Terms and Conditions 2
1.4 User Reliance 2

2.0 SUBJECT PROPERTY DESCRIPTION 3
2.1 Subject Property Location and Legal Description 3
2.2 Subject Property Characteristics 4
2.2.1 Current Use of the Subject Property 4
2.2.2 Site Structures 4
2.2.3 Site Utilities 4
2.3 Current Uses of Adjoining Properties and Properties in the Surrounding Area 4

3.0 USER PROVIDED INFORMATION 5

4.0 PHYSICAL SETTING 7
4.1 Topography/Regional Drainage 7
4.2 Soils 7
4.3 Underlying Formation 7
4.4 Groundwater 8
4.5 Water Migratory Pathways 8

5.0 HISTORICAL RECORDS 9
5.1 Aerial Photographs 10
5.2 Historical Maps 101
5.3 Property Tax Files 101
5.4 Recorded Land Title Records 122
5.5 Historical Topographical Maps 13
5.6 Local Street Directories 13
5.7 Building Department Records 13
5.8 Zoning/Land Use Records 13
5.9 Previous Environmental Reports 14

6.0 REGULATORY AGENCY RECORDS REVIEW 17
6.1 Standard Environmental Record Sources, Federal and State 17
6.1.1 Subject Property 18
6.1.2 Adjacent and Surrounding Properties -- Facilities of Potential Concern 18
6.1.3 Orphan Sites 20
6.2 Additional Environmental Records Sources – State and Federal 20
6.2.1 Pennsylvania Department of Environmental Protection 20

6.2.2 United States Environmental Protection Agency 21
6.3 Additional Environmental Records Sources – Regional and Local 21
6.3.1 City of Philadelphia, Department of Licenses and Inspections 21
6.3.2 City of Philadelphia, Water Department 21

7.0 SITE RECONNAISSANCE 212
7.1 General Observations – Exterior Areas 22
7.2 General Observations – Interior Areas 22
7.3 Hazardous Substances in Connection with Identified Uses 22
7.4 Storage Tanks 23
7.5 Floor Drains and/or Sumps 23
7.6 Other Observations 23
7.7 Polychlorinated Biphenyls ("PCBs") 23
7.7.1 Transformers and Capacitors 24
7.7.2 Fluorescent Light Ballasts 24
7.7.3 Elevators and Hydraulic Equipment 24
7.8 Non-Scope Considerations 24
7.8.1 Asbestos-Containing Material ("ACM") 24
7.8.2 Lead-Based Paint 26
7.8.3 Lead in Drinking Water 27
7.8.4 Wetlands 27
7.8.5 Radon Gas 27
7.8.6 Mold 27

8.0 INTERVIEWS 29
8.1 Present Owners, Operators and Occupants 29
8.2 Past Owners, Operators and Occupants 29
8.3 State and/or Local Government Officials 29

9.0 DATA GAPS 30

10.0 FINDINGS 31

11.0 OPINION AND CONCLUSIONS 32

12.0 NON-SCOPE CONSIDERATIONS 34

13.0 ENVIRONMENTAL PROFESSIONAL STATEMENT AND SIGNATURE 35

14.0 REFERENCES 36

APPENDICES

A Figures
B Environmental Database Report
C Supporting Documentation
D Photographs

EXECUTIVE SUMMARY

On behalf of EPURON ("Client"), Pennoni Associates, Inc. ("Pennoni") has performed a Phase I Environmental Site Assessment ("ESA") of the property at 1413 Langley Avenue which includes a portion of Parcels 2 and 10, in the Philadelphia Naval Business Center at Girard Point, Philadelphia County, Philadelphia, Pennsylvania, 19112 ("subject property"). The subject property is located in an area referred to as "Environmental Reserve Area." Parcel 2 is designated as Management Area "A." The area of Parcel 2 previously capped with approximately two (2) to three (3) feet of fill is the portion of Parcel 2 that comprises the subject property; the area containing Buildings 825, 548, and 668 and the land immediately surrounding those buildings, within the limits of Parcel 2, is not part of the subject property. The portion of Parcel 10 that comprises the subject property includes the areas designated as Management Area "B" and Easement "A" (Debris Screen Area). With the exception of a right-of-way for an elevated section of Interstate 95, which traverses the subject property, and a shed within Easement "A," the subject property consists of undeveloped, vegetated land adjacent to the Schuylkill River and Reserve Basin.

Pennoni conducted the ESA in general conformance with the scope and limitations the American Society for Testing and Materials ("ASTM") Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E 1527-05. ASTM E 1527-05 is a voluntary consensus standard that constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice." The procedures included in the ASTM E1527-05 standard comply with the United States Environmental Protection Agency ("USEPA") 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries; Final Rule.

The primary objective of the Phase I ESA was to identify recognized environmental conditions ("RECs") in connection with the subject property. A REC is defined as the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.

To identify RECs in connection with the subject property, Pennoni's Phase I ESA included a records review; a site reconnaissance; interviews with current and past owners, operators, and occupants of the subject property; interviews with local, state, and federal government officials; a review of information provided by the User (i.e., the party seeking to complete an environmental site assessment of the subject property); and preparation of a report presenting Pennoni's findings, opinions, conclusions and supporting documentation. The Phase I ESA for the subject property did not include any testing or sampling of materials (e.g., soil, water, air, building materials).

Our findings, opinions, and conclusions regarding RECs in connection with the subject property are summarized below. Results of our evaluation of non-scope considerations including suspect asbestos-containing building materials ("ACM"), suspect lead-based paint, lead in drinking water, wetlands, flood zones, radon, and mold are also summarized below.

FINDINGS

The key findings of Pennoni's Phase I ESA for the subject property, including non-scope considerations, are discussed below and are summarized in the Findings Summary Table. Our findings include known or suspect RECs, historical RECs, and de minimus conditions in connection with the subject property, if any.

FINDINGS SUMMARY TABLE

Environmental Conditions	Not Identified/No Significant Finding	Identified/ Deemed *De minimus* /Not a REC	REC	Further Inv. Rec'd. /Action Needed
Historical Review			X	None
On-Site Industrial Operations			X	None
User Provided Information			X	None
Adjoining Properties of Concern			X	None
Regulatory Agency Review	X			
Hazardous Substances	X			
Storage Tanks	X			
Floor Drains/Sumps	X			
Other Issues – stains and corrosion, drains, sumps, stressed vegetation, solid waste, septic systems, etc.	X			
PCBs	X			
Asbestos-Containing Materials*	X			
Lead-based Paint*	X			
Lead in Drinking Water*	X			
Wetlands	X			
Radon*	X			
Mold	X			

*Collection and analysis of samples from the subject property is necessary to determine whether or not these environmental conditions are a concern at the subject property.

OPINION AND CONCLUSIONS

Pennoni has performed a Phase I ESA of the subject property in general conformance with the scope and limitations of the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E 1527-05. This assessment has revealed the following RECs in connection with the subject property:

- The subject property consisted of areas formerly associated with the Philadelphia Naval Base ("PNB") which were utilized as the Girard Point Incinerator, landfills and a parking lot that was also utilized as a storage area for hazardous and non-hazardous wastes by the United States ("US") Navy.

- The current land use documentation for the subject property identifies deed restrictions with respect to groundwater drawn from wells shall not be used or made available for human consumption; no permanent residences shall be constructed or otherwise developed and no portion shall be used as a permanent residence; construction or development of an outdoor childcare playground must include two (2) feet of clean fill material, or other cover, as approved by the Pennsylvania Department of Environmental Protection ("PADEP"), between the underlying soil and the surface of the playground prior to commencement of its use.

- Previous reports provided for review and inclusion in this report identified sources and locations of contamination within the current boundaries of the subject property. The Girard Point Management Area ("GPMA") of the Philadelphia Naval Base (which includes the subject property) was divided into two (2) work areas, Zone A and Zone B. Zone A covers approximately twenty (20) acres and consists of Installation Restoration Program ("IR") Site 3, IR Site 4, IR Site 5, and Building 993 (Industrial Wastewater Treatment Building). Zone B covers approximately five (5) acres and consists of the Northwest Parking Lot ("NWPL"). The subject property consists of the IR Site 4, IR Site 5, and the NWPL parcels. The IR Site 4 parcel is a 6 acre landfill area used for the disposal of ash and debris generated by the Girard Point Incinerator (Building 668) as well as solid wastes that could not be incinerated. The IR Site 5 parcel is a 5 acre landfill area containing spent blasting grit, construction debris, and incinerator ash from the Girard Point Incinerator and solid waste that could not be incinerated. The NWPL parcel is a 4 acre area used prior to 1950 as a parking lot and in the early 1980's as a storage area for hazardous and non-hazardous wastes by the US Navy.

  The remediation activities reported for the Zone A and Zone B portions of the subject property consisted of the construction of a permeable cover cap in Zone A and the construction of an asphalt cap in Zone B.

Based upon the site inspection conducted by Pennoni, the engineering controls proposed for the subject property have been constructed and are adequately serving their intended purpose. If the engineering and institutional controls are properly maintained, no additional adverse impact to the subject property is anticipated. Therefore, no further investigation is required with respect to the soil and groundwater impacts previously identified on the subject property.

1.0 INTRODUCTION

On behalf of EPURON ("Client"), Pennoni Associates, Inc. ("Pennoni") has performed a Phase I Environmental Site Assessment ("ESA") of the property at 1413 Langley Avenue which includes a portion of Parcels 2 and 10, in the Philadelphia Naval Business Center at Girard Point, Philadelphia County, Philadelphia, Pennsylvania, 19112 ("subject property"). The subject property is located in an area referred to as "Environmental Reserve Area." Parcel 2 is designated as Management Area "A." The area of Parcel 2 previously capped with approximately two (2) to three (3) feet of fill is the portion of Parcel 2 that comprises the subject property; the area containing Buildings 825, 548, and 668 and the land immediately surrounding those buildings, within the limits of Parcel 2, is not part of the subject property. The portion of Parcel 10 that comprises the subject property includes the areas designated as Management Area "B" and Easement "A" (Debris Screen Area). With the exception of a right-of-way for an elevated section of Interstate 95, which traverses the subject property, and a shed within Easement "A," the subject property consists of undeveloped, vegetated land adjacent to the Schuylkill River and Reserve Basin.

Pennoni conducted the Phase I ESA in general conformance with the scope and limitations of the American Society for Testing and Materials ("ASTM") Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E 1527-05. The procedures included in the ASTM E1527-05 standard comply with the United States Environmental Protection Agency ("USEPA") 40 CFR Part 312, Standards and Practices for All Appropriate Inquiries; Final Rule.

ASTM E 1527-05 is a voluntary consensus standard that constitutes "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice." The ASTM practice is intended to permit a User (i.e., the party seeking to complete an environmental site assessment of the subject property, in this case, EPURON) to satisfy one of the requirements to qualify for the innocent landowner, contiguous property owner, or bona fide prospective purchaser limitations on Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA") liability (i.e., landowner liability protections or LLPs). The practice does not address whether requirements in addition to all appropriate inquiry have been met in order to qualify for LLPs (e.g., continuing obligations not to impede the integrity and effectiveness of AULs, the duty to take reasonable steps to prevent releases, or the duty to comply with legally required release reporting obligations).

ASTM E 1527-05 does not include any testing or sampling of materials (e.g., soil, water, air, building materials).

This report presents the findings, opinions, and conclusions, and supporting documentation for the Phase I ESA of the subject property, completed by Pennoni as of the date of this report. Information made available to Pennoni after this date, which would change the conclusions of this report, will be forwarded upon receipt.

1.1 Purpose

The purpose of the assessment was to identify recognized environmental conditions ("RECs") in connection with the subject property. A REC is defined as the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of release of any hazardous substances or petroleum

products into structures on the property or into the ground, groundwater, or surface water of the property.

1.2 Scope of Work

Pennoni's Phase I ESA for the subject property included a records review; site reconnaissance; interviews with past and present owners, operators, and occupants of the subject property; interviews with local, state, and federal government officials; review of information provided by the User; and preparation of this report presenting Pennoni's findings, opinions, conclusions and supporting documentation, as referenced in our Proposal # ZZZ08-9330 (2) dated May 8, 2008, revised May 17, 2008.

The Environmental Professional responsible for preparation of this report has the specific qualifications, based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. Mr. William F. Schmidt meets the definition of an "Environmental Professional" as defined in the ASTM standard and AAI regulation. The Environmental Professional Statement and Signature are presented in Section 11.0 of this report. The report was reviewed by Mr. William F. Schmidt, P.E., Associate Vice President of Pennoni Associates, Inc. Mr. Schmidt was supported by Ms. Cynthia D. Shaw, LEED AP, Senior Environmental Consultant, and Mr. Jeff Ham, Associate Environmental Scientist.

1.3 Limitations, Exceptions, Special Terms and Conditions

Pennoni conducted a Phase I ESA of the subject property in general conformance with the scope and limitations of ASTM Standard E 1527-05. The Phase I ESA for the subject property did not deviate from this standard. Data gaps that would affect the ability of the environmental professional to identify RECs are identified in Section 9.0 of this report. This Phase I ESA is valid provided that it has been completed within 180 days prior to the acquisition of the subject property or the date of the intended transaction.

1.4 User Reliance

This report and findings, conclusions, and recommendations contained herein, are furnished for the sole use and benefit of the Client to aid in understanding the environmental condition and potential liabilities of the subject property. This report may not be assigned, quoted, reproduced, relied upon, or otherwise used without the express prior written consent of Pennoni.

All documents prepared by Pennoni Associates Inc. are the instruments of service in respect of the project. They are not intended or represented to be suitable for reuse by owner or others on extensions of the project or on any other project.

Any reuse without the written verification or adaptation by Pennoni Associates Inc. for the specific purpose intended will be at owner's sole risk and without liability or legal exposure to Pennoni Associates and owner shall indemnify and hold harmless Pennoni Associates Inc. from all claims, damages, losses, and expenses arising out of or resulting there from.

2.0 SUBJECT PROPERTY DESCRIPTION

The following paragraphs provide a description of the subject property including its location, general characteristics, and current use. Current uses of adjoining properties and properties in the surrounding area are also described below.

2.1 Subject Property Location

The subject property is located west of the intersection of Langley Avenue and Basin Bridge Road in Philadelphia, Pennsylvania. The subject property is shown on the United States Geological Survey ("USGS") 7.5- minute topographic quadrangle for Philadelphia, Pennsylvania-New Jersey, and the center of the subject property is located at the following map coordinates: 39.894197 degrees North latitude, 75.194982 degrees West longitude. A copy of the topographic quadrangle map, showing the location of the subject property, is provided in Appendix A and titled "Property Location Map."

The subject property consists of an irregularly-shaped tract of land approximately 16 acres in size, generally bounded by a Tasty Baking Company development site to the north, Basin Bridge Road to the east, the Schuylkill River to the south and southwest, and a pier to the west. The subject property includes a portion of Parcels 2 and 10 in the Philadelphia Naval Business Center at Girard Point, Philadelphia, Pennsylvania, 19112. The subject property is located in an area referred to as "Environmental Reserve Area." Parcel 2 is designated as Management Area "A." The area of Parcel 2 previously capped, with approximately two (2) to three (3) feet of fill, is the portion of Parcel 2 that comprises the subject property; the area containing Buildings 825, 548, and 668 and the land immediately surrounding those buildings, within the limits of Parcel 2, is not part of the subject property. The portion of Parcel 10 that comprises the subject property includes the areas designated as Management Area "B" and Easement "A" (Debris Screen Area) within the Environmental Reserve Area. The boundaries and general features of the subject property are depicted in the Site Plan, which is included in Appendix A.

The subject property is located within a 25-acrea area of the northwest portion of the former Philadelphia Naval Base ("PNB") referred to as the Girard Point Management Area and designated as Zone 1C in the Base Realignment and Closure Act ("BRAC") Cleanup Plan, dated April 1999. The United States Navy ("Navy") had previously utilized the Girard Point Management Area, which encompasses the subject property, for the treatment, storage, and disposal of solid wastes generated at the PNB.

In 1995, a substantial portion of the PNB was closed and made available to Philadelphia Authority for Industrial Development ("PAID") for non-military use. On March 30, 2000, the United States, acting through the Navy, transferred approximately 1200 acres of the former PNB to PAID. PAID subsequently redesignated this property as the "Philadelphia Naval Business Center" ("PNBC") and it is now commonly known as The Navy Yard.

On September 18, 2008, Pennoni visited the City of Philadelphia, Department of Records to obtain tax parcel numbers for the subject property. The tax parcel numbers corresponding to Parcels 2 and 10 are 45-S-24-0002 and 45-S-24-0011, respectively. Parcels 2 and 10 are designated as Lots 2 and 11 on the tax parcel maps contained in the Department of Record files. Pennoni was unable to obtain a copy of these maps.

2.2 Subject Property Characteristics

The following paragraphs describe the general characteristics of the subject property, including its current use and a description of structures, roads, and other improvements (i.e., heating/cooling system, sewage disposal, source of potable water, etc.) on the subject property.

2.2.1 Current Use of the Subject Property

With the exception of a right-of-way for an elevated section of Interstate 95, which traverses the subject property, and a shed within Easement "A," the subject property consists of undeveloped, vegetated land adjacent to the Schuylkill River and Reserve Basin.

2.2.2 Site Structures

Other than support structures for an elevated section of Interstate 95, and a shed on the portion of Parcel 10 designated as Easement "A," there are no structures on the subject property.

2.2.3 Site Utilities

Water and sewer service are provided by City of Philadelphia. Electric service is provided by Duke Energy through PIDC, and natural gas service is provided by Philadelphia Gas Works.

2.3 Current Uses of Adjoining Properties and Properties in the Surrounding Area

Adjoining properties, and properties and roads in the area surrounding the subject property, are identified below.

- North – Land being developed by Tasty Baking Company is north of the subject property beyond which is the land proposed for development as the Commerce Center at Girard Point.
- South – The Schuylkill River and Reserve Basin are south of the subject property, beyond which is the Delaware River.
- East – Other properties within the Philadelphia Naval Business Center, where the subject property is located, are east of the subject property.
- West – The Schuylkill River is west of the subject property.

3.0 USER PROVIDED INFORMATION

As defined by ASTM E1527-05, in order to qualify for one of the LLPs, the User must provide the following information, if available, to the Environmental Professional:

- environmental cleanup liens that are filed or recorded against the subject property;
- activity and use limitations that are in place on the subject property or that have been filed or recorded in a registry;
- specialized knowledge or experience of the person seeking to quality for the LLP;
- the relationship of the purchase price to the fair market value of the subject property if it were not contaminated;
- commonly known or reasonably ascertainable information about the property; and
- the degree of obviousness of the presence or likely presence of contamination at the subject property, and the ability to detect the contamination by appropriate investigation.

3.1 Environmental Liens and/or Activity and Use Limitations

The Client is aware that the subject property was previously utilized as a landfill, and that soil and groundwater beneath the subject property have been impacted with regulated compounds. Furthermore, the Client understands that engineering controls—specifically a combination of a permeable cover cap and an asphalt cap—have been constructed on the subject property in order to eliminate exposure to impacted soil and groundwater. The Client is also aware that activity and use limitations ("AULs") have been imposed on the subject property due to the presence of the impacted soil and groundwater and the placement of the cap on the property. Pennoni reviewed the current deed for the subject property as part of this Phase I ESA; based upon this review, Pennoni has identified institutional and engineering controls in connection with the subject property. This will be discussed in detail in Sections 5.4 – Recorded Land Title Records and 5.9 – Previous Environmental Reports.

3.2 Specialized Knowledge

The Client does not have any specialized knowledge or experience related to the subject property or nearby properties.

3.3 Commonly Known or Reasonably Ascertainable Information

The Client is aware that the subject property was previously utilized as a landfill, and that soil and groundwater beneath the subject property have been impacted with regulated compounds. The Client instructed Pennoni to consult with Mr. Tom Detito, an archivist with Cushman and Wakefield, in order to obtain additional information relating to the environmental history of the subject property.

3.4 Valuation Reduction for Environmental Issues

The Client did not disclose the prospective purchase price for the subject property; therefore, Pennoni is unable to comment on whether the purchase price being paid for subject property reasonably reflects the fair market value of the subject property.

3.5 Presence or Likely Presence of Contamination at the Subject Property

The Client is aware that the subject property was previously utilized as a landfill, and that soil and groundwater beneath the subject property have been impacted with regulated compounds. Furthermore, the Client understands that engineering controls—specifically a combination of a permeable cover cap and an asphalt cap—have been constructed on the subject property in order to eliminate exposure to impacted soil and groundwater.

4.0 PHYSICAL SETTING

Pennoni reviewed a current United States Geologic Survey ("USGS") 7.5 Minute Topographic Map for the Philadelphia, Pennsylvania-N.J. Quadrangle showing the subject property and surrounding areas.

Pennoni also reviewed additional discretionary and non-standard physical setting sources, including the United States Department of Agriculture ("USDA"), Natural Resource Conservation Service ("NRCS"), Web Soil Survey, and the Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania.

Information gathered from these sources is presented below.

4.1 Topography/Regional Drainage

According to the United States Geological Survey ("USGS") 7.5- minute topographic quadrangle for Philadelphia, Pennsylvania-N.J., the subject property is at an elevation of approximately 18 feet above mean sea level. A review of the topographic map showing the subject property and observations of local topography made during the site reconnaissance, indicate that the subject property slopes to the south toward the Schuylkill River and Reserve Basin.

Surface water on the subject property is expected to drain to the south toward the Schuylkill River. Regionally, the area is drained by the Delaware River, located approximately ½-mile south of the subject property.

4.2 Soils

According to the USDA-NRCS Web Soil Survey, the soils on the subject property are classified as Urban Land (Ub).

According to the United States Department of Agriculture's publication *Soil Survey for Philadelphia and Bucks Counties, Pennsylvania*, the soils on the subject property consist of Urban Land (Ub). This land type consists of cut and fill areas, most of which have been developed for residential, commercial, or industrial use or for multilane highways. During development, the original soil horizon was destroyed in at least 70 percent of the area. Areas of both cut and fill are moderately or rapidly permeable. Where the original soil was removed and the substratum exposed, the material remaining is rapidly permeable and extremely low in organic-matter content and fertility.

4.3 Underlying Formation

According to the 1981 Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania, the underlying formation at the subject property is the Trenton Gravel (Q_T).

According to DCNR's *Engineering Characteristics of the Rocks of Pennsylvania* (Environmental Geology Report 1), 2nd edition, 1982, the Trenton Gravel is approximately 30 feet thick and consists of gray to pale-reddish-brown, very gravelly sand, inter-bedded with cross-bedded sand and silt layers. The Trenton Gravel occurs at between 0 and 20 feet amsl in the Delaware River Valley and was deposited by the alluvial processes of the Delaware River. Porosity and permeability are high and wells may have yields in excess of 1,000 gallons per minute.

4.4 Groundwater

Groundwater is expected to flow to the south, parallel to the surface gradient. Groundwater would be expected to be located in the joints and fractures of the underlying formation. In order to further determine groundwater conditions on the subject property, however, a property-specific hydrogeologic investigation would be necessary.

4.5 Water Migratory Pathways

Potential migratory pathways for surface water and groundwater entering and exiting the subject property are important in establishing the potential for surrounding areas to impact the subject property or for the subject property to impact neighboring properties that are downgradient. Local topography slopes to the south toward the Schuylkill River. Therefore, surface water and groundwater are expected to migrate from the properties located north of the subject property.

5.0 HISTORICAL RECORDS

The purpose of consulting historical records is to develop a history of the previous uses of the subject property and surrounding area in order to help identify the likelihood of past uses having led to RECs in connection with the subject property.

ASTM E 1527-05 requires identification of all obvious uses of the subject property from the present, back to the subject property's first developed use (including agricultural uses and placement of fill dirt), or back to 1940, whichever is earlier. As such, Pennoni reviewed as many of the standard historical sources (i.e., aerial photographs, fire insurance maps, property tax files, recorded land title records, USGS topographic maps, local street directories, building department records, zoning/land use records, etc.) as were necessary and both reasonably ascertainable and practically reviewable (i.e., publicly available, obtainable from its source within reasonable time and cost constraints), and sufficiently useful by the Environmental Professional.

5.1 Aerial Photographs

Available aerial photographs were reviewed to determine past uses and conditions of the subject property. An aerial photograph published by the Aero Service Corps for the year 1944 with a scale of one (1) inch equal to 500 feet were reviewed at the Free Library of Philadelphia. Delaware Valley Regional Planning Commission ("DVRPC") aerial photographs were reviewed for the years 1965, 1970, 1975, 1980, 1985, 1990, and 1995 with a scale of one (1) inch equal to 400 feet. Additional DVRPC aerial photographs from 2000 and 2005 with a scale of one (1) inch equal to 200 feet were also reviewed. The following is a brief narrative of the aerial photographic review:

- 1944 – The subject property is not improved with any structures. Buildings 825, 548 and 668 located adjacent to the subject property are visible in the aerial photograph. The area of the subject property to the east and west of these buildings appears to be disturbed, most likely as a result of landfilling activities conducted by the US Navy. The northern portion of the subject property and the area directly adjacent to the west of Basin Bridge Road appears to be used for the storage of materials and vehicles.

- 1965 – No significant changes to the subject property or surrounding area from the 1944 aerial photograph are apparent.

- 1970 – The photograph shows parked trucks and other vehicles on the portion of the subject property adjacent to the west of Basin Bridge Road. Construction of Interstate 95 is underway. The area of the subject property to the east of buildings 825, 548 and 668 is still disturbed, most likely due to its use as a landfill.

- 1975 – The landfilling operations in the area between buildings 825, 548 and 668 and Basin Bridge Road on the subject property have expanded. The northeast portion of the subject property consists of an asphalt-paved vehicle/material storage area. Interstate 95 has been constructed; the land beneath and on either side of it is vacant.

- 1980 – Landfilling activity in the southern portion of the subject property appears to have ceased, and vegetation covers the area. No vehicles/materials are stored in the northeast

portion of the subject property. No other significant changes to the subject property or surrounding area from the 1975 aerial photograph are apparent.

- 1985 – There is much less activity on all areas of the subject property near Basin Bridge Road compared to earlier photographs; most of the area is vacant with the exception of what appear to be some small storage buildings.

- 1990 – The aerial photograph shows a parking lot with many vehicles in the southeast portion of the subject property adjacent to the west of Basin Bridge Road. There also appear to be either rectangular-shaped storage sheds or trailer-type trucks on the subject property. There is significant activity on the area of the subject property adjacent to the Reserve Basin compared to earlier photographs. The northernmost portion of the subject property is mostly vacant with the exception of what appears to be several small storage buildings/sheds. There is a disturbed area on Parcel 2, north of where Interstate 95 traverses the subject property. The remainder of the subject property is vacant.

- 1995 – Some of the parking lot shown in the 1990 photograph appears to have been removed. This area of the subject property appears to contain many trailer-size storage containers. There is significantly less activity on the subject property compared to 1990. The area of the subject property between the property where Buildings 825, 548 and 668 are located and Basin Bridge Road is mostly cleared/vacant except for what appears to be several vehicles or storage containers. The northernmost portion of the subject property is cleared/vacant. The remainder of the subject property is vacant.

- 2000 – With the exception of what appears to be a small building on the eastern portion of the subject property, the subject property is vacant.

- 2005 – No significant changes to the subject property from the 2000 aerial photograph are apparent. An asphalt paved area has been constructed north of Parcel 2, adjacent to Basin Bridge Road.

5.2 Historical Maps

Available historical maps, including property atlases and street maps, were reviewed to determine past uses and conditions of the subject property. Historic property atlases and insurance maps obtained from the Greater Philadelphia GeoHistory Network website (http://www.philageohistory.org/geohistory/index.cfm) were reviewed for the years 1843, 1855, 1860, 1888, 1895, 1903, and 1910. In addition, Pennoni reviewed historic land use maps for the years 1942, 1962, and 1967. The following is a brief narrative of the historical map review:

- 1843 Philadelphia County, Charles Ellet, Jr. – the map shows the subject property as undeveloped land; the map shows Providence Island and Mud Island southwest of Girard's Point, and League Island to the southeast of Girard's Point

- 1855, Philadelphia City, R.L. Barnes – the map shows the subject property as undeveloped land; the map also shows Mud Island to the southwest, and the Back Channel and League Island to the southeast of the subject property

- 1860, Atlas of the City of Philadelphia, Samuel L. Smedley – the map shows the subject

property as undeveloped land; the map shows Girard's Point, League Island to the southeast across the Back Channel, and Mud Island to the southwest across the Schuylkill River

- 1888, Baist's Property Atlas of the City of Philadelphia, Penn – the map shows Girard Point; and several basins along the Schuylkill River, with railroad lines adjacent/parallel to them; Mud Island is shown southwest of Girard Point across the Schuylkill River; an area labeled "League Island, US Navy Yard" is shown southeast of Girard Point across the Back Channel.

- 1895, Atlas of the City of Philadelphia, George W. and Walter S. Bromley – the map shows Girard Point and several basins along the Schuylkill River, with railroad lines adjacent/parallel to them; Government Avenue is shown on the southern portion of Girard Point along the Back Channel; an area labeled "League Island, US Navy Yard" is shown southeast of Girard Point across the Back Channel; Mud Island is shown on the map, southwest of Girard Point, across the Schuylkill River.

- 1903, Philadelphia Streets, Dodd, Mead & Co. – the map shows Girard Point, although not labeled as such, and Government Avenue on the southern portion of Girard Point along the Back Channel; four basins are shown to the west of Girard Point along the Schuylkill River; an area labeled "League Island, US Navy Yard" is southeast of Girard Point, across the Back Channel

- 1910, Atlas of the City of Philadelphia, Geo W. and Walter S. Bromley – the map shows Girard Point; several basins are shown along the Schuylkill River, with railroad lines adjacent/parallel to them; Mud Island, Back Channel, Government Ave are labeled on the map; the area labeled "League Island" on earlier maps is labeled "Phila Navy Yard"

- 1942, Land Use Map – the map shows Girard Point and Government Avenue; the area west of Basin Bridge Road is labeled "V;" the area adjacent to the Schuylkill River is labeled "Boat Houses"

- 1962, Land Use Map – the subject property is labeled as "United States of America (US Navy Yard);" land west and adjacent to the subject property is labeled "Girard Point;" the Reserve Basin is labeled on the map; property north of the subject property is labeled "Franklin Delano Roosevelt Park" and "Golf Club."

- 1967, US Naval Base, Philadelphia – the subject property is identified as containing Public Works Storage Areas. A lumber yard and scrap yard are shown on the land north and adjacent to the subject property. Buildings 825, 548, and 668 are shown on the map.

5.3 Property Tax Files

Property tax files include records of past ownership, appraisals, maps, sketches, photos, or other information pertaining to the property. Pennoni reviewed property tax records at the City of Philadelphia, Department of Records. Philadelphia Authority for Industrial Development is listed as the current owner of the subject property; they have owned the property since March 30, 2000. No other historical property tax files were reviewed for the subject property as part of this Phase I ESA.

5.4 Recorded Land Title Records

Recorded land title records include records of historical fee ownership, including leases, land contracts and AULs on or of the subject property.

As indicated in Section 2.1, the subject property includes a portion of Parcels 2 and 10, in the Philadelphia Naval Business Center at Girard Point, Philadelphia County, Philadelphia, Pennsylvania, 19112. The subject property is located in an area referred to as "Environmental Reserve Area." Parcel 2 is designated as Management Area "A." The area of Parcel 2 previously capped, with approximately two (2) to three (3) feet of fill, is the portion of Parcel 2 that comprises the subject property; the area containing Buildings 825, 548, and 668 and the land immediately surrounding those buildings, within the limits of Parcel 2, is not part of the subject property. The portion of Parcel 10 that comprises the subject property includes the areas designated as Management Area "B" and Easement "A" (Debris Screen Area) within the Environmental Reserve Area.

Pennoni obtained a copy of the current deeds for the subject property from the City of Philadelphia, Recorder of Deeds. According to the current deeds for Parcels 2 and 10, the subject property was purchased by Philadelphia Authority for Industrial Development on March 30, 2000 from the United States of America ("USA"). The current deeds for both parcels are referenced by an address of 4501 South Broad Street rather than 1413 Langley Avenue. A copy of the current deeds is included in Appendix C of this report.

The current deed for Parcel 2 contains a "Special Sections" that presents a "Reservation re Groundwater Monitoring Wells" that provides USA with an easement for periodic sampling of existing groundwater monitoring wells and maintenance of groundwater monitoring wells. "Special Sections" of the deed for Parcel 2 also includes an indemnification that includes covenants and restrictions regarding use of groundwater, development for permanent residential use, outdoor childcare playgrounds, and excavation of Subparcel 2(a). Specifically, the deed for Parcel 2 indicates that groundwater drawn from wells situated within Parcel 2 shall not be used or made available for human consumption; no permanent residences shall be constructed or otherwise developed on Parcel 2 and no portion of Parcel 2 shall be used as a permanent residence; construction or development of an outdoor childcare playground within Parcel 2 must include two (2) feet of clean fill material, or other cover, as approved by the Pennsylvania Department of Environmental Protection ("PADEP"), between the underlying soil and the surface of the playground prior to commencement of its use; and that neither the soil or asphalt covers placed within Subparcel 2(a) nor the soil beneath these covers, will be excavated or disturbed without the prior written approval of PADEP.

The current deed for Parcel 10 contains a "Special Sections" that presents a "Notice re Hazardous Substances" which indicates that hazardous substances were disposed of on the property and a "Reservation re Groundwater Monitoring Wells" that provides USA with an easement for periodic sampling of existing groundwater monitoring wells and maintenance of groundwater monitoring wells. "Special Sections" of the deed for Parcel 10 also includes an indemnification that includes covenants and restrictions regarding use of groundwater, development for permanent residential use, and outdoor childcare playgrounds. Specifically, the deed for Parcel 10 indicates that groundwater drawn from wells situated within Parcel 10 shall not be used or made available for human consumption; no permanent residences shall be constructed or otherwise developed on Parcel 2 and no portion of Parcel 10 shall be used as a permanent residence; construction or development of an outdoor childcare playground within Parcel 10 must include two (2) feet of clean fill material, or

other cover, as approved by the Pennsylvania Department of Environmental Protection ("PADEP"), between the underlying soil and the surface of the playground prior to commencement of its use.

Chain of title information was not provided by Client for review and inclusion in this report.

5.5 Historical Topographical Maps

Pennoni reviewed an historical topographical map for the subject property dated 1890-1910 on www.philageohistory.com. A summary of the information gathered based on Pennoni's review of this map is presented below.

- 1890-1910, Historical Topographic Map – the map shows Girard Point; several basins are shown west of Girard Point, along the Schuylkill River; a few structures are located adjacent to the basins, and railroad lines lead to the basins.

5.6 Local Street Directories

Since local street directories were not reasonably ascertainable, Pennoni did not review them as part of the Phase I ESA for the subject property.

5.7 Building Department Records

Building department records include documents pertaining to permission of the local government to construct, alter, or demolish improvements on property.

Pennoni personnel visited the City of Philadelphia Department of Licenses and Inspections ("L&I") on September 18, 2008 to review available files for the subject property.

Files for the subject property contained a December 12, 2000 Application for Zoning Permit and/or Use Registration Permit for property located at "Bldg 763-2001 Langley Ave – Parcel 2 & 3 – Phila Naval Business Ctr." The owner of the property is listed as "Phila Author for Industrial Development," and the applicant is listed as "Prime Plate Industries/Peter Lazer." Although the permit references Parcel 2, it appears that the permit application was submitted for addition of parking and loading for properties east of Parcel 2, referred to as "Lease Lot A, B, and C and Bldg 763," and shown on a plan attached to the application.

Files for the subject property also contained a November 26, 2001 Application for Zoning Permit and/or Use Registration Permit for "Parcel #2" to "establish Parcel #2 as turned over by the Federal Government and establish uses as existing at time of turnover with easements as shown." No plan was attached to the application showing easements. The owner is listed as "Phila. Authority for Industrial Development (PAID)."

Copies of documentation obtained from L&I are included in Appendix C.

5.8 Zoning/Land Use Records

Zoning/land use records for the subject property indicate the uses permitted by local government in particular zones within its jurisdiction. According to information gathered from www.citymaps.phila.gov, the subject property is zoned as a G2, General Industrial District.

5.9 Previous Environmental Reports

Pennoni obtained copies of previous environmental reports prepared for the subject property from Mr. Tom Detitto, an archivist with Cushman and Wakefield. A brief summary of these reports is presented below. Copies of these reports are included on a compact disc in Appendix C.

- *Girard Point Management Area Zone A and Zone B Cap*, dated January 1998, prepared by Foster Wheeler Environmental Corporation

  Foster Wheeler Environmental Corporation ("Foster Wheeler") prepared this report to design and develop construction plans and specifications for the remediation and restoration of the Girard Point Management Area ("GPMA") of the Philadelphia Naval Base. The GPMA was divided into two (2) work areas, Zone A and Zone B. The remediation activities consisted of the construction of a permeable cover cap in Zone A, the construction of an asphalt cap in Zone B, the removal and disposal of contaminated soil located near the former Girard Point Incinerator, and the removal of a 6,000-gallon underground storage tank ("UST") in the vicinity of the former Industrial Wastewater Treatment Building.

  According to the Foster Wheeler report, the work conducted at Zone A was to be completed in accordance with the Girard Point Management Plan, and the work in Zone B was to be completed as part of the Early Removal Action to eliminate the sources of unacceptable risk in Zone B. Zone A covers approximately twenty (20) acres and consists of Installation Restoration Program ("IR") Site 3, IR Site 4, IR Site 5, and Building 993 (Industrial Wastewater Treatment Building). Zone B covers approximately five (5) acres and consists of the Northwest Parking Lot ("NWPL"). The IR Site 3 is a 1.25 acre site which was used extensively in the past for the storage of out-of-service transformers. The IR Site 4 is a 6 acre landfill area used for the disposal of ash and debris generated by the Girard Point Incinerator (Building 668) as well as solid wastes that could not be incinerated. The IR Site 5 is a 5 acre landfill area containing spent blasting grit, construction debris, and incinerator ash from the Girard Point Incinerator and solid waste that could not be incinerated. The Industrial Wastewater Treatment Building (Building 993) treated wastewater generated on-site and had an UST for acid storage located at the site. The NWPL site is a 4 acre area used prior to 1950 as a parking lot and in the early 1980's as a storage area for hazardous and non-hazardous wastes by the US Navy.

- *Environmental Baseline Survey (EBS) for Zone I of the Philadelphia Naval Complex*, dated October 1999, prepared by EA Engineering, Science, and Technology, Inc.

  EA Engineering, Science, and Technology, Inc. ("EA Engineering") prepared their report to document the environmental conditions of the parcel of land identified as Zone I of the PNB, which encompasses the subject property. The subject property includes a portion of the 25-acre area of the northwest portion of the former PNB referred to as the Girard Point Management Area and designated as Zone 1C in the BRAC Cleanup Plan, dated April 1999. The Navy had previously utilized the Girard Point Management Area, which encompasses the subject property, for the treatment, storage, and disposal of solid wastes generated at the PNB.

  Based upon a review of previous reports available for the Girard Point Management Area, EA Engineering identified three (3) IR sites and nine (9) Resource Conservation and Recovery Act ("RCRA") Solid Waste Management Units ("SWMUs") at Zone I. Of these sites, two (2) IR sites and three (3) SWMU sites were identified on the subject property.

The EA Engineering report stated that Building 668 Incinerator was associated with IR Program Site 4 (RCRA SWMU L-1) and IR Program Site 5 (RCRA SWMU L-2). According to the report the IR Program Site 4 (L-1), the Girard Point Landfill Area, was a 4-acre landfill in operation from the 1940's to the 1970's. The area was used to dispose of waste blasting grit, ash from the incinerator, and construction debris (concrete, wood, metal, and glass). Soil samples were collected and analyzed for heavy metals, which were detected. The IR Program Site 5 (L-2), the Girard Point Blasting Grit Disposal Area, was in operation from the 1940's to the 1970's. The area was land filled with yellow-white ash generated from the incinerator, waste blasting grit, and some construction materials (metal, concrete, wood, brick, scrap metal, and asbestos piping insulation). Soil samples collected from this area were collected and analyzed for heavy metals, which were detected. Remedial Investigations of both areas were completed in 1997, with remedial actions including a combination of vegetative cover, asphalt cover, and riverbank stabilization performed. Long term monitoring of groundwater in these areas was reported to be ongoing.

Also included in the Building 668 section of the EA Engineering report was the SWMU WP-2, the Girard Point Blasting Grit Waste Piles ("WP") area. This area was in operation from 1990 to 1995, and consisted of a one-acre site with several piles of waste blasting grit that was reportedly recycled and sent offsite to a recycling facility.

The SWMU M-7 location began operations between 1942 and 1951 through 1980. From 1980 to 1983 the location was used as a waste accumulation area and was included in the evaluation and remediation of the Girard Point Management Area. The waste was removed and remedial actions were conducted as necessary. According to the EA Engineering report, the waste was managed and that Phase I and Phase II investigations were performed. The area was paved and groundwater monitoring is ongoing at this site.

The SWMU WP-1 location was a 30 foot by 100 foot area where three waste piles of petroleum-containing soil were stockpiled. Soil from UST removals was stored south of Building 668 from October 1990 to September 1991. This area was included in the evaluation and remediation of the Girard Point Management Area. Waste piles were removed for off-site disposal. Remedial actions were reported to have been completed and groundwater monitoring is ongoing on the site.

As a result of the environmental conditions of Zone I, usage restrictions were established for this area of the PNB. The usage restrictions include a prohibition of the use of groundwater drawn from Zone I for human consumption or potable use; a prohibition on residential development of the area; and a requirement that at least two (2) feet of clean fill material be placed over any area within Zone I to be used as an outdoor childcare playground.

- *2003 Annual Report—Long Term Groundwater Monitoring Program for Girard Point Management Area at Philadelphia Naval Business Center*, dated November 2003, prepared by EA Engineering, Science, and Technology, Inc.

  This report prepared by EA Engineering includes tables indicating that monitoring wells located at the site were sampled on July 7 and 8, 2003, and analyzed for metals including arsenic, cadmium, chromium, copper, zinc, nickel, lead, selenium, and mercury. Limited analytical data was included in this report; however, arsenic, chromium, lead, nickel, and zinc were reported to

have been detected at concentrations exceeding the regulatory levels.

6.0 ENVIRONMENTAL RECORDS REVIEW

As part of the Phase I ESA for the subject property, Pennoni reviewed both standard and additional environmental record sources for the subject property and surrounding area. Our environmental records review consisted of a review of the following:

- the Environmental FirstSearch Report for the subject property provided by InfoMap Technologies, Inc. of West Chester, Pennsylvania;
- information requested from the United States Environmental Protection Agency ("USEPA"), Region III;
- information requested from the Pennsylvania Department of Environmental Protection ("PADEP"); and,
- information requested from regional and local sources including, the City of Philadelphia, Department of Licenses and Inspections and the City of Philadelphia, Water Department.

Results of our environmental records review are presented below.

6.1 Standard Environmental Record Sources, Federal and State Databases

On behalf of Pennoni, InfoMap Technologies, Inc. ("InfoMap") searched state and federal environmental databases for the subject site and surrounding area. The Environmental FirstSearch ("FirstSearch") Report provided listings, accompanied by a map, of facilities and operations with reported environmental concerns within the ASTM E 1527-05 specified search radius around the subject property.

InfoMap Technologies, Inc. searched the following federal databases:

- Federal National Priorities List ("NPL") site list
- Federal Delisted NPL site list
- Federal Comprehensive Environmental Response, Compensation, and Liability Information System ("CERCLIS") list
- Federal CERCLIS No Further Remedial Action Planned ("NFRAP") site list
- Federal Resource Conservation and Recovery Act ("RCRA") Corrective Action ("CORRACTS") facilities list
- Federal Treatment, Storage, and Disposal ("RCRA TSD") facilities list
- Federal RCRA ("RCRA GEN") generators list
- Federal Institutional Control/Engineering Control ("IC/EC") registries
- Federal Emergency Response Notification System ("ERNS") list

InfoMap Technologies, Inc. also searched the following state databases:

- State Hazardous Waste Sites ("SHWS") list
- State Solid Waste Facility/Landfill ("SWF/LF") site list
- State Leaking Underground Storage Tank ("LUST") site list
- State Registered Underground and Aboveground Storage Tank ("REG UST/AST") site list
- State Institutional Control/Engineering Control ("IC/EC") registries
- State Voluntary Cleanup Program ("VCP") sites list
- State Brownfields sites list

The FirstSearch Report is presented in Appendix B. Complete listings and descriptions of each of the databases searched are included in the FirstSearch Report.

6.1.1 Subject Property

Thirty-one (31) sites are listed as ERNS sites in the FirstSearch Report with a portion of their Site Name/ID/Status or Address in the Site Summary Report referenced to Girard Point. Most of the incidents at these ERNS sites include sheens observed on the river or accidental releases of small quantities of fuel into the Schuylkill River by vessels. Based on the information contained in the FirstSearch Report, none of these incidents are likely to have impacted the subject property.

One (1) site, Girard Point Transfer Station at 3600 South 26th Street, Philadelphia, PA, referenced as 0.32 miles southwest of the subject property, is listed as an SWL site. No other information is contained in the FirstSearch Report.

6.1.2 Adjacent and Surrounding Properties -- Facilities of Potential Concern

The FirstSearch Report identified the following facilities located adjacent to or in close proximity to the subject property:

- **PECO Energy Co Penrose Ave Site**
  Penrose and Lanier Ave
  Philadelphia, PA 19145
  0.64 miles northwest of the subject property

The site is listed as in the FirstSearch Report as a RCRA COR ACT site, a RCRA facility with reported violations subject to corrective action. The site is listed as a small quantity generator. The Corrective Action Event is listed as "CA Prioritization – Medium CA Priority," dated October 1, 1991. Based on the location of this site relative to the subject property, impacts to the subject property are unlikely.

- **Philadelphia Naval Business Center**
  5001 S Broad Street
  Philadelphia, PA 19112
  0.85 miles northeast of the subject property

The site is listed as a RCRA COR ACT site in the FirstSearch Report. The report lists

numerous violations between 1988 and 2005 including "TSD-Other Requirements (Oversight)," "TSD-Manifest Requirements," "Generator-Manifest Requirements." The FirstSearch Report also indicates that corrective action was taken on six (6) occasions between September 1988 and February 1999; corrective measures listed in the report include:

- Referred to a non-RCRA Authority – Referred to CERCLA (9/30/88)
- Stabilization Measures Evaluation – Further Investigation Necessary (10/8/93)
- Stabilization Measures Implemented – Primary Meas is Exposure Control (8/8/95)
- Release to Groundwater Controlled (4/8/96)
- Human Exposures Controlled (4/8/96)
- Stabilization Construction Completed (2/1/99)

Since more detailed information regarding this site is not provided in the FirstSearch Report, its location within the Philadelphia Naval Business Center, relative to the subject property, could not be determined, and potential impacts to the subject property cannot be evaluated.

- **SPC**
  2600 Penrose Avenue
  Philadelphia, PA 19145
  0.45 miles northwest of the subject property

The site is listed as a LUST site in the FirstSearch Report. According to the report, a release from an underground storage system containing petroleum occurred on November 2, 1999. The status is listed as "Interim or Remedial Actions Initiated." Based on the location of this site relative to the subject property, impacts to the subject property are unlikely.

- **Unknown**
  On Schuylkill River between Girard Point and Platt Bridge
  Philadelphia, PA 19112
  0.14 miles southeast of the subject property

The site is listed as an ERNS site on the FirstSearch Report. According to the report, a sheen, from an unknown oil, was reported on the river on June 15, 1992. No other information is contained in the FirstSearch Report.

- **Tidewater Grain Pier**
  26th and Penrose Avenue
  Philadelphia, PA 19145
  0.57 miles northwest of the subject property

The Tidewater Grain Pier site is listed as a CERCLIS NFRAP site in the FirstSearch Report. The report indicates that a Removal Assessment was completed on May 22, 1992 and that as of October 14, 1992, no further remedial action was planned for the site. Based on the location of this site relative to the subject property, impacts to the subject property are unlikely.

- **Mid-Atlantic (Contractor)**
  Tide Water Grain Co Pier 1
  Philadelphia, PA 19145
  0.57 miles northwest of the subject property

The site is listed as an ERNS site in the FirstSearch Report. According to the report, a spill of 12,000 tons of salt onto land occurred on September 29, 1993. The remaining salt was moved. No waterway was impacted.

6.1.3 Orphan Sites

The unfiltered FirstSearch Report identified 211 orphan sites, or sites which could not be mapped due to inadequate address information. Based on a review of the "site name/ID/status" and "address" information for these sites, provided in the Sites Summary Report contained in the FirstSearch Report, two (2) of the sites, listed on the ERNS database, appear to be located on or adjacent to the subject property. Incidents at these locations are unlikely to have impacted the subject property, as described below.

- **Gerards Point**
  Philadelphia, PA

The FirstSearch Report indicates that approximately one (1) gallon of No. 6 fuel oil was spilled into a drip pan on a vessel while Penn Maritime was onloading material from another barge and the release was "secured." No other information regarding the incident is provided in the report.

- **Philadelphia Shipyard at Pier 2**
  Philadelphia, PA

The FirstSearch Report indicates that a hydraulic power unit on a pier leaked approximately one (1) gallon of hydraulic oil onto the pier due to equipment problems, the "area was contained, cleanup is underway," and the release was "secured."

6.2 Additional Environmental Records Sources – State and Federal Regulatory Agencies

6.2.1 Pennsylvania Department of Environmental Protection, Southeast Regional Office

Pennoni submitted a written request, in a letter dated September 15, 2008, to the PADEP, Southeast Regional Office for information regarding environmental concerns at the subject property. A copy of the letter is contained in Appendix C. PADEP responded to our request on September 17, 2008 indicating that they have information in their files for the subject property. Pennoni reviewed these files at the Southeast Regional Office on October 1, 2008. A summary of the information gathered is presented below.

- A RCRA Subtitle C Site Identification Form for the Philadelphia Naval Business Center which commented on the types of hazardous wastes typically generated as a result of redevelopment and construction activities.
- A PADEP Acknowledgement of Notification of Regulated Waste Activity (Verification) letter.

- A letter from the Philadelphia Industrial Development Corporation ("PIDC") to the PADEP referencing the Discharge Monitoring Report ("DMR") for the power plant at the Philadelphia Business Center for the period of November 1, 2007 through November 30, 2007.
- A PADEP letter referencing PIDC's NPDES permit and discharge limitations and monitoring requirements.
- A letter from Manko, Gold, Katcher, Fox, LLP referencing a revision to the NPDES permit made addressing deficiencies with the prior permit submittal by the Philadelphia Authority for Industrial Development ("PAID").

No RECs were identified in connection with the subject property as a result of the PADEP file review.

6.2.2 United States Environmental Protection Agency – Region III

Pennoni submitted a written request, in a letter dated September 15, 2008, to USEPA, Region III for information regarding environmental concerns at the subject property. A copy of the letter is contained in Appendix C. The USEPA responded stating that no files existed for the subject property at the 1413 Langely Avenue address. A CERCLIS file; however, was included for the USN Philadelphia Naval Shipyard, Building 993 Broad Street site. This site was designated as having a Non-NPL Status with a removal only designation and no site assessment work needed.

6.3 Additional Environmental Records Sources – Regional and Local Government

6.3.1 City of Philadelphia Department of Licenses and Inspections ("L&I")

Pennoni reviewed available records for the subject property at L&I. The results of this review are presented in Section 5.7 of this report.

6.3.2 City of Philadelphia, Water Department

Pennoni submitted a written request, in a letter dated September 15, 2008, to the City of Philadelphia Water Department for information regarding environmental concerns at the subject property. A copy of the letter is contained in Appendix C. The Philadelphia Water Department responded to this request via a September 22, 2008 letter indicating that their files do not contain any records for the subject property; a copy of this letter is also included in Appendix C.

7.0 SITE RECONNAISSANCE

Pennoni personnel completed an inspection of the subject property on September 15, 2008 in order to visually inspect the property for evidence of RECs. During the site visit, Ms. Cynthia Shaw of Pennoni was unescorted. Photographs of the significant features observed during the site visit are provided in Appendix D.

Methodology

Ms. Shaw walked both perimeter and interior areas of the subject property, where accessible. Ms. Shaw walked from the asphalt paved area, east of Basin Bridge Road, toward the Reserve Basin, along the subject property's eastern property boundary. She walked along the subject property's southern and western property boundaries adjacent to the Reserve Basin and Schuylkill River and walked in a northerly and/or easterly direction to observe interior areas of the subject property, where possible. Drainage swales on the subject property were dry at the time of the site reconnaissance. From the northwestern corner of the subject property, Ms. Shaw walked in an easterly direction through interior sections of the subject property, back to the asphalt paved area, east/northeast of the subject property, between the subject property and Basin Bridge Road.

Limitations

Limitations on our ability to make observations during the site reconnaissance included dense vegetation within interior sections of the subject property. Pennoni viewed interior areas of the subject property, where possible (e.g., by following drainage swales and walking through less densely vegetated areas).

Ms. Shaw was unescorted during the site reconnaissance; therefore, she was unable to observe the interior of the shed located within Easement "A."

7.1 General Observations – Exterior Areas

With the exception of a right-of-way for an elevated section of Interstate 95, which traverses the subject property, and a shed within Easement "A," the subject property consists of undeveloped, vegetated land adjacent to the Schuylkill River and Reserve Basin. The subject property is generally level.

7.2 General Observations – Interior Areas

With the exception of the shed on Easement "A," there are no buildings on the subject property. Since Pennoni was unescorted during the site reconnaissance, we were unable to observe the interior of the shed.

7.3 Hazardous Substances in Connection with Identified Uses

The subject property currently consists of vacant, vegetated land; there are no hazardous substances used at the subject property in connection with this use.

7.4 Storage Tanks

No storage tanks were observed on the subject property.

7.5 Floor Drains and/or Sumps

With the exception of a shed on Easement "A," there are no buildings on the subject property. Since Pennoni was unescorted during the site reconnaissance, we did not observe the interior of the shed. No floor drains and/or sumps were observed on the subject property.

7.6 Other Observations

Results of other interior and exterior observations made during Pennoni's site reconnaissance are summarized in the table presented below.

Stains or Corrosion	Not Observed
Pits, Ponds or Lagoons	Not Observed
Stained Soil or Pavement	Not Observed
Stressed Vegetation	Not Observed
Fill Material	Present, based on a review of historical information
Municipal Solid Waste	Municipal solid waste is not currently generated on the subject property
Regulated Waste Disposal	Not Observed
Biomedical Waste Disposal	Not Observed
Waste Water	Not Observed
Wells	Not Observed
Septic Systems	Not Observed
Current/Past Agricultural Activity	Not Observed
Odors	No strong, pungent, or noxious odors were observed
Pools of Liquid	Not Observed
Drums/Containers	Not Observed
Unidentified Chemicals	Not Observed

7.7 Polychlorinated Biphenyls ("PCBs")

PCBs are a class of compounds that were developed in the 1930s and became widely used in industry from the mid-1900s to the late 1970s. The flame resistance of PCBs made them ideal for use in electrical equipment and they did not break down or react with other chemicals, even under extreme conditions of high temperature and pressure. PCBs were commonly used, therefore, in hydraulic fluids, lubricating oils, and transformers, electric motors, switches, and capacitors (including fluorescent lighting ballasts), as well as in paints, plastics, and other household items.

Because PCBs persist in the environment and, because they are fat-soluble, they bio-accumulate in

the food chain, the elimination of PCBs from distribution in commerce was mandated in federal legislation in the late 1970s. For economic reasons, however, the use of PCBs in existing equipment was allowed to continue for the useful or normal life of the equipment, as long as specific conditions were met. At present, many industrial facilities continue to rely upon PCB-containing equipment and transformers, while many commercial and residential structures continue to use lighting fixtures, switches, and other articles that contain some level of PCBs.

7.7.1 Transformers and Capacitors

Pennoni observed one (1) transformer located on a concrete pad within a fenced area adjacent to the shed located within Easement "A.". The unit was not labeled. No evidence of staining or leaks was observed beneath or surrounding the transformer.

7.7.2 Fluorescent Light Ballasts

Fluorescent light ballasts contain capacitors that may be filled with PCB-containing dielectric fluid. With the exception of the shed within Easement "A," there are no buildings on the subject property. Since Pennoni was unescorted during the site reconnaissance, we did not observe the interior of the shed.

7.7.3 Elevators and Hydraulic Equipment

With the exception of the shed within Easement "A," there are no buildings on the subject property. Elevators and hydraulic equipment are not present on the subject property.

7.8 Non-Scope Considerations

7.8.1 Asbestos-Containing Material ("ACM")

Asbestos is a naturally occurring mineral that has been used for centuries for variety of applications. Asbestos is a very stable crystalline mineral that forms fibers and withstands high temperature extremely well. Because of this physical and chemical property, commercial and industrial applications and usage of asbestos increased dramatically during the early 1900s. Asbestos was commonly known as a type of insulation, but it was also as a stabilizer and strengthening material in plaster, cement, and other composite materials. As such, asbestos was commonly used in building materials such as insulation, plaster, vinyl surfacing materials, and roofing and roof flashings, as well as in brake linings, caulking, and gaskets for ovens and furnaces. Because asbestos is a mineral, it can also be found in the soils of some areas around the world.

Once commercially milled, asbestos fibers are typically found at sizes that are measured in microscopic, micron particle sizes. Uncontrolled releases of asbestos fibers can remain airborne for an extended time and the particles tend to by-pass most of the defense mechanisms of the respiratory tract. As such, asbestos fibers have the ability to reach the inner portions of the lungs where they can become lodged and cause significant scarring and damage on a cellular level. Diseases attributable to asbestos exposure include asbestosis, mesothelioma, and lung cancer. Occupational exposure to asbestos is, therefore, highly regulated in the workplace.

The mere presence of ACM in a building is not necessarily cause for significant concern. So long as asbestos is not disturbed or accessible to damage or contact and does not become airborne, it poses little health risk and management of ACM in-place is considered a safe and acceptable practice. The U.S. EPA and OSHA have issued substantial guidance regarding proper procedures for the operations and maintenance of asbestos in the workplace. The U.S. EPA has also issued guidelines for home and building owners who have ACM insulation and surfacing materials such as flooring and roofing in their houses. Consequently, while most commercial production and use of asbestos was discontinued in the late 1970s and early 1980s, ACM remain in-place and in use in many commercial, industrial, and residential structures.

Asbestos regulations govern issues such as asbestos exposure and materials handling, transportation, and disposal and they place obligations upon building owners and operators to make notification to building occupants, tenants, visitors, contractors, and employees who may come in contact with the ACM.

Building owners, in particular, are responsible to make notifications regarding the presence and location of ACM. Additionally, all suspect materials are required by law to be "presumed to be asbestos containing materials" (PACM). PACM must be handled and treated as ACM until proven otherwise to be non-ACM.

Policies and procedures relating to the on-going management of PACM and ACM in occupied buildings are typically presented in written asbestos Operations and Maintenance (O&M) Plans. O&M Plans outline the various building owner responsibilities and procedures relating to the asbestos and serve as a tool to ensure consistent and proper management practices.

If a building containing ACM is to be demolished, the asbestos is typically removed prior to the demolition activities. Pursuant to the federal EPA National Emissions Standards for Hazardous Air Pollutants (NESHAP) regulations in 40 CFR 61, subpart M, ACM and asbestos-containing wastes must be removed, handled, and disposed in a manner that does not allow visible and/or uncontrolled emissions of asbestos to the environment.

Also, pursuant to the OSHA General Industry Standards 29 CFR 1910.1001 and the Construction Standards in 29 CFR 1926.1101, employers of employees who may encounter ACM are responsible to ensure that the employees are not exposed to airborne concentrations in excess of permissible exposure limits (PELs) that are based upon a time-weighted average exposure. Additionally, the employees must be properly trained so that they can recognize hazards and avoid unacceptable exposure.

With the exception of the shed within Easement "A," there are no structures on the property. Access was not granted to the small building on the subject property during the site reconnaissance; therefore, potential suspect ACM located within this building was not evaluated as part of this assessment. There is also a potential that asbestos-containing materials were buried in the landfill areas of the subject property that are now covered by the cap installed on the property.

7.8.2 Lead-Based Paint

Lead is commonly added to paints because of its characteristic to resist corrosion. LBP was used substantially for industrial applications; it is also commonly encountered in older commercial and residential properties.

Oral ingestion may represent a major route of exposure in contaminated workplaces and houses. Lead poisoning can cause permanent damage to the brain and many other organs and causes reduced intelligence and behavioral problems. Lead can also cause abnormal fetal development in pregnant women.

The U.S. EPA estimates that approximately three quarters of the nation's housing (i.e., roughly 64 million dwellings) contain some LBP. When properly maintained and managed, this paint poses little risk. However, 1.7 million children have blood-lead levels above safe limits, mostly due to exposure to LBP hazards.

According to the Housing and Urban Development ("HUD") Authority, lead-based paint LBP is defined as paint on surfaces with lead in excess of 1.0-milligrams per square centimeter ("mg/cm^2"), as measured by an x-ray fluorescence ("XRF") detector of 0.5 percent by weight.

Use of LBP in construction was banned in 1978 and Congress passed legislation in 1992 requiring the disclosure of known information on LBP and LBP hazards before the sale or lease of most housing built before 1978. Consequently, LBP was generally phased out in commercial buildings, as well.

Similar to asbestos, OSHA has also established worker protection standards for exposure to lead. Unlike the case with asbestos, however, LBP does not need to be removed from a structure prior to demolition so as the issue of worker exposure and adequate protection can be addressed.

If waste materials from the demolition contain quantities sufficient quantities of LBP, it may meet the definition of a hazardous waste under the U.S. EPA's Resources Conservation and Recovery Act ("RCRA") found in 40 CFR 260 - 279. Therefore, the need for pre-demolition abatement of LBP must be evaluated on a case-by-case basis to determine if the abatement is warranted.

Pursuant to applicable OSHA regulations, the party that is contracting for services to perform work in the structure is required to provide notice to the contractor or employer that LBP is likely present. Most contractors will likely need to know specific locations of the paint such that many owners and managers of buildings containing LBP opt to have a survey performed so that information that is more specific is available and the matter does not delay renovation and construction projects.

With the exception of the shed within Easement "A," there are no structures on the property. Since Pennoni was unescorted during the site reconnaissance, we did not observe interior portions of the small building on the western portion of the subject property.

7.8.3 Lead in Drinking Water

The City of Philadelphia Water Department currently provides water to the subject property.

Public water suppliers are required to monitor lead levels in the water supply and maintain corrosion control programs to minimize the leaching of lead from plumbing, solder joints, and fixtures. Although water which may be supplied to the subject property is unlikely to contain lead, drinking water at the tap may contain lead if a building's water supply system consists of lead pipes, solder joints, and/or fixtures. Collection and analysis of a water sample would be necessary to determine if concentrations of lead in drinking water are a concern at the subject property.

7.8.4 Wetlands

Pennoni gathered wetlands data for the subject property and surrounding area from the NWI On-line Wetlands Mapper at http://www.fws.gov/nwi. According to the Wetlands Mapper, there are no wetlands on the subject property. Wetlands are shown southwest of the subject property, across the Schuylkill River on an area referred to as "Mud Island;" these wetlands are classified as PEM/UB (Palustrine, Emergent, Unconsolidated Botton), PUB (Palustrine, Unconsolidated Bottom), L1UB (Lacustrine, Limnetic, Unconsolidated Bottom), PFO1 (Palustrine, Forested, Broad-Leaved Deciduous), and PEM (Palustrine, Emergent).
Pennoni did not observe any wetlands during our site reconnaissance.

7.8.5 Radon Gas

Radon gas is a naturally occurring radioactive gas found in soils and rocks. It is generated by the decay of naturally occurring uranium as a colorless and odorless gas. Radon gas can accumulate once inside an enclosed space such as an office building or home. There is an increased risk of developing lung cancer when exposed to elevated levels of radon gas. In general, the risk increases as the concentration of radon gas and the length of exposure increases. The EPA has established 4 picoCuries per liter ("pCi/L") of radon gas in indoor air as a guidance level for residences, while readings above 20 pCi/L are considered an actionable level.

According to PADEP, the average radon level for the 19112 zip code is 2.1 pCi/L. Actual radon concentrations at the subject property can only be determined by on-site measurement.

With the exception of an elevated section of Interstate 95 and the shed on Easement "A," the subject property currently consists of vacant, vegetated land. The concentrations of radon at and near the subject property are below the USEPA guidance level of 4 pCi/L. Therefore, health risks due to radon are currently not a concern on the subject property. Plans for future use of the subject property include installation of a photovoltaic electricity generating facility.

7.8.6 Mold

With the exception of the shed on Easement "A," there are no buildings on the subject property; therefore, an assessment for mold was not completed as part of the Phase I ESA for the subject property.

8.0 INTERVIEWS

To obtain information regarding RECs in connection with the subject property, Pennoni conducted interviews with past and present owners and occupants, and state and/or local government officials. Information gathered from interviews conducted as part of Pennoni's Phase I ESA for the subject property is presented below.

8.1 Present Owners, Operators and Occupants

The current and previous property owners were not interviewed as part of this Phase I ESA. Mr. Tom Dettito, an archivist with Cushman and Wakefield, provided Pennoni with a compact disc containing previous environmental reports prepared for the subject property and the Philadelphia Navy Yard. The previous environmental reports pertaining to the subject property are summarized in Section 5.9 of this Report.

8.2 Past Owners, Operators and Occupants

Pennoni did not identify or conduct interviews with past owners, operators, or occupants of the subject property. Since past uses of the subject property are documented in various historical records reviewed by Pennoni as part of this Phase I ESA, the absence of this information does not represent a significant data gap that affects our ability to identify RECs in connection with the subject property.

8.3 State and/or Local Government Officials

In accordance with ASTM E 1527-05, Pennoni made a reasonable attempt to interview at least one staff member of any one of the following types of state and/or local government agencies:

- local fire department that serves the subject property;
- state and/or local health agency or local/regional office of state health agency serving the area in which the subject property is located;
- state and/or local agency or local/regional office of state agency having jurisdiction over hazardous waste disposal or other environmental matters in the area in which the property is located; or
- local agencies responsible for the issuance of building permits or groundwater use permits that document the presence of AULs which may identify a REC in the area in which the property is located.

Refer to Section 6.3 for information gathered from local, regional, and state government officials.

9.0 DATA GAPS

As required by ASTM E1527-05, significant data gaps that affect the ability of the Environmental Professional to identify RECs in connection with the subject property shall be identified and commented on, and the sources of information that were consulted to address the data gaps must also be identified. A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap.

Pennoni identified the following significant data gaps which affected the ability of the EP to identify RECs in connection with the subject property:

1. No property valuation was provided for review; therefore, Pennoni is unable to comment on whether the purchase price being paid for subject property reasonably reflects the fair market value of the subject property. Pennoni does not consider this data gap to be a significant constraint on our ability to provide an opinion regarding RECs on the subject property.

2. Historic property tax files were not reviewed by Pennoni as part of this ESA. Pennoni determined that these standard historical resources were not reasonably ascertainable, practically reviewable, and/or sufficiently useful. Therefore, Pennoni does not consider this data gap to be a significant constraint on our ability to provide an opinion regarding RECs on the subject property.

3. Pennoni was unable to interview the current or former owners of the subject property; however, the previous uses of the subject property are documented in the historical sources reviewed by Pennoni. Therefore, Pennoni does not consider this data gap to be a significant constraint on our ability to provide an opinion regarding RECs on the subject property.

10.0 FINDINGS

The key findings of Pennoni's Phase I ESA for the subject property are discussed below. Our findings include known or suspect RECs, historical RECs, and de minimus conditions in connection with the subject property, if any. Results of our evaluation of non-scope considerations are presented in Section 12.0.

- The subject property consisted of areas formerly associated with the Philadelphia Naval Base ("PNB") which were utilized as the Girard Point Incinerator, landfills and a parking lot that was also utilized as a storage area for hazardous and non-hazardous wastes by the US Navy.

- The current land use documentation for the subject property identifies deed restrictions with respect to groundwater not for human consumption; no permanent residences; construction or development of an outdoor childcare playground must include two (2) feet of approved fill.

- Previous reports identified sources and locations of contamination within the current boundaries of the subject property which consists of the IR Site 4, IR Site 5, and the NWPL parcels. The IR Site 4 parcel is a 6 acre landfill area used for the disposal of ash and debris generated by the Girard Point Incinerator (Building 668) as well as solid wastes that could not be incinerated. The IR Site 5 parcel is a 5 acre landfill area containing spent blasting grit, construction debris, and incinerator ash from the Girard Point Incinerator and solid waste that could not be incinerated. The NWPL parcel is a 4 acre area used prior to 1950 as a parking lot and in the early 1980's as a storage area for hazardous and non-hazardous wastes by the US Navy.

- The remediation activities reported for the Zone A and Zone B portions of the subject property consisted of the construction of a permeable cover cap in Zone A and the construction of an asphalt cap in Zone B.

11.0 OPINION AND CONCLUSIONS

Based on the conditions described in our findings, Pennoni's opinion regarding the impact of these conditions on the subject property, if any, is presented below. Conclusions summarizing all RECs connected with the subject property are also presented below.

Pennoni has performed a Phase I ESA of the subject property in general conformance with the scope and limitations of the ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E 1527-05. This assessment has revealed the following RECs in connection with the subject property:

- The subject property consisted of areas formerly associated with the Philadelphia Naval Base ("PNB") which were utilized as the Girard Point Incinerator, landfills and a parking lot that was also utilized as a storage area for hazardous and non-hazardous wastes by the US Navy.

- The current land use documentation for the subject property identifies deed restrictions with respect to groundwater drawn from wells shall not be used or made available for human consumption; no permanent residences shall be constructed or otherwise developed and no portion shall be used as a permanent residence; construction or development of an outdoor childcare playground must include two (2) feet of clean fill material, or other cover, as approved by the Pennsylvania Department of Environmental Protection ("PADEP"), between the underlying soil and the surface of the playground prior to commencement of its use.

- Previous reports provided for review and inclusion in this report identified sources and locations of contamination within the current boundaries of the subject property. The Girard Point Management Area ("GPMA") of the Philadelphia Naval Base (which includes the subject property) was divided into two (2) work areas, Zone A and Zone B. Zone A covers approximately twenty (20) acres and consists of Installation Restoration Program ("IR") Site 3, IR Site 4, IR Site 5, and Building 993 (Industrial Wastewater Treatment Building). Zone B covers approximately five (5) acres and consists of the Northwest Parking Lot ("NWPL"). The subject property consists of the IR Site 4, IR Site 5, and the NWPL parcels. The IR Site 4 parcel is a 6 acre landfill area used for the disposal of ash and debris generated by the Girard Point Incinerator (Building 668) as well as solid wastes that could not be incinerated. The IR Site 5 parcel is a 5 acre landfill area containing spent blasting grit, construction debris, and incinerator ash from the Girard Point Incinerator and solid waste that could not be incinerated. The NWPL parcel is a 4 acre area used prior to 1950 as a parking lot and in the early 1980's as a storage area for hazardous and non-hazardous wastes by the US Navy.

  The remediation activities reported for the Zone A and Zone B portions of the subject property consisted of the construction of a permeable cover cap in Zone A and the construction of an asphalt cap in Zone B.

Based upon the site inspection conducted by Pennoni, the engineering controls proposed for the subject property have been constructed and are adequately serving their intended purpose. If the engineering and institutional controls are properly maintained, no additional adverse impact to the subject property is anticipated. Therefore, no further investigation is required with respect to the soil

and groundwater impacts previously identified on the subject property.

12.0 NON-SCOPE CONSIDERATIONS

Pennoni's evaluation of non-scope considerations does not indicate environmental issues or conditions of concern with regard to suspected asbestos-containing materials, lead-based paint, lead in drinking water, wetlands, radon, or mold on the subject property.

13.0 ENVIRONMENTAL PROFESSIONAL STATEMENT AND SIGNATURE

I declare that, to the best of my professional knowledge and belief, I meet the definition of an "environmental professional" as defined at 40 C.F.R. §312.10. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 C.F.R. Part 312.

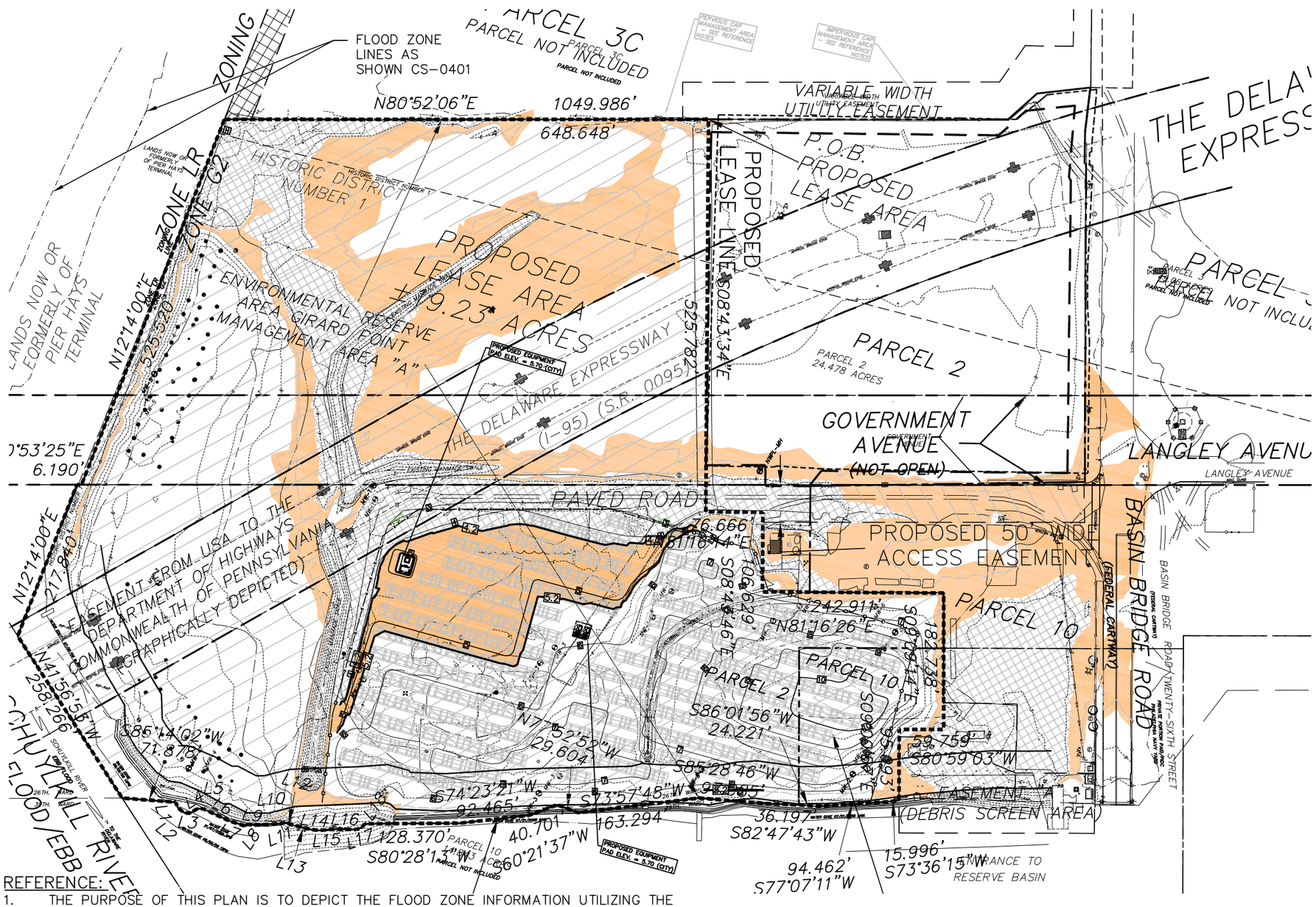
William F. Schmidt, P.E.
Associate Vice President

14.0 REFERENCES

The following documents, publications, maps, etc. were used as source materials for this Phase I Environmental Site Assessment:

- ASTM Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, 2005.
- Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania, 1981
- City of Philadelphia, Department of Records
- City of Philadelphia, Department of Licenses and Inspections (L&I)
- City of Philadelphia, Recorder of Deeds
- City of Philadelphia, Water Department
- Delaware Valley Regional Planning Commission, Pennsylvania Orthotiles, aerial photographs dated 2000 and 2005.
- InfoMap Technologies, Inc. of West Chester, PA, Environmental FirstSearch Report dated September 16, 2008.
- Pennsylvania Department of Environmental Protection (PADEP), Southeast Regional Office
- The Free Library of Philadelphia, aerial photographs dated 1944, 1965, 1970, 1975, 1980, 1985, 1990, and 1995
- U.S. Department of Agriculture, National Resources Conservation Service (USDA-NRCS) Web Soil Survey
- USEPA 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries; Final Rule, November 1, 2005.
- USEPA, Region III
- U.S. Fish and Wildlife Service, National Wetlands Inventory, On-line Wetlands Mapper
- United States Geological Survey (USGS), 7.5 minute topographic map for the Philadelphia, Pennsylvania-N.J. Quadrangle.
- *Girard Point Management Area Zone A and Zone B Cap*, dated January 1998, prepared by Foster Wheeler Environmental Corporation

Appendix 21



SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01)
4590 BASIN BRIDGE ROAD AND
PARCEL 10 (BRT # 78-8-0055-01)
4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD
PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID)
CENTER SQUARE WEST
1500 MARKET STREET
PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 4207570189G, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,

ZONE AE- BASE FLOOD ELEVATION DETERMINED-10 FT NAD 83

ZONE X SHADED - AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD) (INDICATED AS X1 WITHIN THE DRAWING SET)

ZONE X - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)

FLOOD ZONES ON THIS PLAN AREA DEPICTED BY INTERPOLATING THE 4.2 AND 5.2 CONTOUR ELEVATIONS FROM THE FIELD SURVEY. ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- INTERPOLATED AREA ABOVE ELEV 4.2 AND BELOW ELEV 5.2 (ZONE X SHADED)
- INTERPOLATED AREA BELOW ELEVATION 4.2 (ZONE AE)
- EXISTING RAILROAD TRACKS
- FLOOD PLAIN (FEMA MAP BASED)
- EXISTING MINOR CONTOURS
- EXISITNG MAJOR CONTOURS
- EXISTING UTILITY MANHOLES
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING TREE
- MW-1 EXISTING MONITORING WELL
- 4.2 PROPOSED 4.20 EL AND 5.20 EL CONTOUR
- 6 PROPOSED MINOR CONTOURS
- 5 PROPOSED MAJOR CONTOURS
- 3X9 AND 3X7 PHOTOVOLTAIC ARRAYS WITH FOUNDATION
- X X PROPOSED FENCE LINE

REFERENCE:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE FLOOD ZONE INFORMATION UTILIZING THE FIELD SURVEYED TOPOGRAPHIC INFORMATION WITH THE FEMA FLOOD INFORMATION. THE FEMA FLOOD ELEVATION 10 FT NAVD 1983 (4.2 CITY DATUM). THE PROPOSED LOCATION OF THE ZONE AE, ZONE X SHADED, AND ZONE X WITH THE PROPOSED GRADING.
2. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
3. PROPOSED DEVELOPMENT INFORMATION PROVIDED BY CONERGY PROJECTS, INC.
4. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE 1 PARCELS 2, 3 & 10" SHEET 2 OF 11 DATED 11/14/01, SHEET 3 OF 11 DATED 11/20/00, AND SHEET 4 OF 11 DATED 11/20/00, PREPARED BY VANDEMARK & LYNCH, INC.
5. THE INDICATED MANMADE SWALES WERE CONSTRUCTED AT THE TIME OF THE ENVIRONMENTAL CAPPING IN 1998 AND SIZED TO CONVEY THE 10-YEAR RUNOFF FROM THE CAPPED AREAS.

GRAPHIC SCALE

150 0 75 150

(IN FEET)
1 inch = 150 ft.

Pennoni
PENNONI ASSOCIATES INC.
3001 Market Street, Suite 200
Philadelphia, PA 19104

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM

DRAWN BY: J.M.D.	SCALE: 1"=150'
CHECKED BY: PMF	DATE: 06/28/11
JOB No. EPUR 0801	SKETCH No. CS-0403

FIGURE C - ANTICIPATED FLOOD ZONE WITH PROPOSED SITE/GRADING

Appendix 22

SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01)
4590 BASIN BRIDGE ROAD AND
PARCEL 10 (BRT # 78-8-0055-01)
4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD
PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID)
CENTER SQUARE WEST
1500 MARKET STREET
PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 4207570189G, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,

ZONE AE- BASE FLOOD ELEVATION DETERMINED-10 FT NAD 83

ZONE X SHADED - AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD) (INDICATED AS X1 WITHIN THE DRAWING SET)

ZONE X - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)

FLOOD ZONES ON THIS PLAN AREA DEPICTED BY INTERPOLATING THE 4.2 AND 5.2 CONTOUR ELEVATIONS FROM THE FIELD SURVEY. ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- EXISTING RAILROAD TRACKS
- INTERPOLATED AREA ABOVE ELEVATION 4.2
- INTERPOLATED AREA BELOW ELEVATION 4.2
- FLOOD PLAIN (SURVEY BASED)
- FLOOD PLAIN (FEMA MAP BASED)
- 6 EXISTING MINOR CONTOURS
- 5 EXISITNG MAJOR CONTOURS
- D E T W S EXISTING UTILITY MANHOLES
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING TREE
- MW-1 EXISTING MONITORING WELL

REFERENCE:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE FLOOD ZONE INFORMATION UTILIZING THE FIELD SURVEYED TOPOGRAPHIC INFORMATION WITH THE FEMA BASE FLOOD ELEVATION 10 FT NAVD 1983. SURVEY TOPOGRAPHIC INFORMATION IN CITY DATUM (4.2 FT).
2. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
3. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE 1 PARCELS 2, 3 & 10" SHEET 2 OF 11 DATED 11/14/01, SHEET 3 OF 11 DATED 11/20/00, AND SHEET 4 OF 11 DATED 11/20/00, PREPARED BY VANDEMARK & LYNCH, INC.
4. THE INDICATED MANMADE SWALES WERE CONSTRUCTED AT THE TIME OF THE ENVIRONMENTAL CAPPING IN 1998 AND SIZED TO CONVEY THE 10-YEAR RUNOFF FROM THE CAPPED AREAS.

GRAPHIC SCALE

150 0 75 150

(IN FEET)
1 inch = 150 ft.

Pennoni
PENNONI ASSOCIATES INC.
3001 Market Street, Suite 200
Philadelphia, PA 19104

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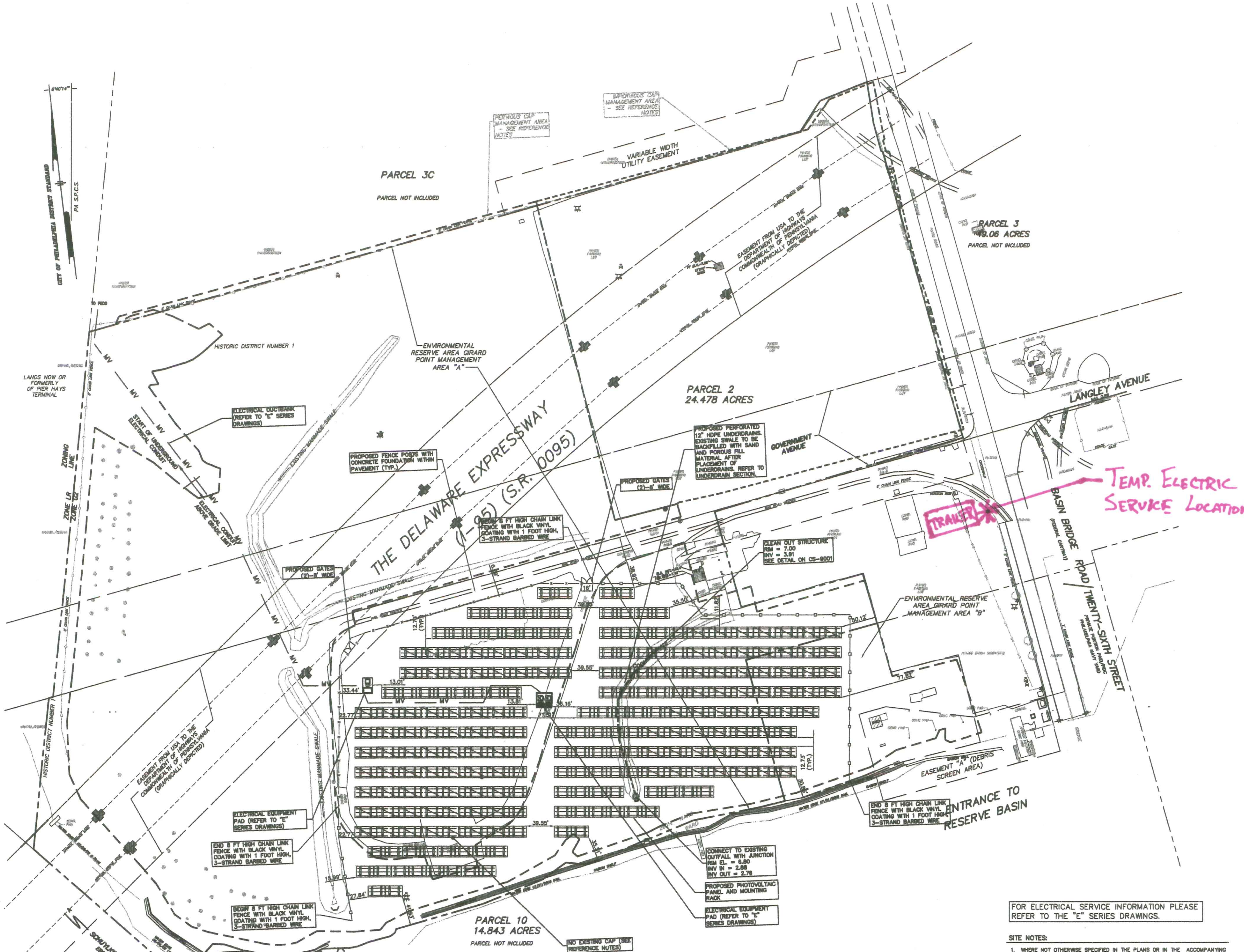
DRAWN BY: J.M.D.	SCALE: 1"=150'	DATE: 06/28/11
CHECKED BY: PMF	SKETCH No.	
JOB No. EPUR 0801	CS-0402	

FIGURE B - EXISTING CONDITIONS WITH SURVEY CONTOUR FLOODPLAIN OVERLAY

Appendix 23



FOR ELECTRICAL SERVICE INFORMATION PLEASE REFER TO THE "E" SERIES DRAWINGS.

UTILITY NOTES:

1. SEE DRAWING NO. CS-8001 FOR LIMIT OF DISTURBANCE.
2. ALL PIPE LENGTHS AND DISTANCES BETWEEN STRUCTURES ARE MEASURED FROM CENTER OF STRUCTURE TO CENTER OF STRUCTURE ALONG A HORIZONTAL PLANE.
3. ALL STORM DRAINAGE PIPE SHALL BE LAID ON SMOOTH CONTINUOUS GRADES WITH NO VISIBLE BENDS AT JOINTS.
4. BEDDING REQUIREMENTS SPECIFIED HEREIN ARE TO BE CONSIDERED AS MINIMUMS FOR RELATIVELY DRY, STABLE EARTH CONDITIONS. ADDITIONAL BEDDING SHALL BE REQUIRED FOR ROCK TRENCHES AND WET AREAS. CONTRACTOR SHALL HAVE THE RESPONSIBILITY TO PROVIDE SUCH ADDITIONAL BEDDING AS MAY BE REQUIRED TO PROPERLY CONSTRUCT THE WORK.
5. EXCESS EARTH FILL MATERIAL, IF ANY, SHALL BECOME THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE APPROVED TO BE PLACED ON SITE BY THE OWNER.
6. CONTRACTOR SHALL LOCATE EXISTING STORM DRAINS, REMOVE DEBRIS, AND PROVIDE A VIDEO INSPECTION OF THE EXISTING STORM LATERAL. INSPECTION VIDEO AND EXISTING CONNECTION PLAN SHALL BE PROVIDED TO THE OWNER AND ENGINEER FOR REVIEW. CONTRACTOR TO REPLACE DAMAGED INLET GRATES AND PROTECT THROUGHOUT CONSTRUCTION.
7. CONTRACTOR MUST APPLY FOR ALL UTILITY CONNECTION APPLICATIONS. CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY CONNECTION FEES FOR CONSTRUCTION. REFER TO COVER SHEET G-0001 FOR AVAILABLE UTILITY COMPANY LIST.
8. UTILITY CONNECTION AND UTILITY COMPANY DETAILS FOR RECONNECTION AND NEW SERVICE WERE NOT PROVIDED BY THE UTILITY COMPANIES. CONTRACTOR MUST OBTAIN ANY UTILITY DETAILS FOR RECONNECTION OF EXISTING SERVICES OR NEW SERVICE AND IS RESPONSIBLE FOR THE CONSTRUCTION OF EACH NEW SERVICE PER THE APPROPRIATE UTILITY COMPANIES SPECIFICATIONS.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES AND TO TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION. THE ENGINEER HAS DILIGENTLY ATTEMPTED TO LOCATE AND INDICATE ALL EXISTING FACILITIES ON THESE PLANS; HOWEVER, THIS INFORMATION IS SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS OF UTILITIES SHOWN OR NOT SHOWN. THE CONTRACTOR SHALL CONTACT THE UTILITY COMPANIES FOR EXACT LOCATION OF THEIR UTILITIES PRIOR TO STARTING CONSTRUCTION. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR AND REPLACE ANY AND ALL DAMAGE MADE TO UTILITIES BY THE CONTRACTOR.
10. REFER TO "E" SERIES DRAWINGS FOR ELECTRICAL EQUIPMENT LOCATION AND UTILITY SERVICE CONNECTIONS.
11. REFER TO "S" SERIES DRAWINGS FOR STRUCTURAL EQUIPMENT.

CITY UTILITY NOTES

1. ALL DISTANCES SHOWN ARE IN U.S. STANDARD MEASUREMENT. UNLESS NOTED OTHERWISE.
2. THE LOCATIONS AND ELEVATIONS OF THE EXISTING UTILITIES ARE APPROXIMATE. THE ELEVATIONS OF THE EXISTING UTILITIES AT THE TERMINATING CONNECTION POINTS TO THE PROPOSED UTILITY AND AT PROPOSED UTILITY CROSSINGS MUST BE FIELD CHECKED PRIOR TO CONSTRUCTING THE NEW UTILITY.
3. STORM SEWER MATERIALS SHALL COMPLY WITH CITY OF PHILADELPHIA PLUMBING CODE PER TABLE P-1005.3 EXCLUDING VITRIFIED CLAY PIPE WITHIN 10 FT OF BUILDING.
4. SEE DRAWING NO. G-0001 FOR UTILITY USERS LIST
5. CONTRACTOR TO COORDINATE TEMPORARY AND NEW SERVICES FOR ELECTRIC, TELEPHONE, COMPUTER CONDUIT, WITH OWNER AND EACH RESPECTIVE UTILITY COMPANY.
6. INLETS, MANHOLES, AND STORM SEWERS, SHALL BE INSTALLED PER PENNDOT REQUIREMENTS.

SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01) 4590 BASIN BRIDGE ROAD AND PARCEL 10 (BRT # 78-8-0055-01) 4621 BASIN BRIDGE ROAD PHILADELPHIA NAVY YARD PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID) CENTER SQUARE WEST 1500 MARKET STREET PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC. 101 LINDENWOOD DRIVE, SUITE 130 MALVERN, PA 19355

REFERENCE:

1. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
2. LOCATIONS OF ON-SITE AND OFF-SITE UTILITIES AS SHOWN ARE APPROXIMATE AND MAY OR MAY NOT BE COMPLETE. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
3. PROPOSED DEVELOPMENT INFORMATION PROVIDED BY CONERGY PROJECTS, INC.
4. EXISTING MONITORING WELL INFORMATION PROVIDED BY STONE AND WEBSTER ENVIROMENTAL TECHNOLOGY AND SERVICES, CHERRY HILL, NJ. PLAN: FIGURE 1-2, GIRARD POINT MANAGEMENT AREA, REVISED OCTOBER 2, 1996.
5. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE 1 PARCELS 2, 3 & 10" SHEET 2 OF 11 DATED 11/14/01, SHEET 3 OF 11 DATED 11/20/00, AND SHEET 4 OF 11 DATED 11/20/00, PREPARED BY VANDEMARK & LYNCH, INC.

LEGEND

BOUNDARY LINE
EXISTING BUILDINGS
EXISTING EDGE OF PAVEMENT
EXISTING RAILROAD TRACKS
EXISTING MANHOLE
EXISTING FIRE HYDRANT
EXISTING FENCE LINE
3X9 PHOTOVOLTAIC ARRAYS WITH FOUNDATION
3X7 PHOTOVOLTAIC ARRAYS WITH FOUNDATION
MW-1 MONITORING WELL
PROPOSED FENCE LINE

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 42075701890, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS.
ZONE AE- BASE FLOOD ELEVATION DETERMINED-10 FT NAD 83
ZONE X(SHADED) - AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD) (INDICATED AS X1 WITHIN THE DRAWING SET)
ZONE X - AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)
NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

NOTES:

1. PA ONE-CALL NOTIFICATION: IN ACCORDANCE WITH PA ACT 287 OF 1974 AS AMENDED BY PA ACT 187. OF 1996. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776).
2. DEVELOPER IS IN THE PROCESS OF OBTAINING DEMOLITION PERMITS FOR BUILDING WITHIN PROPOSED LEASE AREA FOR ALTERNATE PHOTOVOLTAIC ARRAY LOCATIONS.

LAYOUT NOTE:

1. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE SERVICES OF A PENNSYLVANIA LICENSED SURVEYOR TO LAYOUT THE PROPOSED IMPROVEMENTS INCLUDING BUT NOT LIMITED TO THE ARRAY FOUNDATIONS AND EQUIPMENT PADS.

GENERAL NOTES:

1. THE VERTICAL DATUM IS CITY OF PHILADELPHIA VERTICAL DATUM.
2. THE PURPOSE OF THIS PLAN IS TO DEPICT THE CONSTRUCTION OF A 1.5MW PHOTOVOLTAIC ARRAY SYSTEM. REFER TO "E" SERIES DRAWINGS FOR ELECTRICAL IMPROVEMENTS. REFER TO "S" SERIES DRAWINGS FOR STRUCTURAL IMPROVEMENTS.
3. UTILITY NOTES
   3.1. THE LOCATION OF THE EXISTING ON AND OFF SITE UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN TAKEN FROM EXISTING UTILITY RECORDS AVAILABLE AT THE TIME THESE PLANS WERE PREPARED AND FROM SURFACE OBSERVATION OF THE SITE.
   3.2. COMPLETENESS OR ACCURACY OF LOCATION AND DEPTH OF UNDERGROUND UTILITIES AND STRUCTURES IS NOT GUARANTEED.
   3.3. IN ACCORDANCE WITH PA ACT 187. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES WITHIN THE WORK AREA VIA THE PENNSYLVANIA ONE CALL SYSTEM, INC. (800-242-1776) A MINIMUM OF 3 WORKING DAYS BEFORE THE START OF EXCAVATION.
   3.4. THE CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES AND STRUCTURES BEFORE THE START OF WORK. THE NATURE AND EXACT LOCATION OF EXISTING UTILITIES SHOULD BE VERIFIED PRIOR TO INITIATING ANY ACTIVITY THAT MAY AFFECT THEIR USE OR LOCATION.
   3.5. IF CONFLICTS ARE FOUND THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND DESIGN ENGINEER FOR INSTRUCTION BEFORE PROCEEDING WITH WORK.
4. ALL DIMENSIONS ARE IN UNITED STATES MEASUREMENT UNLESS OTHERWISE INDICATED AS PHILADELPHIA DISTRICT STANDARD (DS) MEASUREMENTS.
5. ACCORDING TO THE SOIL SURVEY OF PHILADELPHIA COUNTY, PENNSYLVANIA ALL LANDS LOCATED WITHIN THE BOUNDARY OF THIS PROJECT ARE CLASSIFIED AS URBAN LAND (UB).

FOR ELECTRICAL SERVICE INFORMATION PLEASE REFER TO THE "E" SERIES DRAWINGS.

SITE NOTES:

1. WHERE NOT OTHERWISE SPECIFIED IN THE PLANS OR IN THE ACCOMPANYING DETAILS, THE REFERENCED MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS OF P.A. D.O.T. PUBLICATION 408 OR CITY SPECIFICATIONS, WHICHEVER IS MORE STRINGENT.
2. NO SEWER OR WATER PROPOSED FOR THIS PROJECT.
3. THE VERTICAL DATUM IS CITY VERTICAL DATUM.
4. ALL WORK SHALL COMPLY WITH APPLICABLE STATE, FEDERAL, AND LOCAL CODES, AND ALL NECESSARY LICENSES AND PERMIT SHALL BE OBTAINED BY THE CONTRACTOR AT HIS EXPENSE UNLESS PREVIOUSLY OBTAINED BY THE OWNER/DEVELOPER.
5. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE ENGINEER OF ANY DISCREPANCIES OR ERRORS HE DISCOVERS IN THE PLAN.
6. DEVIATION FROM THESE PLANS AND NOTES WITHOUT THE PRIOR CONSENT OF THE OWNER OR HIS REPRESENTATIVE OR THE ENGINEER MAY BE CAUSE FOR THE WORK TO BE UNACCEPTABLE.
7. ALL MATERIALS SHALL BE NEW UNLESS USED OR SALVAGED MATERIALS ARE AUTHORIZED BY THE OWNER AND TENANT.
8. NECESSARY BARRICADES, SUFFICIENT LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL METHODS AS MAY BE NECESSARY FOR THE PROTECTION AND SAFETY OF THE PUBLIC, SHALL BE PROVIDED AND MAINTAINED THROUGHOUT THE CONSTRUCTION.
9. HIGH INTENSITY LIGHTING FACILITIES SHALL BE SO ARRANGED THAT THE SOURCE OF ANY LIGHT IS CONCEALED FROM PUBLIC VIEW AND FROM ADJACENT RESIDENTIAL PROPERTY AND DOES NOT INTERFERE WITH TRAFFIC.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS FOR EMERGENCY VEHICLES AROUND AND TO ALL BUILDINGS NEAR CONSTRUCTION; I.E. IN TIMES OF RAIN OR MUD, ROADS SHALL BE ABLE TO CARRY A FIRE TRUCK BY BEING PAVED OR HAVING A CRUSHED STONE BASE, ETC. WITH A MINIMUM WIDTH OF 20 FEET. ACCESS TO BUILDINGS THAT HAVE SPRINKLER OR STANDPIPE SYSTEMS SHALL BE WITHIN 40 FEET OF THE FIRE DEPARTMENT CONNECTOR. (NFPA 1141 3-1).

PHILADELPHIA NAVAL BUSINESS CENTER

DATUM COMPARISON

DATUM	CITY	NGVD 29	NAVD 88	PNSY
500 YEAR FLOOD	8.49	14.01	13.03	16.72
100 YEAR FLOOD	4.19	9.71	8.73	12.42
HIGH TIDE 1933	2.84	8.56	7.58	11.27
HIGH TIDE 1950	2.84	8.36	7.38	11.07
	0.00	5.50	4.54	8.21

GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.

Pennoni Associates Inc.
One Drexel Plaza, 3001 Market Street
Philadelphia, PA 19104
Engineers • Surveyors • Planners • Landscape Architects

PHOTOVOLTAIC FACILITY–PHILADELPHIA NAVAL YARD PARCELS 2 & 10
4590 BASIN BRIDGE ROAD AND 4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD – PHILADELPHIA, PA 19112

SITE PLAN

CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

DATE	NO.	REVISIONS	BY
03/24/11	4	PWD TECHNICAL SUBMISSION	JMD
02/18/11	3	PERMIT SUBMISSION	SMD
07/29/10	2	PERMIT SUBMISSION	JKI
07/21/10	1	PRELIMINARY ISSUANCE	JKI

ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR AND OWNER MUST BE NOTIFIED OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK

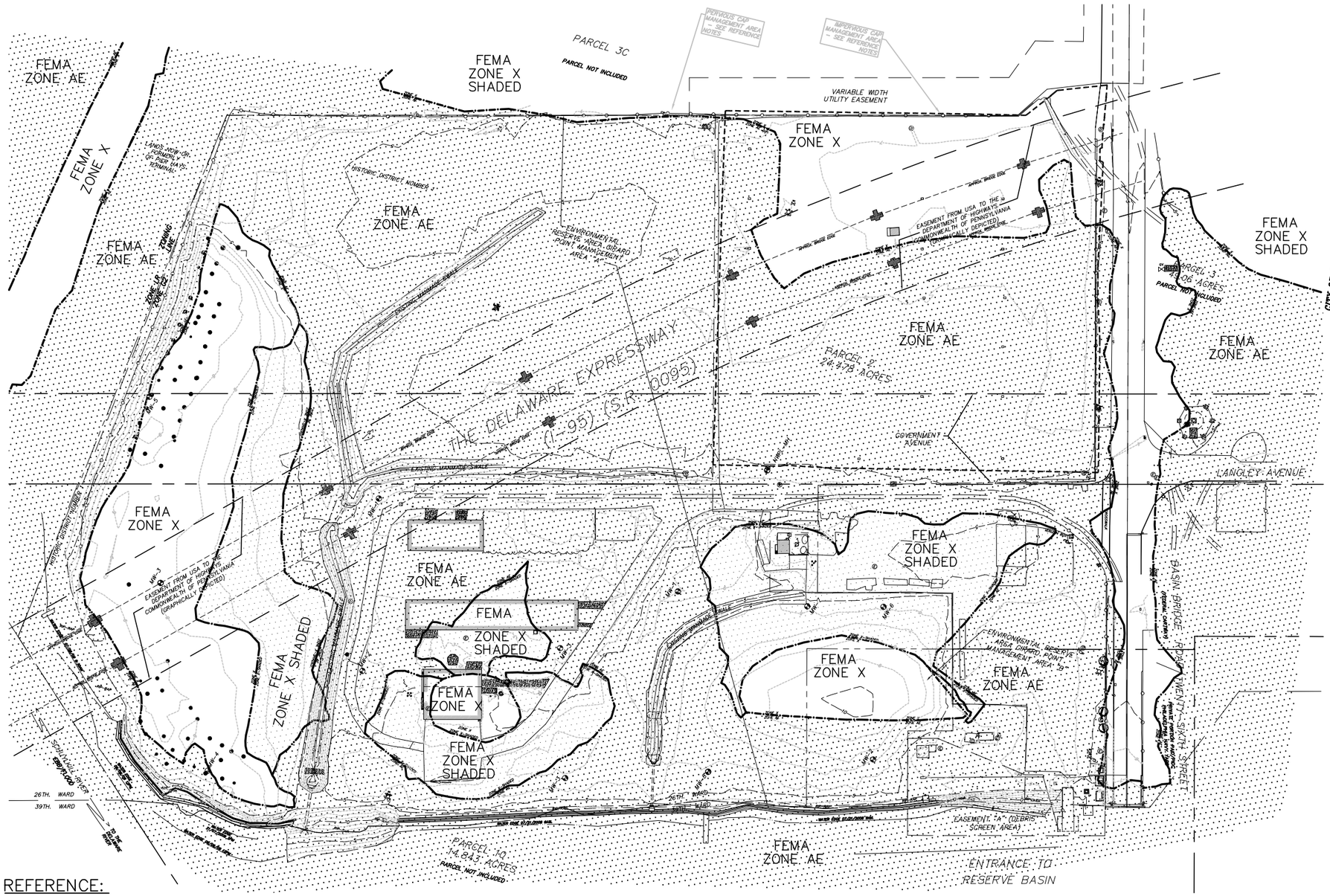
PATRICK M. FOLEY

EPUR 0801

SHEET 4 OF 10

SCALE 1"=60'
DRAWN BY AVR
DATE 06/09/10
APPROVED PMF
DRAWING NO. CS-1001

Appendix 24



SITE INFORMATION:

ADDRESS: PARCEL 2 (BRT # 78-8-0010-01)
4590 BASIN BRIDGE ROAD AND
PARCEL 10 (BRT # 78-8-0055-01)
4621 BASIN BRIDGE ROAD
PHILADELPHIA NAVY YARD
PHILADELPHIA, PA 19112

OWNER: PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT (PAID)
CENTER SQUARE WEST
1500 MARKET STREET
PHILADELPHIA, PA 19102-2000

DEVELOPER: CONERGY PROJECTS, INC.
101 LINDENWOOD DRIVE, SUITE 130
MALVERN, PA 19355

FLOOD ZONE INFORMATION:

BASED UPON THE JANUARY 17, 2007 FLOOD INSURANCE RATE MAP 4207570189G, PANEL 189 OF 230, THE SUBJECT AREA IS LOCATED IN THE FOLLOWING AREAS,

ZONE AE– BASE FLOOD ELEVATION DETERMINED–10 FT NAD 83

ZONE X SHADED – AREAS OF 0.2% ANNUAL CHANCE FLOOD (500 YR FLOOD) (INDICATED AS X1 WITHIN THE DRAWING SET)

ZONE X – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD (INDICATED AS X2 WITHIN THE DRAWING SET)

NO FIELD SURVEYING WAS PERFORMED TO DETERMINE THIS ZONE AND AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR A VARIANCE FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

- BOUNDARY LINE
- EXISTING BUILDINGS
- EXISTING EDGE OF PAVEMENT
- EXISTING RAILROAD TRACKS
- FLOOD ZONE X SHADED
- FLOOD ZONE AE SHADED
- FLOOD PLAIN (FEMA MAP BASED)
- 6 EXISTING MINOR CONTOURS
- 5 EXISITNG MAJOR CONTOURS
- DETWS EXISTING UTILITY MANHOLES
- EXISTING FIRE HYDRANT
- EXISTING FENCE LINE
- EXISTING TREE
- MW-1 EXISTING MONITORING WELL

REFERENCE:

1. THE PURPOSE OF THIS PLAN IS TO DEPICT THE FLOOD ZONE INFORMATION UTILIZING THE FLOOD INSURANCE RATE MAP 4207570189G, WITH FIELD SURVEYED TOPOGRAPHIC INFORMATION.
2. SURVEY INFORMATION TAKEN FROM A PLAN PREPARED BY PENNONI ASSOCIATES INC., ENTITLED, "EXISTING CONDITIONS/TOPOGRAPHIC SURVEY PLAN", LAST REVISED 08/26/08.
3. PARCEL INFORMATION OBTAINED FROM PLANS ENTITLED, "PHILADELPHIA NAVAL BASE FINAL PLAT FOR TRANSFER FROM UNITED STATES NAVY TO PHILADELPHIA AUTHORITY FOR INDUSTRIAL DEVELOPMENT STAGE 1 PARCELS 2, 3 & 10" SHEET 2 OF 11 DATED 11/14/01, SHEET 3 OF 11 DATED 11/20/00, AND SHEET 4 OF 11 DATED 11/20/00, PREPARED BY VANDEMARK & LYNCH, INC.
4. THE INDICATED MANMADE SWALES WERE CONSTRUCTED AT THE TIME OF THE ENVIRONMENTAL CAPPING IN 1998 AND SIZED TO CONVEY THE 10-YEAR RUNOFF FROM THE CAPPED AREAS.

GRAPHIC SCALE

150 0 75 150

(IN FEET)
1 inch = 150 ft.

Pennoni
PENNONI ASSOCIATES INC.
3001 Market Street, Suite 200
Philadelphia, PA 19104

ALL DOCUMENTS PREPARED BY PENNONI ASSOCIATES ARE INSTRUMENTS OF SERVICE IN RESPECT OF THE PROJECT. THEY ARE NOT INTENDED OR REPRESENTED TO BE SUITABLE FOR REUSE BY OWNER OR OTHERS ON EXTENSIONS OF THE PROJECT OR ON ANY OTHER PROJECT. ANY REUSE WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY PENNONI ASSOCIATES FOR THE SPECIFIC PURPOSE INTENDED WILL BE AT OWNERS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO PENNONI ASSOCIATES; AND OWNER SHALL INDEMNIFY AND HOLD HARMLESS PENNONI ASSOCIATES FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES ARISING OUT OF OR RESULTING THEREFROM

DRAWN BY:	J.M.D.
CHECKED BY:	PMF
JOB No.	EPUR 0801
SCALE:	1"=150'
DATE:	06/28/11
SKETCH No.	CS-0401

FIGURE A - EXISTING CONDITIONS WITH FEMA FLOODPLAIN OVERLAY

Appendix 25

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST REGIONAL OFFICE

RECEIVED
MAY 12 2011
PENNONI ASSOCIATES

May 6, 2011

Mr. Carmen Zappile
Philadelphia Industrial Development Corporation
Quarters A – 1413 Langley Avenue
Navy Yard
Philadelphia, PA 19112

Re: NPDES Individual Permit Modification and Plan Revision
NPDES Permit No. PAS10-5312-R
Photovoltaic Facility Parcels 2 and 10
City and County of Philadelphia

Dear Mr. Zappile:

This letter is in reference to the request received by your consultant on February 22, 2011, regarding revisions to the subject permit, including Erosion and Sedimentation (E&S) Control Plan, which authorized the discharge of stormwater for the construction activities at this site. These changes include the proposed construction of a photovoltaic facility on portions of Parcels 2 and 10 at the former Philadelphia Navy Yard.

The requested E&S Control Plan revisions are approved and added to NPDES Individual Permit No. PAS10-5312-R. Please add the enclosed drawings describing the revision to the E&S Control Plan at the project site. A copy of the stamped plans is attached for your records.

All conditions specified in the original permit remain in effect and are to be complied with as part of this plan revision. Please ensure that the plans are fully implemented and available at the construction site.

If you have any questions, please contact Ms. Ranjana Chopra Sharp at 484.250.5166.

Sincerely,

James Newbold, P.E.
Regional Manager
Watershed Management

Enclosure

cc: Ms. Marjoram – Philadelphia Water Department
Philadelphia City Planning Commission
Mr. Foley, P.E. – Pennoni Associates
Mr. Welsh – Conergy Projects
Ms. Sharp
Mr. Rocco
Ms. Moore
Re 30 (GJS11WTSD)63-6