



ENVIRONMENTAL STANDARDS

Setting the Standards for Innovative Environmental Solutions

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

**North Penn United States Army Reserve Center
1625 Berks Road
Norristown, Pennsylvania**

April 17, 2014

Prepared for:

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1.0 Summary

On behalf of Worcester Township (the "User"), Environmental Standards, Inc. (Environmental Standards) conducted a Phase I Environmental Site Assessment (ESA) of the North Penn United States Army Reserve Center (North Penn USARC), located at 1625 Berks Road, Norristown, Worcester Township, Pennsylvania ("Property" or "Site"; Figures 1 and 2). The ESA was conducted in general conformance with the American Society for Testing and Materials (ASTM) standard for conducting Phase I ESAs (1527-13) and the US EPA's All Appropriate Inquiry Regulation (AAI, 40 CFR Part 312, as published in the *Federal Register* on December 30, 2013, FR Vol. 78, No. 250). Record and database reviews; interviews; reviews of historical topographic maps, Sanborn® maps, and aerial photographs; and site reconnaissance were conducted by Environmental Standards environmental professionals as part of this ESA.

The North Penn USARC is situated on 19 total acres and is located in a primarily mixed use residential and agricultural community. There is one 45,000 square foot building used as an administration building as a USARC and a 6,800 square foot building previously used as an organizational maintenance shop (OMS). There is also a small building which houses the potable groundwater well pump and treatment system. Prior to 1968, the site served as a Nike Ajax missile launch facility for the US Army. The missile silos remain on-site.

This ESA has been prepared in general accordance with the ASTM E 1527-13 *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. Exceptions to, or deletions from, this practice and other site-specific limiting conditions and/or data gaps are described in Sections 2.0 and 8.0 of this report. Additional services requested by the client that were beyond the scope of this practice are described in Section 12.0 of this report.

The purpose of this ESA was to evaluate surficial (visible) conditions at the Site to identify recognized environmental conditions (RECs) or historical RECs associated with the Property.

Subject to the limitations stated herein, and based on the records review, site visit, and other non-invasive investigations, Environmental Standards identified evidence of 15 RECs in connection with the Property:

Areas of Concern	AOCs Description
A	Superfund Site Transicoil/North Penn located upgradient of Site
B	On-site spoils area
E	No. 2 fuel oil spill next to potable well
G	Oil-like substance in drainage ditch
H	Former Nike missile silos
J	Groundwater supply well
K	Oil-water separator (OWS) and OMS building
L	Nike missile launch area/fire training burn site
M	Nike missile base - building area
N	Property-wide groundwater impacts
O1	Former 5,000 gallon diesel UST
O9	UST pump house
Q	Former Sewage treatment plant
T	Second drainage ditch located directly in front of building
U	Vanadium in on-site soils above the PA DEP direct contact soil standards

2.0 Introduction

2.1 Purpose

Environmental Standards was retained by Worcester Township to conduct a Phase I Environmental Site Assessment (ESA) of the North Penn United States Army Reserve Center (North Penn USARC) located at 1625 Berks Road, Norristown, Worcester Township, Pennsylvania. The Property is currently vacant, but its previous use was as the USARC administrative building, training area, and vehicle maintenance shop. Worcester Township plans to demolish the existing organizational maintenance shop (OMS) building and repair the administrative building.

This ESA was conducted in conformance with the American Society of Testing Materials (ASTM) Standard for conducting Phase I ESAs (1527-13) and US EPA's All Appropriate Inquiry Regulation (AAI, 40 CFR Part 312, as published in the *Federal Register* on December 30, 2013, FR Vol. 78, No. 250). Record and database reviews; interviews; reviews of historical topographic maps, Sanborn® maps, and aerial photographs; and site reconnaissance were conducted by Environmental Standards' environmental professionals as part of this ESA.

The Property is an irregularly-shaped lot totaling approximately 19 acres. There is one 45,000 square foot building located at the southeastern end of the property near the main entrance off of Berks Road that was used as an administration building for the USARC. There is a 6,800 square foot building previously utilized as the OMS building located toward the northwest end of the Property. There is also a small building which houses the potable well pump and treatment system located in the middle portion of the Property. Prior to 1968, the site served as a Nike Ajax missile launch facility for the US Army. The missile silos remain on-site at the northwestern end of the property. The Property is situated in a primarily mixed-use residential and agricultural community. Electrical and natural gas utility services are provided by Philadelphia Electric Company (PECO). Potable water for the facility comes from the on-site 300 foot deep groundwater well and is temporarily stored in a holding tank prior to use. The Site has an on-site sand mound sewage treatment system currently being used by the building maintenance staff and an additional building located off-site.

Environmental Standards completed this work in accordance with ASTM standards for conducting Phase I ESAs (ASTM Standard 1527-13). On November 6, 2013, ASTM announced the publication of an updated Phase I ESA Standard, E1527-13, which replaced the previous standard, E1527-05. On December 30, 2013, the US EPA published in the Federal Register at Volume 78, No. 250., pages 79319-79324 40 CFR Part 312 [EPA-HQ-SFUND-2013-0513; FRL-9904-52-OSWER] their Amendment to Standards and Practices for All Appropriate Inquiries under CERCLA. This final action adopted ASTM 1527-13 and made clear that "persons conducting all appropriate inquiries may use the procedures in [the] standard to comply with the All Appropriate Inquiry Rule."

Environmental Standards completed this Phase I ESA utilizing the most current ASTM Standard, E1527-13. The basis for this decision is that the new standard, E1527-13, meets the functional requirements of the earlier standard, E1527-05, and adds further requirements in the level of regulatory file review and assessment of vapor encroachment (*i.e.*, the new standard is "more than equal" to the old standard). Therefore, in order to better meet "the industry standard" for performing Phase I ESAs as well as meeting the functional requirements of AAI, Environmental Standards followed the ASTM E1527-13 Standard for performing the Phase I tasks.

The services provided as part of this Phase I ESA included a review of reasonably ascertainable regulatory databases and historical records; interviews with personnel who may have knowledge about environmental conditions at the Property; an assessment of user-provided information about the Property; a site reconnaissance; and a report of findings associated with the investigation.

The overall objective of the Phase I ESA services provided by Environmental Standards was to identify potential environmental issues, both past and present, related to the Property that may create a potential environmental liability for the owner, financier, or potential purchaser of the Property.

2.2 Detailed Scope-of-Services

The Scope-of-Services provided by Environmental Standards for this Phase I ESA was in accordance with ASTM E 1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The objective of this study and of Phase I ESAs in general is to satisfy a portion of the environmental site assessment requirements necessary to qualify for the “innocent landowner defense,” the “*bona fide* prospective purchaser defense,” or the “contiguous landowner defense” associated with CERCLA liability and the “Standards and Practices for All Appropriate Inquiries.” Environmental Standards’ services consisted of five tasks, each of which is described below:

Task 1: Regulatory Review

Environmental Standards conducted a regulatory database review utilizing a commercially contracted environmental database collection service. The review included examining the local geographical area surrounding the Site for listed regulatory environmental records. A map depicting locations of potential off-site environmental concerns listed on available state and federal environmental databases within a specified radius of the Property was provided by Environmental Data Resources, Inc. (EDR) of Southport, Connecticut. The EDR Radius Map Report for the Property is provided as Appendix A.

In addition to reviewing the information contained in the database search, Environmental Standards contacted local agencies regarding issues related to potential environmental conditions at the Site and neighboring properties. Inquisitions were made into the existence of environmental records maintained by the Pennsylvania Department of Environmental Protection (PA DEP; Southeast Records Office), the United States Environmental Protection Agency (US EPA), Montgomery County and Worcester Township.

This review also included reviewing information relative to local geology and hydrogeology, existing groundwater quality data, and potential environmental issues associated with the Properties. Environmental Standards examined only those aspects of the Property for which information was reasonably ascertainable. For this work, *reasonably ascertainable* is defined as in ASTM E 1527-13: “publicly available, obtainable from its source within reasonable time and cost constraints, and practically reviewable.”

Task 2: Interviews

Environmental Standards contacted knowledgeable individuals as identified by project stakeholders to discuss general environmental conditions related to the Property. Discussions and data collection included reviewing information such as availability of Site plans and

drawings, Site history, environmental permits, presence of buildings, USTs, aboveground storage tanks (ASTs), and knowledge of off-site issues.

Task 3: Site History

Environmental Standards reviewed, to the degree reasonably ascertainable, copies of aerial photographs (Appendix B), topographic maps (Appendix C), historical Sanborn® maps (Appendix D), and the City Directory Abstract (Appendix E) to evaluate past land use and activities that may have the potential for an adverse environmental impact on the Property.

Task 4: On-Site Walkover

On March 20, 2014, Environmental Standards visited the Site and reviewed readily accessible portions of the Property to visibly assess present conditions and to note potential physical evidence of contamination. The Property was traversed on foot and observations were made (in general compliance with ASTM Standard E 1527-13) for the recognizable presence or evidence of the following:

- areas of dead, distressed, or dying vegetation
- seepages
- oil slicks or discolorations on building surfaces
- discernible chemical odors
- solid or liquid waste disposal or storage areas
- recent soil disturbances such as grading or filling
- equipment containing polychlorinated biphenyls (PCBs), equipment status, and equipment condition
- waste water discharges and outfalls
- underground storage tanks (USTs), including history
- waste disposal and waste disposal practices
- pits and sumps (including use)

During this on-site inspection, Environmental Standards also evaluated adjacent properties for their potential to contribute to environmental degradation of the subject Property. Environmental Standards documented the condition of the subject Property and adjacent properties on the day of the Site visit with photographs. Other than an external visual inspection, Environmental Standards did not access private, adjoining third-party properties during the Site visit.

Task 5: Report of Findings

The information and data obtained from the preceding tasks have been summarized in an environmental assessment report (*i.e.*, this document) that presents a review of findings, including identified recognized environmental conditions (RECs), controlled RECs (cRECs), historical RECs (hRECs), and *de minimis* conditions. Below are the ASTM E1527-13 definitions of each of these types of findings.

- REC – The presence or likely presence of any hazardous substance or petroleum product in, on, or at a property: (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

- cREC – A REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority, with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls.
- hREC – A past release of any hazardous substance or petroleum product that has occurred in connection with the property and has been addressed to the satisfaction of the applicable regulatory authority or meeting unrestricted use criteria established by a regulatory authority, without subjecting the property to any required controls.
- *de minimis* condition – A condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

This report also includes color copies of photographs taken for documentation (Photographic Log following Section 16.0 of this report).

2.3 Significant Assumptions

Environmental Standards reviewed the following documentation: reasonably ascertainable historical aerial photographs; topographic maps; historical Sanborn® maps; federal and state environmental agency records created by a contracted environmental database company (EDR); and other reasonably ascertainable records regarding the Properties. Although the reviews followed general ASTM Standard Practice 1527-13 and US EPA's AAI methodology, and is considered reasonable and professionally appropriate, Environmental Standards does not warrant or guarantee that these reviews necessarily yielded complete and accurate information.

To the extent that Environmental Standards' services required judgment, there can be no assurance that fully definitive results were obtained. The services provided to the client may include the application of judgment to site evaluation principles; accordingly, certain results of this work may be based on subjective interpretations.

2.4 Limitations and Exceptions

Environmental Standards is not engaged in environmental auditing and reporting for the purpose of advertising, sales promotion, or endorsement of any user's interests, including raising investment capital, recommending investment decisions, or other publicity purposes.

Nothing contained in this report by Environmental Standards shall be construed as a warranty or affirmation by Environmental Standards that the Property described in this report is suitable collateral for any loan or acquisition of such Property by any lender through foreclosure proceedings or otherwise will not pose a specific risk of potential environmental liability on the part of such lender.

2.5 Special Terms and Conditions

Although ASTM Standard E1527-13 and the AAI Regulation indicate that the standard practice is intended to permit a user to satisfy one of the requirements to qualify for the innocent landowner defense to CERCLA liability, Environmental Standards does not represent that this work, in and of itself, constitutes "all appropriate inquiry into the previous ownership and uses of the property," as this phrase is used in Section 101 (35) (B) of the Federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended through PL 99-499 (October 17, 1986) and 42 USC 9601 (35)(B).

A sampling and analyses program designed to detect asbestos, mold, and radon was not performed under this Scope-of-Work. A separate Scope-of-Work with associated costs can be submitted prior to initiation of any asbestos, mold, or radon sampling, if requested. Environmental Standards attempted to determine if PCBs are present or are potentially present within the site boundaries; however the findings of our observations are not guaranteed. PCB sampling was also not completed under this Scope-of-Work.

2.6 User Reliance

Any user of this document acknowledges that the document was prepared by Environmental Standards for the exclusive use of Worcester Township (and others exclusively with the written consent of Environmental Standards). Worcester Township agrees that Environmental Standards' reports and correspondences will not be used or reproduced in full or in part for promotional purposes and may not be used or relied upon in any prospectus or offering circular without prior written consent and financial compensation. Any user also agrees that none of its advertising, sales promotion, or other publicity matter containing information obtained from this ESA and report will make reference to Environmental Standards' trade name.

Users who rely on this information do so at their own peril and specifically acknowledge that the findings described herein do not indicate that the Property evaluated is a suitable investment fit for any particular use.

The information provided in this report is not to be construed as legal advice.

3.0 Site Description

3.1 Location Legal Description

The Property evaluated in this report is located at 1625 Berks Road, Norristown, Pennsylvania 19403. The physical location of the Site is 40° 10' 49.08" N Latitude and - 75° 20' 19.32" W Longitude at an approximate elevation of 458 feet above sea level. The Property is bounded by residential and agricultural properties to the north, east, and west, and by Berks Road to the south. The subject Property is situated in a mixed use residential/agricultural area and is surrounded primarily by single-family dwellings and farmland.

Determination of the specific land survey boundary for this Property was not included in the scope of this Phase I ESA and was not completed as part of this study.

3.2 Site and Vicinity General Characteristics

The Property is an irregularly-shaped lot consisting of three buildings, a large parking lot, and surrounding grounds that are bounded by adjacent residential and agricultural properties, and Berks Road. There is one 45,000 square foot building located at the southeastern end of the property near the main entrance off of Berks Road that was used as an administration building for the USARC. There is a 6,800 square foot building previously utilized as the OMS building located toward the northwest end of the property. There is also a small building which houses the potable well pump and treatment system located in the middle of the property.

Prior to 1968, the site served as a Nike Ajax missile launch facility for the US Army. The missile silos remain on-site at the northwestern end of the property. There is an asphalt paved parking lot that covers a majority of the property. To the north and northeast of the parking lot is a grassy and an overgrown grass/shrubbery area.

3.3 Current Use of the Property

The existing buildings at the Property are currently vacant; maintenance activities are periodically performed by the US Army mainly to maintain the current state of the Property. Based on correspondence with the site maintenance staff, the parking lot at the Property is occasionally used by the state police for motorcycle training exercises.

3.4 Descriptions of Structures, Roads, and Improvements

There is one 45,000 square foot building located at the southeastern end of the Property near the main entrance off of Berks Road, a 6,800 square foot building located toward the northwest end of the Property, and a small building in the middle of the Property. Parking lots cover a majority of the Site which is bordered by Berks Road to the south/southeast.

3.5 Current Uses of Adjoining Properties

The subject Property is bounded by adjacent parcels to the north, east, and west, and by Berks Road to the south. The subject Property is situated in a mixed-use residential/agricultural area and is surrounded primarily by single-family dwellings and farmland.

4.0 User-Provided Information

4.1 Title/Property Use Records

Chain-of-Title records were not provided to Environmental Standards and were not reviewed as part of this Phase I ESA.

4.2 Environmental Liens or Activity and Use Limitations

An environmental lien report was provided to Environmental Standards by EDR. No environmental liens were found to be present for the Property. There was an activity and use limitation incorrectly identified by EDR within their lien search. The AUL identified was dated September 12, 1991, authorizing the U.S. Army to discharge effluent into the Stony Creek Tributary under the National Pollutant Discharge Elimination System Sewage Permit. The Environmental Lien Report is provided in Appendix F.

The results of the environmental lien search as reported here should in no way be construed as all-encompassing or a conclusive indication of the presence or absence of environmental liens on the Property. The lien search was conducted strictly to aid in determining the likelihood that a release of a hazardous substance has occurred at the Property. The lien search was not conducted to determine the overall presence or absence of environmental liens on the Property.

4.3 Specialized Knowledge

The individuals interviewed as part of this Phase I ESA had limited specialized knowledge regarding past uses of the Property. The results of the interviews are presented in Section 7.0.

4.4 Commonly Known or Reasonably Ascertainable Information

Township representatives provided extensive (several hundred) Site-related documents and electronic files to Environmental Standards regarding the property. These documents mainly covered previous investigations conducted during the USARC's occupation and following the decision to close the USARC. More than 700 documents were provided by the Township's representatives to Environmental Standards. These documents consisted of environmental assessment reports, site figures/diagrams/drawings, photographs, sewage treatment plant records and reports, and US Army multiple site investigations among other.

Because of the volume of material provided, an electronic spreadsheet was developed to track the document review and the areas of concern (AOCs) discovered during the document review. This spreadsheet is provided in Appendix F.

Also included as part of the document review were several hundred files obtained during the April 18, 2014 PA DEP file review. Based on a review of the researched documents, Environmental Standards identified 29 AOCs as identified in the table below. The associated AOC letter designation corresponds to a location shown on Figure 3.

Areas of Concern (AOCs) (Based on review of provided documents)	
A	Superfund Site Transcoil/North Penn located upgradient of Site
B	On-site spoils area
C	Former 1,500 gallon No. 2 fuel oil UST
D	Former 1,000 gallon gasoline UST
E	No. 2 fuel oil spill next to potable well
F	Former 20,000 gallon No. 2 fuel oil UST
G	Oil-like substance in drainage ditch
H	Former Nike missile silos
I	PCBs in transformers
J	Groundwater supply well
K	Oil-water separator (OWS) and OMS building
L	Nike missile launch area/fire training burn site
M	Nike missile base - building area
N	Property-wide groundwater impacts
O	USTs and ASTs with "removal documentation unavailable." <i>See O# sub-categories below:</i>
O1	Former 5,000 gallon diesel UST
O2	500 gallon heating oil AST
O3	2- 275 gallon fuel oil ASTs
O4	250 gallon waste oil AST, west side of OMS
O5	550 gallon Waste Oil UST
O6	Unknown UST located on a 1972 map
O7	UST - missile launcher
O8	AST - maintenance facility
O9	UST pump house
P	Fence line
Q	Former Sewage treatment plant
R	Sand mound sewage system
S	Organic Vapor Soil Survey
T	Second drainage ditch located directly in front of building
U	Vanadium in on-site soils above direct contact standards

4.5 Valuation Reduction for Environmental Issues

No real estate pricing, or other information regarding valuation of the Property was provided; therefore, there is no "market-value" sale price for the Property for comparison, and it is not possible for Environmental Standards to compare property value impacts related to potential environmental issues. Such valuation services can and should be supplied by a qualified, licensed, and trained real estate appraiser.

4.6 Owner, Property Manager, and Occupant Information

The Property is currently owned by the United States Army Engineer – Chief Real Estate Division of the. The existing building at the Property is currently vacant. Previously, the buildings were

operated by the USARC as an administration building with an attached training facility and an operational maintenance building until September 2011.

4.7 Reasons for Conducting Phase I ESA

The purpose of conducting this Phase I ESA of the Property was to provide the User with information relative to potential environmental concerns that may affect the value of the Property or concerns that will impact redevelopment of the Property.

5.0 Records Review

Environmental Standards commissioned a computer-based environmental information database search of federal and state regulatory databases for environmental information on sites located within the ASTM E 1527-13 recommended Phase I ESA radii of the Property through a private contractor, EDR. A copy of the EDR Radius Map Report is provided in Appendix A.

5.1 Standard Environmental Record Sources

This Phase I ESA included a computer-based search of federal and state regulatory databases for environmental information on sites located within the ASTM-recommended Phase I ESA radii of the Property through EDR. Standard environmental record sources include both federal and state databases. The following databases had at least one site identified within the ASTM recommended search radius.

Database Searched	Number of Sites Within ASTM Radius	Database Description
NPL	1	US EPA's "Superfund List" of uncontrolled or abandoned hazardous waste sites.
CERCLIS	1	Sites that are reported by US EPA to be potentially hazardous waste sites.
RCRA-CORRACTS	1	Handlers of hazardous wastes with RCRA corrective action activity.
RCRA-CESQG	TP	Conditionally exempt small-quantity generators.
RCRA-NonGen	1	Facilities that do not presently generate hazardous waste.
US ENG CONTROLS	1	Sites in the United States with engineering land use controls.
US INST CONTROLS	1	Sites in the United States with institutional land use controls.
FINDS	TP	Facilities identified on the Facility Index System.
PA LUST	TP	Facilities with reported incidents of leaking underground storage tanks in PA.
PA RGA LUST	TP	The EDR recovered government archive leaking underground storage tank database.
VCP	1	PA Voluntary Cleanup Program sites list.
ROD	1	Record of Decision documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

The subject Property was listed in four of the databases reviewed, the RCRA-CESQG, FINDS, and PA LUST PA RGA LUST databases. Below is a table summarizing these databases and the Property status where applicable.

Database	Status
RCRA-CESQG	Listed as a conditionally exempt small-quantity generator generating 100 kg or less of hazardous waste at any time. The Property generated ignitable hazardous waste and has no violations on record.
FINDS	Registry ID: 110006538032.
PA LUST	The Property is listed with a Facility ID of 46-21187, a release date of 11/27/1995, and a status of "cleanup completed" on 8/1/2011.
PA RGA LUST	This database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department Environmental Protection in Pennsylvania.

It is Environmental Standards' opinion that in the information provided in these databases does not pose new or different environmental risks relative to the subject Property that were not already identified during the historic document review.

North Penn – Area 12 is a site located 0.46 miles upgradient and west of the Property. North Penn – Area 12 is listed in 5 of the databases searched. Below is a table summarizing these databases and the Property status, where applicable.

Database	Status
NPL	As of 2/21/1990, North Penn – Area 12 is on the final National Priorities List (NPL) list for being contaminated with <i>cis</i> -1,2-dichloroethylene, dichloroethane, 1,1-, trichloroethane, 1,1,1-, and trichloroethylene (TCE).
CERCLIS	CERCLIS contains sites which are either proposed to or on the NPL and sites which are in the screening and assessment phase for possible inclusion on the NPL. North Penn – Area 12 is listed as currently on the final NPL.
US ENG CONTROLS	North Penn – Area 12 is listed as having several engineering controls instituted on 9/30/1997 for groundwater, including air stripping, alternate drinking water, carbon adsorption and pump and treat.
US INST CONTROLS	North Penn – Area 12 is listed as having institutional controls in place as of 9/30/1997.

Database	Status
ROD	ROD documents mandate a permanent remedy at an NPL Superfund site containing technical and health information to aid in the cleanup.

It is Environmental Standards' opinion that North Penn – Area 12 may pose an environmental risk to the subject Property groundwater due to its listing on the NPL and known contaminated groundwater. North Penn – Area 12 is located in what is interpreted by Environmental Standards to be hydraulically upgradient relative to the subject Property.

One site within the ASTM-Standard radii was found in the RCRA-CORRACTS database. Handy and Harman Tube Co Inc., located at 701 W Township Ln. had one RCRA-CORRECTS permit on record for 2006. The Handy and Harman Tube Co Inc. property is located downgradient of the subject Property, and is not expected under normal circumstances, to impact the subject parcel's environmental condition.

One site within the ASTM-Standard radii was found in the RCRA-NonGen database. Gambone Bro Dev, located at 1636 Berks Rd. had one RCRA-NonGen permit on record for 2009. No violations are listed for this site and, therefore, the Gambone Bro Dev site, under normal circumstances, is not anticipated to impact the subject Property's environmental condition.

One site within the ASTM-Standard radii was found in the VCP database. Estate of George Hutt Jr., located at 2700 Potshop Rd, had one VCP permit on record for 1998. No current activity is listed for this site. The Estate of George Hutt Jr. property is located downgradient of the subject Property, and is not, under normal circumstances, expected to impact the subject parcel's environmental conditions.

Twenty records were identified within the EDR database search as "orphans" due to poor or inadequate address information. An address search was conducted on the orphan summary list and based on the approximated locations of the sites they are not anticipated to impact the subject Property.

5.2 Vapor Encroachment Screening

In accordance with ASTM E1527-13, a vapor encroachment screening was conducted to evaluate the potential for vapors from contaminated soils or groundwater within a set search radii to impact the subject Property. The vapor encroachment screening is intended to identify a vapor encroachment condition (VEC), which may impact the property resulting in a REC. Environmental Standards utilized the EDR screening workbook for the subject Property and based on the results of applying this workbook, no VECs were identified; therefore, *based solely on the screening process*, there are apparently no RECs associated with vapor encroachment (Appendix G).

5.3 Additional Environmental Record Sources

Pennsylvania Department of Environmental Protection

Environmental Standards inquired about the existence of PA DEP records relating to environmental releases at the subject Property by filing a records request application (Appendix F). A file review was conducted at the PA DEP's Southeast Regional office on

April 18, 2014. A summary of these file content are included in the Historic Document Review Summary Table provided in Appendix F and the associated areas of concern identified during this review are detailed in Section 4.4.

United States Environmental Protection Agency

Environmental Standards also inquired about the existence of US EPA records relating to the Property. As of the date of this report, the US EPA has not responded to the file request. Environmental Standards utilized the US EPA's online FOIA site (MyPropertyInfo), which states that "the information received would be the same as filing a FOIA request with the US EPA." According to the US EPA online FOIA Site, the property is listed with the following US EPA databases; Facility Information (FRS), Clean Air Act, Clean Water Act, RCRA CESQG, Safe Drinking Water Act, Air Emissions Inventory (EIS), Greenhouse Gas Emissions (eGGRT), and Toxic Release Inventory (TRI). These records correspond to previously identified areas of concern from the historic document review and the PA DEP file review. Upon receipt of the US EPA's formal written response, Environmental Standards will review and provide a report addendum to the client if it is our judgment that the findings of this Phase I ESA are materially impacted.

Worcester Township

A standard right to know form was submitted to the Open Records Officer with Worcester Township. A response via e-mail was received from the Assistant Right to Know (RTK) Officer Worcester Township, Ms. Erica Lucey, stating more time would be needed to prepare the documents for review. Email correspondence and a right to know approval letter were provided on March 13, 2014, by Ms. Lucey stating the files were ready for review. A file review was conducted by Environmental Standards on March 18, 2014. The files reviewed while at the Township offices were duplicates of files provided to us previously by the Township's representatives which were evaluated during the historic documentation review. Ms. Lucey's email also stated that the Fire Department and Police Department would need to be contacted separately regarding their records.

Mr. Cornish of the Worcester Volunteer Fire Department stated that he does not recall responding to calls at the facility within the last 20 years. The Police department stated they have no records on file for the Property.

Montgomery County

A standard right to know form was submitted to the Open Records Officer with Montgomery County. As of the date of this report, no response was received. Upon receipt of the County's response, Environmental Standards will review and provide a report addendum to the client if the outcome of this Phase I ESA is impacted.

Owner Provided Reports

Environmental Standards was provided additional documentation for the subject Property as detailed in Section 4.4 of this report.

Additional EDR Provided Reports

EDR provided a Tax Map Report, which covers the area around the subject Property. EDR also provided a Building Permit Report for the subject Property; however, there were no records

discovered for the property in the EDR building permit database. These additional reports are provided in Appendix F.

5.4 Physical Setting Sources

5.4.1 Topography

According to the Geocheck® Physical Setting Source Summary, the Site lies at an elevation of approximately 458 feet above mean sea level. The topography of the Property is generally flat, with a slight slope to east, and the Property sits at a slight hill top in the north-south direction.

5.4.2 Local Geology

The northern portion of the Site lies within the Brunswick formation and the southern portion of the Site lies within the Lockatong formation. The Brunswick formation typically consists of moderately well bedding reddish-brown shale, mudstone, and siltstone. The Brunswick formation is characterized as having joint and bedding plans which provide secondary porosity of moderate magnitude. As a result, the Brunswick formation is characterized as having moderate permeability and good surface drainage. The Lockatong formation consists of dark-gray to black argillite and some zones of black shale. The Lockatong formation is characterized as having joint openings which provide secondary porosity. As a result, the Lockatong formation is characterized as having low porosity, low permeability, and good surface drainage (Engineering Characteristics of the Rocks of Pennsylvania, 1982).

5.4.3 Local Soils

Soils in the vicinity of the subject Property consist primarily of Urban land soil (UgB). The geotechnical properties of the made land were not reported. The Urban land has a 0-8 slope range and the soil is considered poorly drained. Urban land consists of areas where the original soil has been covered with impervious surfaces, such as asphalt, concrete, and buildings. In many places the underlying soil has been cut away or covered by fill from adjacent areas.

The adjacent soils to the subject Property consist of Readington silt loam which varies between fine- and coarse-grained sediments. The Readington silt loam ranges from 0 to 3, 3 to 8, and 8 to 15 percent slopes. The Readington silt loam is moderately well drained. A soil map of the area is presented in Appendix F.

5.4.4 Groundwater

A review of topographic maps in the area suggests that under natural unconfined aquifer conditions, shallow groundwater would reasonably be expected to flow to the regional surface water discharge point, interpreted to be a tributary to Stony Creek, which is located southeast of the subject Property.

5.4.5 Surface Water

No surface water bodies were observed on the Property. Surface water runoff generally flows to a Stony Creek tributary located southeast of subject Property. The tributary runs south of the subject Property flowing into Stony Creek which then flows to the south.

5.5 Historical Use Information about the Properties

Known historical development of the area dates back to at least 1958 when the Property was developed with several small buildings. Use of this Property prior to 1942 is unknown, but appears to be agricultural.

As part of the historical use evaluation, historical aerial photograph coverage (Appendix B) for the area in which the Site is located was obtained and reviewed. Thirteen aerial photographs were provided by Environmental Data Resources (EDR) of the subject area for this ESA. These photographs provide representations of the Site and vicinity for the years 1942, 1950, 1958, 1965, 1971, 1973, 1981, 1988, 1992, 1999, 2005, 2008, and 2010. A review of these photographs is provided below:

- 1942 and 1950 – The subject Property appears undeveloped. There is a wooded area to the north-northeast of the property.
- 1958 – The subject Property appears to have undergone development. Several small buildings and roadways have been constructed on the property on the southeast and northwest of the property. The missile silos, missile transport tracks, and the crescent-shaped berm are visible on this map. The surrounding areas appear unchanged.
- 1965 and 1971 – The subject Property structure appears to have undergone construction. A larger building is located on southeast side of the property, and a long narrow building is located on the northwest side of the property. The surrounding areas appear unchanged.
- 1973 – The subject Property structures have undergone construction. Several buildings were removed, and several other buildings were constructed or are under construction on the southeast side of the property. The surrounding areas appear unchanged.
- 1981 and 1988 – The subject Property structures have undergone construction. A large building was constructed adjacent to the long narrow building on the northwest side of the property. A large paved area was constructed in the middle of the site between the buildings. The adjacent property to the southeast has minimal construction. Several smaller buildings were constructed.
- 1992, 1999, and 2005 – The subject Property use does not appear to have changed; however the areas surrounding adjacent properties appear to be more developed.
- 2008 and 2010 – The subject Property use does not appear to have changed; however the surrounding areas appear to have been developed. Several buildings have been constructed to the adjacent property on the northwest side of the subject Property.

Historical topographic maps (Appendix C) were obtained through EDR and reviewed. The historical topographic maps show roads, water bodies, topographic contours, railroads, and regions of development through time. Historical topographic maps of the subject Property were provided by EDR. These maps provide representations of the Site and the vicinity for the years 1895, 1943, 1951, 1956, 1966, 1973, 1983, and 1999. A review of the maps is provided below:

- 1895 – The subject Property and the surrounding area are not highly developed. Located to the southeast of the site are the Iron Stony Creek and a railroad.
- 1943 – The subject Property does not appear to have changed; however, the surrounding area has increased development.
- 1951 – The subject Property does not appear to have changed; however, a cemetery has been constructed off Berks Road to the southeast of the subject Property.
- 1956 – The subject Property does not appear to have changed.

- 1966- The subject Property use does not appear to have changed; however, buildings have been constructed adjacent to the subject Property. Power lines have been established to the north of the site.
- 1973 – The subject Property does not appear to have changed. Additional power lines have been established to the north of the site.
- 1983 and 1999 – The subject Property has not changed; however the surrounding area has increased developed. Several buildings have been constructed to the southeast and northwest of the site. Additional power lines have been established to the north of the site.

Historical Sanborn Maps (Appendix D) for the area were requested from EDR. There was no Sanborn® Map coverage available for review for the subject property.

In the City Directory Abstract (Appendix E), business directories were reviewed at approximately 5-year intervals for the years spanning 2003 through 2008.

- 2003 – The Property is listed as Army Dept of Army Reserve.
- 2008 – The Property is listed as Army Dept/Army Reserve.

5.6 Historical Use Information about Adjoining Properties

Historical use information for the adjoining properties was obtained from the same sources of information that were used to research the Property. The findings of the adjoining properties commercial and industrial entities reviewed were provided in the previous section.

6.0 Site Reconnaissance

On March 20, 2014, Environmental Standards' representatives Joseph Kraycik and Angela Price conducted a Site visit of the Property. Mr. Kraycik's and Ms. Price's professional qualifications are provided in Appendix H. Scott Henry of the US Army Regional Support Command (RSC) provided access to the buildings and walked the site to answer questions. The objective of Environmental Standards' Site visit was to visually and physically observe the Site to obtain information that could indicate the presence of RECs on the Property.

This section of the report discusses observations made during the Site visit regarding current uses of the Property that are likely to involve or could involve the use, treatment, storage, disposal, or generation of hazardous substances or petroleum products.

6.1 Methodology and Limiting Conditions

The Site reconnaissance consisted of walking *readily accessible* areas of the Property and recording visual and physical observations, including photographic documentation. The Site reconnaissance began with an inspection of the former administration building (interior and exterior). Next, the interior and exterior of the OMS building was inspected as well as the rest of the paved and unpaved areas of the Property.

6.2 General Site Setting

The existing buildings at the Property are currently vacant with occasional maintenance activities being performed. Maintenance activities are performed by the Army mainly to maintain the current state of the Property. The Property is an irregularly-shaped lot approximately 19 acres in size. Surface drainage follows a gradual slope to the south/southeast.

There is one 45,000 square foot building located at the southeastern end of the property near the main entrance off of Berks Road, a 6,800 square foot building is located toward the northwest end of the property, and a small building is in the middle of the property. Prior to 1968 the site served as a Nike Ajax missile launch facility for the US Army. The missile silos remain on-site at the northwestern end of the property. There is an asphalt paved parking lot that covers a majority of the property. To the north and northeast of the parking lot is a grassy and overgrown area.

The Property is bounded by Berks Road to the south/southeast, wooded and agricultural lots to the east, and mixed-use residential and agricultural to the north and west.

Photographs and narratives of the Site exterior and adjoining properties are presented in the attached Photographic Log.

6.3 Observations

This subsection of the report discusses observations regarding current uses of the Property that are likely to involve, or could involve, the use, treatment, storage, disposal, or generation of hazardous substances and petroleum products. Results of the Site reconnaissance provided no evidence of large-quantity use, treatment, storage, disposal, or generation of hazardous substances.

The following subsections are organized according to the specific portions of the Property inspected.

Administration Building Interior

The 45,000-square-foot main administration building (Photographs 1 and 2) consists of a two-story, precast concrete and structural steel frame, slab-on-grade building with the exception of the boiler room which is partially below grade. The main entrance to the administration building is off of the parking lot located at the main entrance to the property which is located off of Berks Road and is secured by a fence and gate. This building consists of classrooms, offices, storage rooms, closets, lavatories, a small kitchen cafeteria, boiler room, a former firing range, storage vaults, and a drill hall.

Administration Building – Lower Floor

The lower floor of the administration building consists of offices, a kitchen, men's and women's lavatories, a former firing range, a drill hall, a corridor of storage rooms (Photograph 3), and a storage vault. The halls were lined with lockers. The former firing range was converted into a storage room with wire shelves which were used for storage of the Army's band equipment.

Administration Building – Upper Floor

The upper floor of the administration building primarily consists of classrooms, offices, and locker rooms with lockers lining the hall way (Photograph 4). There were two women's lavatories and one men's lavatory. Based on discussions with Mr. Henry, the space upstairs was most recently used for Army band practices and limited office space but, hasn't been used since the Army's departure in 2011.

Basement – Boiler Room

The boiler room was accessible from the outside of the administration building. Upon entering the doorway at ground level, stairs are used to access the floor of the boiler room. This area of the building is approximately 3 feet underground. An electrical transformer and breaker panels are present in the boiler room.

The boiler room contains fuel oil and natural gas supply piping, two boilers, two pump stations (Photograph 5), a water heater, and a pressure tank. The boilers (Photograph 6) were previously powered with fuel oil, but were converted to natural gas after the removal of the 20,000 gallon fuel oil UST. Further discussion regarding the 20,000 gallon fuel oil UST, piping, and remote fill observations are included in Table 1; AOC F.

Condensed water from the boiler system was observed to be pooled around the base of the boilers (Photographs 9 and 10). There were four floor drains and one sump observed in the boiler room (Photographs 11 through 13). These floor drains were noted in the historic document review to directly discharge to the drainage ditch located at the southeastern edge of the property. Further discussion regarding the observations of the floor drains and sump during the site visit are included in Table 1; AOC G.

Potable Well House

The potable well house, located in the center of the large parking lot contained the former well, (now abandoned) two pump stations, a heating system, the water treatment system, and water

storage tank gauging devices (Photographs 15 through 17). Currently natural gas fuels the heating system, however; previously the system used fuel oil which was stored in an above ground storage tank outside of the building. Additional discussion regarding the AOCs associated with the potable well house are included in Table 1; AOCs E, J, and O9.

OMS Building and Oil Water Separator Area

The OMS building is a one story, 6,800 square foot building constructed of steel and brick. There are five garage bays which were utilized for vehicle maintenance during USARC's occupancy. The OMS building is heated with natural gas-fired infrared heaters and a single unit heater. Also within the OMS building was a small office, a lavatory, and a small storage closet. No floor drains were observed within the OMS building. Additional discussion regarding the AOCs associated with the OMS Building and the OWS are included in Table 1; AOC K.

Remaining External Areas

The exterior of the subject Property consists of parking lots, grassed and overgrown grassy areas, three missile silos, three drainage ditches, a sand mound sewage treatment system, and a berm area. Surface drainage follows a gradual slope to the south/southeast. Overhead electrical and communication lines were present surrounding the subject Property. Each of the previously identified AOCs (Section 4.4 of this report) from the historic document review were observed and are summarized in Table 1.

7.0 Interviews

7.1 Interview with Owner/User

The "User" of this Phase I ESA is defined by ASTM 1527-13 as the party seeking to use ASTM 1527-13 to complete an environmental site assessment of the Property. A User may be a potential purchaser of the Property, a potential tenant of the Property, an owner of the Property, a lender, or a Property manager. The User has specific obligations for completing a successful application of 1527-13. In order to qualify for the Landowner Liability Protections offered by the Business Liability Relief and Brownfields Revitalization Act of 2001, the User must provide certain and complete information to the environmental professional conducting the Phase I ESA. Failure to provide this information (if available) could result in a determination that "all appropriate inquiry" is not complete.

As part of this Phase I ESA, Environmental Standards interviewed F. Lee Mangan, Worcester Township Manager, regarding environmental conditions at the Property. Worcester Township is the User of this Phase I ESA and the potential purchaser of the Property. In accordance with ASTM 1527-13, the following questions were posed to Mr. Mangan in order to satisfy one of the requirements of the Landowner Liability Protections. Mr. Mangan's responses are provided in Appendix F:

- Are you aware of any environmental cleanup liens against the Property that are filed or recorded under federal, state, or local law?
 - No
- Are you aware of any activity and use limitations (AULs), such as engineering controls, land use restrictions or institutional controls, that are in place at the Property and/or have been filed or recorded in a registry under federal, tribal, state, or local law?
 - No
- As the User of this ESA, do you have any specialized knowledge or experience related to the Property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?
 - No
- Does the purchase price being paid for this Property reasonably reflect the fair market value of the Property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?
 - Not applicable. The Property is being donated to the Township for recreational uses pursuant to the Federal Lands to Parks program.
- Are you aware of commonly known or reasonably ascertainable information about the Property that would help us to identify conditions indicative of releases or threatened releases? For example, as the User,
 - Do you know the past uses of the property?
 - Yes, based on what is documented in the historic environmental reports for the Property. I understand that our counsel has provided Environmental Standards with a copy of the significant historic reports.

- Do you know specific chemicals that are present or once were present at the property?
 - Yes, as documented in the above-referenced reports.
- Do you know of spills or other chemical releases that have taken place at the property?
 - Yes, as documented in the above-referenced reports.
- Do you know of any environmental cleanups that have taken place at the property?
 - Yes, as documented in the above-referenced reports.
- As the User of this ESA, based on your knowledge and experience related to the Property, are there any obvious indicators that point to the presence or likely presence of contamination at the Property?
 - Nothing beyond what is documented in the above-referenced reports.

7.2 Interview with Property Manager

The Property is currently owned and maintained by the US Army. The results of conversations with Mr. Henry are provided in Section 6.0 (Site Reconnaissance).

7.3 Interviews with Site Occupants

The Site is currently vacant and, therefore, has no legal occupants.

7.4 Interviews with Local Government Officials

In an effort to obtain reasonably ascertainable historical information pertaining to the environmental condition of the subject Property, Environmental Standards performed Freedom of Information requests from local, county, state, and federal governmental agencies. Responses to these requests were summarized in Section 5.3 of this Report.

8.0 Findings and Data Gaps

The specific findings for each of the AOCs is included in Table 1 and were developed as a result of the environmental assessment process and as defined in E1527-13 this section of the report identifies known or suspect RECs, cRECs, hRECs, and *de minimis* conditions. Out of the originally identified 29 areas of concern, Environmental Standards identified 15 RECs, 4 hRECs, and 4 data gaps which are detailed on Table 1. The remaining 6 areas of concern are no longer considered areas of concern due to the information received and evaluated during the Phase I historic document review.

8.1 Data Gaps

According to the US EPA AAI Regulation, a "data gap" is a lack of or inability to obtain information required by the standards and practices listed in the AAI Regulation, despite good faith efforts by the environmental professional or the prospective landowner (or grant recipient) to gather such information pursuant to the objectives for all appropriate inquiries.

The AAI Final Rule requires environmental professionals, prospective landowners, and grant recipients to identify data gaps that affect their ability to identify conditions indicative of releases or threatened releases of hazardous substances. The final rule requires such persons to identify the sources of information consulted to address the data gaps and comment upon the significance of the data gaps with regard to the ability to identify conditions indicative of releases or threatened releases. The AAI final rule also requires that the inquiries report include comments regarding the significance of data gaps relative to the environmental professional's ability to provide an opinion as to whether the inquiries have identified conditions indicative of releases or threatened releases.

As of the date of this report, certain significant data gaps persist despite Environmental Standards' investigative efforts. These data gaps restrict Environmental Standards' ability to form an opinion regarding the release, threat of a release, or potential for a release to have occurred at the property and are listed below:

1. As of the date of this report, Montgomery County has not responded to Environmental Standards' request to review Property records. This lack of information represents a data gap that restricts Environmental Standards' ability to take these records into account when examining past property uses. Nevertheless, because the property history is known back to the 1940's from numerous sources, it is our opinion that the lack of Montgomery County information will not significantly impact the findings described herein.
2. No additional information for AOCs O3, O5, and O6 were available, therefore, we were unable to identify the specific locations of the tanks in question. Since the tanks were unable to be located, we cannot make definitive conclusions regarding the potential environmental impact to the property. The inability to definitively locate these tanks is a significant data gap because the tanks potential environmental impact can only be ascertained if their specific location is known and visually assessed.
3. The fire protection pump house was inaccessible due to a faulty lock mechanism; therefore, Environmental Standards was unable to observe the interior of this building. This is a data gap as we cannot make conclusions on the interior condition or the contents of the building. The data gap can be eliminated at a future date through a supplemental inspection during Environmental Standard's Phase II activities, but until the interior is

investigated, the lack of information regarding the fire protection pump house contents is considered significant.

9.0 Opinions

Environmental Standards has developed the following opinions regarding the findings (Section 8.0) of this Phase I ESA. For ease of reference, they have been divided into AOCs and summarized on the following table:

Areas of Concern (AOCs)		Opinions
A	Superfund Site Transicoil/North Penn located upgradient of Site	Groundwater is potentially impacted by this offsite superfund site.
B	On-site spoils area	Since the area is not known to have been investigated and the contents of the wastes are unknown there is a potential for surface soil impacts.
C	Former 1,500 gallon No. 2 fuel oil UST	This tank was deemed "closed" by PA DEP, therefore, it is not anticipated to present further risk to the subsurface.
D	Former 1,000 gallon gasoline UST	This tank and associated pump were removed and impacted soil was excavated. Samples were collected and closure documentation was provided to PA DEP. It is anticipated that this AOC no longer presents a risk to the subsurface.
E	No. 2 fuel oil spill next to potable well	There were no soil samples collected to investigate the surface spill or subsurface samples collected to investigate the potential UST. There could be remaining soil impacts in this area.
F	Former 20,000 gallon No. 2 fuel oil UST	<p>This UST and impacted soil was removed. Samples were collected and closure documentation was provided to PA DEP. It is anticipated that this AOC no longer presents a risk to the subsurface.</p> <p>The remote fill was not observed and there was no staining evident, therefore, no ongoing risk of impact to the property is anticipated.</p>
G	Oil-like substance in drainage ditch	The drainage ditch still accepts wash water from the boiler room. Based on the historic document review, soil may have been impacted at this AOC.
H	Former Nike missile silos	<p>Due to the limited amount of previous sampling, the known use of hazardous substances, and the lack of additional information regarding sumps within the silos, it is possible that there are surface and subsurface impacts associated with this AOC.</p> <p>A data gap for this AOC is noted due to the inability to access the interior of the fire protection pump house.</p>
I	PCBs in transformers	The pad mounted transformer was replaced, the pole mounted transformer was removed, and no staining was observed in either location, therefore no impact to the property is anticipated.
J	Groundwater supply well	Due to the known groundwater impact upgradient of the property due to the off-site superfund site, it is possible that the groundwater being supplied to the site is impacted.

Areas of Concern (AOCs)		Opinions
K	Oil-water separator (OWS) and OMS building	There were no indications observed in the OMS building that would be anticipated to impact the surface or subsurface. The status of the OWS and its contents remains unclear and, therefore, may be impacting the subsurface of the Site.
L	Nike missile launch area/fire training burn site	Due to the known use of hazardous substances and the limited soil sampling previously conducted in this AOC, it is unclear if soil or groundwater impacts resulted from this area being used as a launch area, missile maintenance, or a fire training area.
M	Nike missile base - building area	Due to the known use of hazardous substances and the limited soil sampling previously conducted in this AOC, it is unclear if soil or groundwater impacts resulted from this area being used as a missile handling area. There was also a large manhole that will require further investigation to determine its contents and former use.
N	Property-wide groundwater impacts	Due to the known upgradient groundwater impacts and the potential for the AOCs on this property to impact groundwater, the property-wide groundwater quality is of concern.
O1	Former 5,000 gallon diesel UST	This tank may have impacted the subsurface and the previous investigation does not appear to have been conducted in the correct location.
O2	500 gallon heating oil AST	No staining on the pavement, therefore, no surface or subsurface impact to the property is anticipated.
O3	2- 275 gallon fuel oil ASTs	Unable to access the building interior; however, they are housed in a building built on top of the silo therefore, no surface or subsurface impacts are anticipated. Since these tanks were not observed, this is a data gap..
O4	250 gallon waste oil AST, west side of OMS	No staining on the pavement therefore, no surface or subsurface impact to the property is anticipated..
O5	550 gallon Waste Oil UST	No additional information regarding this UST was gained during the Site visit therefore, this AOC is a data gap.
O6	Unknown UST located on a 1972 map	No additional information regarding this UST was gained during the Site visit therefore, this AOC is a data gap.
O7	UST - missile launcher	Based on the location indicated for this tank, it is assumed that this was an inaccurate identification of a UST. It is not anticipated that this AOC will impact the property
O8	AST- maintenance facility	No staining on the pavement therefore, no surface or subsurface impact to the property is anticipated.
O9	UST pump house	No indications of a tank or tank removal were identified during the site visit however, if the tank remains, there could be subsurface impacts.
P	Fence line	This area was previously investigated and PA DEP closed out this AOC. It is not anticipated that this AOC will impact the property.

Areas of Concern (AOCs)		Opinions
Q	Former Sewage treatment plant	The former treatment plant's discharge location is of concern and will need to be further investigated. PA DEP called attention to the potential impacts that its discharge may have on the tributary and Stony Creek. This is an off-site area of concern however, if the actual discharge point can be located further information regarding the potential impact can be evaluated.
R	Sand mound sewage system	Based on our understanding of the current sand mound sewage treatment system and the assumed use of the offsite property contributing to this system it is not anticipated that this AOC is impacting the property.
S	Organic Vapor Soil Survey	Based on current information gained from the site visit and the historic document review, it is not anticipated that a soil vapor study will be necessary however, this is strictly observational and may change if samples are collected. Soil and groundwater sample results from future Phase II work will dictate if a soil vapor survey is necessary.
T	Second drainage ditch located directly in front of building	Since this drainage ditch has not been previously investigated and the contributing sources are unknown, it is possible that this area of the site has been impacted.
U	Vanadium in on-site soils above the PA DEP direct contact soil standards	Based on current information gained from the site visit and historic data review it is anticipated that vanadium is a soil issue onsite.

10.0 Conclusions

Environmental Standards has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E 1527-13 of the subject Properties located at 1625 Berks Road, Norristown, Pennsylvania. Exceptions to or deletions from this practice are described in Section 11.0 of this report. This assessment has revealed evidence of 15 RECs in connection with the Property. Additional designations of AOCs are included in Table 1 (*i.e.* hRECs, cRECs, de minimis, and data gaps).

A REC is defined in the ASTM Standard as a condition that represents “the presence or likely presence of any hazardous substances or petroleum products in, on or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of future release to the environment” (ASTM, 1527-13). The 15 RECs identified as part of this Phase I ESA included the following:

REC	REC Description
A	Superfund Site Transicoil/North Penn located upgradient of Site
B	On-site spoils area
E	No. 2 fuel oil spill next to potable well
G	Oil-like substance in drainage ditch
H	Former Nike missile silos
J	Groundwater supply well
K	Oil-water separator (OWS) and OMS building
L	Nike missile launch area/fire training burn site
M	Nike missile base - building area
N	Property-wide groundwater impacts
O1	Former 5,000 gallon diesel UST
O9	UST pump house
Q	Former Sewage treatment plant
T	2nd drainage ditch located directly in front of building
U	Vanadium in on-site soils above the PA DEP direct contact soil standards

11.0 Deviations

The following deviation from the ASTM Phase I ESA Standard in the ESA process is noted.

1. A detailed Chain-of-Title search or detailed deed review was not conducted.

12.0 Additional Services

No additional services were performed by Environmental Standards as part of this Phase I ESA. Environmental Standards did not perform an evaluation for lead based paint or asbestos; however, due to the age of the building and historic reports both are likely to be present at the Property.

13.0 References

Environmental Data Resources, Inc., "The EDR Aerial Photo Decade Package," Inquiry No. 3842278.11, January 30, 2014.

Environmental Data Resources, Inc., "The EDR-City Directory Abstract," Inquiry No. 3842278.5, January 29, 2014.

Environmental Data Resources, Inc., "The EDR Historical Topographic Map Report," Inquiry No. 3842278.4, January 29, 2014.

Environmental Data Resources, Inc., "The EDR Radius Map with GeoCheck Report," Inquiry No. 3842278.2s, January 29, 2014.

Environmental Data Resources, Inc., "The EDR Sanborn Map Report," Inquiry No. 3842278.3, January 29, 2014.

Environmental Data Resources, Inc., "The EDR Environmental Lien and AUL Search Report," Inquiry No. 3842278.7S, February 3, 2014.

Geyer, A. and Wilshusen J., "Engineering Characteristics of the Rocks of Pennsylvania – Environmental Geology Report 1." Department of Environmental Resources – Office of Resources Management. 1982.

Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey Database for Montgomery County, Pennsylvania. Available online at: <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed 2/10/2014.

14.0 Signatures

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in §312.10 of the US EPA's Standards and Practices for All Appropriate Inquiries Final Rule.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject Property. We have developed and performed the All Appropriate inquiries in conformance with the standards and practices set for in 40 CFR Part 312.

Report Prepared By:



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Report Reviewed By:



Gerald L. Kirkpatrick, P.G.
Principal Geoscientist
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15.0 Qualifications of Environmental Professionals

The following environmental professionals were involved in the development of this Phase I ESA. Detailed professional profiles for these individuals are provided in Appendix H.

Gerald L. Kirkpatrick, P.G., Principal Geoscientist/Managing Partner

Mr. Kirkpatrick served as the Principal-in-Charge of this project and provided senior-level report review and project oversight. Mr. Kirkpatrick is a Pennsylvania Licensed Professional Geologist, an Indiana Registered Geologist, and an AIPG Certified Professional Geologist who has more than 35 years of applied geoscience experience in both private industry and environmental consulting. He has provided investigation and facility assessment services for multi-billion dollar international mergers and has also provided expert testimony and consulting services to professional firms involved with environmental insurance, environmental litigation, and financial arbitration issues.

As Principal Geoscientist at Environmental Standards, he is responsible for providing negotiation services and strategy advice to clients for complex property re-use projects, as well as environmental business issues including the development and negotiation of work scopes, property redevelopment strategies, and remedial action planning. International experience in Europe, Asia, North America, and South America provides him with a global perspective on environmental management issues for the multi-national client.

Mr. Kirkpatrick received a Bachelor of Science Degree in Geology from Muskingum College in 1980 and a Master of Science Degree in Geology from the Florida State University in 1982.

Joseph P. Kraycik, P.G., Consulting Geoscientist

Mr. Kraycik conducted site reconnaissance, file reviews, interviews, and prepared the ESA report. Mr. Kraycik is a Licensed Professional Geologist in New Hampshire and has over 16 years of experience as a geologist, environmental scientist, and project manager for engineering and environmental consulting firms conducting subsurface soil, groundwater, and soil gas investigations. As a Consulting Geoscientist, he is responsible for the management of field and office activities associated with Site investigations and remediation. Mr. Kraycik has managed risk-based investigations, completed brownfield redevelopment projects, conducted numerous Phase I and Phase II ESAs, managed multi-million dollar remediation projects, and managed the installation of soil and groundwater remediation systems for petroleum-impacted and chlorinated hydrocarbon-impacted Sites. He has also conducted and managed pilot studies for soil-vapor extraction and groundwater treatment systems.

Mr. Kraycik received a Bachelor of Arts Degree in Geo-Environmental Studies from Shippensburg University of Pennsylvania in 1993 and a Master of Arts Degree in Earth Science from the University of Northern Colorado in 1996.

Angela N. Price, Project Geoscientist

Ms. Price has 9 years of project experience with Pennsylvania Act 2 and underground storage tank (UST) Phase I and Phase II environmental site assessments, UST investigations/removal in New Jersey and Pennsylvania, New Jersey brownfields, New Jersey Industrial Site Recovery Act (ISRA), and Pennsylvania and New Jersey indoor vapor intrusion investigations. As a Project Geoscientist, her primary responsibilities include management of environmental site

investigation and remediation projects, as well as the implementation of field work associated with those projects. Ms. Powley is responsible for managing projects, including tasks such as proposals and budgets, development and implementation of work plans, assessment of field and laboratory data, regulatory reporting, client and regulatory interaction, and budget tracking and invoicing.

Ms. Price received a Bachelor of Science Degree in Biology/Environmental Science from Edinboro University of Pennsylvania in 2003 and a Master of Science Degree in Environmental Health and Engineering from Gannon University in 2005.

PHOTOGRAPHIC LOG



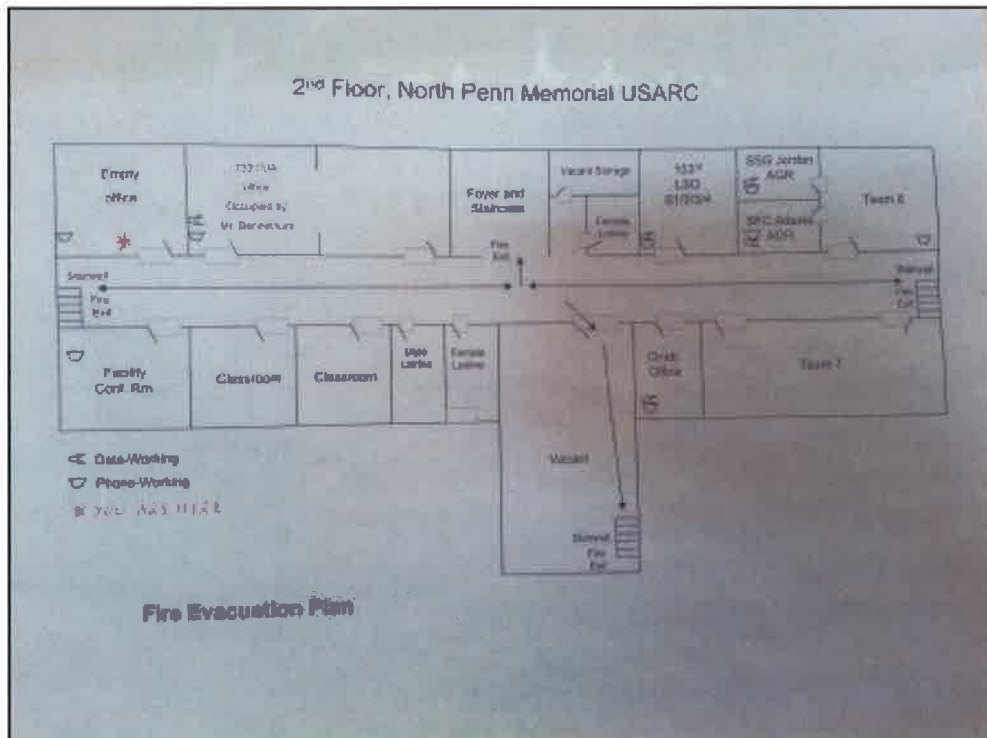
Photograph 1: Front of administration building.



Photograph 2: Front of administration building.



Photograph 3: One of multiple storage areas located on the first floor of administration building.



Photograph 4: 2nd floor plan.



Photograph 5: Two pumps located in boiler room of administration building.



Photograph 6: Boilers located in administration building.



Photograph 7: Area where former 20,000 gallon tank was identified in historic document review.



Photograph 8: Former 20,000 gallon pipes cut off above floor grade.



Photograph 9: Boilers with condensation water around their base.



Photograph 10: Boilers with condensation water around their base.



Photograph 11: Floor drains observed in boiler room of administration building.



Photograph 12: Floor drain observed in boiler room of administration building.



Photograph 13: Sump observed in boiler room of administration building.



Photograph 14: Assumed location of former remote fill for the former 20,000 gallon heating oil UST.



Photograph 15: Potable water treatment system.



Photograph 16: Heater inside potable well house.



Photograph 17: Pumps located in the potable well house.



Photograph 18: Potable well house and location of former heating oil AST and spill location.



Photograph 19: Newer potable well flush with parking lot in foreground with the potable well house in the background.



Photograph 20: Wash rack located adjacent to the OMS building.



Photograph 21: Cover to OWS.



Photograph 22: Grease rack located adjacent to the OMS building.



Photograph 23: Inside of OMS building. No evidence of service pits.



Photograph 24: Groundwater monitoring well located at northwest corner of property.



Photograph 25: Drainage Ditch (AOC G).



Photograph 26: Fire protection pump house located on top of center missile silo.



Photograph 27: Pad mounted transformer.



Photograph 28: Pole mounted transformers.



Photograph 29: Access path and gravel area in missile handling/launch area.



Photograph 30: Mounded area covered with overgrown grass and shrubbery.



Photograph 31: Manhole cover located in bermed area.



Photograph 32: Debris pile located in bermed area.



Photograph 33: Area behind fire protection pump house.



Photograph 34: View of sand mound from access path.



Photograph 35: View of sand mound from side with OMS building in background.

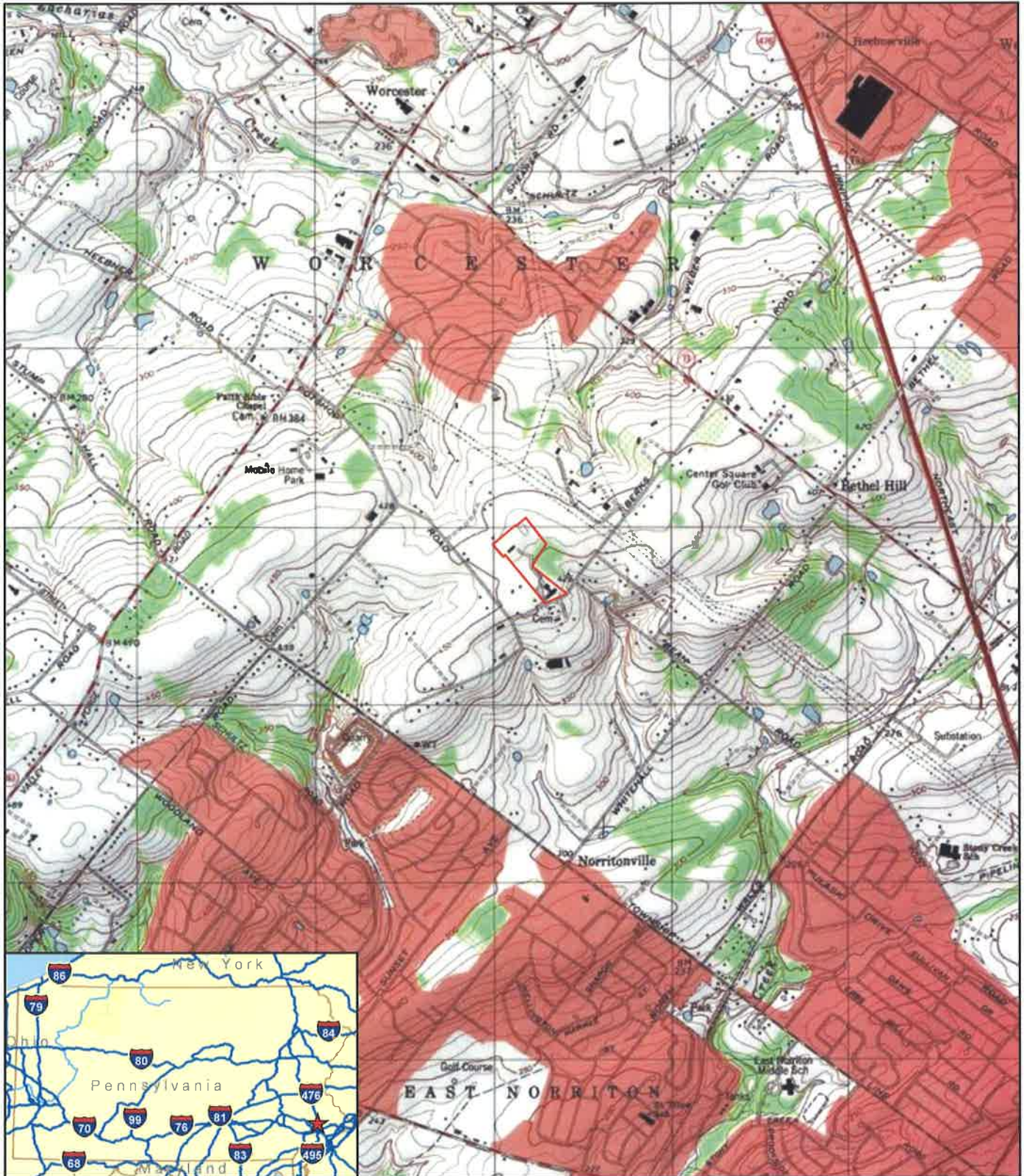


Photograph 36: Drainage ditch (AOC T).



Photograph 37: Drainage ditch (AOC T) flow path.

FIGURES



ESRI USA TOPOGRAPHIC BASEMAP IMAGERY

LEGEND

APPROXIMATE PROPERTY BOUNDARY



0 0.25 0.5 1 Miles

CREATION DATE: MARCH 5, 2014		PROJECT NO: 20146456.A		FIGURE 1: TOPOGRAPHIC SITE LOCATION MAP
DRAWN BY: MCF		APPRVD BY: ANPP		
CHKD BY: SES		REVISION: 0		
ENVIRONMENTAL STANDARDS				1625 BERKS ROAD NORRISTOWN, PENNSYLVANIA



ESRI AERIAL BASEMAP IMAGERY, 2011

LEGEND

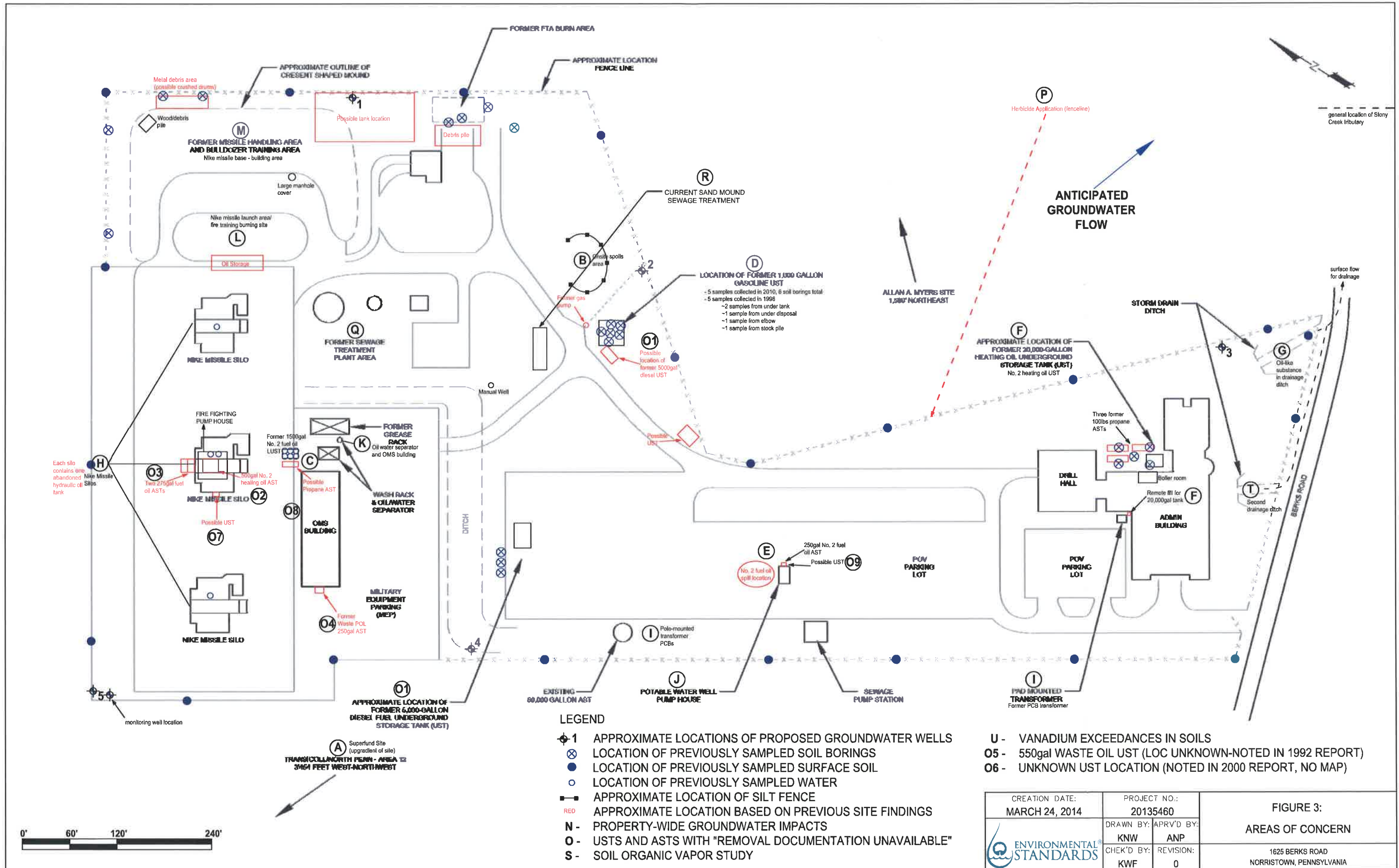
 APPROXIMATE PROPERTY BOUNDARY



0 225 450 900 Feet

CREATION DATE: MARCH 5, 2014		PROJECT NO: 20146456.A		FIGURE 2: AERIAL SITE LOCATION MAP 1625 BERKS ROAD NORRISTOWN, PENNSYLVANIA
DRAWN BY: MCF		APPR'VD BY: ANPP		
CHEK'D BY: SES		REVISION: 0		





TABLE

Table 1
 Area of Concern Summary Table
 North Penn USARC, Worcester, PA

Area of Concern (AOC) (Based on review of provided documents)	Details/Previous Investigations	Site Visit Observations	Opinions	Conclusion
A Superfund Site Transcoil/North Penn located upgradient of Site	Known groundwater contamination of VOCs above drinking water standards. Possible groundwater well previously installed at NW corner of property.	Groundwater monitoring well was observed at NW corner of property (Photograph 24). It is unclear if this well was installed to evaluate the superfund site's impact to the groundwater. The construction details of the well are also unknown.	Groundwater is potentially impacted by this offsite superfund site.	REC
B On-site spoils area	Sewage treatment plant spoils were located southeast of the former sewage treatment plant on opposite side of access driveway/bath.	There was no evidence of a spoils pile in the location identified. This area was overgrown with grasses and shrubbery.	Since the area is not known to have been investigated and the contents of the wastes are unknown there is a potential for surface soil impacts.	REC
C Former 1,500 gallon No. 2 fuel oil UST	Leaking UST was removed on October 30, 1990. Impacted soil was removed. Soil sampling was not conducted in the excavation as agreed to by PA DEP. Tank was deemed closed by PA DEP.	There was no evidence of this former UST. A concrete pad was observed in the general vicinity of the former UST that could be associated with the excavation area.	This tank was deemed "closed" by PA DEP therefore it is not anticipated to present further risk to the subsurface.	hREC
D Former 1,000 gallon gasoline UST	Pump and UST were removed in 1996. Holes were observed in the tank. UST closure documentation was provided to PA DEP in July 2011.	There was no direct evidence of this former UST and pump, however Mr. Henry indicated he was aware of some investigations that took place in the assumed area of the former tank.	This tank and associated pump were removed and impacted soil was excavated. Samples were collected and closure documentation was provided to PA DEP. It is anticipated that this AOC no longer presents a risk to the subsurface.	hREC
E No. 2 fuel oil spill next to potable well	Fuel Oil No. 2 was released to the ground surface next to the potable well, likely due to an overflow of the 250 gallon AST. No soil investigation conducted. Meeting between PA DEP and Army in July 2009 concluded with PA DEP agreeing to remove this AOC.	THIS AST was not observed during the site visit, however the former location and the building access points were observed (Photograph 18). There was no staining observed in the area of concern. The parking lot was not in good condition in the assumed area of the former AST.	There were no soil samples collected to investigate the surface spill or subsurface samples collected to investigate the potential UST. There could be remaining soil impacts in this area.	REC
F Former 20,000 gallon No. 2 fuel oil UST	A leak from this UST was noted within 1991 document. The UST and impacted soil was removed in 1995. UST Closure documentation was provided to the PADEP in July 2011. A remote fill is located on the other side of the administration building. This remote fill has been noted to have staining around it with no specific investigation conducted in this area.	There was no evidence of a UST or UST removal around the site visit (Photograph 7). The fuel oil piping was cut off and capped above the floor (Photograph 8) near the boilers. An obvious difference in concrete at the location of the piping supply coming from the tank and into the boiler area was observed (Photograph 9) however the exit of the piping to the remote fill line was not observed. No remote fill was observed on the exterior of the building. No staining was observed around the area assumed to be the location of the former remote fill (Photograph 14).	This UST and impacted soil was removed. Samples were collected and closure documentation was provided to PA DEP. It is anticipated that this AOC no longer presents a risk to the subsurface. The remote fill was not observed and there was no staining evident, therefore no ongoing risk of impact to the property is anticipated.	hREC

Area of Concern (AOC) (Based on review of provided documents)	Details/Previous Investigations	Site Visit Observations	Opinions	Conclusion
G Oil-like substance in drainage ditch	<p>Wash water from boiler room enters this drainage swale. Due to a heating oil spill in the boiler room of the main building, oil was observed in the ditch. Soil was excavated and replaced with clean soil. Oil-like substance re-appeared. PADEP noted that discrete sampling was required.</p>	<p>There were four floor drains and one sump observed in the boiler room (Photographs 11 through 13). A white powdery substance, noted by Mr. Henry to be water treatment salt, was seen around two of the floor drains. The sump was located in the northwestern corner of the boiler room and was observed to be dry at the time of the site visit. The floor drains have previously been identified to discharge to this drainage ditch. Mr. Henry was unaware of the discharge location of this sump.</p>	<p>The drainage ditch still accepts wash water from the boiler room. Based on the historic document review, soil may have been impacted at this AOC.</p>	REC
H Former Nike missile silos	<p>Potential regulated substances include chlorinated solvents, hydraulic oil, acids, and sewage disposal. Possible sumps were noted to exist in bottom of missile silos, it is unclear if these silos contained sumps. Previous investigations recommended a groundwater investigation.</p> <p>Hydraulic fluid tanks located at each silo were closed in place.</p>	<p>Mr. Kraycik observed a portion of the interior of the western missile silo however access was limited due to safety concerns and water in the bottom of the silo. Since the floor of the silo was un-observable the existence of sumps is still unclear.</p> <p>The exterior portion of the silos was observed. The two end silos contained some water which was attributed to rain water and the middle silo contained a large amount of water that was previously used for fire fighter training. The fire protection pump house located on top of the middle silo was observed, however we could not gain access to the interior as the coded lock was not operating properly (Photograph 26).</p>	<p>Due to the limited amount of previous sampling, the known use of hazardous substances, and the lack of additional information regarding sumps within the silos, it is possible that there are surface and subsurface impacts associated with this AOC.</p> <p>A data gap for this AOC is noted due to the inability to access the interior of the fire protection pump house.</p>	REC and Data Gap
I PCBs in transformers	<p>One pad-mounted transformer was identified as containing PCBs. One pole mounted (between OMS and sand mound) was also noted as containing PCBs. Pole mounted transformer location provided on map does not match location described in text. No indications of stains/leaks noted in report.</p>	<p>A pad-mounted transformer was located in the western corner of the administration building, however Mr. Henry noted that the PCB containing transformer was removed and replaced with a non-PCB containing transformer in August 2010. Staining was not observed around the base of the pad-mounted transformer (Photograph 27).</p> <p>The pole-mounted PCB containing transformer was removed after being struck by lightning. Three additional transformers existed on this same pole. Three other pole mounted transformers were identified adjacent to the grease rack. No indications of staining were observed at either of these pole-mounted locations (Photograph 28).</p>	<p>The pad mounted transformer was replaced, the pole mounted transformer was removed, and no staining was observed in either location, therefore no impact to the property is anticipated.</p>	
J Groundwater supply well	<p>A new 300 foot deep supply well was drilled sometime prior to 2000.</p>	<p>The new well was located outside of the potable well house flush with the asphalt parking lot (Photograph 19).</p>	<p>Due to the known groundwater impact upgradient of the property due to the offsite superfund site, it is possible that the groundwater being supplied to the site is impacted.</p>	REC

Area of Concern (AOC) (Based on review of provided documents)	Details/Previous Investigations	Site Visit Observations	Opinions	Conclusion
K Oil-water separator (OWS) and OMS building	<p>The OMS building drained to the OWS which went through the treatment system and drained into the NPDES permitted storm drain. The grease rack and wash rack also drained to the 500 gallon underground OWS tank.</p> <p>A June 2009 meeting with PA DEP and Stell Env. Enterprises concluded that the service pit was encased in concrete in 2007 therefore, sampling was not required. PA DEP agreed to remove the OMS service pit as an AOC.</p> <p>PA DEP identified the OWS as still needing investigation.</p>	<p>Immediately to the east of the OMS building were the wash rack, oil water separator, and the grease rack (Photographs 20 through 22). The cover to the oil water separator was overgrown and the lid was not able to be removed (Photograph 21). Environmental Standards removed the grate from the floor drain located in the center of the wash rack and a pipe going in the direction of the oil water separator was observed. Mr. Henry indicated that the containment area that makes up the wash rack area does not hold water; it drains through the floor drain rather quickly. Mr. Henry was also unaware of the operational status of the oil water separator (i.e. closed or not).</p> <p>Environmental Standards observed no evidence of the OMS service pits during the Site visit (Photograph 23). Three sides of the building were surrounded by paved/asphalt parking lot and the third (north) side of the building had a narrow strip of grass along the edge.</p>	<p>There were no indications observed in the OMS building that would be anticipated to impact the surface or subsurface. The status of the OWS and it's contents remains unclear and therefore may be impacting the subsurface of the Site.</p>	REC
L Nike missile launch area/fire training burn site	<p>This area was reportedly used for warhead arming, maintenance, and fueling operations. Hazardous substances used include TCE, PCE, Benzene, carbon tetrachloride, 1,1,1 TCA, 1,1,2 TCA, nitric acid, sodium dichromate, sulfuric acid, zinc chromate, and paints.</p> <p>It was later used as a fire training area where various materials could have been ignited for training purposes. Interviews with former employees and Reserve staff, has indicated that the area was not used on a routine basis as a burn location. The Fire Fighting Unit located at the North Penn facility used the grounds for routine rescue and training exercises.</p>	<p>This area was traversed during the site visit. Portions of this area were paved and, based on discussions with Mr. Henry, this area was used to maintain the missiles. There were grooves in the pavement that appeared to be used for tracks which would transport the missiles from the silo to each of the handling/maintenance areas. It also appeared that this portion of the site also had at least one building/shed based on what appeared to be a building pad.</p> <p>An area of gravel was observed a the southern portion of this AOC. It is unclear what this area was used for (Photograph 29).</p>	<p>Due to the known use of hazardous substances and the limited soil sampling previously conducted in this AOC, it is unclear if soil or groundwater impacts resulted from this area being used as a launch area, missile maintenance, or a fire training area.</p>	REC
M Nike missile base - building area	<p>This area historically had buildings related to missile assembly, test building, and handling. The buildings listed included: generator building, paint shed, chemical storage building, acid storage building, missile assembly and testing building. The buildings were demolished around 1973.</p> <p>Some reports identified crushed drums and debris in this area as well as a possible UST near the generator building.</p>	<p>This mounded area was covered with overgrown grass and some shrubbery/trees (Photograph 30). There was a large manhole discovered on the inside of the berm toward the southern corner. It is unclear what this manhole is for. It was half overgrown and buried, therefore Environmental Standards could not remove the lid to further investigate (Photograph 31).</p> <p>There were no crushed drums identified. Two areas of debris were observed during the site visit. They both appeared to be demolition type debris (Photograph 32).</p>	<p>Due to the known use of hazardous substances and the limited soil sampling previously conducted in this AOC, it is unclear if soil or groundwater impacts resulted from this area being used as a missile handling area. There was also a large manhole that will require further investigation to determine its contents and former use.</p>	REC
N Property-wide groundwater impacts	<p>Due to leaking USTs, the Nike missile silos, the documented upgradient groundwater issues, and the storm drain issues, the potential exists for groundwater quality degradation at the property. It was mentioned that a groundwater monitoring well was installed in the northwest corner of the property. PADEP requested that all residential wells within 1/4 mile be identified and sampled.</p>	<p>A groundwater well was observed at NW corner of property (Photograph 24). It is unclear if this well was installed to evaluate the superfund site's impact to the groundwater. The construction details of the well are also unknown.</p>	<p>Due to the known upgradient groundwater impacts and the potential for the AOCs on this property to impact groundwater, the property-wide groundwater quality is of great concern.</p>	REC

Area of Concern (AOC) (Based on review of provided documents)	Details/Previous Investigations	Site Visit Observations	Opinions	Conclusion
O USTs and ASTs with "removal documentation unavailable." See O# sub-categories below.	The 2007 PA DEP letter states that all USTs and ASTs must be closed in accordance with regulations. Documentation and sample analysis confirming proper tank closures should be included to demonstrate attainment of Act 32 stds.	See O# sub-categories below.		
O1 Former 5,000 gallon diesel UST	This UST was removed in 1995 however based on the maps and documents provided the location is questionable. There was no disturbance or indication of a tank in area sampled in July 2010.	There was no direct evidence observed in either location identified for the 5,000 gallon UST during the site visit.	This tank may have impacted the subsurface and the previous investigation does not appear to have been conducted in the correct location.	REC
O2 500 gallon heating oil AST	Noted as being outside of fire protection pump house. This tank was removed, but no documentation was provided.	No tank or staining was observed outside of the fire protection pump house. Mr. Henry did indicate that there is a 500 gallon AST located inside the pump house however the interior was not accessible.	No staining on the pavement, therefore no surface or subsurface impact to the property is anticipated.	
O3 2- 275 gallon fuel oil ASTs	These two tanks were located inside fire protection pump house and the fuel was used to operate the pumps. The tanks were removed, but no documentation was provided.	The interior of the fire protection pump house was not accessible.	Unable to access the building interior however they are housed in a building built on top of the silo therefore no surface or subsurface impacts are anticipated. Since these tanks were not observed, this is a data gap.	Data Gap
O4 250 gallon waste oil AST, west side of OMS	Tank is no longer present and no staining was observed in the vicinity during previous investigations. PADEP concurred no further action for this AOC during July 2009 site visit.	No tank or staining was observed outside of the OMS building.	No staining on the pavement therefore no surface or subsurface impact to the property is anticipated.	
O5 550 gallon Waste Oil UST	No additional information and no location indicated on a map. This tank was identified by a note in the 1992 ECAS report.	No indications of a UST were identified during the site visit.	No additional information regarding this UST was gained during the Site visit therefore this AOC is a data gap	Data Gap
O6 Unknown UST located on a 1972 map	No additional information and no location indicated on a map. This tank was identified by a note in the 2000 Environmental Compliance Assessment report.	No indications of a UST were identified during the site visit.	No additional information regarding this UST was gained during the Site visit therefore this AOC is a data gap	Data Gap
O7 UST - missile launcher	UST was noted to be located adjacent to the silos at the rear of the property. Shown on map as possible UST adjacent to center silo. This tank was identified in a 1994 report.	No indications of a UST were identified during the site visit. It is also unlikely based on the layout of the area around the silos that a UST would be feasible due to the larger portion of the silos that are underground.	Based on the location indicated for this tank it is assumed that this was an inaccurate identification of a UST. It is not anticipated that this AOC will impact the property.	
O8 AST- maintenance facility	AST identified in a 1994 report as existing at the rear of maintenance building. The 1994 report observed no sign of release.	No tank or staining was observed outside of the OMS building.	No staining on the pavement therefore no surface or subsurface impact to the property is anticipated.	
O9 UST pump house	A UST was identified in a 1994 report as being located adjacent to the pump house, in the middle of the parking area.	There were no indications of a UST located near the potable well house as noted in the historic document review.	No indications of a tank or tank removal were identified during the site visit however if the tank remains, there could be subsurface impacts.	REC
P Fence line	Petroleum and oil liquid wastes from missile handling operations could have been used for weed control along fence line. PADEP agreed for no further action in February 2001.	The fence line was walked during the site visit. No additional areas of concern were identified.	This area was previously investigated and PA DEP closed out this AOC. It is not anticipated that this AOC will impact the property.	hREC
Q Former Sewage treatment plant	This treatment plant operated under NDPES Permit #PA0042129. It drained to a swale that was occasionally dry. This swale contributes to Stony Creek (a high quality waters and trout stocking stream). This was of concern to the PADEP and will need further investigation. It was noted during the document review that "existing sludge drying beds will be used to dry the sludge as needed. The solids will be used as soil supplement for the shrubbery onsite."	The area of the former sewage treatment plant was traversed during the site visit. There were no indications of surface impacts. It was still unclear where exactly the former treatment plant discharged. This will require some additional record searching.	The former treatment plant's discharge location is of concern and will need to be further investigated. PA DEP called attention to the potential impacts that its discharge may have on the tributary and Stony Creek. This is an offsite area of concern however if the actual discharge point can be located further information regarding the potential impact can be evaluated.	REC

Area of Concern (AOC) (Based on review of provided documents)	Details/Previous Investigations	Site Visit Observations	Opinions	Conclusion
R	Sand mound sewage system Located adjacent to the former sewage treatment plant as indicated on map.	The sand mound was observed during the site visit. It was located in the triangle like grassy portion between the access paths just north of the center of the site (Photographs 34 and 35). Mr. Henry stated that this treatment system is still currently used by the building maintenance staff and occasionally by guests of the facility. The treatment system also accepts wastes from the building located to the west/northwest that used to be the missile control building for all the regional missile silo locations. According to Mr. Henry the former control building is now used for an office type use.	Based on our understanding of the current sand mound sewage treatment system and the assumed use of the offsite property contributing to this system it is not anticipated that this AOC is impacting the property.	
S	Organic Vapor Soil Survey Conducted across site. Hollow steel rod with detachable steel drive point inserted into vadose zone (4-5 ft bgs). Vapors pumped into 500 ml tedlar bag. Analyzed onsite with Photovac portable gas chromatograph.	Not something able to be observed during the Site visit.	Based on current information gained from the site visit and the historic document review, it is not anticipated that a soil vapor study will be necessary however this is strictly observational and may change if samples are collected. Soil and groundwater sample results from future Phase II work will dictate if a soil vapor survey is necessary.	
T	Second drainage ditch located directly in front of building This drainage ditch was mentioned in multiple reports as well as by PA DEP as requiring further investigation due to unknown discharges and potential impacts.	This drainage ditch was observed during the site visit. It discharges to a small ditch just outside of the property fence along Berks Road and flows into the same discharge point as the other drainage ditch located to the east. Once they intermingle they flow into Berks Road and eventually into the unnamed tributary to Stony Creek. Photographs 36 and 37.	Since this drainage ditch has not been previously investigated and the contributing sources are unknown it is possible that this area of the site has been impacted.	REC
U	Vanadium in onsite soils above the PA DEP direct contact soil standards Vanadium was detected in samples from the sewage treatment plant area, missile handling area, and the wash rack area above the direct contact standards.	It is still unknown what specifically contributes to this drainage ditch.	Based on current information gained from the site visit and historic data review it is anticipated that vanadium is a soil issue onsite.	REC

APPENDICIES
PROVIDED ELECTRONICALLY