



UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION III

STATEMENT OF BASIS

FORMER INGERSOLL RAND INDUSTRIAL TECHNOLOGIES
ATHENS, PENNSYLVANIA
EPA ID # PAD003039518

Prepared by
Office of Pennsylvania Remediation
Land and Chemicals Division
August 2016

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Section 1: Introduction

The United States Environmental Protection Agency (EPA) has prepared this Statement of Basis (SB) to solicit public comment on its proposed remedy to address historical environmental releases at the former Ingersoll Rand Power Tools Facility (Facility) located at 101 North Main Street, Athens, Bradford County, Pennsylvania. This SB highlights key information relied upon by EPA in making its proposed decision.

The Facility is subject to EPA's Corrective Action Program under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. §§ 6901 et seq. (Corrective Action Program). The Corrective Action Program is designed to ensure that certain facilities subject to RCRA have been investigated and releases of hazardous waste and hazardous constituents that have occurred at the facility have been cleaned up. The Commonwealth of Pennsylvania (Commonwealth) is not authorized for the Corrective Action Program under Section 3006 of RCRA. Therefore, EPA retains primary authority in the Commonwealth for the Corrective Action Program.

Ingersoll-Rand Co. (Ingersoll Rand) enrolled in the EPA Region 3 – Pennsylvania Department of Environmental Protection (PADEP) "One Cleanup Program." Under this program, Ingersoll Rand can receive a final determination for cleanup completion from both the EPA RCRA Corrective Action Program and the PADEP Act 2 Land Recycling Program. For Ingersoll Rand, PADEP North Central Regional Office is the lead agency in reviewing the investigation results and approving a Cleanup Plan.

EPA reviews the environmental investigation and evaluates the Cleanup Plan in collaboration with PADEP staff in order to determine that the proposed remedy protects human health and the environment while conforming to relevant EPA cleanup policies.

The proposed remedy for the Facility consists of three elements:

- 1) Continued groundwater monitoring to measure declining levels of contaminants in groundwater; and
- 2) Compliance with and maintenance of groundwater and land use restrictions to be implemented through enforceable institutional controls.
- 3) Soil excavation and disposal at the Willow Street parking lot.

The Administrative Record (AR) for the Facility contains all documents, including data and quality assurance information, on which EPA's proposed remedy is based. See Section 5, Public Participation, for information on how you may review the AR.

Section 2: Facility Background

The Facility is located at 101 North Main Street, Athens, Bradford County, Pennsylvania. The Facility property coordinates are: Latitude (north) 41° 57' 48", and Longitude (west) -76° 31' 20". The Facility has an irregular shape and includes two tax parcels that, when combined, form the subject Facility (Figure 1). The parcels include Parcel 138 which includes the former manufacturing floor, the former foundry, and the Wheelock Avenue parking lot, and Parcel 052 which includes the Willow Street parking lot. The combined acreage of these parcels, and therefore the Facility, is approximately 32-acres.

The original manufacturing building was built in 1895 for the manufacture of pneumatic hand tools. Facility operations expanded several times from the original Ingersoll Rand building. The historical process at the former foundry included the forging of steel, which was discontinued in the late 1970s. Manufacturing process included machining, painting, powder coating, assembly, de-burring, aqueous cleaning, heat treat finishing, grinding, and black oxide finishing. All operations at the Facility ceased in 2010.

Most of the manufacturing building is single-story slab-on-grade construction with basements associated with the former Heat Treat area, former Chip Recovery Basements, Chiller basement, and former Power House Basement.

Currently, 60,000 square feet of the Facility (southeast corner) is leased to Camco, Inc. for light manufacturing. The remainder of the Facility is vacant and not currently in use.

Section 3: Summary of Environmental History

Ingersoll Rand conducted a Phase I Environmental Site Assessment (ESA) in 2010. The Phase I ESA assessed environmental and historical conditions at Parcel 138. The assessment identified Areas of Interest (AOIs) which included the hazardous waste storage area (HWSA), chip recovery room, heat treat basement quench oil tanks/waste water treatment plant (WWTP), historic chip waste area, former power house USTs, former petroleum AST farm, former tank farm, former lube oil USTs, former lagoon, former foundry, and the Wheelock Ave parking lot.

Based on the results of the Phase I ESA, Ingersoll Rand performed a Phase II ESA in 2011. Phase II consisted of both soil and groundwater investigations to determine the extent of constituents - primarily Trichloroethylene (TCE) and lead - that had been released as a result of past operations.

In January 2012, Ingersoll Rand voluntarily installed a Soil Vapor Extraction (SVE) System parts of which were installed beneath the former HWSA. This installation allowed recovery of TCE from the both soil gas and indoor air. The SVE system operated for three years until January 2015 and recovered 63 pounds (lbs.) of TCE.

In June 2013, Ingersoll Rand submitted a Remedial Investigation Report (RIR) pursuant to the Pennsylvania Land Recycling and Environmental Remediation Standards Act (Act 2), 35 P.S. Sections 6026.101 et seq. The RIR summarized the Remedial Investigation (RI) activities on-site and the findings related to the Phase II ESA. The primary constituents of concern (COCs) identified in the RIR were TCE in soil and groundwater and lead in soil. PADEP approved the RIR in September 2013. EPA reviewed both the PADEP-approved RIR and the Cleanup Plan and relied on them to develop this SB.

Summary of Results

Soils

Beginning in 2012, Facility soils were sampled for COCs that may have been released during facility operations. Soil results presented in the RIR demonstrated that three of the approximate 100 total soil samples taken exceeded EPA's non-residential Regional Screening Level (RSL) for lead of 800 milligrams per kilogram (mg/kg). All three soil samples were from shallow soil borings under the Willow Street parking lot. The average of the 100 samples demonstrate that the soils meet EPA's non-residential RSL for lead. Full sampling results can be found in Table 3 in the RIR, which is included in the AR.

Statement of Basis

Groundwater

During the Phase II ESA and RIR, Ingersoll Rand installed 42 permanent wells and 31 temporary wells to sample the groundwater throughout the Facility and to determine the extent of TCE contamination in the shallow aquifer. EPA's drinking water standard, known as Maximum Contaminant Level (MCL), codified at 40 C.F.R. Part 141 and promulgated pursuant to the Safe Drinking Water Act, Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 C.F.R. Part 141, for TCE is 5 micrograms per liter ($\mu\text{g/L}$).

TCE concentrations in Facility groundwater exceeded the MCL in five of the 42 permanent wells. Monitoring results indicate a small TCE plume leaving the former manufacturing floor at the southwest Facility boundary (Figure 2). Results from the monitoring wells on the southwest perimeter were between 5.2-6.9 $\mu\text{g/L}$. TCE levels in groundwater sampling results from the rest of the Facility property did not exceed the applicable MCL. Ingersoll Rand modeled the attenuation of this small plume and determined that the TCE levels in groundwater attenuate below 5 $\mu\text{g/L}$ approximately 140 feet beyond property boundary. This neighboring property is currently a parking area for a bus company. The bus company does not use the groundwater for any purpose.

Indoor Air

Both indoor air and soil gas were sampled to determine if the TCE plume beneath the manufacturing building caused a potentially unacceptable TCE exposure in the indoor air. Testing completed by Ingersoll Rand, and reviewed and approved by EPA, that indoor air levels of TCE will not exceed the 8.8 micrograms per meter cubed ($\mu\text{g}/\text{meter}^3$) standard within the manufacturing building. EPA's review of the vapor intrusion potential is discussed in an October 2016 technical memo available in the AR.

Section 4: Corrective Action Objectives

EPA's Corrective Action Objectives for the specific environmental media at the Facility are the following:

1. Soils

EPA's Corrective Action Objective for Facility soils is to control exposure to the hazardous constituents remaining in Facility soils.

2. Groundwater

EPA expects final remedies to return groundwater to its maximum beneficial use within a timeframe that is reasonable given the particular circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA's objective is to restore the groundwater to drinking water standards, known as MCLs.

The corrective action objective for groundwater at the Facility is to attain the MCL for TCE and until such time as that standard is met and drinking water standards are restored, to control exposure to the TCE remaining in the groundwater by requiring the continued implementation of the groundwater monitoring program, and compliance with and maintenance of groundwater use restrictions.

Section 5: Proposed Remedy

A. Groundwater

Groundwater monitoring at the Facility has shown that concentrations of TCE are attenuating; that is, the extent of contamination in groundwater is stable and concentrations of TCE are declining over time. Therefore, the proposed remedy for groundwater consists of a Monitored Natural Attenuation (MNA) program until the MCL for TCE is attained. In addition, the remedy proposes maintenance of groundwater use restrictions, to be implemented through institutional controls (ICs), at the Facility to prevent exposure to TCE while levels remain above the drinking water standard. Eight quarters of data will be collected to evaluate groundwater trends (including samples collected prior to MNA). If stable or decreasing trends are obvious after four quarters of MNA, a petition may be made to reduce or cease the monitoring program. Sampling locations and monitoring details are presented in the Cleanup Plan and Cleanup Plan Addendum, available in the AR.

EPA's proposed remedy includes the following groundwater use restrictions:

1. Groundwater at the Facility shall not be used for any purpose other than the operation, maintenance, and monitoring activities required by EPA and/or PADEP, unless it is demonstrated to EPA that such use will pose a threat to human health or the environment or adversely affect or interfere with the final remedy and EPA provides prior written approval for such use;
2. The Facility shall not be used in a way that will adversely affect or interfere with the integrity of the groundwater monitoring wells;
3. No new wells shall be installed on Facility property unless it is demonstrated to EPA that such wells are necessary to implement the final remedy and EPA provides prior written approval to install such wells; and
4. Owner shall comply with the EPA-approved groundwater monitoring program described in the EPA-approved Cleanup Plan and Cleanup Plan Addendum.

The above-listed groundwater use restrictions will be implemented through an enforceable IC(s). ICs are generally non-engineered mechanisms such as administrative and/or legal controls that minimize the potential for human exposure to contamination and/or protect the integrity of a remedy. ICs may be established through an enforceable mechanism such as an order, permit or an environmental covenant pursuant to the Pennsylvania Uniform Environmental Covenants Act. If the enforceable mechanism selected were to be an environmental covenant, it would be recorded with the Facility property records.

Statement of Basis

B. Soils

Because contaminants remain in Facility soil above levels appropriate for residential use, EPA's proposed remedy requires land use restrictions to restrict activities that may result in exposure to those contaminants. EPA's proposed remedy for Facility soils, other than those at the Willow State parking lot, consists of the following land use restriction:

1. The Facility property, except for the Willow Street parking lot, will be restricted to non-residential use.

EPA proposes that this restriction be implemented and maintained through an IC.

Ingersoll Rand has informed EPA that it intends to excavate soils at the Willow Street parking lot to attain the RSL for lead of 450 mg/kg. EPA and PADEP will review post excavation results. If the results demonstrate attainment of the RSL of 450 mg/kg, no land use restriction at the Willow State parking lot will be required. Therefore, the Willow Street parking lot, identified on Figure 1, may be used for residential purposes if Ingersoll Rand demonstrates to EPA that the concentrations of lead in the soil meets the RSL of 450 mg/kg and EPA provides prior written approval of such use.

If Ingersoll Rand is unable to attain the RSL for lead of 450 mg/kg at the Willow Street parking lot, EPA's proposed remedy for those soils consists of the following land use restrictions:

1. The Willow Street parking lot will be restricted to non-residential use.
2. All earth moving activities, including excavation, drilling and construction activities, in the Willow Street parking lot shall be prohibited unless it is conducted in accordance with an EPA-approved Post Remedial Care Plan detailing the inspection and maintenance requirements of the parking lot and measures to protect workers from unacceptable exposure to contaminants.

EPA proposes that these restrictions be implemented and maintained through an IC.

Section 6: Evaluation of Proposed Remedy

This section provides a description of the criteria EPA used to evaluate the proposed remedy consistent with EPA guidance. The criteria are applied in two phases. In the first phase, EPA evaluates three decision threshold criteria as general goals. In the second phase, for those remedies which meet the threshold criteria, EPA then evaluates seven balancing criteria.

Threshold Criteria	Evaluation
1) Protect human health and the environment	<p>EPA's proposed remedy for the Facility protects human health and the environment by eliminating, reducing, or controlling potential unacceptable risk through monitored natural attenuation and the implementation and maintenance of use restrictions.</p> <p>Low levels of TCE remain in the groundwater beneath the Facility; however, those levels are decreasing through natural attenuation as shown by groundwater monitoring data. Groundwater monitoring will continue for at least 2 years and are expected to confirm that the TCE levels are continuing to decline as the residual contamination attenuates. EPA proposes to require groundwater use restrictions to minimize human exposure to contamination while TCE levels remain above the drinking water standard. In addition, the Facility and surrounding area are supplied with water from the City's public water supply system.</p> <p>Sampling has demonstrated that there is no excessive risk to human health associated with indoor air exposures in existing buildings, provided the Facility land use remained industrial or commercial.</p> <p>The Risk Assessment for the Facility concluded that there would be no risk associated with the soil as long as the Facility property use remains non-residential. No land use restriction will be implemented at the Willow Street parking lot if the Pennsylvania SHS of 450 mg/kg is achieved through excavation.</p>

Threshold Criteria	Evaluation
2) Achieve media cleanup objectives	<p>EPA's proposed remedy is designed to meet the media cleanup objectives. The groundwater plume appears to be stable (not increasing); although TCE levels are slightly above the MCL, they are declining over time. Groundwater monitoring will continue until MCL levels are met.</p> <p>The lead-contaminated soil in the Willow Street parking lot will be excavated to achieve the Pennsylvania SHS of 450 mg/kg.</p>
3) Remediating the Source of Releases	<p>In all proposed remedies, EPA seeks to eliminate or reduce further releases of hazardous wastes and hazardous constituents that may pose a threat to human health and the environment and the Facility met this objective.</p> <p>Through the operation of the SVE System and the removal of 63 lbs. of TCE, Ingersoll Rand has remediated, to the extent practicable, the source of releases of hazardous constituents from on-site soils as well as the source of the groundwater contamination.</p> <p>TCE levels remaining in Facility groundwater are declining through attenuation. Groundwater is not used for potable purposes at the Facility or at neighboring facilities. Sampling has demonstrated that there are no adverse health impacts associated with indoor air exposure to VOC's in existing buildings provided land use remains non-residential.</p>

Balancing Criteria	Evaluation
4) Long-term effectiveness	Groundwater is not used on the Facility for drinking water, and no down gradient users of off-site groundwater exist. Therefore, the proposed long term effectiveness of the remedy for the Facility will be maintained by the continuation of the groundwater monitoring program and implementation of use restrictions.
5) Reduction of toxicity, mobility, or volume of the Hazardous Constituents	The reduction of toxicity, mobility, and volume of TCE has been completed through the SVE System and will continue by monitored natural attenuation at the Facility. The SVE system removed 63 lb of TCE during its operating period. Reduction has already been demonstrated using the groundwater monitoring data. The groundwater monitoring program already in place will continue for at least 8 quarterly sampling events.
6) Short-term effectiveness	Major elements of the remedy are already in place and have been working to reduce exposures. Implementation of land use controls is expected to be routine and should be accomplished quickly.
7) Implementability	EPA's proposed remedy is readily implementable. The groundwater monitoring is already in place and operational. EPA proposes to implement the use restrictions through an enforceable mechanism such as an Environmental Covenant, permit or order.
8) Cost	<i>Need a cost estimate from IR.</i>
9) Community Acceptance	EPA will evaluate community acceptance of the proposed remedy during the public comment period, and it will be described in the Final Decision and Response to Comments.
10) State/Support Agency Acceptance	PADEP has the lead on this project and has approved the cleanup plan for the Facility.

Section 7: Financial Assurance

Awaiting Cost Estimate from Ingersoll Rand.

Section 8: Public Participation

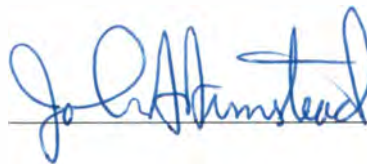
Before EPA makes a final decision on its proposal for the Facility, the public may participate in the decision selection process by reviewing this SB and documents contained in the Administrative Record (AR) for the Facility. The AR contains all information considered by EPA in reaching this proposed decision. It is available for public review during normal business hours at:

U.S. EPA Region III
1650 Arch Street
Philadelphia, PA 19103
Contact: Catherine McGoldrick
Phone: (215) 814-3399
Fax: (215) 814-3163
Email: mcgoldrick.catherine@epa.gov

Interested parties are encouraged to review the AR and comment on EPA's proposed decision. The public comment period will last thirty (30) calendar days from the date that notice is published in a local newspaper. You may submit comments by mail, fax, or e-mail to Ms. Catherine McGoldrick. EPA will hold a public meeting to discuss this proposed decision upon request. Requests for a public meeting should be made to Ms. McGoldrick.

EPA will respond to all relevant comments received during the comment period. If EPA determines that new information warrants a modification to the proposed decision, EPA will modify the proposed decision or select other alternatives based on such new information and/or public comments. EPA will announce its final decision and explain the rationale for any changes in a document entitled the Final Decision and Response to Comments (FDRTC). All persons who comment on this proposed decision will receive a copy of the FDRTC. Others may obtain a copy by contacting Ms. McGoldrick at the address listed above.

Date: 7.21.16



John A. Armstead, Director
Land and Chemicals Division
US EPA, Region III

Statement of Basis

Index to Administrative Record

ARCADIS. 2016. Cleanup Plan Addendum, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. March 2016.

ARCADIS. 2015. Cleanup Plan, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. November 2015. Revised March 2016.

ARCADIS. 2013. Act 2 Remedial Investigation Report, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. June 2013.

ARCADIS. 2014. Risk Assessment Report, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. January 2014. Revised June 2014.

EPA. 2014. Current Human Exposures under Control, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. August 2014.

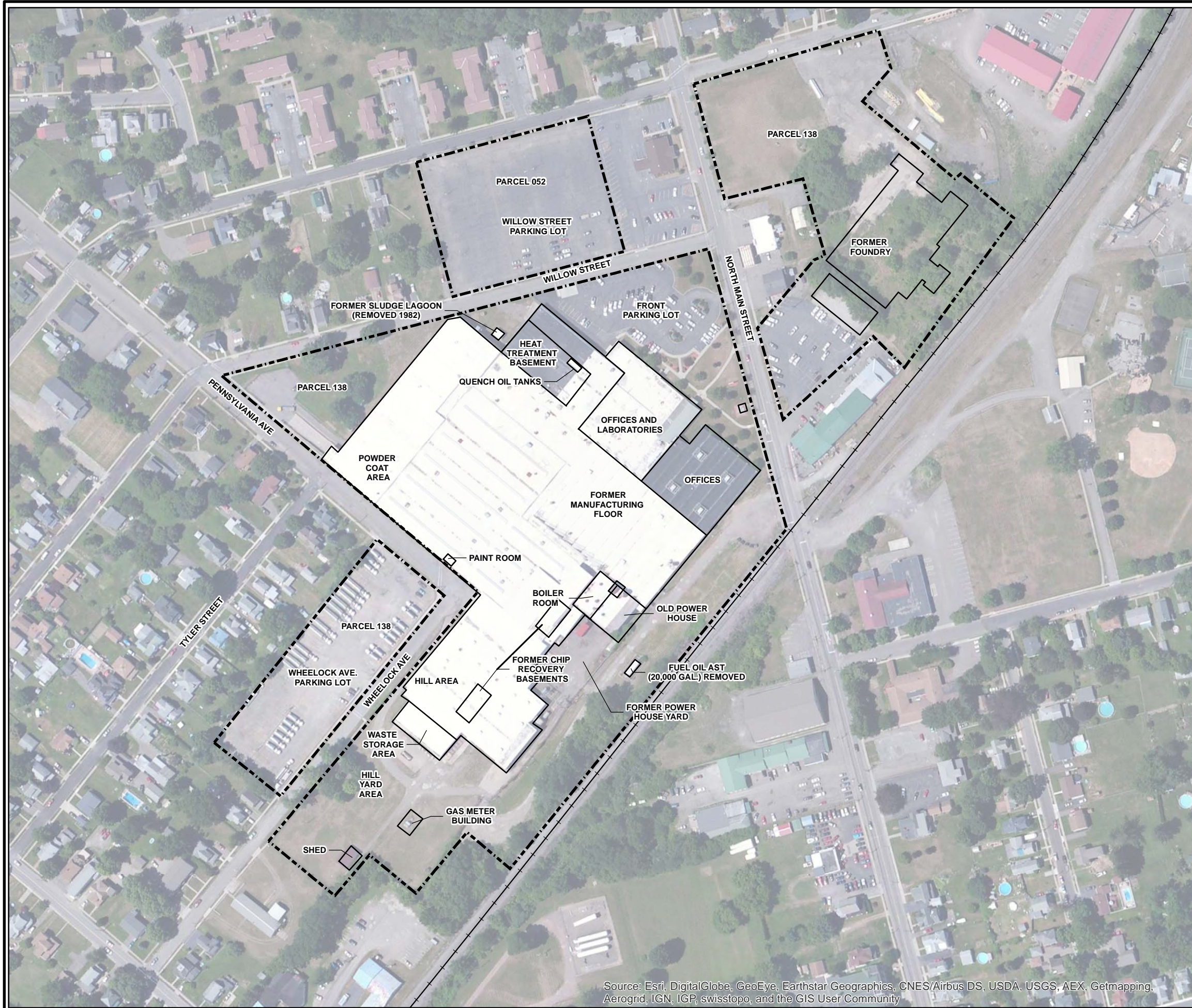
EPA. 2014. Migration of Contaminated Groundwater under Control, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. November 2014.

EPA. 2014. Technical Memo from A. Clibanoff “Ingersoll Rand Vapor Intrusion - Weight of Evidence Evaluation”, Former Ingersoll Rand Industrial Technologies, Athens, Pennsylvania. October 2014.

PADEP. 2016. Non-Use Aquifer Determination Survey, Form B: property Evaluation (All Parcels), Ronald C. and Patricia R. Wanck, Athens, Pennsylvania. February 2016.

Correspondence File

City: SYR Div/Group: SED GIS Created By: J. RAPP Last Saved By: jrapp
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LEGEND:

- BUILDING
- RAILROAD
- - - SITE BOUNDARY



NOTES:

1. TIGER 2000-BASED STREETS DATASET, ENHANCED BY ESRI AND TELE ATLAS. STREETMAP USA DATA WAS PROVIDED BY ESRI DATA & MAPS.
2. BASEMAPPING LINEWORK DIGITIZED FROM TAX MAP NO. 2014 FROM BRADFORD COUNTY ASSESSORS OFFICE.

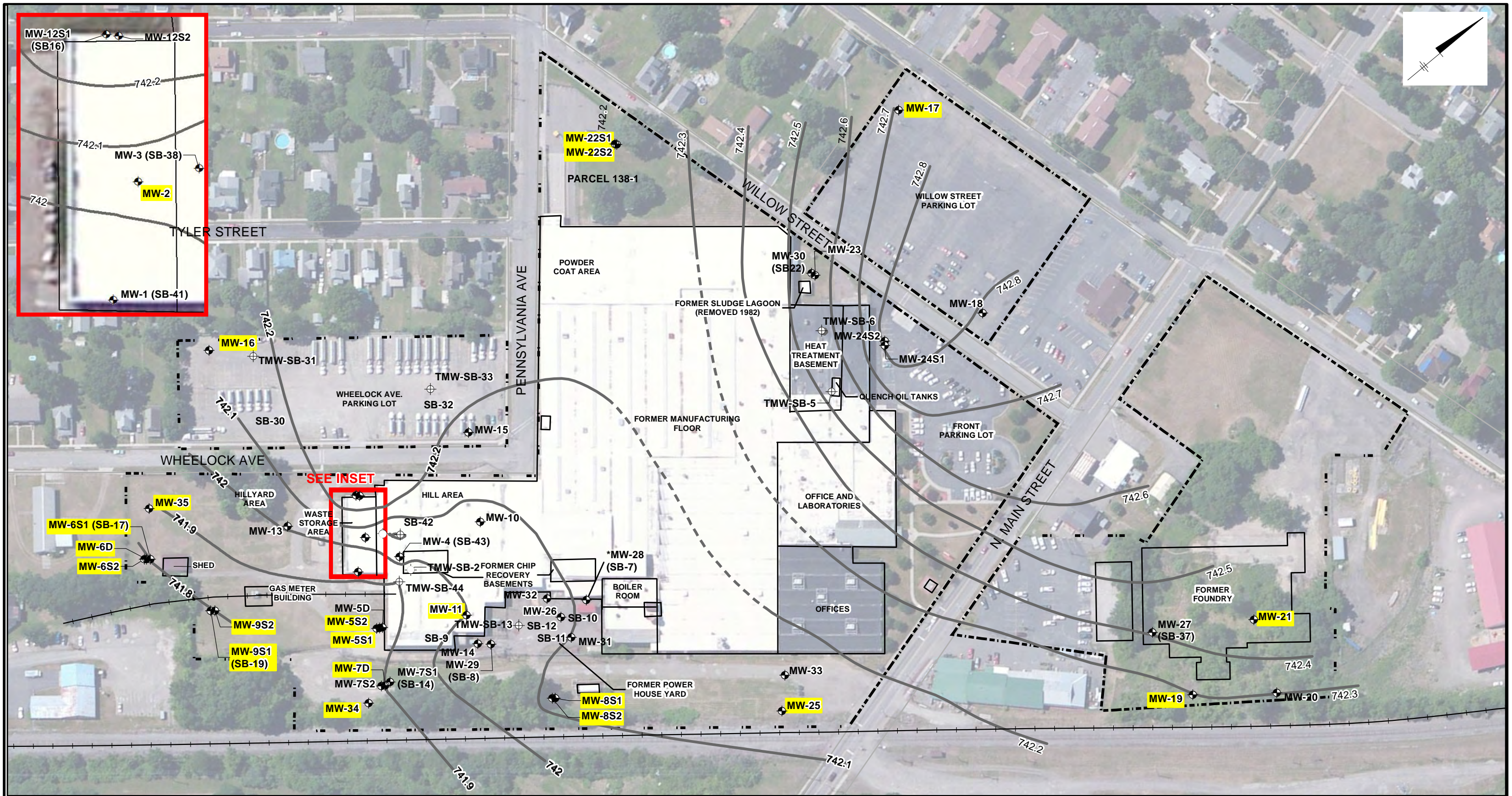
INGERSOLL RAND COMPANY
101 N. MAIN STREET, ATHENS PENNSYLVANIA
CLEANUP PLAN

SITE PLAN



FIGURE
1

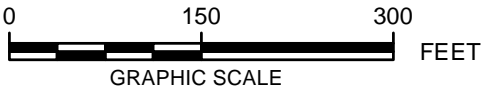
CITY: CITRIX DIV/GROUP: ENV/GIS DB: JRAPP LD: PIC: PM: TM: PROJECT: INGERSOLL RAND PATH: Z:\GIS\PROJECTS\ENV\INGERSOLL RAND\20141210\FIG6 MONITORED NATURAL ATTENUATION SAMPLING LOCATION_V2.MXD DATE SAVED: 2/22/2016 2:45:21 PM



LEGEND

- MONITORING WELL
- TEMPORARY MONITORING WELL /SOIL BORING
- RAILROAD
- ROAD
- BUILDING
- SITE BOUNDARY

- GROUNDWATER ELEVATION CONTOUR (FEBRAURY 2013) (DASHED WHERE INFERRED)
- MONITORED NATURAL ATTENUATION (MNA) SAMPLING LOCATION
- * MONITORING WELL DAMAGED NOT INCLUDED IN CONTOURING



NOTES:

- IMAGERY OBTAINED FROM ESRI IMAGE SERVICE.
- TIGER 2000-BASED STREETS DATASET, ENHANCED BY ESRI AND TELE ATLAS. STREETMAP USA DATA WAS PROVIDED BY ESRI DATA & MAPS.
- BASEMAPPING LINEWORK DIGITIZED FROM TAX MAP NO. 2014 FROM BRADFORD COUNTY ASSESSORS OFFICE.

INGERSOLL RAND COMPANY
101 N. MAIN STREET, ATHENS PENNSYLVANIA
CLEANUP PLAN

**MONITORED NATURAL ATTENUATION
SAMPLING LOCATIONS**



FIGURE

2