PHILADELPHIA GAS WORKS

REQUEST FOR PROPOSALS

FOR

THE DEMOLITION OF THREE BUILDINGS

AND ASSOCIATED ITEMS LOCATED AT 3030 CASTOR AVENUE.

Dated: August 7, 2019

RFP NO.: 33431

Table of Contents

1 The Solicitation – Notice to Proposers

Notice is hereby given that Philadelphia Gas Works ("PGW") will receive sealed proposals on or before September 24, 2019 at 2:30 p.m. Eastern Time, at the PGW Supply Chain Department, 800 W. Montgomery Avenue, Philadelphia, Pennsylvania 19122, for the demolition and removal of three existing buildings and associated items located at 3030 Castor Avenue.

This document outlines PGW's objectives, describes the general characteristics of the services to be provided, and (without being exhaustive) outlines the principal obligations of PGW and the selected Proposer.

Questions concerning this Request for Proposals shall be directed in writing towards Li Deng, PGW Supply Chain Department, fax: 215-684-6163, e-mail: li.deng@pgworks.com (with a copy to procurement@pgworks.com), or PGW Supply Chain Department, 800 W. Montgomery Avenue, Philadelphia, Pennsylvania 19122. **Proposers may not contact other PGW personnel regarding this RFP.**

1.1 Schedule of Events

The projected schedule of events for this Request for Proposals is as follows:

Issue Date of the RFP.....August 7, 2019

Mandatory In-person Meeting, 10:00 a.m.
at 3030 Castor Avenue, Philadelphia, PA 19134.....August 20, 2019

Questions and requests for clarification or information
must be received, in writing, at the office of the person
listed above by 5 p.m. (EST) .....August 28, 2019

Proposal Submission Due Date
Must be received, in writing, at the office of the person
listed above by 2:30 p.m. (EST).....September 24, 2019

The Mandatory In-person Meeting Conference is scheduled for 10:00 a.m. on August 20, 2019 at 3030 Castor Avenue, Philadelphia, PA 19134 to answer questions and requests for clarification.

These dates are estimates only and PGW reserves the right to alter this schedule as it deems necessary or appropriate.

1.2 Proposal Requirements

Proposals shall be accepted only from respondents ("Proposers") who have:

1.2.1 Obtained from PGW a complete set of Proposal Documents and any addenda thereto issued by PGW (sometimes referred to as the "RFP"), consisting of the following five (5) sections and two (2) attachments:

Sections:

1 The Solicitation – Notice to Proposers

2 Project Definition and Requirements

3 Instructions to Proposers

4 Proposer Information

5 Proposal Evaluation, Negotiation and Contract Award

Attachments:

D Disclosure Form

I Demographic Survey

Exhibits:

1 – Spec 3036 Demo Three Buildings and Associated Items Located at 3030 Castor Avenue

2 – Bid Sheet

Appendices to Exhibit 1:

A – Fence details along east side.

B – Fence details for the fence supported by the building foundation.

C – Attachments A, B, C, D and E.

D – Railroad Requirements.

F – Picture Showing Location of Buildings.

G – Erosion and Sediment Control Plan

1.2.2 Attended the Mandatory Meeting (or attended via teleconference); and

1.2.3 Submitted a proposal pursuant to the instructions in this RFP as set forth in Section 3.

In evaluating the proposals, PGW will consider the demonstrated experience and ability of the Proposer to deliver the proposed services, the scope and value of the proposed services, and the financial proposal of each Proposer as described in this RFP.

PGW hereby solicits proposals in accordance with these Proposal Documents.

2 Project Definition and Requirements

2.1 Overview

2.1.1 Overview of PGW

PGW is a municipally-owned utility operated by the Philadelphia Facilities Management Corporation (hereafter referred to as "PFMC"). The successful Proposer will enter into a negotiated contract with PGW by PFMC. PGW provides natural gas service to approximately 502,000 active accounts within the city of Philadelphia, using 6,000 miles of gas mains and services. PGW is the only utility currently distributing natural gas within the city of Philadelphia, and its mission is to provide safe, reliable natural gas service to the citizens of Philadelphia at a reasonable cost.

2.2 Services to be Provided; Scope of Work

The demolition and removal of three existing buildings and associated items located at 3030 Castor Avenue as detailed in the attached Exhibit 1.

2.3 Term

The project will commence in September 2019 with the contract between PGW and the successful Proposer being for a period of one (1) year.

2.4 Proposal Pricing

See the attached Exhibit 2.

2.5 Proposer/Personnel Minimum Requirements

See the attached Exhibit 1.

2.6 Licensing

The Proposer will be authorized to do business in the Commonwealth of Pennsylvania and comply with all pertinent state and federal requirements, codes and regulations.

If Proposer is a "business" as defined in The Philadelphia Code, Section 19-2601, Proposer must have a valid commercial activity license, issued by the City of Philadelphia's Department of Licenses and Inspections, to do business in the City of Philadelphia, prior to entering into any contract with PGW.

2.7 Information/Product

All reports, surveys, tables, charts, diagrams, design work, product recordings and other data (including electronic, audio and video) or documentation prepared or compiled by Proposer in connection with the performance of its obligations under the contract, shall be the sole and exclusive property of PGW. Proposer shall retain in its files, sufficiently detailed working papers relevant to its engagement with PGW. Proposer further agrees that its working papers will be held in the strictest confidence and will not be disclosed or otherwise made available to outside sources, except as required by law, without the written consent of PGW.

2.8 Confidentiality

Proposer must agree to keep confidential any and all information concerning the plans, operations or activities of PGW which may be divulged by PGW or ascertained by Proposer in the course of performing services under any contract with PGW. In the event Proposer is required to disclose confidential information pursuant to a subpoena, order of a court, or other legal process, Proposer shall, upon notice of such required disclosure and prior to disclosure, immediately notify PGW and allow PGW the opportunity to inspect the information subject to disclosure, and in the event such disclosure is objectionable under any standard or rule of the court, Proposer shall exhaust all legal means to prevent disclosure.

2.9 Minority Participation

PGW has established an anti-discrimination policy relating to the participation of government-certified Minority, Women, Veteran, and/or Disabled Owned Business Enterprises; collectively known as Disadvantage Business Enterprises (“DBEs”) in contracts and in workforces, which policy is designed to provide equal opportunity for all businesses and persons to assure that its funds are not used, directly or indirectly, to promote, reinforce or perpetuate discriminatory practices.

For this project, PGW has established a participation goal of 3-5% for Minority Owned Business Enterprise (“MBE”), and 3-5% Women Owned Business Enterprise (“WBE”), or you may use Veteran Owned Business Enterprise (“VOSBE”), or Disabled Owned Business Enterprises (“DSBE”); collectively known as (“DBEs”). Each Proposer must use its best efforts to comply with and/or exceed such goals. In furtherance of such purpose, each Proposer may employ some or all of the following methods:

- Contact DBEs that reasonably could be expected to submit a quote before the proposal date and notify them of the nature and scope of the work to be performed.

- Break down or combining elements of work into economically feasible units to facilitate DBE participation.

- Work with trade, community, or other organizations that provide assistance in recruitment of DBEs.

Proposer shall secure the prior approval of PGW, which approval shall not be unreasonably withheld, before making any changes or modifications to contract commitments made by Proposer that affect DBE participation, including, without limitation, substitutions for its DBE contractors and subcontractors, changes or reductions in services provided by its DBE contractors and subcontractors or changes or reductions in the percentage amounts of commitments with its DBE contractors and subcontractors.

Proposers must complete Attachment I (Demographic Survey) attached hereto and submit same with their proposals.

2.10 Insurance

Proposer shall procure and maintain, at its own cost and expense, insurance with companies that have an A. M. Best's Rating of not less than A- and acceptable to Philadelphia Gas Works, the following coverage with limits not less than stipulated below.

Philadelphia Gas Works, Philadelphia Facilities Management Corporation and the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents, shall be included as Additional Insureds on the General Liability, Automobile Liability and Excess/Umbrella Liability Insurance policies. An endorsement is required stating that Proposer's policies affording Additional Insured status will be primary to any other coverage available to PGW, PFMC, and the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents, and any insurance maintained by PGW will be excess and non-contributory. No act or omission of PGW, PFMC, and/or the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents, shall invalidate the coverage.

Workers Compensation and Employers Liability

Workers Compensation Insurance as required by statute. Employers Liability coverage to be carried with limits of not less than $1,000,000/per accident, $1,000,000/disease (policy limit), $1,000,000/disease (each employee).

Commercial General Liability

Commercial General Liability is required with limits of not less than $5,000,000 for Bodily Injury and Property Damage Each Occurrence; $10,000,000 General Aggregate; $5,000,000 Products/Completed Operations Aggregate and $5,000,000 Personal/Advertising Injury. This policy shall also cover liability arising from liability assumed under an insured contract (including the tort liability of another assumed in a business contract) and Personal Injury (including, but not limited to, coverage for defamation, malicious prosecution and slander). Coverage for damage caused by blasting, collapse, or structural injury and/or damage to underground utilities may not be excluded. Products/Completed Operations must be included and maintained for at least three (3) years beyond completion of the work required by contract in accordance with the terms thereof. ISO endorsement CG 21 39 10 93 (Contractual Liability Limitation) shall not apply to this contract. This insurance shall be excess over any other insurance, whether primary, excess, contingent or on any other basis, that is available to the

Proposer or its subcontractor covering liability for damages because of Bodily Injury or Property Damage for which the Proposer has been included as an Additional Insured. Such policy must contain a "Severability of Interests" clause. Philadelphia Gas Works, Philadelphia Facilities Management Corporation and the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents shall be included as Additional Insureds. A copy of the actual Additional Insured Endorsement or policy wording is required.

Automobile Liability

Business Automobile Liability covering all owned, non-owned and hired autos is required with limits of not less than $5,000,000 Combined Single Limit for Bodily Injury and Property Damage; Motor Carrier Safety Act (MCS90) and CA9948 Endorsements are to be attached if hazardous materials or waste are to be transported. Such policy must contain a "Severability of Interests" clause. Philadelphia Gas Works, Philadelphia Facilities Management Corporation, and the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents shall be included as Additional Insureds. A copy of the actual Additional Insured Endorsement or policy wording is required.

Excess/Umbrella Liability

Proposer shall provide evidence of Excess/Umbrella Liability Insurance with limits of not less than $10,000,000 in Any One Claim or Occurrence. The Excess/Umbrella policy shall follow form and be excess of all underlying insurance required by this contract. Philadelphia Gas Works, Philadelphia Facilities Management Corporation and the City of Philadelphia and their respective officers, employees, directors, boards, commissions and agents shall be included as Additional Insureds. A copy of the actual Additional Insured Endorsement or policy wording is required.

Contractor's Pollution Liability

Proposer or its Subcontractor(s) shall provide evidence of Contractors Pollution Liability (CPL) Insurance on an occurrence basis with a minimum limit of $10,000,000 each claim and a $10,000,000 aggregate with a deductible not to exceed $100,000. Coverage under an occurrence form shall be maintained in full force and effect under the policy during the contract period. Under a claims made form continuous coverage is required. Should an Extended Discovery Period or "tail" coverage be required in the event coverage is terminated, such coverage must be maintained for a period of not less than three (3) years. Philadelphia Gas Works, Philadelphia Facilities Management Corporation, and the City of Philadelphia and their respective officers, employees, directors, boards, commissions, and agents shall be included as Additional Insureds. A copy of the actual Additional Insured Endorsement or policy wording is required.

Coverage shall apply to slow & gradual and sudden & non-sudden pollution conditions including the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any watercourse or body of water, which results in Bodily Injury or Property Damage. Bodily Injury shall include, but not be limited to, physical injury to any person, sickness, disease, mental anguish or shock sustained by any person, including death. Property Damage shall include, but not be limited to, physical injury to or destruction of tangible property including the resulting loss of use thereof; clean-up costs, and the loss of use of tangible property that has not

been physically injured or destroyed. Coverage shall also include Defense Costs, including charges and expenses incurred in the investigation, adjustment or defense of claim for such compensatory damages.

Additional Provisions

A copy of the certificate of insurance shall be submitted to PGW at the address set forth above. Submission must be made at least ten (10) days before work is begun and at least ten (10) days before each Additional Term. The ten (10) day requirement for advance documentation of coverage may be waived in such situations where such waiver will benefit PGW, but under no circumstances shall the Proposer actually begin work (or continue work, in the case of an additional term) without providing the required evidence of insurance. The insurance shall provide for at least thirty (30) days prior written notice to be given to PGW in the event coverage is canceled or non-renewed.

It shall be the responsibility of the Proposer to ensure that all subcontractors carry insurance of not less than coverage and limits specified herein, except to the extent that PGW's Director of Risk Management may agree to lower limits on a case by case basis depending on the nature of the subcontractor's work. Subcontractor must forward proper evidence of this compliance to Philadelphia Gas Works prior to the inception of any work.

Renewal certificates and policies, as required, shall be forwarded to Philadelphia Gas Works for as long as Proposer performs the work as specified in this contract.

2.11 Indemnification

The Proposer will be required in the contract to indemnify, defend and hold harmless PGW, PFMC, the City of Philadelphia, and each of their respective officers, employees, directors, boards, commissions, and agents, from and against any and all losses, costs (including, but not limited to, litigation and settlement costs and counsel fees), claims, suits, actions, damages, liability and expenses, occasioned wholly or in part by Proposer's act or omission or negligence or fault or the act or omission or negligence or fault of Proposer's agents, subcontractors, suppliers, employees or servants in connection with this Agreement, including, but not limited to, those in connection with loss of life, bodily injury, personal injury, damage to property, contamination or adverse effects on the environment, intentional acts, failure to pay such subcontractors and suppliers, any breach of this Agreement, and any infringement or violation of any proprietary right (including, but not limited to, patent, copyright, trademark, service mark and trade secret), regardless of the negligence of PGW, PFMC, and/or the City of Philadelphia. In any and all claims, suits and actions against PGW, PFMC and the City of Philadelphia, and their respective officers, employees, directors, boards, commissions and agents, by any employee of Proposer, any subcontractor, or anyone for whose acts Proposer and its subcontractor is liable, the indemnification obligation set forth in this section shall not be limited in any way by any limitation on the amount or type of third party damages, compensation or benefits payable by or for Proposer or any subcontractor under workers' compensation acts, disability acts, or other employees' benefit acts.

PGW does not indemnify.

2.12 Certificate of Non-Indebtedness

The Proposer will be required to certify and represent that Proposer and Proposer's parent company(ies) and subsidiary(ies) are not indebted (at the time of signing of the contract) to the City of Philadelphia, PGW or PFMC (collectively the "City"), and will not at any time during the term of the contract (including any extensions or renewals thereof) be indebted to the City, for or on account of any delinquent taxes (including, but not limited to, taxes collected by the City on behalf of the School District of Philadelphia), liens, judgments, fees or other debts for which no written agreement or payment plan satisfactory to the City has been established. In addition to any other rights or remedies available to PGW at law or in equity, Proposer acknowledges that upon any breach or failure to conform to such certification PGW shall have the right to, and may, at the option of PGW, withhold payments otherwise due to Proposer, and, if such breach or failure is not resolved to PGW's satisfaction within a reasonable time frame as specified by PGW in writing, this will offset any such indebtedness against said payments and/or terminate this Agreement for default (in which case Proposer shall be liable for all excess costs and other damages including reasonable attorney's fees resulting from the termination).

2.13 Non-Discrimination

Proposer shall not discriminate or permit discrimination against any person because of race, color, religion, national origin, sex or sexual orientation. In the event of such discrimination, PGW may, in addition to any other rights or remedies available under the contract, at law or in equity, terminate any contract with Proposer forthwith.

Proposer shall comply with the provisions of Title VII of the Civil Rights Act of 1964 (42 U.S.C. §200d et seq.), §504 of the Federal Rehabilitation Act of 1973 (29 U.S.C. §794), The Age Discrimination Act of 1975, (42 U.S.C. §6101 et seq.), Title IX of the Education Amendments of 1972, (20 U.S.C. §1681), and 45 C.F.R. Part 92, as they may be amended from time to time, which together prohibit discrimination on the basis of race, color, national origin, sex, handicap, age and religion.

Proposer understands and agrees that no individual with a disability shall, on the basis of the disability, be excluded from participation in any contract of Proposer with PGW or from activities or services provided under such contract. As a condition of accepting and executing such contract, Proposer shall comply with all provisions of the Americans with Disabilities Act, 42 U.S.C. §12101 et seq., and all regulations promulgated thereunder, as the Act and regulations may be amended from time to time, which are applicable (a) to Proposer, (b) to the benefits, services, activities, facilities and programs provided in connection with this Agreement, (c) to PGW, or the Commonwealth of Pennsylvania, and (d) to the benefits, services, activities, facilities and programs of PGW or of the Commonwealth.

Without limiting the generality of the preceding sentence, Proposer shall comply with the "General Prohibitions Against Discrimination," 28 C.F.R. §35.130, and all other regulations promulgated under Title II of "The Americans with Disabilities Act," as they may be amended from time to time, which are applicable to the benefits, services, programs and activities provided by PGW through contracts with outsider contractors.

2.14 MacBride Principles

Proposer certifies and represents that, to the best of its knowledge, (i) Proposer (including any affiliates under its direct control) does not have, and will not have at anytime during the term of any contract with PGW (including any extension or renewal thereof), any investments, licenses, franchises, management agreements or operations in Northern Ireland and (ii) no product to be provided under any contract with PGW will originate in Northern Ireland, unless Proposer has implemented the fair employment principles embodied in the MacBride Principles.

In the performance of any contract with PGW, Proposer covenants that it will not utilize any suppliers, subcontractors at any tier (i) who have (or whose parent, subsidiary, exclusive distributor or affiliates have) any investments, licenses, franchises, management agreements or operations in Northern Ireland or (ii) who will provide products originating in Northern Ireland unless said supplier or subcontractor has implemented the fair employment principles embodied in the MacBride Principles. Proposer further covenants to include the provisions of this paragraph, with appropriate adjustments for the identity of the parties, in all subcontracts and supply agreements which are entered into in connection with the performance of any contract with PGW. Proposer covenants that it will cooperate with PGW and City's Director of Finance in any manner which PGW and the said Director deem reasonable and necessary to carry out PGW's and the Director's responsibilities under Section 17-104 of the Philadelphia Code which embodies the requirements set forth in this section. Proposer understands and agrees that any false certification or representation in connection with this section and any failure to comply with the provisions of this section shall constitute a material breach of any contract with PGW entitling PGW to all rights and remedies provided therein or otherwise available in law (including, but not limited to, Section 17-104 of the Philadelphia Code) or equity. In addition, Proposer understands that false certification or representation in connection with this section is subject to prosecution under Title 18 Pa.C.S.A. Section 4904.

2.15 Governing Laws

Any contract entered into by PGW will be executed in and shall be governed by the laws of the Commonwealth of Pennsylvania.

2.16 Certain Required Disclosures

In accordance with The Philadelphia Code Title 17 Chapter 17-400, persons and entities who wish to provide goods and services to PGW must provide certain information about contributions they have made to elected City officials or candidates for City offices. All Proposers must therefore complete Attachment D and include such completed Attachment with their proposal. Please note that the selected Proposer will be required to update such disclosure during the term of its agreement with PGW and for one year thereafter.

3 Instructions to Proposers

3.1 Proposal Preparation Requirements

3.1.1 Proposals must be prepared in English on 8 ½ x 11 inch paper with tabbed indexes separating the following seven (7) completed sections in the following order:

3.1.1.1 **Tab 1**: Transmittal letter.

3.1.1.2 **Tab 2: Scope of Work.** Proposed scope of work, work plan, procedure and timeline to provide the scope of work described in Section 2 of this RFP.

3.1.1.3 **Tab 3:** Proposal Pricing.

3.1.1.4 **Tab 4:** Completed Section 4 (Proposer Information) of this RFP. All Proposals must include the following information and be signed (at the end of Section 4) as follows:

3.1.1.4.1 If the Proposal is made by an individual, the Proposal must be signed by the individual, the individual's full name must be typed or printed under the signature line and the Proposal must include the individual's mailing address.

3.1.1.4.2 If the Proposal is made by a partnership, the Proposal must:

a) be signed by at least one of the general partners with authority to bind the partnership and the name of the general partner must be typed or printed under the signature line;

b) include the name and mailing address of the partnership; and

c) attach a copy of the partnership agreement, or other document authorizing the general partner to sign the Proposal to bind the partnership;

3.1.1.4.3 If a corporation makes the Proposal, the Proposal must:

a) be signed by the president or vice president of the corporation, and the secretary or treasurer must attest the signature and the names of the corporate officers must be typed or printed under the signature lines;

b) include the name and mailing address of the corporation; and

c) attach a copy of the corporation's by-laws or a corporate resolution authorizing the corporate officer signing the Proposal to bind the corporation.

3.1.1.4.4 If the Proposal is made by a joint venture, the Proposal must:

a) be signed by all joint venture partners and the names of the joint venture partners must be typed or printed under the signature lines;

b) include the name and mailing address of the joint venture; and

c) attach a copy of the joint venture agreement or other documentation signed by each member of the Joint Venture and, if applicable, any documentation necessary to show that the individuals signing on behalf of each joint venture partner are authorized to bind the joint venture.

3.1.1.5 **Tab 5**: Qualification and Experience of Proposer. Proposers are strongly encouraged to list experience providing similar services.

3.1.1.5.1 Provide the names and resumes of each person who would be participating in this project;

3.1.1.5.2 Indicate whether the individual is a full time employee of Proposer's organization (and if so for how long) or a subcontractor. If the individual is a subcontractor, list the engagements (and the particular responsibilities on each engagements) that the subcontractor has previously worked for Proposer;

3.1.1.5.3 Indicate whether the individual is a full time employee of Proposer's organization (and if so for how long) or a subcontractor. If the individual is a subcontractor, list the engagements (and the particular responsibilities on each engagements) that the subcontractor has previously worked for Proposer;

3.1.1.5.4 Indicate the areas of the project that each individual will be involved with or have responsibility for;

3.1.1.5.5 For each such individual, provide a reference list with phone numbers.

3.1.1.6 **Tab 6:** Prior Work Examples. Provide details of similar projects you have performed.

3.1.1.7 **Tab 7:** Completed Attachments D and I, and any other attachments required to be completed under the RFP.

3.1.2 One (1) original Proposal, one (1) copy and one (1) CD containing a searchable PDF readable by Adobe Reader 7.0 or higher of the proposal, must be submitted in a

sealed envelope or envelopes addressed to PGW Supply Chain Department, Philadelphia Gas Works, 800 W. Montgomery Avenue, Philadelphia, Pennsylvania 19122. The name and address of the Proposer must also appear on the face of the envelope. The PDF file name should be as follows: PROPOSER_RFP_33431, where Proposer is your company name and 33431 is the PGW RFP id number.

3.1.3 Failure to answer all questions completely and furnish all information required in these Proposal Documents may result in disqualification of the Proposer. PGW reserves the right to thoroughly investigate the financial status and experience of the Proposer.

3.1.4 It shall be the responsibility of the Proposer to deliver the Proposal and all other required items to the location specified in Section 1 of these Proposal Documents on or before the due date and time set forth in Section 1.1.

3.1.5 Oral communications from PGW personnel or other persons shall not be binding on PGW and shall in no way modify the provisions of the Proposal Documents. Official responses of PGW to inquiries regarding these Proposal Documents shall be issued by PGW in writing as addenda, and only such written responses shall be binding on PGW as modifications to these Proposal Documents.

3.2 Duration of Proposal

In consideration of PGW's evaluation of the submitted Proposals, each Proposer agrees that its Proposal shall be a firm offer to PGW, and shall remain open for acceptance by PGW for a period of at least one hundred and fifty (150) days beginning with the submission due date set forth in Section 1 of these Proposal Documents, as may be revised by addenda.

3.3 Proposer's Responsibility

The Proposer shall carefully examine the terms of the Proposal Documents and shall judge for itself all of the circumstances and conditions affecting its Proposal. PGW will endeavor to present accurate information, but Proposers are advised to independently verify the accuracy of any information received.

4 Proposer Information

4.1 Proposer

Submitted by:

[Please type or print]

Name: _____

_____

Address: _____

_____

_____

Telephone: _____

Facsimile: _____

The undersigned Proposer hereby submits to PGW this Proposal as described herein and in the attached documents.

4.2 Qualifications Statement

The Proposer represents and covenants that the Proposer is fully qualified to provide the requested services to PGW. The undersigned further swears and affirms that the information contained in this response is true, accurate and complete.

4.3 Business Experience

4.3.1 The following describes other points of service by Proposer and the companies for whom the services were provided. Proposer should include a reference contact at the described companies, and this contact should have direct, specific responsibility for the oversight of the program. In particular, the Proposer should describe all experience with projects similar to this project.

4.3.2 The Proposer has operated under its current name since ____, a period of _____ years, and the Proposer (if such be the case) formerly operated under the following name:

_____.

4.3.3 Proposer must attach the resume of the manager which it anticipates will be the contact for the services required by this RFP.

4.3.4 The Proposer submits herewith the following list of three (3) persons or businesses, which have knowledge of the Proposer's ability to successfully perform the services for which this Proposal is submitted.

REFERENCE NO. 1

Name: _____

Firm: _____

Title: _____

Address: _____

Telephone: _____

Facsimile: _____

Nature of Association: _____

REFERENCE NO. 2

Name: _____

Firm: _____

Title: _____

Address: _____

Telephone: _____

Facsimile: _____

Nature of Association: _____

REFERENCE NO. 3

Name: _____

Firm: _____

Title: _____

Address: _____

Telephone: _____

Facsimile: _____

Nature of Association: _____

4.3.5 The Proposer has not had an agreement canceled or terminated due, in whole or in part, to the fault of Proposer, or a default or breach of contract on the part of the Proposer. (If a contract or agreement has been canceled, please explain.)

4.4 Financial Information

4.4.1 The Proposer has ( ) has never ( ) [check one] had a bond or surety canceled or forfeited. (If the Proposer has had a bond or surety canceled, state the name of the bonding company, date, amount of bond and reason for such cancellation or forfeiture.)

4.4.2 The Proposer has ( ) has never ( ) [check one] been adjudged bankrupt (Chapter 7), or petitioned the court for relief under the Bankruptcy Code or Act for either business reorganization (Chapter 11) or the Wage Earner's Plan (Chapter 13). If the response is in the affirmative, provide the following information:

4.4.2.1 Date petition filed

4.4.2.2 Case No. and jurisdiction

4.4.2.3 Amount of liabilities and debts

4.4.2.4 Date of discharge or successful completion of reorganization or wage earner's plan

4.4.3 The Proposer's bank references are:

	Name	Address
4.4.4.1.	_____	_____
4.4.4.2.	_____	_____
4.4.4.3.	_____	_____

The undersigned herewith submits a letter from

_____ indicating that the Proposer has an
(name of financial institution)

available working line of credit of no less than _____Dollars ($_____), or other evidence of Proposer's capital sufficient to permit it to meet the obligations contemplated by its Proposal.

4.4.4 The undersigned hereby affirms that the Proposer is authorized to conduct business in the Commonwealth of Pennsylvania, and City of Philadelphia, or will obtain proper authorization to do so before executing an agreement and furnishing the required bond or letter of credit, if any.

4.5 General Litigation Disclosure

Proposer must describe any pending, contemplated or ongoing administrative or judicial proceedings material to Proposer's business, finances or products including, but not limited to, any litigation, consent orders, debarment or contracts with any local, state or federal regulatory agency issued to Proposer or to any parent or subsidiary of Proposer:_____
_____
_____
_____.

4.6 Business Organization Statement

4.6.1 General Information

Name of Firm [Exactly as it would appear on an agreement; if operating under a fictitious name, so indicate.]

_____

Principal Office Address:

_____

_____

Telephone Number:

_____

Form of Business Entity [check one]

( ) Corporation

( ) Partnership

( ) Individual

( ) Joint Venture

4.6.2 Corporation Statement

If a corporation, answer the following:

Date of incorporation: _____

Location of incorporation: _____

Is the corporation authorized to do business in Pennsylvania? Yes ( ) No ( )

If so, as of what date? _____

The corporation is held: Publicly ( ) Privately ( )

Furnish the name, title, and address of each director and officer of the corporation.

DIRECTORS

	Name	Address	Principal Business Affiliation Other than Proposer's Directorship
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

SHAREHOLDERS

	Name	Address	Number of Shares Owned
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			

OFFICERS

	Name	Position
1.		
2.		
3.		
4.		

4.6.3 Partnership Statement

If a partnership, answer the following:

Date of organization: _____

General Partnership ( ) Limited Partnership ( )

Partnership Agreement recorded? Yes ( ) No ( )

_____	_____	_____	_____	_____
Date	Book	Page	County	State

Has the partnership done business in Pennsylvania? Yes ( ) No ( )

When? _____

Name, address, and ownership share of each general partner owning more than five percent (5%) of the partnership:

	Name	**Address**	**% of Ownership**
1.	_____	_____	_____ %
2.	_____	_____	_____ %
3.	_____	_____	_____ %
4.	_____	_____	_____ %
5.	_____	_____	_____ %
6.	_____	_____	_____ %

4.6.4 Joint Venture Statement

If a Joint Venture, answer the following:

Date of organization: _____

Joint Venture Agreement recorded? Yes ( ) No ( )

_____	_____	_____	_____	_____
Date	Book	Page	County	State

Has the Joint Venture done business in Pennsylvania? Yes ( ) No ( )

When? _____

Name, address of each Joint Venturer and percent of ownership of each:

	Name	Address	% of Ownership
1.	_____	_____	_____ %
2.	_____	_____	_____ %
3.	_____	_____	_____ %
4.	_____	_____	_____ %
5.	_____	_____	_____ %

4.7 Warranties by Proposer

4.7.1 The Proposer's Proposal has been completed to the best of the Proposer's ability, and the Proposer swears that all information contained herein is true, correct and complete to the best of the Proposer's knowledge, information and belief.

4.7.2 By submission of this Proposal, the Proposer acknowledges that PGW has the right to make any inquiry or investigation it deems appropriate to substantiate or

supplement information contained in the Proposal, and Proposer authorizes the release to PGW of any and all information sought in such inquiry or investigation.

4.7.3 Proposer expressly agrees and acknowledges that any response to this RFP, including written documents and verbal communication, regardless of how marked, is not confidential and may be subject to public disclosure by PGW, or any authorized agent of PGW, including but not limited to disclosure under the Pennsylvania Right to Know Law. Any materials submitted or ideas elicited in response to this RFP shall be the sole and absolute property of PGW, with PGW having title. By responding to this RFP, Proposer expressly waives any right to designate its response or parts thereof confidential, proprietary, a trade secret, or otherwise exempt from disclosure under any circumstance.

4.7.4 The Proposer declares by the submission of this Proposal that the Proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the Proposal is genuine and not collusive or sham; that the Proposer has not directly or indirectly induced or solicited any other Proposer to put in a false or sham Proposal, and has not directly or indirectly colluded or agreed with any Proposer or anyone else to put in a sham Proposal or to refrain from proposing; that the Proposer has not directly or indirectly sought by agreement or communication to secure any advantage against PGW; anyone interested in the Proposal as principal are named within the Proposal; that all statements contained in the Proposal are true; that the Proposer has not directly or indirectly divulged information or data relative to the Proposer's Proposal to any other person, partnership, corporation, or association, except to such person or persons as have a direct financial interest in the Proposer's general business.

The foregoing Proposal is hereby submitted by the entity signing below in accordance with all terms and conditions as set forth in the Request for Proposals issued by PGW.

PROPOSER:

DATE: _____

(Corporate Seal if Applicable)

_____

Name of Proposer

By: _____

Name:

Title:

Attest: _____

(signature)

Name:

Title:

[Add signature lines as necessary below.]

5 Proposal Evaluation, Negotiation and Contract Award

5.1 Disqualification of Proposers

5.1.1 If more than one Proposal is received from any individual, firm, partnership, corporation, or association, under the same or different names, said Proposals will not be considered. Reasonable grounds for believing that any Proposer has an interest in more than one Proposal will cause the rejection of all Proposals in which such Proposer is interested. If there is reason to believe that collusion exists among Proposers, none of the participants in such collusion will be considered.

5.1.2 No Proposal shall be received from, or contract awarded to, any PGW or City employee or official who may have any direct or indirect interest in such submitted Proposal or contract.

5.2 Qualification of Proposers

5.2.1 PGW will carefully consider the Proposer's qualifications, proposed financial consideration, experience, financial responsibility, proposed scope of services, and timeline in evaluating each Proposal. In PGW's evaluation, the Proposal as a whole may bear more weight than the individual parts of the Proposal.

5.2.2 Following PGW's review of the submitted proposals, PGW may select one or more Proposers with which to negotiate. PGW shall notify Proposer(s) of selection for negotiations. The date that the Proposer's receipt of the notification is confirmed by PGW, is referred to herein as the "Notification Date."

5.2.3 Respondents to this RFP are subject to Philadelphia Code (Chapter 20-600) and the Pennsylvania Ethics Act (65 P.S. Section 401 et.seq.) All respondents are required to disclose any potential conflict caused by PGW or City employees having a financial interest in the entity entering into a contract or agreement with PGW.

5.3 General Reservation of Rights

5.3.1 This RFP and the process it describes are proprietary to PGW and are for the sole and exclusive benefit of PGW. No other party, including any respondent to this RFP or future Proposer to any RFP which may be issued by PGW, is intended to be granted any rights hereunder.

5.3.2 PGW reserves the right to reject as informal or non-responsive any Proposal that, in PGW's sole judgment, is incomplete, is not in conformity with applicable law, is not responsive to this RFP, or contains ambiguities or services not called for by this RFP.

5.3.3 Without limiting the generality of any other provision of this RFP, PGW reserves the right, at any time prior to execution of an agreement with the successful Proposer, to exercise all or any of the following rights and options, which rights and options PGW may exercise to the extent that PGW, in its sole discretion, deems to be in its best interests:

5.3.3.1 To request additional or supplemental information (including but not limited to information inadvertently omitted by any Proposer in response to this RFP) from any or all Proposers;

5.3.3.2 To accept or reject, at any time prior to its execution of an agreement, any or all Proposals or any part thereof submitted in connection with this RFP;

5.3.3.3 To accept or reject any or all of the items in any Proposal and award the contract in whole or in part if it is deemed in PGW's best interest to do so;

5.3.3.4 To waive any informality, defect, non-responsiveness, or derivation from this RFP that is not, in PGW's sole judgment, material to the Proposal;

5.3.3.5 To negotiate unacceptable provisions incorporated within an otherwise acceptable Proposal submitted in response to this RFP;

5.3.3.6 To reject without evaluation any Proposal that is incomplete, unclear, conditional, or which contains irregularities of any kind;

5.3.3.7 To reject any Proposal that in the sole discretion of PGW is not in the best interest of PGW;

5.3.3.8 To re-issue this RFP without change or modification;

5.3.3.9 To issue a subsequent RFP for this project with terms and conditions that are substantially different from the terms and conditions set forth in this RFP;

5.3.3.10 To cancel this RFP with or without issuing another RFP;

5.3.3.11 To supplement, amend, substitute, or otherwise modify this RFP at any time prior to execution of a final agreement with a Proposer;

5.3.3.12 To reject the Proposal of a Proposer that, in PGW's sole judgment, has been delinquent or unfaithful in the performance of any contract with PGW, or is financially or technically incapable of performing the services required in this RFP, or is otherwise not a responsible Proposer;

5.3.3.13 To permit or reject, at PGW's sole discretion, amendments (including information inadvertently omitted), modifications, alterations and/or corrections of Proposals by some or all of the Proposers following Proposal submission;

5.3.3.14 To request that some or all of the Proposers modify Proposals or provide additional information following evaluation by PGW;

5.3.3.15 To conduct such investigations as PGW considers appropriate with respect to the qualifications of any Proposer and/or any information contained in any Proposal;

5.3.3.16 To request clarifications of any unclear Proposal;

5.3.3.17 To negotiate simultaneously, or otherwise, with one or more Proposers;

5.3.3.18 To discontinue and resume negotiations with one or more Proposers;

5.3.3.19 To rescind its rejection of any Proposal(s) and negotiate (or resume negotiations) with a previously rejected Proposer;

5.3.3.20 To not proceed with the process described in this RFP, or to change any time schedules set forth herein;

5.3.3.21 To not enter into an agreement pursuant to this RFP.

5.3.4 PGW intends to enter into contract negotiations with the selected Proposer. However, PGW reserves the right to terminate any negotiations at any time or conduct simultaneous, competitive negotiations with multiple Proposers. PGW reserves the right to negotiate acceptable terms in an otherwise unacceptable Proposal. Such negotiations may result in changes to material terms of this RFP; in such event, PGW shall not be obligated to inform other Proposers of the changes, or permit them to revise their Proposals accordingly, unless PGW, in its sole discretion, determines that doing so and permitting such is in PGW's best interest. Should negotiations not prove satisfactory with the recommended Proposer(s), PGW reserves the right to discontinue negotiations with the recommended Proposer(s) and additional firms may be asked to enter into negotiations or PGW may solicit new Proposals or issue a new Request for Proposals.

5.4 Award

5.4.1 PGW intends to award the agreement to the Proposer whose Proposal best satisfies the scope of services described in Section 2 and is otherwise in the best interest of PGW. The determination of award shall be made by PGW, in its sole discretion, which decision shall be final. PGW may employ such analysis techniques and professional consultants for Proposal evaluation as it deems necessary. PGW may

request submission of additional information to assist it in evaluating a Proposal, and the Proposer shall cooperate fully with such request. The contract resulting from this RFP will be awarded to the qualified Proposer whose Proposal PGW believes will be the most advantageous to PGW. PGW may condition an award on the successful Proposer's agreement to such terms and conditions as required by PGW including, but not limited to, PGW's indemnification.

ATTACHMENT D. REQUIRED 17-1400 DISCLOSURE

In accordance with the City of Philadelphia's contract reform legislation, codified as The Philadelphia Code Title 17 Chapter 17-1400, persons and entities who wish to provide goods and services to PGW must provide certain information about contributions they have made to elected City officials or candidates for City offices. Please note that, if selected, you will be required to update such disclosure during the term of your agreement with PGW and for one year thereafter.

Therefore, the following information must be provided to PGW:

1.	Did you use any consultant with respect to this RFP or the contract at issue within the prior one year period? If so, you are required to list (in an attachment hereto) the following information for each such consultant: (i) name, (ii) business address, (iii) business phone number and (iv) amount paid or to be paid. As used herein, the term "consultant" means any person or entity used to assist you in obtaining a contract through direct or indirect communication with the City, PGW, any City Agency or any officer or employee of any of them, if such communication is undertaken by the person or entity for payment.	YES ☐	NO ☐
2.	Have you or any consultant disclosed above made any contributions of money or in-kind assistance within the prior two year period to (i) any candidate for nomination or election to any public office in Pennsylvania, (ii) any individual who holds any such office, (iii) any political committee or state party in Pennsylvania or (iv) any group, committee or association organized in support of any such candidate, office holder, political committee or state party in Pennsylvania? If so, you are required to list (in an attachment hereto) the date, amount and recipient of each such contribution. For purposes hereof, (i) contributions made by a person's immediate family shall be deemed contributions made by that person and (ii) contributions made by an entity's affiliate or an officer, director, controlling shareholder or partner of an entity's or such entity's affiliate shall be deemed contributions made by that entity.	YES ☐	NO ☐

3.	Do you intend to use any subcontractors on this contract? If so, you are required to list (in an attachment hereto) the following information for each such subcontractor: (i) name, (ii) business address, (iii) business phone number and (iv) amount or percentage to be paid.	YES ☐	NO ☐
4.	Within the prior two year period, has any City or PGW officer or employee asked (i) you, (ii) any of your officers, directors or management employees or (iii) any person or entity representing you, to give money, services, or any other thing of value to any person or entity? If so, you are required to list (in an attachment hereto) the following information for each such officer or employee: (i) name, (ii) title, (iii) date of request, (iv) amount requested and (iv) amount of any payment made in response to request (other than contributions listed under (2) above).	YES ☐	NO ☐
5.	Within the prior two year period, has any City or PGW officer or employee directly or indirectly advised (i) you, (ii) any of your officers, directors or management employees or (iii) any person or entity representing you, that a particular person or entity could be used by you to satisfy any goals in this RFP or contract for the participation of minority, women, disabled or disadvantaged business enterprises? If so, you are required to list (in an attachment hereto) the following information for each such officer or employee: (i) name, (ii) title, (iii) date of advice and (iv) name of person or entity they advised could be used to satisfy such goals.	YES ☐	NO ☐

The undersigned hereby certifies that the information provided herein is true and correct as of the date set forth below.

Signature: _____

Title: _____

Name of Entity: _____

Date: _____
(Please Print)

ATTACHMENT I. DEMOGRAPHIC SURVEY

A key tenet of PGW's practice of good corporate citizenship is its commitment to the use, non-discrimination against and development of qualified minority, disabled and women vendors and to non-discrimination in employment.

In an effort to insure the full inclusion of all segments of the American population, PGW is requesting that the following information be returned with your proposal:

A.	Does your organization have a written program which addresses the utilization of minority business enterprises (MBE), disabled business enterprises (DBE) and women enterprises (WBE) in the manufacturing, distribution of servicing of your product(s)? If so, please furnish a copy of your program. Please provide statistics of MBE, DBE and WBE in (1) manufacturing, (2) distribution, and (3) service for the past two years.	YES ☐	NO ☐

COMMENTS: _____

_____

_____

B.	Does your organization foster economic growth and development by providing procurement opportunities to MBE/DBE/WBE firms as material suppliers, contractors, sub-contractors, etc? If so, please furnish a copy of your company policy or directive.	YES ☐	NO ☐

COMMENTS: _____

_____

_____

C.	Does your organization have an Affirmative Action Equal Employment Opportunity Policy? If so, please furnish a copy of this policy.	YES ☐	NO ☐

COMMENTS: _____

_____

_____

D. Please furnish data depicting the composition of your work force by ethnic group gender and their appropriate titles/job classifications.

# OF EMPLOYEES	TITLE CLASS	ETHNIC GROUP	GENDER

As a socially responsible entity, PGW seeks to insure that its business partners are committed and dedicated to the practice of including all segments of the American population in their business practices. Accordingly, the information requested above must be provided or your proposal may be rejected as non-responsive.

If the information was provided to PGW within the past twelve months, please check here: ☐

Signature:_____
Title:_____
Name of Firm:_____
(Please Print)

EXHIBIT 1

SPECIFICATION NO. 3036 FOR THE DEMOLITION OF THREE BUILDINGS AND ASSOCIATED ITEMS LOCATED AT 3030 CASTOR AVENUE.

1 SCOPE OF WORK

The Contractor shall furnish all labor, material, tools, equipment, insurance, and supervision necessary for and incidental to the demolition and removal of three existing buildings and associated items located at 3030 Castor Avenue.

2 DETAIL OF SCOPE

2.1 The Contractor shall procure and pay all required City of Philadelphia permits.

2.2 The Bidders and the successful Contractor shall have a Class A Demolition Contractor License from the City of Philadelphia from at least the Pre-bid to final inspection.

2.3 The Contractor shall furnish and install temporary fencing. The fencing shall be 8' high chain link fencing on the city sidewalk and the railroad side to protect the site during demolition. The length required is approximately 440 feet.

2.4 The Contractor shall remove and dispose of contents within the buildings.

2.5 The Contractor shall dismantle and properly dispose of the buildings (including 3030 Castor and 3000R Castor).

2.6 The Contractor shall demolish the metal structures to the floor slab elevation.

2.7 The Contractor shall coordinate the Work with the Philadelphia Belt Line Railroad. See Appendix D.

2.8 The Contractor shall follow the Erosion and Sediment Control Plan. See Appendix G.

2.9 The soil in the new fence and existing roof drain areas contains lead and cadmium. See Appendix C for environmental specifications. The personnel excavating this soil and their supervisor shall have hazwoper training, see 18.4. See Section 20.2 for requirements pertaining to soil handling.

2.10 The Contractor shall excavate, cut and cap the old three inch natural gas line. The line is located next to the drain line on Castor Avenue. The line shall be excavated to a depth of 3 feet. The line shall be threaded and a cap installed. The exposed piping shall be wrapped with Trenton tape before backfilling. Based upon sampling conducted on the property, soils in this area are known to be impacted with lead and cadmium. The personnel excavating this soil and their supervisor shall have hazwoper training; see Section 18.4. See Section 20.2 for requirements pertaining to soil handling.

2.11 The Contractor shall provide the Company with a Health and Safety Plan two week prior to starting the Work for review by the Company.

2.12 The Contractor shall remove approximately 200 feet of a metal, wood and concrete wall on the south side.

2.13 The Contractor shall take all necessary action to meet OSHA regulation 1926.52 and any State and Local regulations concerning noise.

2.14 The Contractor shall obtain a Dust Control Permit from the City of Philadelphia. The Contractor shall provide a Dust Control Plan approved by the City of Philadelphia's Department of Health. The Contractor shall provide the Company with a copy of the Dust Control Plan for review prior to submission of the Dust Control Permit. The Company will directly contract with a third party to conduct perimeter air monitoring during the demolition work to ensure that the Dust Control Plan is effective at preventing off-site migration of dust. The Contractor is responsible for performing personal air monitoring of their employees as needed to comply with OSHA requirements.

2.15 The Contractor shall run a temporary 230 volt, 2 pole, 20 amp electrical line to the portable guard shack from the north electrical panel.

2.16 The Contractor shall furnish necessary toilet facilities for its force at the work site when required by the Authorized Representative. These facilities shall be in

accordance with Local, State, and Federal regulations and shall be kept in a clean and sanitary manner.

2.17 The Contractor shall protect all inlets and drains on the property with a compost sock or synthetic filter. The inlet protection shall be installed, inspected, cleaned and replaced according to manufacturer's specifications.

2.18 The Contractor shall remove approximately 25 feet of a steel wall on east end of property. Replace the wall with fencing per Appendix A.

2.19 The Contractor shall remove all items marked with a white X.

2.20 The Contractor shall plug or cap the two, existing roof drains at least one foot below grade. The caps and/or the plugs shall be made of metal. The exposed piping shall be wrapped with Trenton tape before backfilling.

2.21 Once the building has been removed, the Contractor shall break up the floor of the building at 10 marked out locations so that rain water can soak into the ground. The area of each location shall be 10 feet by 10 feet.

2.22 The Contractor shall provide a plan for performing the Work at least two weeks prior to the anticipated start date for the Company to review.

2.23 The Company will hire a special inspector/special inspection agency to inspect and report on parts of the Work.

2.24 The red molasses tank contains approximately 100 gallons of residual molasses. The piping associated with the red molasses tank may also contain residual molasses. The Contractor shall properly dispose of the residual molasses.

2.25 The Contractor shall furnish and install approximately 400 LF of new 8' high chain link fence with three stands of barbed wire angles 45 degrees to the outside. The fencing shall meet the specifications outlined in Section 7. The fencing shall be supported from the foundation of the building per Appendix B. The barbed wire shall meet the following:

2.25.1 Zinc-Coated Steel Barbed Wire: Comply with ASTM A 121, Chain-Link Fence grade for the following three-strand barbed wire:

2.25.1.1 Standard Size and Construction: 0.099-inch- (2.51-mm-) diameter line wire with 0.080-inch- (2.03-mm-) diameter, 2-point round barbs spaced not more than [4 inches (102mm)] [5 inches (127 mm)] o.c.

2.26 The Contractor shall remove the following associated items:

1. Northwest baghouse
2. Exhaust Stack from Building
3. Exhaust from building
4. Separate exhaust stack
5. Interior Stack and blower
6. Gray duct work
7. Three fiberglass tanks
8. Inside baghouse
9. Steel wall from northeast to southeast of building interior.
10. Rotary furnaces
11. Southwest red tank
12. Conveyor belt
13. Southwest baghouse
14. Midwest baghouse
15. Concrete basin
16. Buildings A, B and C.
17. CMU Shed
18. Propane tank

As described in Section 20.1, the EPA previously completed a removal action at this site to mitigate imminent threats to human health and the environment. The Contractor is responsible for assessing all structures and industrial equipment slated for removal/demolition for any remaining hazards and residual contamination. The Contractor shall properly mitigate any remaining hazards and cleanup any residual contamination as needed to safely remove/demolish and transport the materials and equipment off-site.

3 CONDITIONS OF PROPERTIES

3.1 The Company assumes no responsibility for the condition of existing buildings and structures and other property. No adjustment of contract price or allowance for any change in conditions which may occur will be made. Bidders shall visit the site and make their own evaluation before submitting their bids.

4. PERMITS AND CODES

4.1 All Work shall be done in strict accordance with federal, state and local laws, rules, requirements and regulations.

4.2 Contractor is responsible for obtaining all permits from authorities having jurisdiction. Contractor shall also arrange and pay for all required inspections. Copies of all permits and inspection reports shall be furnished to the Company.

5. USE OF THE PROJECT AREA

5.1 The Contractor shall confine equipment, storage of materials, and demolition operations to the limits prescribed by ordinances or permits, or as may be directed by the Company and shall not unreasonably encumber the premises with salvaged material.

5.2 The Contractor shall comply with all instructions of the Company and the ordinances and codes of the local government regarding signs, traffic, fires, explosives, danger signals, barricades, and fire prevention.

5.3 The Contractor shall arrange with the City for the temporary closure of any streets as required for the demolition and removal work.

6. SIGNS

6.1 No signs are to be erected on the project site except approved warning signs and permit notices.

6.2 The Contractor shall furnish, erect and maintain approved danger, warning and "Keep Out" signs at places and locations where the placing of such signs are arranged, or as directed by the Company.

7. FENCES

7.1 Fence Specifications

7.1.1 Fences shall be of chain link fabric of 0.30 ounce zinc coated steel conforming to ASTM A491, woven from 4 AWG (0.192-inch) in a 2" mesh such as U. S. Steel Cyclone fence.

7.1.2 The fence posts shall be embedded in a 3 feet deep concrete base

underground or attached to the foundation of the building per Appendix B and shall be 8 feet aboveground. The posts shall be standard U. S. Steel Round 2-3/8" OD line posts with U. S. Steel "Invincible" angled brackets.

7.1.3 End and corner posts shall be 3" SCH 40 OD steel pipe with 2 oz. per square foot galvanizing.

7.1.4 Top and bottom brace rails are to be provided between all posts while corners are to be provided with a middle brace rail also. Brace rails shall be 1-5/8" diameter Schedule 40 steel pipe with 2 oz. per square foot galvanizing.

8. SITE UTILITY WORK

8.1 In addition to the work previously described, it shall be the responsibility of the Contractor to have any utilities disconnected, capped and removed, if they still exist, that the Company does not want to keep. The Company is only looking to keep the city water service piping, the fire water piping and the electric service in the northwest corner of the property.

9. PROPERTIES OWNED BY OTHERS

9.1 All demolition work shall be done in such a manner to cause the least inconvenience and disturbance to persons adjacent to the site.

9.2 Any damages done by the Contractor to structures owned by others shall be repaired or replaced in kind by the Contractor to the satisfaction of the Company, and any jurisdictional, local or state ordinances or regulations.

9.3 Curbs, sidewalks, and street paving are not to be disturbed, except as specified. All curbs, sidewalks and street paving damaged or disturbed by the Contractor shall be restored to satisfactory and safe condition, at least equal to that existing at the start of the work.

10. DEMOLITION PROCEDURES

10.1 Before beginning demolition operations, the Contractor shall pump out and clean, in a satisfactory manner, all wells and cesspools within the areas to be cleared, disinfecting them as may be required by the Philadelphia Department of Public Health.

10.2 All sewage piping shall be removed by the Contractor back to the building wall and the pipe opening sealed to suit the requirements of the City Department of Licenses and Inspections and the Philadelphia Department of Public Health.

10.3 The Contractor shall obtain the necessary permits from these departments. The Contractor shall furnish written evidence to the Company that such work has been inspected and approved by the City before permission is given by the Company to backfill.

10.4 Window and door frames shall not be removed until the demolition work shall have progressed to their elevations in the walls.

10.5 The Contractor shall prevent or control, to the satisfaction of the Company and the requirements of applicable Air Pollution Regulations, any dust which may result from any demolition operation.

10.6 Contractor shall provide adequate security measures at all times to prevent unauthorized entrance into the buildings during demolition operations.

11. BACKFILL

11.1 No unstable or combustible material will be permitted in the fill, and any material encountered in the demolition which the Contractor proposes to use as fill shall be stored on the ground until the walls are down.

11.2 Material for backfilling, resulting from demolition operations, shall be subject to the Company's approval prior to placement by the Contractor. Backfill material must consist of soil or other material deemed acceptable by the Company that meets the definition of Clean Fill per the Pennsylvania Department of Environmental Protection (PADEP) Bureau of Waste Management's Management of Fill Policy dated August 7, 2010 (Document #258-2182-773). The Company requires that the Contractor provide a copy of completed PADEP Form FP-001 Certification of Clean Fill (Document #2500-FM-BWM0008) to certify the origin of the fill material and confirm that the material is clean fill.

11.3 All operations in connection with backfilling and grading shall be performed and completed in such manner as will insure proper drainage.

11.4 The Contractor shall furnish all additional material required for filling subsurface areas. Said material required shall be of quality acceptable to the Company and a sufficient quantity shall be on hand to insure uninterrupted progress in completing the backfilling.

11.5 Backfill shall consist of material free from mud, organic materials, rubbish, or other objectionable substances. No rock, cinders or building material shall be used for backfill. The backfill shall be compacted by tamping in six inch layers.

12. TREES AND SHRUBS

12.1 The Contractor shall remove trees and shrubs within the project area.

12.2 All tree stumps shall be removed to grade elevation for that location.

13. RUBBISH AND DEBRIS

13.1 All rubbish and debris found on the demolition site at the start of the work as well as that resulting from the demolition activities or deposited on the site by others shall be removed and legally disposed of by the Contractor. Upon completion of the work, the Contractor shall remove all temporary construction, equipment, salvaged materials, trash and debris of all kinds, leaving the entire site in a neat and workmanlike condition.

14. PREVAILING WAGES

14.1 The Contractor is required to comply with the state laws regarding prevailing wages.

15. OWNERSHIP

15.1 All salvage becomes the property of the Contractor, but storage of such materials and equipment on the site shall not be permitted.

16. DRAWINGS

16.1 See Appendix A and Appendix B.

17. BID SUBMITTAL

17.1 The bidder shall provide a schedule of work.

17.2 The bidder shall provide the bidder's safety manual with the bid.

17.3 The bidder shall fill out the Bid Sheet.

18. SAFETY REQUIREMENTS

18.1 General Safety Requirements

18.1.1 The Contractor must have Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDSs) available onsite while using chemical products at a Company facility or jobsite in accordance with the Occupational Health and Safety Administration (OSHA) Hazard Communication Standard found at 29 CFR 1910.1200.

18.1.2 If utilizing ladders, scaffolding, or aerial lift equipment for demolition work, the Contractor must utilize ladders in accordance with 29 CFR Part 1926.1053; scaffolding in accordance with 29 CFR Part 1926.451; and aerial lifts in accordance with 29 CFR Part 1926.453.

18.1.3 The Contractor is required to use adequate fall protection when working on structures that require the contractor to work at elevated heights of 6 feet above the ground or higher. The fall protection equipment utilized must be in accordance with OSHA 29 CFR 1926.502.

18.2 Plant Requirements

18.2.1 A Company Gas Processing Safety Manual will be provided to the Contractor. The Contractor shall follow the Safety Manual to prevent any incidents or injuries.

18.2.2 Company normal working hours are Monday-Friday 6:30 am-3:00 pm. The Company will decide if work will go outside normal working hours. The Contractor must coordinate with the Company if work is needed outside normal working hours.

18.2.3 All workers must wear safety-toed shoes/boots, hard hats and safety glasses. All workers must wear flame resistant clothing meeting the National Fire Protection Association (NFPA) 2112 Standard. This personal protective equipment (PPE) must be worn by all contractor personnel upon entry to the site.

18.2.4 Proposers must use specifically designated gates for non-emergency entry and exit.

18.2.5 Proposer's employees must receive training on the Characteristics of Liquefied Natural Gas (LNG) and plant safety rules prior to starting work.

18.2.6 Daily work permits are required for all work. The work permits are required to be submitted by 1:00pm on the last workday before the proposed work day.

18.2.7 Cell phones or other electronic devices are not permitted to be used inside the site. All workers must follow the Company's Gas Processing Cell Phone policy.

18.2.8 Smoking is not allowed inside any Company Facility.

18.2.9 No photographs can be taken without permission of the Plant Manager.

18.2.10 Parking will not be available onsite for Proposers/ Contract Employees.

18.2.11 No propane powered equipment is allowed inside any Company facility. Only diesel equipment or unless authorized by the Company will be allowed to operate inside any Company facility.

18.2.12 Daily meetings are required.

18.3 Deleted. (was Drug and Alcohol Screening)

18.4 Training Requirements for Work Involving Exposure to Hazardous Waste and Hazardous Substances

18.4.1 The Contractor shall fully comply with the Hazardous Waste Operations and Emergency Response (HAZWOPER) standard which establishes training

requirements for employees on clean-up or work sites that are exposed to hazardous substances, health hazards, or safety hazards, and their supervisors and the managers responsible for the site. [29 CFR 1910.120(e)(1)].

18.4.2 General site workers (such as equipment operators and general laborers) who are engaged in hazardous substance removal or other activities that expose (or potentially expose) them to hazardous substances and health hazards must receive a minimum of 40 hours of off-site training and a minimum of 3 days of supervised field experience. [29 CFR 1910.120(e)(3)(i)].

18.4.3 Workers who are on site only occasionally for a specific, limited task (for example, ground water monitoring or land surveying) and who are unlikely to be exposed over permissible exposure limits and published exposure limits must receive a minimum of 24 hours of off-site instruction and a minimum of 1 day of supervised field experience. [29 CFR 1910.120(e)(3)(ii)].

18.4.4 Also, workers regularly on site who work in areas that have been monitored and fully characterized indicating that exposures are under permissible exposure limits and published exposure limits, where respirators are not necessary, and where the characterization indicates that there are no health hazards or the possibility of an emergency developing, need to receive a minimum of 24 hours of off-site training and a minimum of 1 day of supervised field experience. [29 CFR 1910.120(e)(3)(iii)].

18.4.5 On-site managers and supervisors directly responsible for, or who supervise employees engaged in, hazardous waste operations generally must receive 40 hours of initial training, have 3 days of supervised field experience, and receive at least an additional 8 hours of specialized training at the time of job assignment. [29 CFR 1910.120(e)(4)].

18.4.6 In addition, employees, managers and supervisors covered by the HAZWOPER training requirements must receive eight hours of refresher training annually. [29 CFR 1910.120(e)(8)].

19. SAFETY RECORD

19.1 Bidders must submit an OSHA Form 300A Summary of Work-Related Injuries and Illnesses for calendar year 2018 as part of their bid submittals.

20. ENVIRONMENTAL, HEALTH, AND SAFETY REQUIREMENTS

20.1 Property Background

20.1.1 The Franklin Smelting and Refining Corporation operated a copper smelting facility on the site between 1935 and 1997. Closure of Franklin Smelting and Refining Corporation occurred in 1997 due to the presence of high concentrations of both lead and arsenic that were discovered on-site.

20.1.2 A Comprehensive Environmental Response Compensation and Liability Act (CERCLA) removal response action was conducted by the Environmental Protection Agency (EPA) at the former Franklin Smelting site between 1998 and 2000. The EPA removal response action included, among other activities: off-site shipment of copper-bearing feedstock materials, drummed flue dusts, circuit scrap, and metallurgic materials for recycling; excavation and off-site disposal of contaminated soils; transportation and off-site disposal of bagged zinc-oxide and contaminated wood and debris; transportation and off-site disposal of PCB-containing oils and transformer carcasses; and surficial decontamination of buildings and equipment by vacuuming dusts and pressure washing. The interior floor of the on-site building was sealed with concrete after the surficial decontamination, removal, and disposal activities were completed. Additionally, clean fill and crushed stone was placed at a site-wide depth of 3 feet below grade to the surface of the property surrounding the on-site building. The former Franklin Smelting site is currently classified by the EPA as inactive.

20.1.3 The Company purchased the property in 2005 following the EPA removal action at the site.

20.2 Handling and Management of Impacted Soils

20.2.1 As noted above, soils on the former Franklin Smelting Property were known to have been impacted by historic smelting operations on the property. The Company's Chemical Services Department collected soil samples to determine whether soils in locations to be excavated as part of the scope of work of the demolition project were impacted with contaminants at concentrations exceeding

Pennsylvania Department of Environmental Protection (PADEP) Non-Residential Statewide Health Standards.

20.2.2 In order to determine soil conditions in the vicinity of proposed fence post installations at the northeast, southeast, and southwest corners of the Main Building on the former Franklin Smelting Property, the Company's Chemical Services personnel collected soil samples in these areas on November 14, 2018. A total of three (3) samples were collected the 0-6" depth interval from three (3) sample points. A report documenting the sample locations, sample depths, sample collection methods, and results is included in Attachment A.

20.2.3 The surface soil samples collected from the 0-6" depth interval were submitted to ALS Environmental, Inc. (ALS) for analysis for Target Contaminant List (TCL) semi-volatile organic compounds (SVOCs) and Target Analyte List (TAL) metals. The results of the soil analyses are included in the report included in Attachment A.

20.2.4 Based upon a review of the soil sample results, lead and cadmium were detected in soils within the proposed area of soil excavation/disturbance at concentrations exceeding the PADEP Non-Residential Direct Contact Medium Specific Concentrations (MSCs). As a result, there is a potential for worker exposure to concentrations of these contaminants that could pose a health risk when soil is disturbed in this area. The Contractor shall assume that the soils in the area of the natural gas main to be abandoned as part of the scope of work of this project are also impacted with lead and cadmium concentrations exceeding the PADEP Non-Residential Direct Contact MSCs.

20.2.5 The Contractor is responsible for ensuring the health and safety of their employees during the completion of the scope of work, including excavation of any impacted soils. The Contractor must develop and implement a Health and Safety Plan (HASP) that conforms to 29 CFR 1910.120. The Contractor must provide appropriate personal protective equipment (PPE), respiratory protection, and air monitoring, as needed, to protect their employees from exposure to contaminants in the soil during the course of the project. The Contractor is responsible for compliance with all Federal, State and Local laws and regulations relating to the health and safety of their employees as well as the excavation and handling of impacted soil.

20.2.6 The Company will provide a roll-off container with a rain cover to contain all impacted soils excavated by the Contractor as part of the scope of work. The Contractor is responsible for covering the roll-off container at the end of each work day and for ensuring that only impacted soils are placed in the container. Upon completion of the excavation, the Company will characterize and dispose of the impacted soil. The contractor will NOT be responsible for disposal of impacted soil.

20.3 Handling and Management of Slag Materials

20.3.1 Based upon previous analysis of slag materials found within structures and/or staged on the ground surface at the Franklin Smelting property, the Company expects slag materials to be regulated as hazardous waste due to the concentration of heavy metals, specifically lead and cadmium, found within these materials.

20.3.2 Any residual slag materials present within structures on the property, including the rotary furnace within the Main Building as well as the three (3) rotary furnaces located in the northeast quadrant of the building, must be removed by the Contractor prior to demolition or removal of this equipment.

20.3.3 The Company will provide a roll-off container with a rain cover to contain all slag materials removed by the Contractor as part of the scope of work. The Contractor is responsible for covering the roll-off container at the end of each work day and for ensuring that only slag materials are placed within the container. Upon completion of the excavation, the Company will characterize and dispose of the slag materials. The contractor will NOT be responsible for disposal of slag materials.

20.4 Handling and Management of Lead-Containing Building Materials

20.4.1 As noted above, the EPA completed surficial decontamination of buildings and equipment at the Franklin Smelting Property between 1998 and 2000 by vacuuming dusts and pressure washing building surfaces. However, residual lead dusts may remain on building surfaces. The Company contracted with USA Environmental Management, Inc. (USAEMI) to collect lead dust samples and lead air samples within the Main Building on May 31, 2017. A report documenting the sample locations, sample collection methods, analytical methods, and results is included in Attachment B. The lead dust wipe samples showed detectable levels of lead dust in all locations sampled; the lead dust

concentrations ranged from 15 micrograms per square foot (µg/ft^2) to 660 µg/ft^2. The air monitoring results showed no detectable levels of lead in the air. The results of all air samples were less than 30 micrograms per cubic meter (µg/m^3) of air, which is the OSHA Action Level for employee lead exposure. NOTE: The air samples were collected under static conditions with no disturbance of lead dust coated materials. The Contractor is responsible for assessing all structures and industrial equipment slated for removal/demolition for any remaining hazards and residual contamination. The Contractor shall properly mitigate any remaining hazards and cleanup any residual contamination as needed to safely remove/demolish and off-site transport the materials and equipment.

20.4.2 The Company Chemical Services completed an inspection of the painted surfaces associated with the Main Building, Northwest Building, and other structures located on the property to identify lead-containing paint (LCP) on August 10th, 2018. Analysis of the samples collected as part of this survey determined that the majority of painted surfaces on the property contain lead at concentrations ranging from 0.02 milligrams per square centimeter (mg/cm^2) to 0.90 mg/cm^2. A report documenting the sample locations, sample collection methods, analytical methods, and results is included in Attachment C.

20.4.3 Compliance with the Lead in Construction Standard

20.4.3.1 Based upon the results of the lead wipe testing completed by USAEMI and the LCP survey completed by the Company Chemical Services, the Contractor shall assume that all painted surfaces on the site contain lead.

20.4.3.2 The Contractor is responsible for ensuring the health and safety of their workers in accordance with the OSHA Lead in Construction Standard as per 29 CFR 1926.62. In order to demonstrate compliance with this standard, the Company requires that the Contractor provide a copy of their Lead Compliance Program, consisting of the following minimum requirements:

A) A copy of the Contractor's Respiratory Protection Program, including records of training and fit testing.

B) A description of specific means employed to achieve compliance, including engineering, administrative, and work practice controls.

C) A copy of the Contractor's personal protective equipment selection criteria.

D) Records of lead hazard training as required by the OSHA Lead in Construction Standard.

E) A copy of the Contractor's Lead Exposure Assessment protocol.

20.4.3.3 Typical activities that would result in disturbance of LCP, include, but are not limited to:

A) Manual surface preparation (e.g. sanding, scraping)

B) Surface preparation involving other than manual methods (e.g. chemical strippers or abrasive removal)

C) Complete paint removal to the substrate

D) Any activities that break up or disturb the substrate to which the LCP is adhered

E) Burning and torch cutting

20.4.3.4 In addition to the above requirements, the Contractor must utilize dust suppression and control work practices or systems to ensure compliance with the National Emission Standards on Hazardous Air Pollutants per 40 CFR Part 61.

20.4.4 The Contractor must properly containerize lead-containing paint waste and properly recycle any lead paint coated metal as specified below.

20.4.4.1 In the event that the Contractor must remove LCP prior to performing work or in the event that the Contractor generates waste impacted with LCP during the work, the LCP-containing waste material must be placed into suitable (DOT approved) containers, which are to be sealed, secured, and labeled at the end of each work day. The Contractor is responsible for labeling waste containers as follows: "Waste Lead Containing Debris." The Company will supply the drums or containers to store the lead containing debris; no other trash or waste that is not impacted with lead is to be placed in the containers provided by the Company for storage of lead-containing wastes. The Contractor must turn the waste containers over to the Company once they are full or at the conclusion of the project. The Company will characterize and dispose of the waste material in accordance with local, state, and federal regulations.

20.4.4.2 Scrap metal coated with LCP can be treated in the same manner as uncoated scrap metal provided that is transported to a facility for recycling. The Contractor must provide a certificate of recycling for all scrap metal that is recycled as part of this project.

20.4.5 All painted cinderblock, including the cinderblock walls of the Northwest Building, must be presumed to be coated with LCP. As a result, painted cinderblock demolished as part of the scope of work is NOT eligible for recycling and must be disposed at an appropriate waste landfill that can accept painted cinderblock. Bidders may presume the painted cinderblock to be non-hazardous. The Company can sample the cinderblock and provide Toxicity Characteristic Leaching Protocol (TCLP) analysis for lead to verify that the cinderblock waste stream is non-hazardous as needed. The Contractor is responsible for removal and off-site disposal of cinderblock demolished as part of the scope of work. Certificates of disposal must be provided for all waste cinderblock material shipped offsite.

20.5 Handling and Management of Asbestos-Containing Materials

20.5.1 A City of Philadelphia licensed asbestos investigator with the Company Chemical Services completed asbestos survey of the structures located on the property on August 10th, 2018 and November 14th, 2018. Eleven (11) different types of asbestos-containing materials (ACM) were identified on the property as part of this survey. A report documenting the results of the ACM inspection is included in Attachment D. The Contractor WILL NOT be expected to perform asbestos abatement as part of this scope of work. The Company contracted with an appropriately trained and licensed asbestos abatement company to abate the asbestos-containing building materials identified in the Northwest Building as noted in the inspection report included in Attachment D in accordance with the Philadelphia Asbestos Control Regulations (ACR) and the Occupational Health and Safety Administration (OSHA) Asbestos Standard (29 CFR 1926.1101). The asbestos-containing building materials within the Northwest Building were removed in March 2019, with the exception of gaskets associated with piping within the building. The Company will provide a completed Asbestos Inspection Report (AIR) Form to the Contractor as this form will be required to obtain a demolition permit.

20.5.2 Based upon the results of the asbestos survey, the Contractor must treat all gaskets associated with piping in the Northwest Building; gaskets associated with tanks, conveyor belts, and other structures within the Main Building; and gaskets associated with baghouses, exhaust stacks, and other structures located throughout the property to be ACM. In addition, the two (2) fire doors within the Main Building shall be presumed to contain ACM. The removal of the ACM gaskets throughout the property and fire doors within the Main Building will be conducted in conjunction with the demolition work. The Contractor will be responsible for cutting the metal structures on either side of the gaskets to remove the ACM gaskets intact along with the adhered metal structure. The Contractor shall place the removed asbestos-containing gasket and adhered metal structure into asbestos-containing waste dumpsters to be provided by the Company. The Contractor shall also remove the fire doors within the Main Building intact and place them in the asbestos-containing waste dumpsters. Because the asbestos-containing gaskets and fire doors will be removed intact, asbestos training or licenses are not required for the Contractor to complete these tasks. The Contractor is responsible for securing the asbestos-waste dumpster at the end of each work day and for ensuring that only asbestos-containing wastes are placed within the container. Upon completion of the removal of asbestos-containing gaskets and fire doors, the Company will dispose of the asbestos-containing waste materials. The Contractor is NOT responsible for disposal of asbestos-containing wastes. The Company will have personnel familiar with the location of the asbestos-containing materials and/or a City of Philadelphia licensed Asbestos Project Inspector (API) onsite to aid the Contractor in identifying ACM gaskets and fire doors. The API may also conduct perimeter air monitoring during the course of the gasket and fire door removal work.

20.6 Transformer Oil

20.6.1 Two (2) transformers are located adjacent to the south of the Northwest Building on the site; the transformers are identified by serial number, including S/N TAT1711-01 and S/N 78E710111. The Company Chemical Services sampled the transformer oil present within these transformers on November 14, 2018. The samples were submitted to ALS Environmental for analysis for PCBs. The transformer oil in both transformers was determined to be non-detect for PCBs. The laboratory analytical report documenting the PCB analysis is included in Attachment E.

20.6.2 The Contractor is responsible for draining the oil from the transformers into 55-gallon DOT drums supplied by the Contractor. The maximum transformer oil capacity for each transformer is identified as 125 gallons. Once the oil is emptied from the transformers, the Contractor is responsible for removal and recycling of the transformers. The Contractor shall label the 55-gallon drums of transformer oil as Non-Hazardous Transformer Oil and place them onsite on secondary containment to be supplied by the Company. The Company will dispose of the drums of transformer oil. The Contractor is NOT responsible for disposal of the transformer oil.

Appendix A: Fence details along east side.

Appendix B: Fence details for the fence supported by the building foundation.

Appendix C: Attachments A, B, C, D and E.

Appendix D: Railroad Requirements.

Appendix F: Picture Showing Location of Buildings.

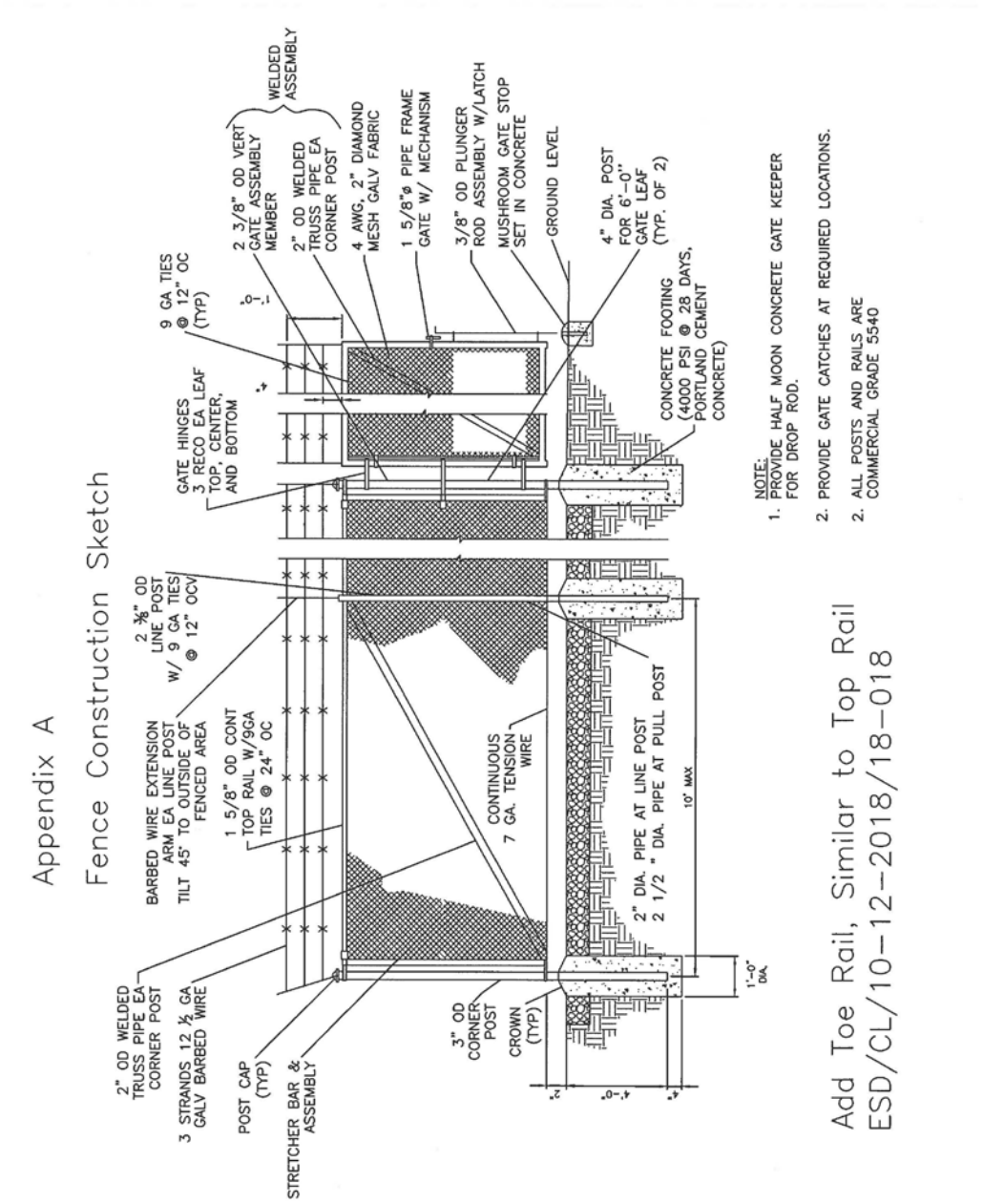
Appendix G: Erosion and Sediment Control Plan

EXHIBIT 2

Exhibit 2 - Bid Sheet - Demo 3030

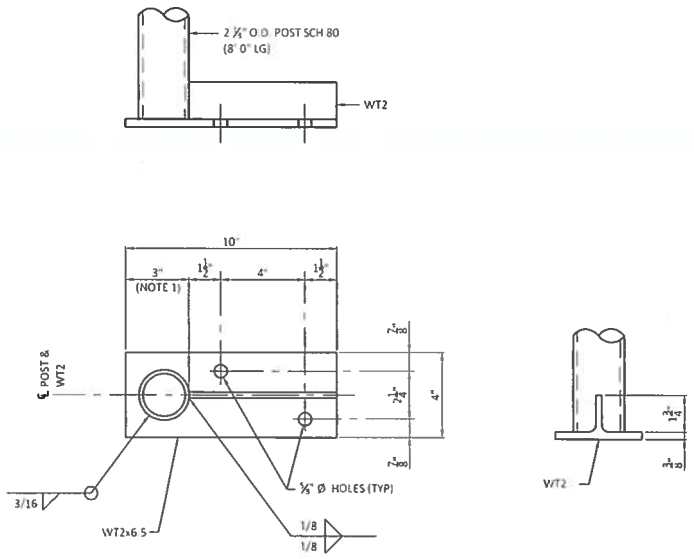
Remove Building A	
Remove 4 Rotary Furnaces	
Permanent Fence Work	
All other Work	
Total Sum of all the Work	
Deduct for Salvage Value of the Scrap Material	
Cost of Bonds for all the Work	
Overall Lump Sum for all the Work	

Appendices to Exhibit 1:

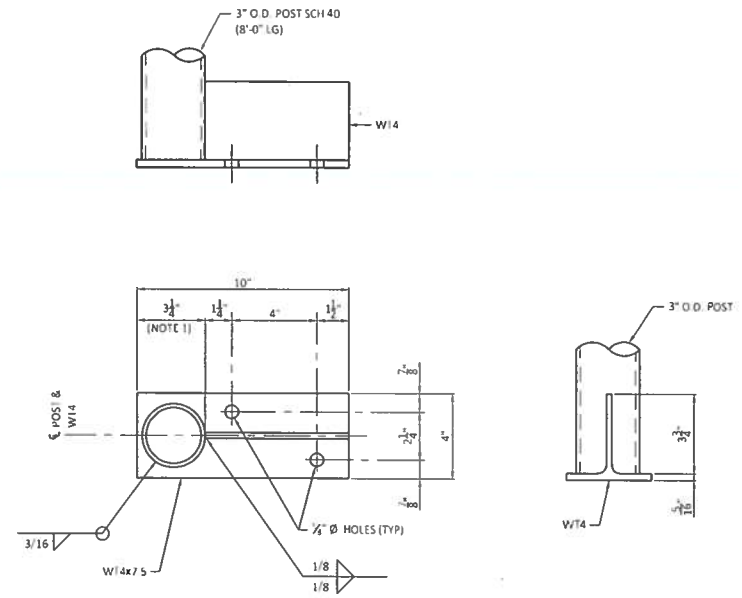


Appendix B

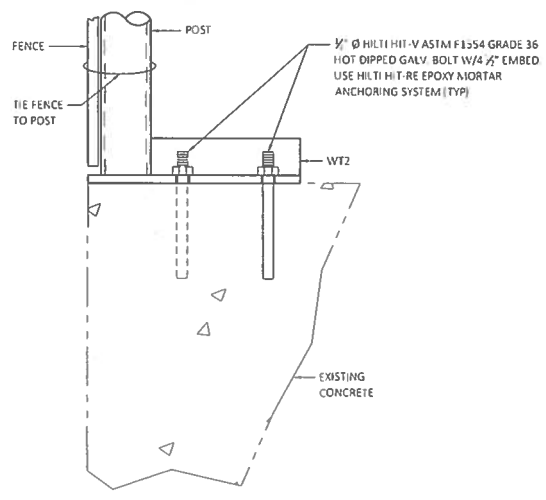
DRAWING NUMBER: SKETCH 001 | REV. A



LINE POST BASE PLATE DETAIL
SCALE: 3"=1'-0"



CORNER & TERMINATION POST
BASE PLATE DETAIL
SCALE: 3"=1'-0"



BASE PLATE ANCHORING DETAIL
SCALE: 3"=1'-0"

NOTES:

1. CUT & REMOVE WEB OF WT2 OR WT4. GRIND AREA ON FLANGE SMOOTH & FLAT PRIOR TO WELDING.
2. LINE POSTS SHALL BE ASTM A36 SCH 80 STEEL PIPE. CORNER/TERMINATION POSTS SHALL BE ASTM A36 SCH 40 STEEL PIPE.
3. BASE PLATE AND POST TO BE HOT DIP GALVANIZED AFTER FABRICATION PER ASTM A123.
4. WELDS SHALL MEET THE REQUIREMENTS OF AWS E70XX.

Appendix B
Demo 3030
8-1-2019

REV.	DATE	REVISION DESCRIPTION	DRWN	CHKD	APPD

PHILADELPHIA GAS WORKS
Chain-link Fence Anchoring System
STRUCTURAL
FENCE POST
SECTIONS & DETAILS

IMPERIA ENGINEERING PARTNERS

PROJECT NO. 18-0206

DRWN: MS
CHKD: KA
SCALE: AS NOTED

APPROVED TMS

DRAWING NUMBER: SKETCH 001

REV. A

Appendix C

CHEMICAL SERVICES & ENVIRONMENTAL COMPLIANCE SAMPLE ANALYTICAL REPORT

Site: PGW Former Franklin Smelting Property
3030 East Castor Avenue
Philadelphia, PA 19134

Sample Date(s): 11/14/2018

Purpose of Sampling: Determine whether contaminants of concern are present in soil at concentrations exceeding Pennsylvania Department of Environmental Protection (PADEP) Non-Residential Statewide Health Standards so that appropriate soil handling protocols, personal protective equipment (PPE), and sanitation practices are utilized when the soil is disturbed.

Project: Excavation of soil for installation of fence post supports after building demolition; the excavations required for the fence post supports will be approximately 3 feet deep.

Sampler(s): Amy Brown, Staff Chemist II; Larry Gould, Plant Chemist; and Jeff Ham, Manager of Chemical Services.

Report Prepared by: Jeff Ham, Manager of Chemical Services

Report Date: 01/24/2019

SAMPLING DESCRIPTION

In order to determine soil conditions in the vicinity of proposed fence post installations at the northeast, southeast, and southwest corners of the main building on the Former Franklin Smelting Property, PGW Chemical Services personnel collected soil samples in these areas on November 14th, 2018. A total of three (3) samples were collected the 0-6" depth interval from three (3) sample points. The approximate sample locations are depicted in the Sample Location Plan included in Attachment A. The samples were collected using decontaminated shovels and decontaminated stainless steel sampling trowels.

The surface soil samples collected from the 0-6" depth interval were submitted to ALS Environmental, Inc. (ALS) for analysis for Target Contaminant List (TCL) semi-volatile organic compounds (SVOCs) and Target Analyte List (TAL) metals. The results of the soil analyses are summarized and compared to PADEP Non-Residential Statewide Health Standards in the table included in Attachment B. Complete laboratory analytical results are included in Attachment C.

SUMMARY OF SAMPLE RESULTS AND APPLICABLE REQUIREMENTS

Sample Name	**11142018-01**	**11142018-02**	**11142018-03**
Sample Location	Northeast corner of main building as depicted in Attachment A.	Southeast corner of main building as depicted in Attachment A.	Southwest corner of main building as depicted in Attachment A.
Sample Depth	0-6” below grade	0-6” below grade	0-6” below grade
Soil Sample Results Exceed PADEP Non-Residential Direct Contact Medium Specific Concentrations	**Yes**	**Yes**	**Yes**
Soil Sample Results Exceed PADEP Non-Residential Soil-to-Groundwater Medium Specific Concentrations	**Yes**	**Yes**	**Yes**
Plans/Precautions Applicable to this Project	Standard excavation safety and PPE applies to all projects. If checked, the following additional requirements apply: ☒ Job Hazard Analysis (including additional PPE as specified) ☒ Soil Management Plan (including offsite disposal of soil) ☐ Dewatering Plan		

Notes
- mg/kg: milligrams per kilogram
- ppm: parts per million

Definitions
Dewatering Plan – A written plan that identifies appropriate precautions and procedures for dewatering of excavations in a regulatory compliant manner if groundwater is present.

Job Hazard Analysis (JHA) – A written plan that identifies the contaminants of concern; provides a hazard assessment; establishes appropriate engineering controls, work practices, and personal protective equipment; identifies an air monitoring plan; and outlines work zone controls and decontamination procedures for work at locations where environmental contaminants have been identified in an environmental media (soils or groundwater) above risk-based screening levels.

PADEP Non-Residential Direct Contact Medium Specific Concentrations (MSCs) – The maximum concentrations of contaminants in soil that a worker can be directly exposed to without significant increased risk of adverse health effects as determined by the PADEP.

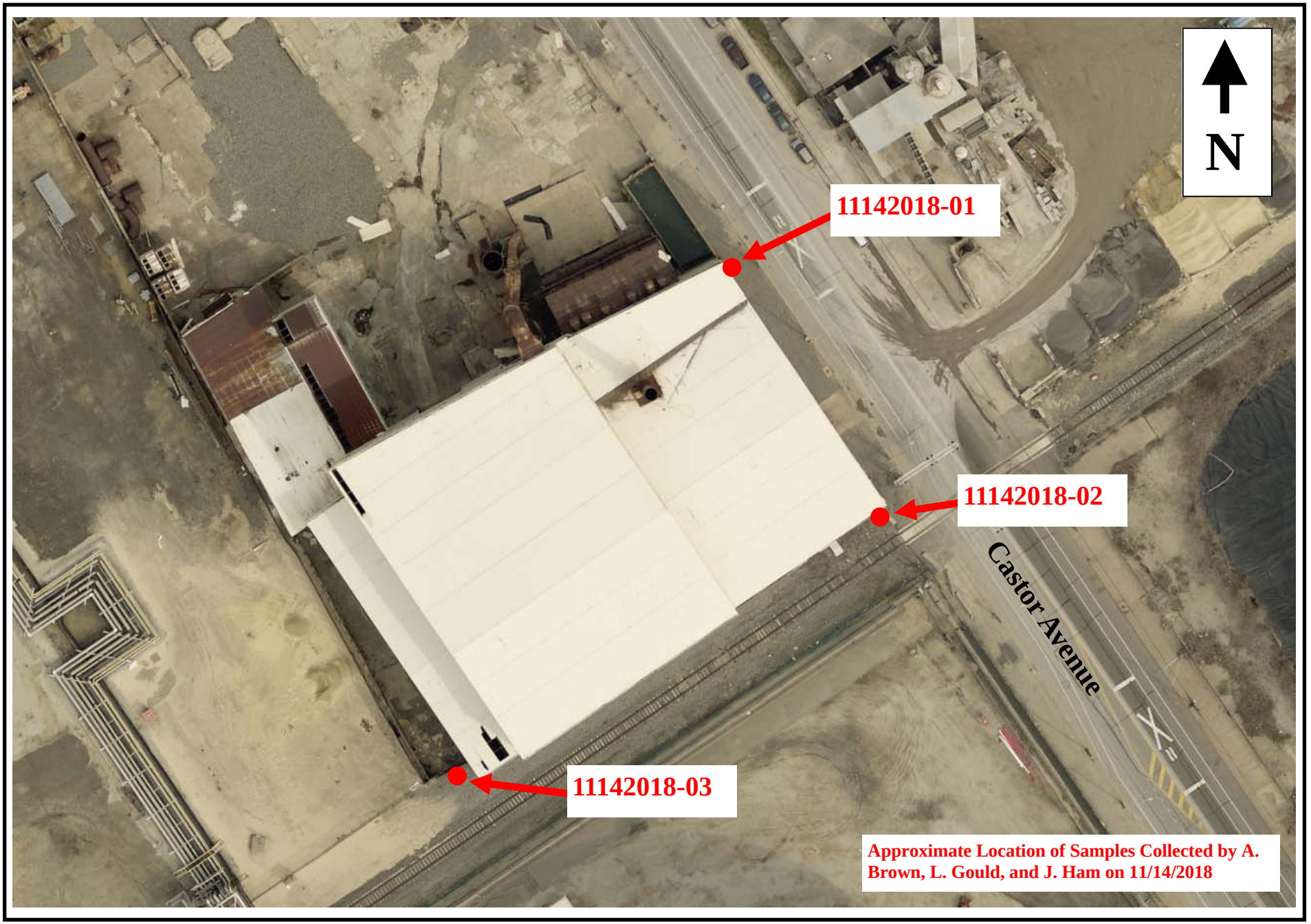
PADEP Non-Residential Soil-to-Groundwater MSCs – The maximum concentrations of contaminates present in soil that are not expected to result in excessive contamination of groundwater as determined by PADEP.

Soil Management Plan – A written plan that identifies appropriate soil handling and storage practices, soil characterization requirements, and soil disposal requirements. The soil management plan may be incorporated into the JHA.

ATTACHMENT A

SAMPLE LOCATION PLAN

Former Franklin Smelting Soil Sample Location Plan



ATTACHMENT B

SAMPLE ANALYTICAL RESULTS SUMMARY TABLE(S)

Table 1 - Laboratory Soil Sample Analytical Data
Former Franklin Smelting
Richmond Plant
3100 E. Venango Street
Philadelphia, PA 19134

			PADEP Non-Residential Statewide Health Standards		11142018-01			11142018-02			11142018-03		
CLIENT ID:					11142018-01			11142018-02			11142018-03		
LAB ID:					3000905003			3000905004			3000905005		
COLLECTION DATE:					11/14/2018			11/14/2018			11/14/2018		
SAMPLE MATRIX:					Soil			Soil			Soil		
SAMPLE DEPTH:					0-6" bgs			0-6" bgs			0-6" bgs		
SAMPLE UNITS:					mg/kg			mg/kg			mg/kg		
TEST CODE	*ANALYTE*	*CAS NUMBER*	*Direct Contact MSC 0-2 ft (MG/KG)*	*Soil-to-Groundwater MSC TDS <=2,500 (MG/KG)*	Result	Flag	RDL	Result	Flag	RDL	Result	Flag	RDL
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs)													
8270TCL46	ACENAPHTHENE	83-32-9	190,000	4,700	ND	U	0.0598	0.166		0.0552	ND	U	0.0548
8270TCL46	ACENAPHTHYLENE	208-96-8	190,000	8,000	0.104		0.0598	1.56		0.0552	0.101		0.0548
8270TCL46	ACETOPHENONE	98-86-2	10,000	1,200	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	ANTHRACENE	120-12-7	190,000	350	0.0668		0.0598	1.24		0.0552	ND	U	0.0548
8270TCL46	ATRAZINE	1912-24-9	400	0.3	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	BENZO[A]ANTHRACENE	56-55-3	130.0	430.0	0.253		0.0598	3.01		0.0552	0.181		0.0548
8270TCL46	BENZO[A]PYRENE	50-32-8	12.00	46.00	0.3		0.0598	2.72		0.0552	0.211		0.0548
8270TCL46	BENZO[B]FLUORANTHENE	205-99-2	76.0	170.0	0.555		0.0598	2.5		0.0552	0.214		0.0548
8270TCL46	BENZO[GHI]PERYLENE	191-24-2	190,000	180	0.286		0.0598	2.18		0.0552	0.197		0.0548
8270TCL46	BENZO[K]FLUORANTHENE	207-08-9	76	610	0.57		0.0598	2.68		0.0552	0.193		0.0548
8270TCL46	BIPHENYL, 1,1-	92-52-4	11,000	190	ND	U	0.12	0.118		0.11	ND	U	0.11
8270TCL46	BIS(2-CHLOROETHOXY)METHANE	111-91-1	9,600	35	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	BIS(2-CHLOROETHYL)ETHER	111-44-4	6.7	0.076	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	BIS(2-CHLORO-ISOPROPYL)ETHER	108-60-1	220	30	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	BIS[2-ETHYLHEXYL] PHTHALATE	117-81-7	6,500	130	0.125		0.12	0.157		0.11	ND	U	0.11
8270TCL46	BUTYLBENZYL PHTHALATE	85-68-7	10,000	10,000	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	CARBAZOLE	86-74-8	4,600	110	ND	U	0.12	0.359		0.11	ND	U	0.11
8270TCL46	CHLOROANILINE, P-	106-47-8	460	2.1	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	CHLORONAPHTHALENE, 2-	91-58-7	190,000	20,000	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	CHLOROPHENOL, 2-	95-57-8	10,000	4.4	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	CHRYSENE	218-01-9	760	230	0.393		0.0598	3.21		0.0552	0.224		0.0548
8270TCL46	CRESOL, 4,6-DINITRO-O-	534-52-1	260	0.93	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	CRESOL, O- (2-METHYLPHENOL)	95-48-7	160,000	580	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	CRESOL, P-CHLORO-M-	59-50-7	190,000	2,500	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	DIBENZO[A,H]ANTHRACENE	53-70-3	22	270	0.0796		0.0598	0.499		0.0552	ND	U	0.0548
8270TCL46	DIBENZOFURAN	132-64-9	3200	310	ND	U	0.12	0.244		0.11	ND	U	0.11
8270TCL46	DIBUTYL PHTHALATE, N-	84-74-2	10,000	4,900	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	DICHLOROBENZIDINE, 3,3'-	91-94-1	200	42	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	DICHLOROPHENOL, 2,4-	120-83-2	9,600	2	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	DIETHYL PHTHALATE	84-66-2	10,000	9,300	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	DIMETHYLPHENOL, 2,4-	105-67-9	10,000	230	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	DINITROPHENOL, 2,4-	51-28-5	6,400	23	ND	U	0.479	ND	U	0.441	ND	U	0.438
8270TCL46	DINITROTOLUENE, 2,4-	121-14-2	290	1.1	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	DINITROTOLUENE, 2,6- (2,6-DNT)	606-20-2	61	0.23	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	DIOXANE, 1,4-	123-91-1	290	3.2	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	FLUORANTHENE	206-44-0	130,000	3,200	0.578		0.0598	5.01		0.0552	0.306		0.0548
8270TCL46	FLUORENE	86-73-7	130,000	3,800	ND	U	0.0598	0.333		0.0552	ND	U	0.0548
8270TCL46	HEXACHLOROBENZENE	118-74-1	57	0.96	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	HEXACHLOROBUTADIENE	87-68-3	1200	52	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	HEXACHLOROCYCLOPENTADIENE	77-47-4	10,000	91	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	HEXACHLOROETHANE	67-72-1	220	0.56	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	INDENO[1,2,3-CD]PYRENE	193-39-5	76.0	22,000	0.281		0.0598	1.96		0.0552	0.165		0.0548
8270TCL46	ISOPHORONE	78-59-1	10,000	10	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	METHYLNAPHTHALENE, 2-	91-57-6	13,000	1,900	ND	U	0.12	0.631		0.11	ND	U	0.11
8270TCL46	NAPHTHALENE	91-20-3	760	25	ND	U	0.0598	0.832		0.0552	ND	U	0.0548
8270TCL46	NITROANILINE, M-	99-09-2	NS	NS	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	NITROANILINE, O-	88-74-4	32,000	120	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	NITROANILINE, P-	100-01-6	4,600	17	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	NITROBENZENE	98-95-3	6,400	23	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	NITROPHENOL, 2-	88-75-5	26,000	93	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	NITROPHENOL, 4-	100-02-7	26,000	6	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	NITROSODI-N-PROPYLAMINE, N-	621-64-7	13	0.049	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	NITROSODIPHENYLAMINE, N-	86-30-6	19,000	110	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	OCTYL PHTHALATE, DI-N-	117-84-0	10,000	10,000	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	PENTACHLOROPHENOL	87-86-5	230	5	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	PHENANTHRENE	85-01-8	190,000	10,000	0.253		0.0598	3.37		0.0552	0.128		0.0548
8270TCL46	PHENOL	108-95-2	16,000	200	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	PYRENE	129-00-0	96,000	2,200	0.495		0.0598	4.84		0.0552	0.323		0.0548
8270TCL46	TETRACHLOROBENZENE, 1,2,4,5-	95-94-3	960	16	ND	U	0.12	ND	U	0.11	ND	U	0.11
8270TCL46	TETRACHLOROPHENOL, 2,3,4,6-	58-90-2	96,000	5,500	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	TRICHLOROPHENOL, 2,4,5-	95-95-4	190,000	7,300	ND	U	0.239	ND	U	0.221	ND	U	0.219
8270TCL46	TRICHLOROPHENOL, 2,4,6-	88-06-2	3,200	34	ND	U	0.239	ND	U	0.221	ND	U	0.219
METALS													
6010/3051	ALUMINUM	7429-90-5	190,000	NS	12500		118	8920		1100	7860		466
6010/3051	**ANTIMONY**	**7440-36-0**	**1,300**	**27**	**259**		**23.6**	ND	U	220	ND	U	93.2
6010/3051	ARSENIC	7440-38-2	61	29	ND	U	23.6	ND	U	220	ND	U	93.2
6010/3051	BARIUM AND COMPOUNDS	7440-39-3	190,000	8,200	94.3		11.8	434		110	103		46.6
6010/3051	BERYLLIUM	7440-41-7	11	320	ND	U	11.8	ND	U	110	ND	U	46.6
6010/3051	**CADMIUM**	**7440-43-9**	**6**	**38**	18		5.9	ND	U	54.9	30.3		23.3
6010/3051	CHROMIUM (TOTAL)	7440-47-3	190,000 (III)/220 (VI)	190,000 (III)/190 (VI)	107		11.8	ND	U	110	ND	U	46.6
6010/3051	COBALT	7440-48-4	960	160	15.2		11.8	ND	U	110	ND	U	46.6
6010/3051	COPPER	7440-50-8	120,000	43,000	4040		23.6	10400		220	2610		93.2
6010/3051	IRON	7439-89-6	190,000	NS	69700		118	34500		1100	17400		466
6010/3051	**LEAD**	**7439-92-1**	**1,000**	**450**	**2380**		**23.6**	**2050**		**220**	**956**		**93.2**
6010/3051	MANGANESE	7439-96-5	150,000	2,000	598		11.8	899		110	269		46.6
7471HGS	MERCURY	7439-97-6	510	10	0.69		0.054	0.51		0.05	ND	U	0.055
6010/3051	NICKEL	7440-02-0	64,000	650	174		23.6	ND	U	220	109		93.2
6010/3051	SELENIUM	7782-49-2	16,000	26	ND	U	59.1	ND	U	549	ND	U	233
6010/3051	SILVER	7440-22-4	16,000	84	ND	U	5.9	ND	U	54.9	ND	U	23.3
6010/3051	THALLIUM	7440-28-0	32	14	ND	U	35.4	ND	U	329	ND	U	140
6010/3051	VANADIUM	7440-62-2	220	820	65.1		11.8	ND	U	110	ND	U	46.6
6010/3051	**ZINC**	**7440-66-6**	**190,000**	**12,000**	6750		23.6	**12500**		**220**	2840		93.2

Legend
Bolded Results: Analyte concentration exceeds PADEP Soil-to-Groundwater MSC.
Red Highlighting: Analyte concentration exceeds PADEP Direct Contact MSC.
Gray Highlighting and Bolded Font: Identifies analyte for which results exceed either the PADEP Direct Contact MSC or Soil-to-Groundwater MSC.

Notes
- PADEP Non-Residential Statewide Health Standards obtained from 25 PA Code Chapter 250 Appendix A updated on August 27th, 2016.
- For the purposes of evaluating health and safety during excavation or other disturbance of soils, the soil sample analytical results were compared only to the Direct Contact MSCs for the 0-2' depth interval.
- In order to determine the Soil-to-Groundwater MSC, the 100 X GW MSC and the Generic Value were compared for each compound and the higher of the two was chosen as the Soil-to-Groundwater MSC per 25 PA Code Chapter 250.308.

Abbreviations
- bgs: below ground surface
- CAS: Chemical Abstract Number
- I: Indicates erported value is greater than or equal to the MDL but less than the RDL
- J: Indicates an estimated value between the MDL and PQL
- MDL: Method Detection Limit
- mg/kg: milligrams per kilogram
- mg/L: milligrams per liter
- MSC: Medium Specific Concentration
- NA: Sample not analyzed for the analyte listed
- ND: Sample not detected at the RDL
- NS: No standard available for the listed analyte
- PADEP: Pennsylvania Department of Environmental Protection
- PQL: Practical Quantitation Limit
- RDL: Reporting Detection Limit
- TCLP: Toxicity Characteristic Leaching Procedure
- TDS: Total Dissolved Solids

ATTACHMENT C

LABORATORY ANALYTICAL REPORT(S)

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

December 3, 2018

Mr. Jeffrey Ham
Philadelphia Gas Works (PGW)
3100 West Passyunk Avenue
Philadelphia, PA 19145

Certificate of Analysis

Project Name:	**Soils**	Workorder:	**3000905**
Purchase Order:		Workorder ID:	**Franklin Smelting**

Dear Mr. Ham:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 16, 2018.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Amy Brown , Mr. Eric Hendrickson , Jobi Cherian , Mr. Kevin Grooms , Mr. Larry Gould , Ms. Jessica Mason , Mr. Dan McKenna , Mr. Chin So

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

ALS Environmental

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SAMPLE SUMMARY

Workorder: 3000905 Franklin Smelting

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3000905001	TAT1711-01	Oil/Other	11/14/2018 10:55	11/16/2018 20:47	Collected by Client
3000905002	78E710111	Oil/Other	11/14/2018 11:25	11/16/2018 20:47	Collected by Client
3000905003	11142018-01	Solid	11/14/2018 13:20	11/16/2018 20:47	Collected by Client
3000905004	11142018-02	Solid	11/14/2018 13:30	11/16/2018 20:47	Collected by Client
3000905005	11142018-03	Solid	11/14/2018 13:40	11/16/2018 20:47	Collected by Client

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SAMPLE SUMMARY

Workorder: 3000905 Franklin Smelting

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905001** Date Collected: 11/14/2018 10:55 Matrix: Oil/Other

Sample ID: **TAT1711-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	8.6	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1016	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1221	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1232	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1242	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1248	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1254	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1260	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1262	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1268	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	98.4		%	64 - 150	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Tetrachloro-m-xylene (S)	90.5		%	74 - 152	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A

Vanessa N. Badman

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905002** Date Collected: 11/14/2018 11:25 Matrix: Oil/Other

Sample ID: **78E710111** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	8.6	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1016	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1221	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1232	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1242	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1248	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1254	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1260	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1262	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1268	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	96.2		%	64 - 150	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Tetrachloro-m-xylene (S)	87.4		%	74 - 152	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
SEMIVOLATILES										
Acenaphthene	ND	59	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Acenaphthylene	104	56	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Acetophenone	ND	14	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Anthracene	66.8	85,86	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Atrazine	ND	80,81	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzaldehyde	ND		ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(a)anthracene	253	96,97	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(a)pyrene	300	104,105	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(b)fluoranthene	555	101	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(g,h,i)perylene	286	110,111	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(k)fluoranthene	570	102,103	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Biphenyl	ND	46,47,48	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Bromophenyl-phenylether	ND	77	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Butylbenzylphthalate	ND	93	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Caprolactam	ND		ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Carbazole	ND	87,88	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chloro-3-methylphenol	ND	34,35	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chloroaniline	ND	31,32	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroethoxy)methane	ND	27	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroethyl)ether	ND	9	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Chloronaphthalene	ND	49	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Chlorophenol	ND	10,11	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chlorophenyl-phenylether	ND	70	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Chrysene	393	98,99	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
mp-Cresol	ND	17,18	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
o-Cresol	ND	12,13	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Di-n-Butylphthalate	ND	89,90	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Di-n-Octylphthalate	ND		ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dibenzo(a,h)anthracene	79.6	108, 109	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dibenzofuran	ND	63	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
3,3-Dichlorobenzidine	ND	94,95	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dichlorophenol	ND	28,29	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Diethylphthalate	ND	68,69	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dimethylphenol	ND	25,26	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dimethylphthalate	ND	52,53	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dinitrophenol	ND	60,61	ug/kg	479	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dinitrotoluene	ND	64,65	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,6-Dinitrotoluene	ND	54,55	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
1,4-Dioxane	ND	5,6	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Ethylhexyl)phthalate	125	100	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Fluoranthene	578	91	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Fluorene	ND	71	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorobenzene	ND	78,79	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorobutadiene	ND	33	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorocyclopentadiene	ND	40,41	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachloroethane	ND	19,20	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Indeno(1,2,3-cd)pyrene	281	106, 107	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Isophorone	ND	22	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Methyl-4,6-dinitrophenol	ND	74,75	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Methylnaphthalene	ND	36,37	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Naphthalene	ND	30	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Nitroaniline	ND	50,51	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
3-Nitroaniline	ND	57,58	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Nitroaniline	ND	72,73	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Nitrobenzene	ND	21	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Nitrophenol	ND	23,24	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Nitrophenol	ND	62	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
N-Nitroso-di-n-propylamine	ND	15,16	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
N-Nitrosodiphenylamine	ND	76	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
n-Nonane	ND	112, 113, 114	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Pentachlorophenol	ND	82,83	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenanthrene	253	84	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenol	ND	7,8	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Pyrene	495	92	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
1,2,4,5-Tetrachlorobenzene	ND	38,39	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,3,4,6-Tetrachlorophenol	ND	66,67	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4,5-Trichlorophenol	ND	44,45	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4,6-Trichlorophenol	ND	42,43	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	32.9		%	19 - 132	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Fluorobiphenyl (S)	33.5	3	%	40 - 110	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Fluorophenol (S)	29.4		%	26 - 116	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Nitrobenzene-d5 (S)	31.3	2	%	38 - 112	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenol-d5 (S)	31.2	1	%	35 - 111	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Terphenyl-d14 (S)	33	4	%	45 - 126	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
WET CHEMISTRY										
Moisture	18.6		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	81.4		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	12500		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Antimony, Total	259		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Arsenic, Total	ND		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Barium, Total	94.3		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Beryllium, Total	ND		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Cadmium, Total	18.0		mg/kg	5.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Calcium, Total	7670		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Chromium, Total	107		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Cobalt, Total	15.2		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Copper, Total	4040		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Iron, Total	69700		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Lead, Total	2380		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Magnesium, Total	8170		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Manganese, Total	598		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Mercury, Total	0.69		mg/kg	0.054	SW846 7471B	11/27/18 07:30	MNP	11/27/18 09:56	MNP	A1
Nickel, Total	174		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Potassium, Total	1390	115	mg/kg	591	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Selenium, Total	ND		mg/kg	59.1	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Silver, Total	ND		mg/kg	5.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Sodium, Total	ND		mg/kg	591	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Thallium, Total	ND		mg/kg	35.4	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Vanadium, Total	65.1		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Zinc, Total	6750		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
SEMIVOLATILES										
Acenaphthene	166		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Acenaphthylene	1560		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Acetophenone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Anthracene	1240		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Atrazine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzaldehyde	ND	1	ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(a)anthracene	3010		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(a)pyrene	2720		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(b)fluoranthene	2500		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(g,h,i)perylene	2180		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(k)fluoranthene	2680		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Biphenyl	118		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Bromophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Butylbenzylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Caprolactam	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Carbazole	359		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chloro-3-methylphenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chloroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroethoxy)methane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroethyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Chloronaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Chlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chlorophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Chrysene	3210		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
mp-Cresol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
o-Cresol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Di-n-Butylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Di-n-Octylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dibenzo(a,h)anthracene	499		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dibenzofuran	244		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
3,3-Dichlorobenzidine	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Diethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dimethylphenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dimethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dinitrophenol	ND		ug/kg	441	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,6-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
1,4-Dioxane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Ethylhexyl)phthalate	157		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Fluoranthene	5010		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Fluorene	333		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorobutadiene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorocyclopentadiene	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachloroethane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Indeno(1,2,3-cd)pyrene	1960		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Isophorone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Methyl-4,6-dinitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Methylnaphthalene	631		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Naphthalene	832		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
3-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Nitrobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Nitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Nitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
N-Nitroso-di-n-propylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
N-Nitrosodiphenylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
n-Nonane	ND	2	ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Pentachlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenanthrene	3370		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Pyrene	4840		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,3,4,6-Tetrachlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4,5-Trichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4,6-Trichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	83.2		%	19 - 132	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Fluorobiphenyl (S)	73.3		%	40 - 110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Fluorophenol (S)	77.4		%	26 - 116	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Nitrobenzene-d5 (S)	84.5		%	38 - 112	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenol-d5 (S)	76.6		%	35 - 111	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Terphenyl-d14 (S)	76.8		%	45 - 126	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
WET CHEMISTRY										
Moisture	13.4		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	86.6		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	8920	3	mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Antimony, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Arsenic, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Barium, Total	434		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Beryllium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Cadmium, Total	ND		mg/kg	54.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Calcium, Total	11000		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Chromium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Cobalt, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Copper, Total	10400		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Iron, Total	34500		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Lead, Total	2050		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Magnesium, Total	2800		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Manganese, Total	899		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Mercury, Total	0.51		mg/kg	0.050	SW846 7471B	11/27/18 07:30	MNP	11/27/18 09:57	MNP	A1
Nickel, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Potassium, Total	ND		mg/kg	5490	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Selenium, Total	ND		mg/kg	549	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Silver, Total	ND		mg/kg	54.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Sodium, Total	ND		mg/kg	5490	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Thallium, Total	ND		mg/kg	329	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Vanadium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Zinc, Total	12500		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
SEMIVOLATILES										
Acenaphthene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Acenaphthylene	101		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Acetophenone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Anthracene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Atrazine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzaldehyde	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(a)anthracene	181		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(a)pyrene	211		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(b)fluoranthene	214		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(g,h,i)perylene	197		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(k)fluoranthene	193		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Biphenyl	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Bromophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Butylbenzylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Caprolactam	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Carbazole	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chloro-3-methylphenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chloroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroethoxy)methane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroethyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Chloronaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Chlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chlorophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Chrysene	224		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
mp-Cresol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
o-Cresol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Di-n-Butylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Di-n-Octylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dibenzo(a,h)anthracene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dibenzofuran	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
3,3-Dichlorobenzidine	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Diethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dimethylphenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dimethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dinitrophenol	ND		ug/kg	438	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,6-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
1,4-Dioxane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Ethylhexyl)phthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Fluoranthene	306		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Fluorene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorobutadiene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorocyclopentadiene	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachloroethane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Indeno(1,2,3-cd)pyrene	165		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Isophorone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Methyl-4,6-dinitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Methylnaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Naphthalene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
3-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Nitrobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Nitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Nitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
N-Nitroso-di-n-propylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
N-Nitrosodiphenylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
n-Nonane	ND	1	ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Pentachlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenanthrene	128		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Pyrene	323		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,3,4,6-Tetrachlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4,5-Trichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4,6-Trichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	100		%	19 - 132	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Fluorobiphenyl (S)	85.3		%	40 - 110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Fluorophenol (S)	90.9		%	26 - 116	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Nitrobenzene-d5 (S)	93.8		%	38 - 112	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenol-d5 (S)	89.4		%	35 - 111	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Terphenyl-d14 (S)	94.8		%	45 - 126	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
WET CHEMISTRY										
Moisture	9.3		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	90.7		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	7860	2	mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Antimony, Total	ND		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Arsenic, Total	ND		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Barium, Total	103		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Beryllium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Cadmium, Total	30.3		mg/kg	23.3	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Calcium, Total	3990		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Chromium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Cobalt, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Copper, Total	2610		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Iron, Total	17400		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Lead, Total	956		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Magnesium, Total	6840		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Manganese, Total	269		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Mercury, Total	ND		mg/kg	0.055	SW846 7471B	11/27/18 08:15	MNP	11/27/18 10:00	MNP	A1
Nickel, Total	109		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Potassium, Total	3710		mg/kg	2330	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Selenium, Total	ND		mg/kg	233	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Silver, Total	ND		mg/kg	23.3	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Sodium, Total	ND		mg/kg	2330	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Thallium, Total	ND		mg/kg	140	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Vanadium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Zinc, Total	2840		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3000905003	1	11142018-01	SW846 8270D	Phenol-d5
The surrogate Phenol-d5 for method SW846 8270D was outside of control limits. The % Recovery was reported as 31.2 and the control limits were 35 to 111. This result was reported at a dilution of 1.				
3000905003	2	11142018-01	SW846 8270D	Nitrobenzene-d5
The surrogate Nitrobenzene-d5 for method SW846 8270D was outside of control limits. The % Recovery was reported as 31.3 and the control limits were 38 to 112. This result was reported at a dilution of 1.				
3000905003	3	11142018-01	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 33.5 and the control limits were 40 to 110. This result was reported at a dilution of 1.				
3000905003	4	11142018-01	SW846 8270D	Terphenyl-d14
The surrogate Terphenyl-d14 for method SW846 8270D was outside of control limits. The % Recovery was reported as 33 and the control limits were 45 to 126. This result was reported at a dilution of 1.				
3000905003	5	11142018-01	SW846 8270D	1,4-Dioxane
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 27.2 and the control limits were 37 to 98.				
3000905003	6	11142018-01	SW846 8270D	1,4-Dioxane
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 34.8 and the control limits were 37 to 98.				
3000905003	7	11142018-01	SW846 8270D	Phenol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Phenol. The % Recovery was reported as 39.4 and the control limits were 53 to 118.				
3000905003	8	11142018-01	SW846 8270D	Phenol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Phenol. The % Recovery was reported as 51.9 and the control limits were 53 to 118.				
3000905003	9	11142018-01	SW846 8270D	bis(2-Chloroethyl)ether
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Chloroethyl)ether. The % Recovery was reported as 46.7 and the control limits were 51 to 105.				
3000905003	10	11142018-01	SW846 8270D	2-Chlorophenol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Chlorophenol. The % Recovery was reported as 40.9 and the control limits were 61 to 111.				
3000905003	11	11142018-01	SW846 8270D	2-Chlorophenol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Chlorophenol. The % Recovery was reported as 51.9 and the control limits were 61 to 111.				
3000905003	12	11142018-01	SW846 8270D	o-Cresol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte o-Cresol. The % Recovery was reported as 41.1 and the control limits were 62 to 113.				
3000905003	13	11142018-01	SW846 8270D	o-Cresol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte o-Cresol. The % Recovery was reported as 53.5 and the control limits were 62 to 113.				
3000905003	14	11142018-01	SW846 8270D	Acetophenone
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acetophenone. The % Recovery was reported as 36.7 and the control limits were 45 to 87.				

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	15	11142018-01	SW846 8270D	N-Nitroso-di-n-propylamine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte N-Nitroso-di-n-propylamine. The % Recovery was reported as 39.3 and the control limits were 55 to 109.

3000905003	16	11142018-01	SW846 8270D	N-Nitroso-di-n-propylamine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte N-Nitroso-di-n-propylamine. The % Recovery was reported as 50.7 and the control limits were 55 to 109.

3000905003	17	11142018-01	SW846 8270D	mp-Cresol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte mp-Cresol. The % Recovery was reported as 42.1 and the control limits were 60 to 112.

3000905003	18	11142018-01	SW846 8270D	mp-Cresol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte mp-Cresol. The % Recovery was reported as 55.3 and the control limits were 60 to 112.

3000905003	19	11142018-01	SW846 8270D	Hexachloroethane

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachloroethane. The % Recovery was reported as 25 and the control limits were 50 to 103.

3000905003	20	11142018-01	SW846 8270D	Hexachloroethane

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachloroethane. The % Recovery was reported as 29.7 and the control limits were 50 to 103.

3000905003	21	11142018-01	SW846 8270D	Nitrobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Nitrobenzene. The % Recovery was reported as 41.3 and the control limits were 53 to 108.

3000905003	22	11142018-01	SW846 8270D	Isophorone

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Isophorone. The % Recovery was reported as 43.2 and the control limits were 51 to 112.

3000905003	23	11142018-01	SW846 8270D	2-Nitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Nitrophenol. The % Recovery was reported as 35.4 and the control limits were 61 to 114.

3000905003	24	11142018-01	SW846 8270D	2-Nitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Nitrophenol. The % Recovery was reported as 46.1 and the control limits were 61 to 114.

3000905003	25	11142018-01	SW846 8270D	2,4-Dimethylphenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dimethylphenol. The % Recovery was reported as 44.4 and the control limits were 65 to 114.

3000905003	26	11142018-01	SW846 8270D	2,4-Dimethylphenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dimethylphenol. The % Recovery was reported as 58.4 and the control limits were 65 to 114.

3000905003	27	11142018-01	SW846 8270D	bis(2-Chloroethoxy)methane

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Chloroethoxy)methane. The % Recovery was reported as 44.6 and the control limits were 56 to 108.

3000905003	28	11142018-01	SW846 8270D	2,4-Dichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dichlorophenol. The % Recovery was reported as 43.5 and the control limits were 65 to 111.

3000905003	29	11142018-01	SW846 8270D	2,4-Dichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dichlorophenol. The % Recovery was reported as 57.1 and the control limits were 65 to 111.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	30	11142018-01	SW846 8270D	Naphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Naphthalene. The % Recovery was reported as 42.6 and the control limits were 56 to 105.

3000905003	31	11142018-01	SW846 8270D	4-Chloroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chloroaniline. The % Recovery was reported as 18.3 and the control limits were 21 to 115.

3000905003	32	11142018-01	SW846 8270D	4-Chloroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Chloroaniline. The RPD was reported as 25 and the upper control limit is 22.

3000905003	33	11142018-01	SW846 8270D	Hexachlorobutadiene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 45.4 and the control limits were 58 to 123.

3000905003	34	11142018-01	SW846 8270D	4-Chloro-3-methylphenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chloro-3-methylphenol. The % Recovery was reported as 45.3 and the control limits were 65 to 118.

3000905003	35	11142018-01	SW846 8270D	4-Chloro-3-methylphenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Chloro-3-methylphenol. The % Recovery was reported as 59.6 and the control limits were 65 to 118.

3000905003	36	11142018-01	SW846 8270D	2-Methylnaphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Methylnaphthalene. The % Recovery was reported as 43.8 and the control limits were 58 to 96.

3000905003	37	11142018-01	SW846 8270D	2-Methylnaphthalene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Methylnaphthalene. The % Recovery was reported as 56.8 and the control limits were 58 to 96.

3000905003	38	11142018-01	SW846 8270D	1,2,4,5-Tetrachlorobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 1,2,4,5-Tetrachlorobenzene. The % Recovery was reported as 42 and the control limits were 56 to 107.

3000905003	39	11142018-01	SW846 8270D	1,2,4,5-Tetrachlorobenzene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 1,2,4,5-Tetrachlorobenzene. The % Recovery was reported as 52.7 and the control limits were 56 to 107.

3000905003	40	11142018-01	SW846 8270D	Hexachlorocyclopentadiene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorocyclopentadiene. The % Recovery was reported as 0 and the control limits were 33 to 109.

3000905003	41	11142018-01	SW846 8270D	Hexachlorocyclopentadiene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachlorocyclopentadiene. The % Recovery was reported as 0 and the control limits were 33 to 109.

3000905003	42	11142018-01	SW846 8270D	2,4,6-Trichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4,6-Trichlorophenol. The % Recovery was reported as 44.8 and the control limits were 68 to 119.

3000905003	43	11142018-01	SW846 8270D	2,4,6-Trichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4,6-Trichlorophenol. The % Recovery was reported as 58.7 and the control limits were 68 to 119.

3000905003	44	11142018-01	SW846 8270D	2,4,5-Trichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4,5-Trichlorophenol. The % Recovery was reported as 46.9 and the control limits were 68 to 121.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	45	11142018-01	SW846 8270D	2,4,5-Trichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4,5-Trichlorophenol. The % Recovery was reported as 60.2 and the control limits were 68 to 121.

3000905003	46	11142018-01	SW846 8270D	Biphenyl

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Biphenyl. The % Recovery was reported as 42.5 and the control limits were 60 to 111.

3000905003	47	11142018-01	SW846 8270D	Biphenyl

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Biphenyl. The % Recovery was reported as 55.2 and the control limits were 60 to 111.

3000905003	48	11142018-01	SW846 8270D	Biphenyl

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Biphenyl. The RPD was reported as 14.9 and the upper control limit is 14.

3000905003	49	11142018-01	SW846 8270D	2-Chloronaphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Chloronaphthalene. The % Recovery was reported as 45 and the control limits were 55 to 111.

3000905003	50	11142018-01	SW846 8270D	2-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Nitroaniline. The % Recovery was reported as 48.2 and the control limits were 61 to 120.

3000905003	51	11142018-01	SW846 8270D	2-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Nitroaniline. The RPD was reported as 21 and the upper control limit is 19.

3000905003	52	11142018-01	SW846 8270D	Dimethylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dimethylphthalate. The % Recovery was reported as 46.6 and the control limits were 59 to 111.

3000905003	53	11142018-01	SW846 8270D	Dimethylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Dimethylphthalate. The % Recovery was reported as 58.7 and the control limits were 59 to 111.

3000905003	54	11142018-01	SW846 8270D	2,6-Dinitrotoluene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,6-Dinitrotoluene. The % Recovery was reported as 42.1 and the control limits were 61 to 115.

3000905003	55	11142018-01	SW846 8270D	2,6-Dinitrotoluene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,6-Dinitrotoluene. The % Recovery was reported as 50.2 and the control limits were 61 to 115.

3000905003	56	11142018-01	SW846 8270D	Acenaphthylene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acenaphthylene. The % Recovery was reported as 46.7 and the control limits were 59 to 114.

3000905003	57	11142018-01	SW846 8270D	3-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 3-Nitroaniline. The % Recovery was reported as 34 and the control limits were 52 to 115.

3000905003	58	11142018-01	SW846 8270D	3-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 3-Nitroaniline. The % Recovery was reported as 45.3 and the control limits were 52 to 115.

3000905003	59	11142018-01	SW846 8270D	Acenaphthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acenaphthene. The % Recovery was reported as 47.5 and the control limits were 59 to 115.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	60	11142018-01	SW846 8270D	2,4-Dinitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrophenol. The % Recovery was reported as 2.12 and the control limits were 36 to 131.

3000905003	61	11142018-01	SW846 8270D	2,4-Dinitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrophenol. The % Recovery was reported as 2.6 and the control limits were 36 to 131.

3000905003	62	11142018-01	SW846 8270D	4-Nitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Nitrophenol. The % Recovery was reported as 45.4 and the control limits were 49 to 134.

3000905003	63	11142018-01	SW846 8270D	Dibenzofuran

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dibenzofuran. The % Recovery was reported as 46.7 and the control limits were 61 to 111.

3000905003	64	11142018-01	SW846 8270D	2,4-Dinitrotoluene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrotoluene. The % Recovery was reported as 39.7 and the control limits were 61 to 117.

3000905003	65	11142018-01	SW846 8270D	2,4-Dinitrotoluene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrotoluene. The % Recovery was reported as 50.4 and the control limits were 61 to 117.

3000905003	66	11142018-01	SW846 8270D	2,3,4,6-Tetrachlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,3,4,6-Tetrachlorophenol. The % Recovery was reported as 43.1 and the control limits were 60 to 111.

3000905003	67	11142018-01	SW846 8270D	2,3,4,6-Tetrachlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,3,4,6-Tetrachlorophenol. The % Recovery was reported as 52.8 and the control limits were 60 to 111.

3000905003	68	11142018-01	SW846 8270D	Diethylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Diethylphthalate. The % Recovery was reported as 45.7 and the control limits were 59 to 112.

3000905003	69	11142018-01	SW846 8270D	Diethylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Diethylphthalate. The % Recovery was reported as 58.2 and the control limits were 59 to 112.

3000905003	70	11142018-01	SW846 8270D	4-Chlorophenyl-phenylether

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chlorophenyl-phenylether. The % Recovery was reported as 46 and the control limits were 58 to 112.

3000905003	71	11142018-01	SW846 8270D	Fluorene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Fluorene. The % Recovery was reported as 48.5 and the control limits were 61 to 112.

3000905003	72	11142018-01	SW846 8270D	4-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Nitroaniline. The % Recovery was reported as 42.4 and the control limits were 50 to 106.

3000905003	73	11142018-01	SW846 8270D	4-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Nitroaniline. The RPD was reported as 20.3 and the upper control limit is 19.

3000905003	74	11142018-01	SW846 8270D	2-Methyl-4,6-dinitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Methyl-4,6-dinitrophenol. The % Recovery was reported as 5.73 and the control limits were 53 to 131.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	75	11142018-01	SW846 8270D	2-Methyl-4,6-dinitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Methyl-4,6-dinitrophenol. The % Recovery was reported as 5.74 and the control limits were 53 to 131.

3000905003	76	11142018-01	SW846 8270D	N-Nitrosodiphenylamine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte N-Nitrosodiphenylamine. The % Recovery was reported as 53.4 and the control limits were 65 to 134.

3000905003	77	11142018-01	SW846 8270D	4-Bromophenyl-phenylether

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Bromophenyl-phenylether. The % Recovery was reported as 47 and the control limits were 60 to 111.

3000905003	78	11142018-01	SW846 8270D	Hexachlorobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorobenzene. The % Recovery was reported as 45.8 and the control limits were 59 to 109.

3000905003	79	11142018-01	SW846 8270D	Hexachlorobenzene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachlorobenzene. The % Recovery was reported as 57.6 and the control limits were 59 to 109.

3000905003	80	11142018-01	SW846 8270D	Atrazine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Atrazine. The % Recovery was reported as 38 and the control limits were 54 to 128.

3000905003	81	11142018-01	SW846 8270D	Atrazine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Atrazine. The % Recovery was reported as 47.6 and the control limits were 54 to 128.

3000905003	82	11142018-01	SW846 8270D	Pentachlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Pentachlorophenol. The % Recovery was reported as 42 and the control limits were 60 to 145.

3000905003	83	11142018-01	SW846 8270D	Pentachlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Pentachlorophenol. The % Recovery was reported as 57.3 and the control limits were 60 to 145.

3000905003	84	11142018-01	SW846 8270D	Phenanthrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Phenanthrene. The % Recovery was reported as 50.4 and the control limits were 62 to 109.

3000905003	85	11142018-01	SW846 8270D	Anthracene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Anthracene. The % Recovery was reported as 47.6 and the control limits were 63 to 112.

3000905003	86	11142018-01	SW846 8270D	Anthracene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Anthracene. The % Recovery was reported as 59.9 and the control limits were 63 to 112.

3000905003	87	11142018-01	SW846 8270D	Carbazole

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Carbazole. The % Recovery was reported as 45.8 and the control limits were 65 to 117.

3000905003	88	11142018-01	SW846 8270D	Carbazole

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Carbazole. The % Recovery was reported as 57.9 and the control limits were 65 to 117.

3000905003	89	11142018-01	SW846 8270D	Di-n-Butylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Di-n-Butylphthalate. The % Recovery was reported as 45.4 and the control limits were 58 to 118.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	90	11142018-01	SW846 8270D	Di-n-Butylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Di-n-Butylphthalate. The % Recovery was reported as 57.4 and the control limits were 58 to 118.

3000905003	91	11142018-01	SW846 8270D	Fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Fluoranthene. The % Recovery was reported as 50.9 and the control limits were 61 to 116.

3000905003	92	11142018-01	SW846 8270D	Pyrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Pyrene. The % Recovery was reported as 51.7 and the control limits were 60 to 114.

3000905003	93	11142018-01	SW846 8270D	Butylbenzylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Butylbenzylphthalate. The % Recovery was reported as 48.4 and the control limits were 56 to 126.

3000905003	94	11142018-01	SW846 8270D	3,3-Dichlorobenzidine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 3,3-Dichlorobenzidine. The % Recovery was reported as 16.4 and the control limits were 27 to 106.

3000905003	95	11142018-01	SW846 8270D	3,3-Dichlorobenzidine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 3,3-Dichlorobenzidine. The % Recovery was reported as 23.5 and the control limits were 27 to 106.

3000905003	96	11142018-01	SW846 8270D	Benzo(a)anthracene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(a)anthracene. The % Recovery was reported as 47.4 and the control limits were 61 to 118.

3000905003	97	11142018-01	SW846 8270D	Benzo(a)anthracene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(a)anthracene. The % Recovery was reported as 59.4 and the control limits were 61 to 118.

3000905003	98	11142018-01	SW846 8270D	Chrysene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Chrysene. The % Recovery was reported as 51.4 and the control limits were 63 to 111.

3000905003	99	11142018-01	SW846 8270D	Chrysene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Chrysene. The % Recovery was reported as 62 and the control limits were 63 to 111.

3000905003	100	11142018-01	SW846 8270D	bis(2-Ethylhexyl)phthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Ethylhexyl)phthalate. The % Recovery was reported as 49 and the control limits were 51 to 126.

3000905003	101	11142018-01	SW846 8270D	Benzo(b)fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(b)fluoranthene. The % Recovery was reported as 53 and the control limits were 64 to 113.

3000905003	102	11142018-01	SW846 8270D	Benzo(k)fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(k)fluoranthene. The % Recovery was reported as 42.8 and the control limits were 62 to 113.

3000905003	103	11142018-01	SW846 8270D	Benzo(k)fluoranthene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(k)fluoranthene. The % Recovery was reported as 51.9 and the control limits were 62 to 113.

3000905003	104	11142018-01	SW846 8270D	Benzo(a)pyrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(a)pyrene. The % Recovery was reported as 46.5 and the control limits were 61 to 114.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	105	11142018-01	SW846 8270D	Benzo(a)pyrene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(a)pyrene. The % Recovery was reported as 56.7 and the control limits were 61 to 114.				
3000905003	106	11142018-01	SW846 8270D	Indeno(1,2,3-cd)pyrene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Indeno(1,2,3-cd)pyrene. The % Recovery was reported as 43.3 and the control limits were 62 to 113.				
3000905003	107	11142018-01	SW846 8270D	Indeno(1,2,3-cd)pyrene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Indeno(1,2,3-cd)pyrene. The % Recovery was reported as 52.8 and the control limits were 62 to 113.				
3000905003	108	11142018-01	SW846 8270D	Dibenzo(a,h)anthracene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dibenzo(a,h)anthracene. The % Recovery was reported as 43.9 and the control limits were 64 to 117.				
3000905003	109	11142018-01	SW846 8270D	Dibenzo(a,h)anthracene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Dibenzo(a,h)anthracene. The % Recovery was reported as 53.3 and the control limits were 64 to 117.				
3000905003	110	11142018-01	SW846 8270D	Benzo(g,h,i)perylene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(g,h,i)perylene. The % Recovery was reported as 45.4 and the control limits were 61 to 118.				
3000905003	111	11142018-01	SW846 8270D	Benzo(g,h,i)perylene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(g,h,i)perylene. The % Recovery was reported as 55 and the control limits were 61 to 118.				
3000905003	112	11142018-01	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905003	113	11142018-01	SW846 8270D	n-Nonane
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte n-Nonane. The % Recovery was reported as 24.8 and the control limits were 50 to 150.				
3000905003	114	11142018-01	SW846 8270D	n-Nonane
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte n-Nonane. The % Recovery was reported as 27.7 and the control limits were 50 to 150.				
3000905003	115	11142018-01	SW846 6010C	Potassium, Total
Due to the zinc content, this sample required a 1/10 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				
3000905004	1	11142018-02	SW846 8270D	Benzaldehyde
The QC sample type LCS for method SW846 8270D was outside the control limits for the analyte Benzaldehyde. The % Recovery was reported as 133 and the control limits were 52 to 108.				
3000905004	2	11142018-02	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905004	3	11142018-02	SW846 6010C	Aluminum, Total
Due to the zinc content, this sample required a 1/100 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				
3000905005	1	11142018-03	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905005	2	11142018-03	SW846 6010C	Aluminum, Total
Due to the zinc content, this sample required a 1/50 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3000905 Franklin Smelting

Lab ID	Sample ID	Analysis Method	Prep Method
3000905001	TAT1711-01	600/4-81-045	600/4-81-045
3000905002	78E710111	600/4-81-045	600/4-81-045
3000905003	11142018-01	S2540G-11	
3000905003	11142018-01	SW846 6010C	SW846 3051
3000905003	11142018-01	SW846 7471B	SW846 7471B
3000905003	11142018-01	SW846 8270D	SW846 3546
3000905004	11142018-02	S2540G-11	
3000905004	11142018-02	SW846 6010C	SW846 3051
3000905004	11142018-02	SW846 7471B	SW846 7471B
3000905004	11142018-02	SW846 8270D	SW846 3546
3000905005	11142018-03	S2540G-11	
3000905005	11142018-03	SW846 6010C	SW846 3051
3000905005	11142018-03	SW846 7471B	SW846 7471B
3000905005	11142018-03	SW846 8270D	SW846 3546

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3000905

1 of 1

Client Name: Philadelphia Gas Works
Address: 3100 W. Passyunk Avenue
Philadelphia, PA 19145
Contact: Jeff Ham
Phone#: (215) 787-4849
Project Name/#: Franklin Smelting
Bill To: jeffrey.ham@pgworks.com

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? [X] -Y jeffrey.ham@pgworks.com
Fax? [ ] -Y No.: _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	PCBs	TCL SVOCs	TAL Metals							
Container Type			CG	CG	CG									
Container Size			8 Oz	16 Oz	16 Oz									
Preservative			None	None	None									
			ANALYSES/METHOD REQUESTED											
			Enter Number of Containers Per Sample or Field Results Below.											
TAT1711-01	11/14/18	10:55	G	OI	1									
78E710111	11/14/18	11:25	G	OI	1									
11142018-01	11/14/18	13:20	G	SO		1	X							
11142018-02	11/14/18	13:30	G	SO		1	X							
11142018-03	11/14/18	13:40	G	SO		1	X							

Receiving Lab)
Cooler Temp: 2.1° Therm ID: 403
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			KM
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #: SP18111e0052

Sample/COC Comments

Transformer S/N is sample ID; light amber	
Transformer S/N is sample ID; dark amber	
Black soil; NE Corner of Main Bldg	
Black soil; SE Corner of Main Bldg	
Brown soil; SW Corner of Main Bldg	

ALS Field Services: _Pickup _Labor _Composite Sampling _Rental Equipment _Other: _____

Project Comments: Franklin Smelting Transformer Oil Samples for Waste Characterization and Soil Samples for Fence Installation

LOGGED BY(signature): Date: Time:
REVIEWED BY(signature): Date: Time:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Amy Brown / PGW	111618	13 15	2 Chris Greene	111618	1215
3 Chris Greene	111618	1645	4 COMMON COURIER / ALS COURIER		
5 COMMON COURIER / ALS COURIER			6	11/16/2018	2047
7			8		
9			10		

Data Deliverables: [ ] Standard [X] CLP-like [ ] USACE [ ]
Special Processing: USACE [ ] Navy [ ] [ ]
State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ] PWSID # _____
Sample Disposal: Lab [X] Special [ ]
EDDS: Format Type- _____

* G=Grab; C=Composite ** Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 10/11

USA Environmental Management, Inc.
Environmental ♦ Engineering ♦ Construction

July 10, 2017

Kevin Grooms, Manager
Environmental Services
Philadelphia Gas Works
800 W. Montgomery Avenue
Philadelphia, PA 19122

Reference: Lead Dust & Air Sampling Report
Franklin Smelting Site
3100 Castor Avenue
Philadelphia, PA 19134

Dear Mr. Grooms:

USA Environmental Management, Inc. (USAEMI) contracted by the Philadelphia Gas Works (PGW) to collect lead dust samples and lead air samples at the Franklin Smelting Site located at 3100 Castor Avenue, Philadelphia, PA. The investigation focused on the extent of the lead contamination that was present at the site. The investigation was performed by Norman Harrison of USAEMI on May 31, 2017.

During the investigation, ten (10) dust wipe samples were collected, including a blank, to determine the lead concentration in the settled dust from various areas in the site. Results for three (3) of the samples collected were above the U.S. Department of Housing and Urban Development (HUD) thresholds of 40.0 micrograms per square foot ($\mu g/ft^2$) for interior floors, 250.0 $\mu g/ft^2$ for interior windowsills, 400.0 $\mu g/ft^2$ for interior window troughs, or 800 mg/ft^2 for concrete surfaces or other rough surfaces. The following component was above the clearance threshold:

- Center-Floor
- Ramp-Window Sill
- Delaware Avenue Side-Window Sill

USAEMI collected a total of five (5) lead air samples, including a blank, throughout the site. Analysis of these samples yielded results of less than 30 micrograms per cubic meter ($\mu g/m^3$) of air, which is the OSHA Action Level for employee lead exposure.

All dust wipe and lead air samples were analyzed by Atomic Absorption Spectrophotometry (AAS) in accordance with US EPA standards by EMSL Analytical.

If you have any questions or require further information, please feel free to contact our office at (215) 365-5810.

Sincerely,

Mark Jenkins

Mark Jenkins
Project Manager

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201705275
CustomerID:	USA50
CustomerPO:	17-0133
ProjectID:	

Attn: **Mark Jenkins**
USA Environmental Management
8436 Enterprise Avenue
Philadelphia, PA 19153

Phone:	(215) 365-5810
Fax:	(215) 551-6052
Received:	05/31/17 11:50 AM
Collected:	5/31/2017

Project: **17-010035-04 / PGW Franklin Smelting**

Test Report: Lead in Dust by Flame AAS (SW 846 3050B/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Area Sampled*	*Lead Concentration*
01	*201705275-0001*	5/31/2017	5/31/2017	n/a	<10 µg/wipe
	Site: Blank				
02	*201705275-0002*	5/31/2017	5/31/2017	144 in²	360 µg/ft²
	Site: Floor- Center				
03	*201705275-0003*	5/31/2017	5/31/2017	144 in²	15 µg/ft²
	Site: Ramp Floor				
04	*201705275-0004*	5/31/2017	5/31/2017	144 in²	230 µg/ft²
	Site: Fountain Wall Horizontal				
05	*201705275-0005*	5/31/2017	5/31/2017	144 in²	48 µg/ft²
	Site: Center Beam Pier Horizontal				
06	*201705275-0006*	5/31/2017	5/31/2017	144 in²	71 µg/ft²
	Site: Smelter Exhaust Duct				
07	*201705275-0007*	5/31/2017	5/31/2017	64 in²	550 µg/ft²
	Site: Corner Cross Beam				
08	*201705275-0008*	5/31/2017	5/31/2017	64 in²	180 µg/ft²
	Site: Center Cross Beam				
09	*201705275-0009*	5/31/2017	5/31/2017	64 in²	660 µg/ft²
	Site: Sill @ Ramp				
10	*201705275-0010*	5/31/2017	5/31/2017	64 in²	310 µg/ft²
	Site: Sill - Delaware Ave.				

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Dust by EMSL SOP/ Determination of Environmental Lead by FLAA. Reporting limit is 10 ug/wipe. ug/wipe = ug/ft2 x area sampled in ft2. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. Samples received in good condition unless otherwise noted. The lab is not responsible for data reported in µg/ft² which is dependent on the area provided by non-lab personnel. The test results contained within this report meet the requirements of NELAC unless otherwise noted. "<" (less than) results signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, NY 10872, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 06/01/2017 11:26:57

USA Environmental Management, Inc.
8436 Enterprise Avenue, Philadelphia PA 19153

20170527S

OrderID: 20170527S

LEAD HAZARD CONTROL DUST SAMPLE CHAIN OF CUSTODY SHEET

PROJECT NAME: PGW PROJECT NO.: 17-0/0035 -04 DATE: 5/31/17

PROJECT ADDRESS: Franklin Smelting APT/RM.#:

NAME OF INSPECTOR: NH LICENSE # (if applicable) :

TURN AROUND TIME: (24hr) 48hr 72hr Immediate_____ HR (CIRCLE ONE) PURCHASE ORDER #: 17-0133

Sample #	Room Location, Room # or Area Identifier	Surface type being sampled (floor, sill, trough)	Dimensions of sample (in x in)	Area in ft² (filled in by lab)	Result of lab analysis (ug/ft²) (completed by lab)	Pass (P) or Fail (F)
01	Blank		X	ft²	ug/ft²	P F
02	Floor - Center	~~Floor 12 X 12~~	12 X 12	ft²	ug/ft²	P F
03	Ramp	Floor	12 X 12	ft²	ug/ft²	P F
04	Foundation Wall	Horizontal	12 X 12	ft²	ug/ft²	P F
05	Center Beam Pier	Horizontal	12 X 12	ft²	ug/ft²	P F
06	Smelter Exhaust	Duct	12 X 12	ft²	ug/ft²	P F
07	Corner Cross Beam	Beam	8 X 8	ft²	ug/ft²	P F
08	Center Cross Beam	Beam	8 X 8	ft²	ug/ft²	P F
09	Sill @ Ramp	Sill	8 X 8	ft²	ug/ft²	P F
10	Sill - Delaware Ave	Sill	8 X 8	ft²	ug/ft²	P F
			X	ft²	ug/ft²	P F
			X	ft²	ug/ft²	P F

Page 1 of 1

USA Uses ASTM Approved Wipes
(HUD CLEARANCE LEVELS = FLOOR – 40ug/ft² ; SILL - 250 ug/ft² ; TROUGH – 400 ug/ft²)

10 Total number of samples on this page.

Date of sample collection 5/31/17 Date shipped to laboratory ____/____/____ Lab samples sent to:

Relinquished by: NH Received by: LD 5-31-17 11:50am

Page 1 of 1

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (856) 303-2500 / (856) 786-5974
http://www.EMSL.com cinnaminsonleadlab@emsl.com

EMSL Order:	201705276
CustomerID:	USA50
CustomerPO:	17-0133
ProjectID:	

Attn: **Mark Jenkins**
USA Environmental Management
8436 Enterprise Avenue
Philadelphia, PA 19153

Phone:	(215) 365-5810
Fax:	(215) 551-6052
Received:	05/31/17 11:50 AM
Collected:	5/31/2017

Project: **17010035-04 / PGW Franklin Smelting**

Test Report: Lead in Air by Flame AAS (NIOSH 7082)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Volume*	*Lead Concentration*
40-053117-01	*201705276-0001*	5/31/2017	5/31/2017	500 L	<8.0 µg/m³
	Site: Amb Smelter Center				
40-053117-02	*201705276-0002*	5/31/2017	5/31/2017	500 L	<8.0 µg/m³
	Site: Amb Smelter Ramp @ Castor Ave.				
40-053117-03	*201705276-0003*	5/31/2017	5/31/2017	500 L	<8.0 µg/m³
	Site: Amb Smelter Interior Stairs				
40-053117-04	*201705276-0004*	5/31/2017	5/31/2017	500 L	<8.0 µg/m³
	Site: Amb Smelter Exterior Stairs				
40-053117-05	*201705276-0005*	5/31/2017	5/31/2017	n/a	<4.0 µg/filter
	Site: Blank				

Phillip Worby, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Air by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 4 µg/filter. ug/filter = ug/m3 x volume sampled (m3). OSHA PEL - 50 µg/m³. OSHA action level - 30 µg/m³. Unless otherwise noted, results in this report are not blank corrected. EMSL bears no responsibility for sample collection activities (such as volume sampled) or analytical method limitations. This report may not be reproduced except in full, without written approval by EMSL. This report relates only to those Items tested. Samples received in good condition unless otherwise noted. "<" (less than) result signifies that the analyte was not detected at or above the reporting limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NELAP Certifications: NJ 03036, PA 68-00367, AIHA-LAP, LLC ELLAP 100194, A2LA 2845.01

Initial report from 06/01/2017 11:31:40

USA ENVIRONMENTAL MANAGEMENT, INC.
8436 Enterprise Ave. Philadelphia, PA 19153

201705276

LEAD AIR SAMPLE CHAIN OF CUSTODY SHEET

PROJECT NUMBER 17010035-04
PROJECT NAME PGW
SITE Franklin Smelting
OWNER'S REP
PHONE # 215-365-5810 FAX # 215-365-5870
PURCHASE ORDER # 17-0133

DATE 5/31/17 PAGE 1 OF 1
SAMPLER(S) NH
ANALYST
TURN AROUND 24
Filter SIZE 37 mm

SAMPLE # / PUMP # / LAB #	TYPE	SAMPLE DESCRIPTION	TIMES START / STOP / MINUTES	LPM START / STOP / VOLUME	Total Pb mg/m3
17-053517-01	Amb	Smelter	0915	4	
		Center	1120	4	
			125	500	
02	Amb	Smelter	0915	4	
		Pump @	1120	4	
		Center AVE	125	500	
03	Amb	Smelter	0915	4	
		Exterior	1120	4	
		Stairs	125	500	
04	Amb	Smelter	0915	4	
		Exterior	1120	4	
		Stairs	125	500	
05	Blank	Field			

SAMPLE # / PUMP # / LAB #	TYPE	SAMPLE DESCRIPTION	TIMES START / STOP / MINUTES	LPM START / STOP / VOLUME	Total Pb mg/m3

SAMPLE TYPE P-Personal, B- Blank T-8rh TWA, TWA - inside work area, OWA - outside work area, A - Ambient

Relinquished By
Date 5/31/17 Time 1442
Received By
Date 5-31-17 Time 11:50a

High Flow Rotometer # Cal Date
Low Flow Rotometer # Cal Date

Microscope Model
Microscope Make

[redacted]

Page 1 Of 1

OrderID: 201705276

Chemical Services Suspect Lead Containing Paint Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018

Inspector(s): Amy Brown

Report Date: 01/25/2019

Scope of Work and Limitations:
- Scope of work included assessment of suspect lead containing paint (LCP) on the structures located in the Former Franklin Smelting property, including the Northwest Building (Blue Building), the Main Building (White Building), and other structures located the throughout the property.

Material #	Material	Location(s) and Quantities	Condition	Sample Numbers	Lead Concentration (mg/cm^2)	LCP (Y/N)	Comments/Photo #
Confirmed Lead Containing Paint							
1	Light blue paint	Outside walls of Blue Building 01 - North outside wall 02 - East outside wall 03 - South outside wall 04 - West outside wall	Good	08102018-01 08102018-02 08102018-03 08102018-04	0.05 ± 0.01	Y	
7	Red paint	Sprinkler pipe on first floor of Blue Building	Good	08102018-13	0.35 ± 0.10	Y	
8	Blue paint	Electric pipe on first floor of Blue Building	Good	08102018-14	0.08 ± 0.01	Y	
9	Light green paint	Ampgard box in southwest corner of first floor of Blue Building	Good	08102018-15	0.02 ± 0.01	Y	
15	Gray paint	Pipe support in southeast corner of first floor of Blue Building	Good	08102018-21	0.02 ± 0.01	Y	
16	White paint	Outside siding of White Building 22 - North outside siding 23 - East outside siding 24 - South outside siding 25 - West outside siding 26 - Roof siding	Good	08102018-22 08102018-23 08102018-24 08102018-25 08102018-26	0.02 ± 0.01	Y	
17	Blue paint	Gear support in northwest corner of White Building	Damaged	08102018-27	0.24 ± 0.10	Y	
18	Red paint	Tank in northwest corner of White Building	Damaged	08102018-28	0.15 ± 0.01	Y	

Chemical Services Suspect Lead Containing Paint Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018

Inspector(s): Amy Brown

Report Date: 01/25/2019

Scope of Work and Limitations:
- Scope of work included assessment of suspect lead containing paint (LCP) on the structures located in the Former Franklin Smelting property, including the Northwest Building (Blue Building), the Main Building (White Building), and other structures located the throughout the property.

Material #	Material	Location(s) and Quantities	Condition	Sample Numbers	Lead Concentration (mg/cm^2)	LCP (Y/N)	Comments/Photo #
19	Gray paint	Platform supports in northwest corner of White Building	Significantly Damaged	08102018-29	0.42 ± 0.10	Y	
20	Gray paint	Reactor support in northeast corner of White Building	Significantly Damaged	08102018-30	0.90 ± 0.10	Y	
21	Red paint	Pipe most west in the Yard	Significantly Damaged	08102018-31	0.10 ± 0.01	Y	
22	White paint	Reactor duct in the Yard	Significantly Damaged	08102018-32	0.04 ± 0.01	Y	
Other Suspected Lead-Based Paint Coated Surfaces Sampled							
2	Off-white paint	Inside walls of Blue Building 05 - North outside wall 06 - East outside wall 07 - South outside wall 08 - West outside wall	Good	08102018-05 08102018-06 08102018-07 08102018-08	< 0.01	N	

PGW Chemical Services Suspect Lead Containing Paint Inspection Report

Lead Containing Paint Inspection Methodology
Lead containing paint (LCP) is defined as paint on surfaces with any measurable quantity of lead . Lead concentrations may be expressed in units of milligrams per square centimeter ("mg/cm2"), as measured by an x-ray fluorescence ("XRF") detector, or percent by weight for samples submitted for laboratory analysis of lead content by weight.

The LCP inspection conducted by PGW Chemical Services included inspection and testing of representative homogeneous painted surfaces in order to determine the lead content of the paint. Bulk paint samples were collected for submission to an external laboratory for analysis for lead content. In some cases, LeadCheck Swabs may have been utilized to determine whether LCP was present on painted surfaces tested.

Suspect LCP Sampling Protocol
At least one (1) paint sample from each homogenous painted surface in the survey area was tested for lead.

Condition Assessment
- Good (G): no visible damage or deterioration or showing only very limited damage or deterioration.
- Damaged (D): Less than or equal to 10% damage evenly distributed across area or less than 25% damage in a localized area.
- Significantly Damaged (SD): Greater than or equal to 10% damage evenly distributed across area or greater than or equal to 25% damage in a localized area.

Sample Analysis and Interpretation of Results
Paint was analyzed using a Thermo Fisher Scientific Niton XL2-960 GOLDD (Serial Number 102052) handheld XRF analyzer. Reports were created using the Thermo Scientific Niton Data Transfer Software Version 8.4.3.

As explained above, LeadCheck Swabs may have been used to assess painted surfaces in some areas for the presence of LCP. LeadCheck Swabs are a screening test to determine whether or not lead is present at a concentration above 0.5 percent by weight. LeadCheck Swabs do not provide quantitative results, so a positive or negative outcome of the test is noted in the report. The concentration of lead in the sample cannot be determined using the LeadCheck Swabs.

There are currently no federal, state, or local regulations that require the removal of LCP prior to building renovation/demolition activities. If LCP is present, worker exposure to lead must be monitored during any renovation/demolition activities that impact LCP surfaces in accordance with the Lead-In-Construction Standard, OSHA 29 CFR 1926.62. This information should be made available to the renovation/demolition contractor. During renovation/demolition activities which impact LCP surfaces, the waste stream generated should be characterized through laboratory analysis to determine the ultimate disposal requirements (hazardous/non-hazardous landfill).

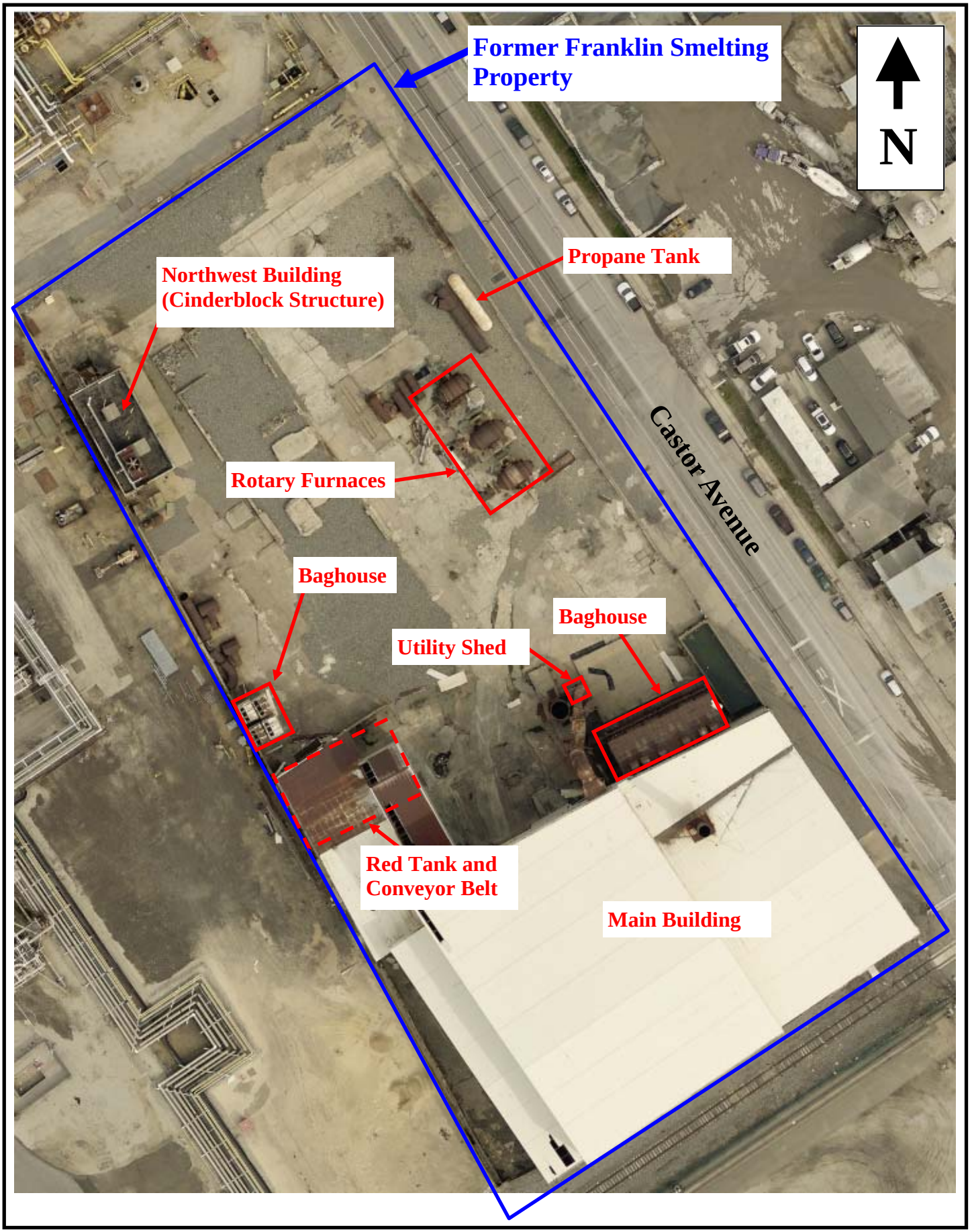
Abbreviations:
- SF: square feet
- LF: linear feet
- ND: not detected

Laboratory Result Qualifications
* Insufficient sample provided to perform quality control reanalysis (<200 mg)
** Not enough sample provided to analyze (<50 mg)
*** Matrix/substrate interference possible. Sample results are not corrected for contamination by field or analytical blanks.

ATTACHMENT A

Survey Location Plan

Former Franklin Smelting Property LCP Survey Location Plan



ATTACHMENT B

Suspect Lead Containing Paint Sample
Analytical Results

Thermo Fisher Scientific
2 Radcliff Road
Tewksbury, MA 01876 USA

Index	Reading No	Time	Type	Duration	Units	Results	Action Lev	Component	Substrate	Side	Color	Pb
1	**511**	**2018-08-10 13:42**	**Quantify Lead Paint**	**60.25**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-32**	**franklinsmeltingyard**	**reactor duct**	**white**	**0.09 +/- 0.01**
2	510	2018-08-10 13:40	Quantify Lead Paint	60.38	mg / cm ^2	Inconclusive	0.01	08102018-32	franklinsmeltingyard	reactor duct	white	< LOD: 0.01
3	509	2018-08-10 13:39	Quantify Lead Paint	60.36	mg / cm ^2	Inconclusive	0.01	08102018-32	franklinsmeltingyard	reactor duct	white	< LOD: 0.01
4	508	2018-08-10 13:34	Quantify Lead Paint	59.98	mg / cm ^2	Inconclusive	0.01	08102018-31	franklinsmeltingyard	pipe most west	red	< LOD: 0.01
5	**507**	**2018-08-10 13:33**	**Quantify Lead Paint**	**60.25**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-31**	**franklinsmeltingyard**	**pipe most west**	**red**	**0.24 +/- 0.01**
6	**506**	**2018-08-10 13:32**	**Quantify Lead Paint**	**60.35**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-31**	**franklinsmeltingyard**	**pipe most west**	**red**	**0.06 +/- 0.01**
7	**505**	**2018-08-10 13:12**	**Quantify Lead Paint**	**60.44**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-30**	**franklinsmeltingwhitebldg**	**rractor support northeast**	**gray**	**1.55 +/- 0.10**
8	**504**	**2018-08-10 13:11**	**Quantify Lead Paint**	**60.49**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-30**	**franklinsmeltingwhitebldg**	**rractor support northeast**	**gray**	**0.04 +/- 0.01**
9	**503**	**2018-08-10 13:09**	**Quantify Lead Paint**	**60.82**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-30**	**franklinsmeltingwhitebldg**	**rractor support northeast**	**gray**	**1.11 +/- 0.10**
10	**502**	**2018-08-10 13:04**	**Quantify Lead Paint**	**60.62**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-29**	**franklinsmeltingwhitebldg**	**platform supports northwest**	**gray**	**0.14 +/- 0.01**
11	**501**	**2018-08-10 13:03**	**Quantify Lead Paint**	**60.33**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-29**	**franklinsmeltingwhitebldg**	**platform supports northwest**	**gray**	**0.41 +/- 0.10**
12	**500**	**2018-08-10 13:02**	**Quantify Lead Paint**	**60.31**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-29**	**franklinsmeltingwhitebldg**	**platform supports northwest**	**gray**	**0.70 +/- 0.10**
13	**499**	**2018-08-10 12:57**	**Quantify Lead Paint**	**60.21**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-28**	**franklinsmeltingwhitebldg**	**tank northwest corner**	**red**	**0.15 +/- 0.01**
14	**498**	**2018-08-10 12:56**	**Quantify Lead Paint**	**60.33**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-28**	**franklinsmeltingwhitebldg**	**tank northwest corner**	**red**	**0.15 +/- 0.01**
15	**497**	**2018-08-10 12:55**	**Quantify Lead Paint**	**60.29**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-28**	**franklinsmeltingwhitebldg**	**tank northwest corner**	**red**	**0.14 +/- 0.01**
16	**496**	**2018-08-10 12:51**	**Quantify Lead Paint**	**60.46**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-27**	**franklinsmeltingwhitebldg**	**gear support**	**blue**	**0.13 +/- 0.01**
17	**495**	**2018-08-10 12:49**	**Quantify Lead Paint**	**60.29**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-27**	**franklinsmeltingwhitebldg**	**gear support**	**blue**	**0.22 +/- 0.01**
18	**494**	**2018-08-10 12:48**	**Quantify Lead Paint**	**60.60**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-27**	**franklinsmeltingwhitebldg**	**gear support**	**blue**	**0.38 +/- 0.10**
19	**493**	**2018-08-10 12:40**	**Quantify Lead Paint**	**60.41**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-26**	**franklinsmeltingwhitebldg**	**roof siding**	**white**	**0.03 +/- 0.01**
20	492	2018-08-10 12:39	Quantify Lead Paint	60.28	mg / cm ^2	Inconclusive	0.01	08102018-26	franklinsmeltingwhitebldg	roof siding	white	0.02 +/- 0.01
21	**491**	**2018-08-10 12:38**	**Quantify Lead Paint**	**60.63**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-26**	**franklinsmeltingwhitebldg**	**roof siding**	**white**	**0.04 +/- 0.01**
22	490	2018-08-10 12:36	Quantify Lead Paint	60.62	mg / cm ^2	Inconclusive	0.01	08102018-25	franklinsmeltingwhitebldg	west outside siding	white	0.02 +/- 0.01
23	489	2018-08-10 12:34	Quantify Lead Paint	60.59	mg / cm ^2	Inconclusive	0.01	08102018-24	franklinsmeltingwhitebldg	south outside siding	white	0.02 +/- 0.01
24	488	2018-08-10 12:31	Quantify Lead Paint	60.47	mg / cm ^2	Inconclusive	0.01	08102018-23	franklinsmeltingwhitebldg	east outside siding	white	0.02 +/- 0.01
25	487	2018-08-10 12:28	Quantify Lead Paint	60.63	mg / cm ^2	Inconclusive	0.01	08102018-22	franklinsmeltingwhitebldg	north outside siding	white	< LOD: 0.01
26	**486**	**2018-08-10 12:07**	**Quantify Lead Paint**	**60.63**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-21**	**franklinsmeltingbluebldg**	**pipe support**	**gray**	**0.04 +/- 0.01**
27	485	2018-08-10 12:06	Quantify Lead Paint	60.23	mg / cm ^2	Inconclusive	0.01	08102018-21	franklinsmeltingbluebldg	pipe support	gray	< LOD: 0.01
28	484	2018-08-10 12:04	Quantify Lead Paint	60.23	mg / cm ^2	Inconclusive	0.01	08102018-21	franklinsmeltingbluebldg	pipe support	gray	< LOD: 0.01
29	483	2018-08-10 12:00	Quantify Lead Paint	60.57	mg / cm ^2	Inconclusive	0.01	08102018-20	franklinsmeltingbluebldg	door	off-white	< LOD: 0.01
30	482	2018-08-10 11:59	Quantify Lead Paint	60.33	mg / cm ^2	Inconclusive	0.01	08102018-20	franklinsmeltingbluebldg	door	off-white	< LOD: 0.01
31	481	2018-08-10 11:58	Quantify Lead Paint	60.50	mg / cm ^2	Inconclusive	0.01	08102018-20	franklinsmeltingbluebldg	door	off-white	< LOD: 0.01
32	480	2018-08-10 11:55	Quantify Lead Paint	60.61	mg / cm ^2	Inconclusive	0.01	08102018-19	franklinsmeltingbluebldg	fire control box	red	< LOD: 0.01
33	479	2018-08-10 11:54	Quantify Lead Paint	60.34	mg / cm ^2	Inconclusive	0.01	08102018-19	franklinsmeltingbluebldg	fire control box	red	< LOD: 0.01
34	478	2018-08-10 11:52	Quantify Lead Paint	60.65	mg / cm ^2	Inconclusive	0.01	08102018-19	franklinsmeltingbluebldg	fire control box	red	< LOD: 0.01
35	477	2018-08-10 11:50	Quantify Lead Paint	60.51	mg / cm ^2	Inconclusive	0.01	08102018-18	franklinsmeltingbluebldg	wire box northeast	off-white	< LOD: 0.01
36	476	2018-08-10 11:49	Quantify Lead Paint	60.29	mg / cm ^2	Inconclusive	0.01	08102018-18	franklinsmeltingbluebldg	wire box northeast	off-white	< LOD: 0.01
37	475	2018-08-10 11:47	Quantify Lead Paint	60.41	mg / cm ^2	Inconclusive	0.01	08102018-18	franklinsmeltingbluebldg	wire box northeast	off-white	< LOD: 0.01
38	474	2018-08-10 11:44	Quantify Lead Paint	60.56	mg / cm ^2	Inconclusive	0.01	08102018-17	franklinsmeltingbluebldg	electrical box northeast	gray	< LOD: 0.01
39	473	2018-08-10 11:43	Quantify Lead Paint	60.34	mg / cm ^2	Inconclusive	0.01	08102018-17	franklinsmeltingbluebldg	electrical box northeast	gray	< LOD: 0.01
40	472	2018-08-10 11:42	Quantify Lead Paint	60.60	mg / cm ^2	Inconclusive	0.01	08102018-17	franklinsmeltingbluebldg	electrical box northeast	gray	< LOD: 0.01
41	471	2018-08-10 11:38	Quantify Lead Paint	60.57	mg / cm ^2	Inconclusive	0.01	08102018-16	franklinsmeltingbluebldg	expander box central north	off-white	< LOD: 0.01
42	470	2018-08-10 11:37	Quantify Lead Paint	60.36	mg / cm ^2	Inconclusive	0.01	08102018-16	franklinsmeltingbluebldg	expander box central north	off-white	< LOD: 0.01

Thermo Fisher Scientific
2 Radcliff Road
Tewksbury, MA 01876 USA

Index	Reading No	Time	Type	Duration	Units	Results	Action Lev	Component	Substrate	Side	Color	Pb
43	469	2018-08-10 11:36	Quantify Lead Paint	60.67	mg / cm ^2	Inconclusive	0.01	08102018-16	franklinsmeltingbluebldg	expander box central north	off-white	< LOD: 0.01
44	**468**	**2018-08-10 11:31**	**Quantify Lead Paint**	**60.51**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-15**	**franklinsmeltingbluebldg**	**Ampgard box southwest**	**light green**	**0.03 +/- 0.01**
45	467	2018-08-10 11:30	Quantify Lead Paint	60.38	mg / cm ^2	Inconclusive	0.01	08102018-15	franklinsmeltingbluebldg	Ampgard box southwest	light green	< LOD: 0.01
46	466	2018-08-10 11:29	Quantify Lead Paint	60.35	mg / cm ^2	Inconclusive	0.01	08102018-15	franklinsmeltingbluebldg	Ampgard box southwest	light green	< LOD: 0.01
47	**465**	**2018-08-10 11:24**	**Quantify Lead Paint**	**59.73**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-14**	**franklinsmeltingbluebldg**	**electric pipe**	**blue**	**0.08 +/- 0.01**
48	**464**	**2018-08-10 11:22**	**Quantify Lead Paint**	**60.44**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-14**	**franklinsmeltingbluebldg**	**electric pipe**	**blue**	**0.07 +/- 0.01**
49	**463**	**2018-08-10 11:21**	**Quantify Lead Paint**	**60.41**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-14**	**franklinsmeltingbluebldg**	**electric pipe**	**blue**	**0.08 +/- 0.01**
50	**462**	**2018-08-10 10:54**	**Quantify Lead Paint**	**60.33**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-13**	**franklinsmeltingbluebldg**	**sprinkler pipe**	**red**	**0.45 +/- 0.10**
51	**461**	**2018-08-10 10:53**	**Quantify Lead Paint**	**60.08**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-13**	**franklinsmeltingbluebldg**	**sprinkler pipe**	**red**	**0.24 +/- 0.01**
52	**460**	**2018-08-10 10:52**	**Quantify Lead Paint**	**60.40**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-13**	**franklinsmeltingbluebldg**	**sprinkler pipe**	**red**	**0.37 +/- 0.10**
53	459	2018-08-10 10:48	Quantify Lead Paint	60.31	mg / cm ^2	Inconclusive	0.01	08102018-12	franklinsmeltingbluebldg	tower water pipe	green	< LOD: 0.01
54	458	2018-08-10 10:46	Quantify Lead Paint	60.44	mg / cm ^2	Inconclusive	0.01	08102018-11	franklinsmeltingbluebldg	west inside wall	green	< LOD: 0.01
55	457	2018-08-10 10:43	Quantify Lead Paint	60.43	mg / cm ^2	Inconclusive	0.01	08102018-10	franklinsmeltingbluebldg	south inside wall	yellow	< LOD: 0.01
56	456	2018-08-10 10:41	Quantify Lead Paint	60.32	mg / cm ^2	Inconclusive	0.01	08102018-09	franklinsmeltingbluebldg	south inside wall	red	< LOD: 0.01
57	455	2018-08-10 10:37	Quantify Lead Paint	59.65	mg / cm ^2	Inconclusive	0.01	08102018-08	franklinsmeltingbluebldg	west inside wall	off-white	< LOD: 0.01
58	454	2018-08-10 10:35	Quantify Lead Paint	59.90	mg / cm ^2	Inconclusive	0.01	08102018-07	franklinsmeltingbluebldg	south inside wall	off-white	< LOD: 0.01
59	453	2018-08-10 10:33	Quantify Lead Paint	60.27	mg / cm ^2	Inconclusive	0.01	08102018-06	franklinsmeltingbluebldg	east inside wall	off-white	< LOD: 0.01
60	452	2018-08-10 10:31	Quantify Lead Paint	60.40	mg / cm ^2	Inconclusive	0.01	08102018-05	franklinsmeltingbluebldg	north inside wall	off-white	< LOD: 0.01
61	**451**	**2018-08-10 10:25**	**Quantify Lead Paint**	**60.31**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-04**	**franklinsmeltingbluebldg**	**west outside wall**	**blue**	**0.05 +/- 0.01**
62	**450**	**2018-08-10 10:23**	**Quantify Lead Paint**	**60.00**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-03**	**franklinsmeltingbluebldg**	**south outside wall**	**blue**	**0.05 +/- 0.01**
63	**449**	**2018-08-10 10:21**	**Quantify Lead Paint**	**60.41**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-02**	**franklinsmeltingbluebldg**	**east outside wall**	**blue**	**0.04 +/- 0.01**
64	**448**	**2018-08-10 10:19**	**Quantify Lead Paint**	**60.65**	**mg / cm ^2**	**Positive**	**0.01**	**08102018-01**	**franklinsmeltingbluebldg**	**north outside wall**	**blue**	**0.04 +/- 0.01**
65	447	2018-08-10 10:15	Quantify Lead Paint	60.21	mg / cm ^2	Inconclusive	0.01	blank				< LOD: 0.01
66	**446**	**2018-08-10 10:13**	**Quantify Lead Paint**	**60.30**	**mg / cm ^2**	**Positive**	**0.01**	**green standard**				**0.32 +/- 0.10**
67	**445**	**2018-08-10 10:11**	**Quantify Lead Paint**	**60.25**	**mg / cm ^2**	**Positive**	**0.01**	**yellow standard**				**3.35 +/- 0.10**
68	**444**	**2018-08-10 10:09**	**Quantify Lead Paint**	**60.17**	**mg / cm ^2**	**Positive**	**0.01**	**red standard**				**1.00 +/- 0.10**
69	443	2018-08-10 10:04	System Check	88.25	cps							
70	442	2018-08-10 10:03	System Check	89.11	cps							

Chemical Services Suspect Asbestos Containing Materials Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018 and 11/14/2018

Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

Scope of Work and Limitations:
- Scope of work included assessment of suspect asbestos-containing material (ACM) associated with all accessible buildings and structures at the Former Franklin Smelting Property. All accessible interior and exterior surfaces were evaluated as part of the assessment. See Attachment A for the locations of key structures present on the property at the at the time that this assessment was completed.
- Due to concerns about the structural integrity of the staircases leading to the conveyor belt system in the northwest portion of the Main Building and the baghouse located adjacent to the north of the main building, the ACM assessment of these areas was conducted visually from the ground and from a high reach. Other than suspect ACM gaskets, no other additional suspect ACM were visible in these areas.

Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
Confirmed and Presumed Asbestos Containing Materials								
2	Black Perimeter Roof Flashing	Misc.	Northwest Building, Roof Perimeter (180 SF)	N	Good	08102018-04 08102018-05 08102018-06	Yes (8.3% Chrysotile)	Black asphaltic felt roof flashing. See Photo #1.
3	Black Roof Flashing at Roof Penetrations	Misc.	Northwest Building, Roof Penetrations (60 SF)	N	Good	08102018-07 08102018-08 08102018-09	Yes (6.3% Chrysotile)	Black asphaltic felt roof flashing. Includes penetrations around pipe supports, air intakes, and electrical conduit. See Photos #1 and 2.
7	Gray-Black Roofing Cement/Tar	Misc.	Northwest Building, Roof Perimeter Seams and Roof Penetrations (Same Locations as Materials #2 and #3)	N	Good	08102018-19 08102018-20 08102018-21 08102018-11 (Layer 2)	Yes (8.2 - 15% Chrysotile)	See Photo #3. Some tar was adhered to silver caulk analyzed by IATL as Layer 2 of sample 08102018-11.
9	White Caulk	Misc.	- Northwest Building, Seams on Sheet Metal of North Air Intake on Roof (40 LF) - Northwest Building, Seams on Sheet Metal of South Air Intake on Roof (40 LF)	N	Good	08102018-25 08102018-26 08102018-27	Yes (2.1% Chrysotile)	See Photos #1 and 4.
19	Gray Gasket	Misc.	Northwest Building Gaskets on Piping Flanges within Building and on Roof (Estimated 10-30 Gaskets on Water Piping and Gas Piping)	N	Good	08102018-53 08102018-54	Yes (20% Chrysotile)	See Photos #5 and 6.
21	Dark Gray Gasket	Misc.	Northwest Building, Gasket on Ground by South Wall (1 SF)	N	Good	08102018-58 08102018-59	Yes (20% Chrysotile)	

Chemical Services Suspect Asbestos Containing Materials Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018 and 11/14/2018

Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

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Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
22	White Window Glazing	Misc.	- Northwest Building, Window Pane on Exterior Door at NE Corner (5 LF) - Northwest Building, Window Pane on Interior Door at NE Corner (5 LF) - Northwest Building, Window Pane on Exterior Door at South Wall (5 LF)	N	Good	08102018-60 08102018-61	Yes (1.2% Chrysotile)	See Photo #7.
23	Dark Gray-Black Gasket	Misc.	Main Building, Gaskets on Red Tank (5-10 gaskets; 5-10 SF)	N	Good	08102018-62 08102018-63	Yes (75% Chrysotile)	See Photo #9.
25	Fire Doors	Misc.	Main Building (2 doors)				Presumed	Fire doors locked; presumed to contain ACM insulation. See Photo #8.
32	White Woven Gasket	Misc.	Baghouse Adjacent to North of Main Building (Numerous Gaskets)	N	Good	08102018-81 08102018-82	Yes (80% Chrysotile)	Baghouse identified as Hopper Structure in IATL Sample Log. See Photo #10.
41	Gaskets	Misc.	Gaskets on all structures on the property, including but not limited to piping, fiberglass storage tanks, metal tanks, baghouses, and exhaust stacks. (Numerous Gaskets)	N	Good	N/A	Presumed (75-80% Chrysotile)	Based upon samples of gaskets collected from the Red Tank and Baghouse at the Main Building and from piping within the Northwest Building, all gaskets on property are presumed to contain asbestos.
Other Suspect Asbestos Containing Materials Sampled								

Chemical Services Suspect Asbestos Containing Materials Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018 and 11/14/2018

Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

Scope of Work and Limitations:
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Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
1	Roof Membrane	Misc.	Nortwest Building, Roof - Main Field (1,800 SF)	N	Good	08102018-01 08102018-02 08102018-03	No	Roof membrane consists of black tar, yellow foam insulation, and tan-brown loose insulation
4	Silver-Gray Caulk	Misc.	Northwest Building, Roof Electrical Penetrations and Pipe Supports	N	Good	08102018-10 08102018-11 08102018-12	No	NOTE: Black tar from layer 2 of sample 08102018-11 was 15% chrysotile, but this material is associated with Material #7 above. Layer 1 of this sample consisted of gray caulk and was non-detect for asbestos.
5	White-Silver Wrap on Fiberglass Pipe Insulation (PI) - 10" Pipe	TSI	Northwest Building, North-South 10" Pipe Run on Roof (60 LF)	N	Good	08102018-13 08102018-14 08102018-15	No	
6	White-Silver Wrap on Fiberglass PI - 1.5" Pipe	TSI	Northwest Building, 1.5" Pipe Run on Roof (8 LF)	N	Good	08102018-16 08102018-17 08102018-18	No	
8	Loose White Insulation	TSI	Northwest Building, Loose Insulation in Voids of Cinderblock Walls (Observed at roof and assumed to be present throughout walls of cinderblock structure)	Y	Good	08102018-22 08102018-23 08102018-24	No	
10	Gray-White Loose Insulation	TSI	Northwest Building, loose insulation observed in and around Cold Box at north wall of building (72 SF)	Y	Good	08102018-28 08102018-29 08102018-30	No	

Chemical Services Suspect Asbestos Containing Materials Inspection Report

Site: PGW Former Franklin Smelting Property; 3030 Castor Avenue; Philadelphia, PA 19134

Building/Area: Entire Property

Date(s): 08/10/2018 and 11/14/2018

Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

Scope of Work and Limitations:
- Scope of work included assessment of suspect asbestos-containing material (ACM) associated with all accessible buildings and structures at the Former Franklin Smelting Property. All accessible interior and exterior surfaces were evaluated as part of the assessment. See Attachment A for the locations of key structures present on the property at the at the time that this assessment was completed.
- Due to concerns about the structural integrity of the staircases leading to the conveyor belt system in the northwest portion of the Main Building and the baghouse located adjacent to the north of the main building, the ACM assessment of these areas was conducted visually from the ground and from a high reach. Other than suspect ACM gaskets, no other additional suspect ACM were visible in these areas.

Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
11	White Wrap on Fiberglass PI 10" Pipe	TSI	Nortwest Building, Interior Piping in NW Quadrant of Building (45 LF)	N	Good	08102018-31 08102018-32 08102018-33	No	
12	White Wrap on Fiberglass PI 4-6" Pipe	TSI	- Northwest Building, Interior Air Line Piping in NW Quadrant of Building (50 LF) - Northwest Building, Interior Air Line Piping Along West Wall of Building (30 LF)	N	Good	08102018-34 08102018-35 08102018-36	No	
13	Gray Wrap Over Fiberglass Insulation	TSI	- Northwest Building, Interior Tank/Filter in Center of West Wall of Building (65 SF)	N	Good	08102018-37 08102018-38 08102018-39	No	
14	Orange-Red Foam Sealant	TSI	- Northwest Building, Penetrations at North Wall and NE Interior Corner (5 LF) - Northwest Building, Penetrations on East Wall in SE Corner of Building (10 LF)	N	Good	08102018-40 08102018-41 08102018-42	No	
15	White Wrap on Fiberglass PI 1.5" Pipe	TSI	- Northwest Building, Interior 1.5" Piping (30 LF) - Northwest Building, Exterior 1.5" Piping (47 LF)	N	Good	08102018-43 08102018-44 08102018-45	No	
16	Gray Caulk	Misc.	- Northwest Building South Wall Doorway Seam-Interior and Exterior (35 LF) - Northwest Building, South Wall Exterior Window Seam (15 LF) - Northwest Building, Exterior Wall Seams in SE Corner of Building (64 LF)	N	Good	08102018-46 08102018-47	No	

Chemical Services Suspect Asbestos Containing Materials Inspection Report

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Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

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- Due to concerns about the structural integrity of the staircases leading to the conveyor belt system in the northwest portion of the Main Building and the baghouse located adjacent to the north of the main building, the ACM assessment of these areas was conducted visually from the ground and from a high reach. Other than suspect ACM gaskets, no other additional suspect ACM were visible in these areas.

Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
17	White Caulk	Misc.	- Northwest Building, Exterior Louvers on North Wall (20 LF) - Northwest Building, Exterior Door in NE Corner of Building (35 LF) - Northwest Buildng, Roll-Down Door Seams (33 LF) - Northwest Building, Exterior Wall Seams (20 LF)	N	Good	08102018-48 08102018-49	No	
18	Gray Fibrous Fire Door Insulation	TSI	- Northwest Building, Insulation within Exterior Door at NE Corner (21 SF) - Northwest Building, Insulation within Interior Door at NE Corner (21 SF) - Northwest Building, Insulation within Exterior Door at South Wall (21 SF)	N	Good	08102018-50 08102018-51 08102018-52	No	
20	Black-Gray PI	TSI	Northwest Building, Exterior Pipe Run Along South Wall at Ground Level (10 LF)	N	Damaged	08102018-55 08102018-56 08102018-57	No	Black Isocyanate/Rubber/Foam Insulation (weathered)
24	Gray-Black Conveyor Belt	Misc.	Main Building, Conveyor Belt in Northwest Section of Building	N	Good	08102018-64 08102018-65	No	
26	Gray Cement	Surfacing	Main Building, SW Corner of Building	N	Good	08102018-66 08102018-67 08102018-68	No	
27	Gray Vibration Collar	Misc.	Main Building, Vibration Collars on Rectangular Duct Leading to Interior Central Smokestack (15 SF)	N	Good	08102018-69 08102018-70	No	
28	Gray Ash/Debris	Misc.	Main Building, Interior of Central Smokestack (50-100 CF)	Y	Debris	08102018-71 08102018-72 08102018-73	No	

Chemical Services Suspect Asbestos Containing Materials Inspection Report

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Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

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- Due to concerns about the structural integrity of the staircases leading to the conveyor belt system in the northwest portion of the Main Building and the baghouse located adjacent to the north of the main building, the ACM assessment of these areas was conducted visually from the ground and from a high reach. Other than suspect ACM gaskets, no other additional suspect ACM were visible in these areas.

Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
29	Gray Mastic and Fibrous Cloth	Misc.	Main Building, Patches on Baghouse Adjacent to North of Main Building	N	Good	08102018-74 08102018-75	No	
30	Black Asphaltic Roofing Material	Misc.	Small Utility Shed, Roof (30 SF)	N	Good	08102018-76 08102018-77	No	
31	Tan Fire Brick	TSI	- Main Building, Interior Lining of One (1) Rotary Furnace Inside Building - Interior Lining of Three (3) Rotary Furnaces in NE Quadrant of Property	N	Good	08102018-78 08102018-79 08102018-80	No	
33	Cementitious Pipe Lining	TSI	Large Diameter Pipe/Exhaust Stacks Observed on Ground Adjacent to Rotary Furnaces in NE Quadrant of Property	N	Good	08102018-83 08102018-84 08102018-85	No	
34	White Woven Gasket with Gray Mastic	Misc.	Gaskets on Exhaust Stacks Observed on Ground Along Castor Avenue	N	Good	6652697 6652698	No	IATL Lab No. referenced for these samples
35	Brown Insulating Board	Misc.	Electrical Insulating Boards within Transformer with S/N 78E710111	N	Good	6652699 6652700	No	IATL Lab No. referenced for these samples
36	Pink Insulating Board	Misc.	Electrical Insulating Boards within Transformer with S/N TAT1711-01	N	Good	6652701 6652702	No	IATL Lab No. referenced for these samples
37	White Block Pipe Insulation	TSI	Main Building, Northwest Corner to North of Red Fiberglass Tank (20 LF)	Y	Damaged	6652703 6652704 6652705	No	IATL Lab No. referenced for these samples
38	Red Insulating Board	Misc.	Northwest Building, Insulating Board within Electrical Panel in SE Corner of Building	N	Good	6652706 6652707	No	IATL Lab No. referenced for these samples

Chemical Services Suspect Asbestos Containing Materials Inspection Report

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Date(s): 08/10/2018 and 11/14/2018

Report Date: 01/25/2019

Inspector(s): Jeff Ham (Philadelphia Asbestos Investigator Cert. # AIC 15-000032)

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- Due to concerns about the structural integrity of the staircases leading to the conveyor belt system in the northwest portion of the Main Building and the baghouse located adjacent to the north of the main building, the ACM assessment of these areas was conducted visually from the ground and from a high reach. Other than suspect ACM gaskets, no other additional suspect ACM were visible in these areas.

Material #	Material	Category	Location(s) and Quantities	Friable (Y/N)	Condition	Sample Numbers	Confirmed ACM	Comments/Photo #
39	White Woven Gasket with White Caulk	Misc.	Gaskets on Exhaust Stacks Observed Along Western Property Boundary	N	Good	6652708 6652709	No	IATL Lab No. referenced for these samples
40	Black Rubber with Fiber Mesh	Misc.	Saddles of Propane Tank Observed Along Castor Avenue in NE Quadrant of Property	N	Good	6652710 6652711	No	IATL Lab No. referenced for these samples

PGW Chemical Services Suspect Asbestos Containing Materials Inspection Report

Asbestos Inspection Methodology

The asbestos inspection was completed by United States Environmental Protection Agency (USEPA) accredited and Pennsylvania licensed Asbestos Building Inspectors. The methodology employed by the inspection team consisted of categorizing and identifying all suspect asbestos building components or materials. Both friable (i.e., materials that can be pulverized or reduced to powder by normal hand pressure) and non-friable suspect asbestos containing materials were considered during the course of this inspection. Homogeneous materials (i.e., one which seems by function, texture, color, and wear to be uniform in nature and to have been applied during the same general time period) were identified and bulk samples of each material were collected to determine the content of the material and its physical condition. Suspect materials were grouped based on material homogeneity. Samples were collected in accordance with the sampling protocol identified for thermal system insulation, surfacing, and miscellaneous materials identified in the Asbestos Hazard and Emergency Response Act (AHERA).

Representative bulk samples of suspect friable and non-friable ACM were collected per homogeneous material for analysis by an independent accredited laboratory. Asbestos samples were analyzed on a "first positive" basis such that, once one sample of a homogeneous material was found to be positive for asbestos content, the material was considered to be asbestos containing without analyzing the remaining samples.

Suspect ACM Categories

- Thermal System Insulation (TSI): insulation applied to pipes, boilers, tanks, ducts and other equipment tht contains hot liquids/gases. Includes lagging, wrap, block, mudded elbows, corrugated insulation, seam tape, skim coats, etc.

- Surfacing Material (Surfacing): material that was typically mixed in batches and spray or trowel applied to surfaces, i.e. plaster walls/ceilings, popcorn ceilings, textured ceiling plaster, spray-applied fireproofing, etc.

- Miscellaneous Material (Misc.): anything other than TSI or surfacing materials; mostly non-friable materials that were used for various applicaitons, i.e. floor tile and mastic, ceiling tiles, outdoor siding (transite), electrical panels (ebonite), fire doors, etc.

Suspect ACM Sampling Protocol

Thermal System Insulation (TSI): collect three (3) samples of each suspect material (homogenous area)
- Surfacing Material (Surfacing): collect samples based upon the area of the suspect material according to the frequency below:
  < 1,000 SF: collect three (3) samples
  1,000 SF > 5,000 SF: collect five (5) samples
  > 5,000 SF: collect seven (7) samples
- Miscellaneous Material (Misc.): collect two (2) samples of each suspect material (homogenous area)

Condition Assessment

- Good (G): no visible damage or deterioration or showing only very limited damage or deterioration.
- Damaged (D): Less than or equal to 10% damage evenly distributed across area or less than 25% damage in a localized area.
- Significantly Damaged (SD): Greater than or equal to 10% damage evenly distributed across area or greater than or equal to 25% damage in a localized area.

Sample Analysis and Interpretation of Results

Samples were sent to International Asbestos Testing Laboratories ("IATL") located in Mount Laurel, New Jersey for analysis for asbestos content. IATL is accredited under the National Voluntary Laboratory Accreditation Program. The samples were analyzed for asbestos using Polarized Light Microscopy ("PLM") via EPA Method 600/R-93/116. Materials containing greater than 1% asbestos are considered asbestos containing materials (ACM).

Abatement of the identified ACM will be necessary prior to performance of any anticipated renovation/demolition activities that disturb these materials to the point where asbestos fibers could be released. The Occupational Safety and Health Administration (OSHA) defines disturbance as activities that disrupt the matrix of the ACM, crumble or pulverize the ACM, or generate visible debris from the ACM.

If any ACM will be disturbed, the ACM must be properly abated by an asbestos abatement contractor prior to completing renovation or demolition work that would disturb the ACM. Proper oversight and air monitoring of the abatement activities by a qualified environmental consultant may also be required. PGW Chemical Services can arrange for abatement of the ACM upon request.

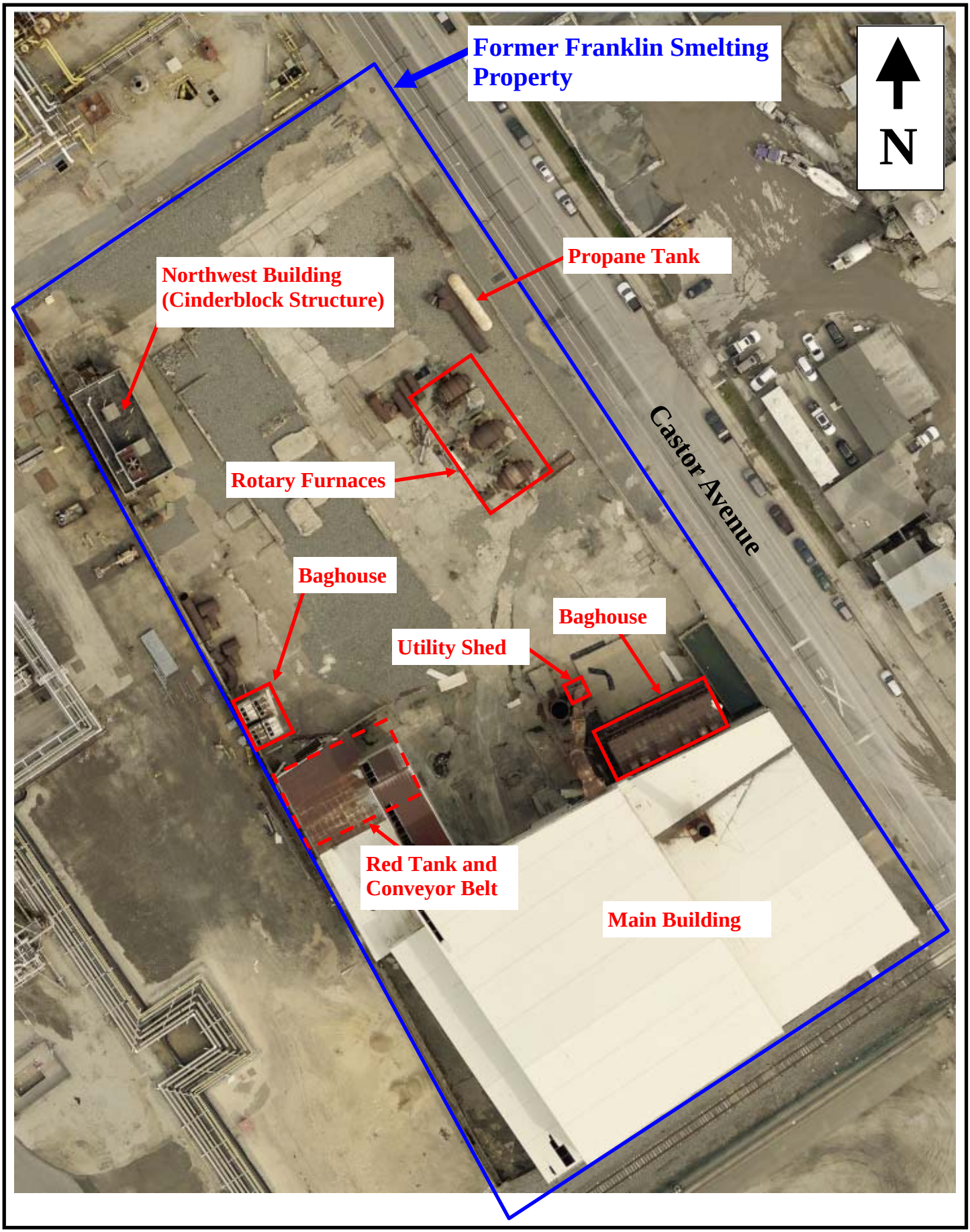
Abbreviations:

- SF: square feet
- LF: linear feet

ATTACHMENT A

Survey Location Plan

Former Franklin Smelting Property Asbestos Survey Location Plan



ATTACHMENT B

Photographs

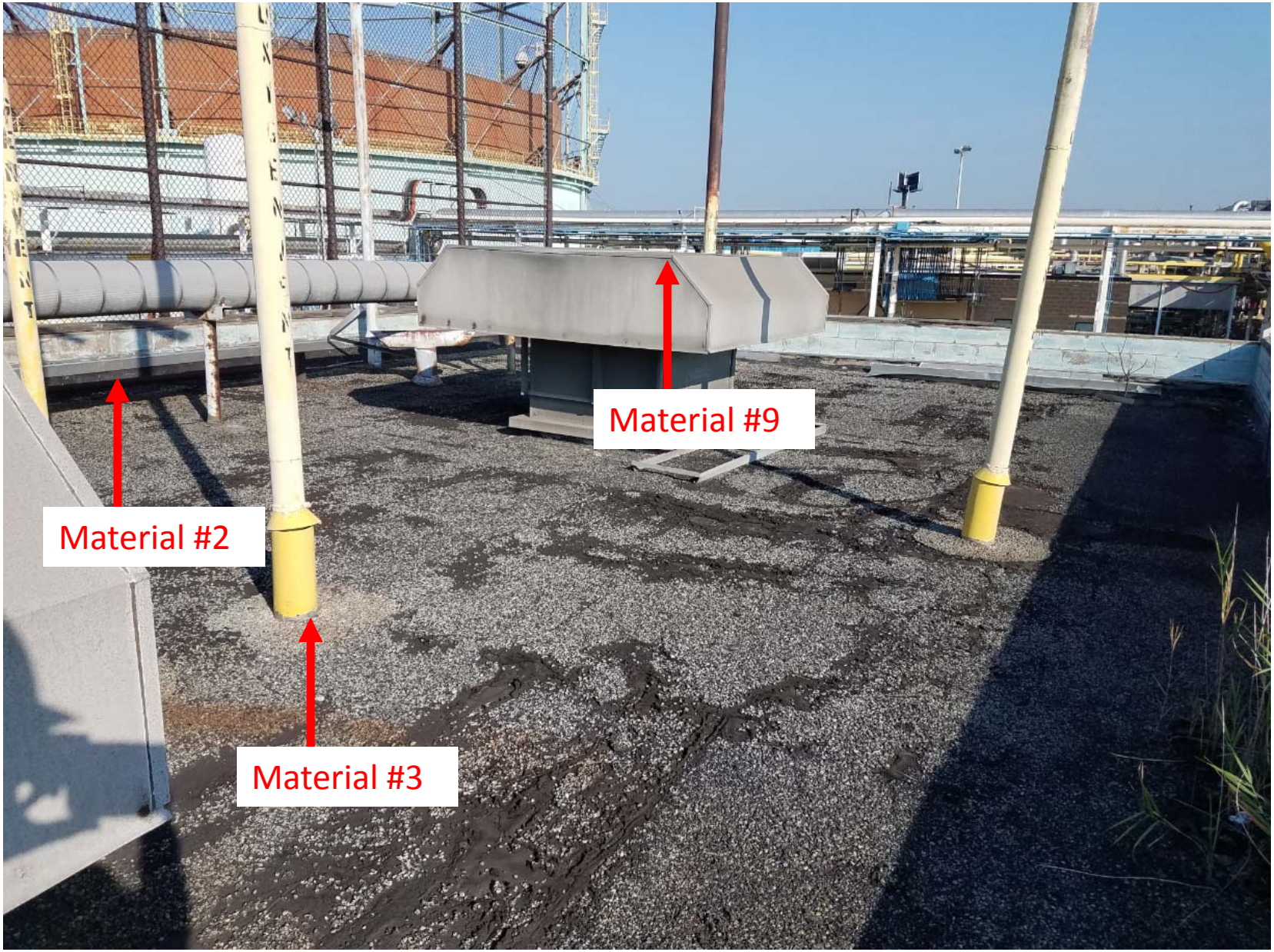


Photo 1: Roof of Northwest Building on Former Franklin Smelting Property as observed during asbestos survey completed on 08/10/2018. Asbestos-containing materials (ACM) noted in photo.

Photo 2: Northwest Building perimeter roof flashing close-up (Material #2).

Photo 3: Northwest Building gray-black roofing cement (Material #7).

Photo 4: Norwest Building white caulk on air intake ductwork (Material #9).

Photo 5: Northwest Building interior. Gaskets (Material #19) on all piping are ACM.

Photo 6: Northwest Building interior. Gaskets (Material #19) on all piping are ACM.

Photo 7: Northwest Building exterior door at south wall. Window glazing is ACM (Material #22).

Photo 8: Fire doors observed within Main Franklin Smelting Building (Material # 25).

Photo 9: Asbestos-containing gaskets (Material #23) on red tank in NW corner of Main Building. Gaskets also observed on top of tank.

Photo 10: Asbestos-containing gaskets on baghouse adjacent to Main Building (Material #32).

ATTACHMENT C

Suspect Asbestos Containing Material
Laboratory Analytical Results

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587223
Client No.: 08102018-01
Analyst Observation: Black Roof Material
Client Description: Roof Membrane
Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
25 Cellulose

Percent Non-Fibrous Material:
75

Lab No.: 6587223(L2)
Client No.: 08102018-01
Analyst Observation: Brown Insulation
Client Description: Roof Membrane
Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
35 Cellulose

Percent Non-Fibrous Material:
65

Lab No.: 6587223(L3)
Client No.: 08102018-01
Analyst Observation: Yellow Insulation
Client Description: Roof Membrane
Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587223(L4)
Client No.: 08102018-01
Analyst Observation: Black Tar Paper
Client Description: Roof Membrane
Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose

Percent Non-Fibrous Material:
40

Lab No.: 6587223(L5)
Client No.: 08102018-01
Analyst Observation: Black Tar
Client Description: Roof Membrane
Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587224
Client No.: 08102018-02
Analyst Observation: Black Roof Material
Client Description: Roof Membrane
Location: NW Building, NE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
25 Cellulose

Percent Non-Fibrous Material:
75

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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Mt. Laurel, New Jersey 08054
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3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587224(L2)
Client No.: 08102018-02

Analyst Observation: Brown Insulation
Client Description: Roof Membrane

Location: NW Building, NE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
35 Cellulose

Percent Non-Fibrous Material:
65

Lab No.: 6587224(L3)
Client No.: 08102018-02

Analyst Observation: Yellow Insulation
Client Description: Roof Membrane

Location: NW Building, NE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587224(L4)
Client No.: 08102018-02

Analyst Observation: Black Tar Paper
Client Description: Roof Membrane

Location: NW Building, NE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose

Percent Non-Fibrous Material:
40

Lab No.: 6587224(L5)
Client No.: 08102018-02

Analyst Observation: Black Tar
Client Description: Roof Membrane

Location: NW Building, NE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587225
Client No.: 08102018-03

Analyst Observation: Black Roof Material
Client Description: Roof Membrane

Location: NW Building, Near West Wall At Center Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
25 Cellulose

Percent Non-Fibrous Material:
75

Lab No.: 6587225(L2)
Client No.: 08102018-03

Analyst Observation: Brown Insulation
Client Description: Roof Membrane

Location: NW Building, Near West Wall At Center Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
35 Cellulose

Percent Non-Fibrous Material:
65

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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CERTIFICATE OF ANALYSIS

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3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587225(L3)
Client No.: 08102018-03

Analyst Observation: Yellow Insulation
Client Description: Roof Membrane

Location: NW Building, Near West Wall At Center Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587225(L4)
Client No.: 08102018-03

Analyst Observation: Black Tar Paper
Client Description: Roof Membrane

Location: NW Building, Near West Wall At Center Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose

Percent Non-Fibrous Material:
40

Lab No.: 6587225(L5)
Client No.: 08102018-03

Analyst Observation: Black Tar
Client Description: Roof Membrane

Location: NW Building, Near West Wall At Center Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587226
Client No.: 08102018-04

Analyst Observation: Black Flashing
Client Description: Perimeter Roof Flashing

Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
PC 8.3 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
10 Fibrous Glass

Percent Non-Fibrous Material:
81.7

Lab No.: 6587226(L2)
Client No.: 08102018-04

Analyst Observation: Black Tar Paper
Client Description: Perimeter Roof Flashing

Location: NW Building, SE Corner Of Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
70 Cellulose

Percent Non-Fibrous Material:
30

Lab No.: 6587227
Client No.: 08102018-05

Analyst Observation: Sample Not Analyzed
Client Description: Perimeter Roof Flashing

Location: NW Building, Near East Wall At Center Of Roof
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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ASBESTOS TESTING LABORATORIES

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Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587228
Client No.: 08102018-06

Analyst Observation: Sample Not Analyzed
Client Description: Perimeter Roof Flashing

Location: NW Building, NW Corner Of Roof
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587229
Client No.: 08102018-07

Analyst Observation: Black Tar
Client Description: Roof Flashing At Penetrations

Location: NW Building, NE Quadrant Of Roof
Facility:

Percent Asbestos:
PC 6.3 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
93.7

Lab No.: 6587230
Client No.: 08102018-08

Analyst Observation: Sample Not Analyzed
Client Description: Roof Flashing At Penetrations

Location: NW Building, Air Duct In North Central Portion Of Roof
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587231
Client No.: 08102018-09

Analyst Observation: Sample Not Analyzed
Client Description: Roof Flashing At Penetrations

Location: NW Building, Pipe Support In NW Corner Of Roof
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587232
Client No.: 08102018-10

Analyst Observation: Silver Caulk
Client Description: Silver-Grey Caulk

Location: NW Building, NW Pipe Support On Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587233
Client No.: 08102018-11

Analyst Observation: Clear Caulk
Client Description: Silver-Grey Caulk

Location: NW Building, Center West Electrical Penetration On Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587233(L2)
Client No.: 08102018-11

Analyst Observation: Black Tar
Client Description: Silver-Grey Caulk

Location: NW Building, Center West Electrical Penetration On Roof
Facility:

Percent Asbestos:
15 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
85

Lab No.: 6587234
Client No.: 08102018-12

Analyst Observation: Silver Caulk
Client Description: Silver-Grey Caulk

Location: NW Building, Center West Pipe Insulation Seam On Roof
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587235
Client No.: 08102018-13

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation - 10" Pipe

Location: NW Building, 10" Pipe On Roof - Center
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
25 Fibrous Glass

Percent Non-Fibrous Material:
35

Lab No.: 6587235(L2)
Client No.: 08102018-13

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation - 10" Pipe

Location: NW Building, 10" Pipe On Roof - Center
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587236
Client No.: 08102018-14

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation - 10" Pipe

Location: NW Building, 10" Pipe On Roof - North
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
25 Fibrous Glass

Percent Non-Fibrous Material:
35

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Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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Client: PHI907

Report Date: 8/23/2018
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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587236(L2)
Client No.: 08102018-14

Percent Asbestos:
None Detected

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation - 10" Pipe

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Location: NW Building, 10" Pipe On Roof - North
Facility:

Percent Non-Fibrous Material:
5

Lab No.: 6587237
Client No.: 08102018-15

Percent Asbestos:
None Detected

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation (PI) - 10" Pipe

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Location: NW Building, 10" Pipe On Roof - South
Facility:

Percent Non-Fibrous Material:
40

Lab No.: 6587237(L2)
Client No.: 08102018-15

Percent Asbestos:
None Detected

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass Pipe Insulation (PI) - 10" Pipe

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Location: NW Building, 10" Pipe On Roof - South
Facility:

Percent Non-Fibrous Material:
5

Lab No.: 6587238
Client No.: 08102018-16

Percent Asbestos:
None Detected

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Mineral Wool

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Top
Facility:

Percent Non-Fibrous Material:
40

Lab No.: 6587238(L2)
Client No.: 08102018-16

Percent Asbestos:
None Detected

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Top
Facility:

Percent Non-Fibrous Material:
5

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587239
Client No.: 08102018-17

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Middle
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587239(L2)
Client No.: 08102018-17

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Middle
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587240
Client No.: 08102018-18

Analyst Observation: Off-White/Silver Wrap
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Bottom
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587240(L2)
Client No.: 08102018-18

Analyst Observation: Yellow Insulation
Client Description: White-Silver Wrap On Fiberglass (PI) - 1.5" Pipe

Location: NW Building, 1.5" P1 For Cooling Tower On Roof - Bottom
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587241
Client No.: 08102018-19

Analyst Observation: Black Tar
Client Description: Grey-Black Roofing Cement

Location: NW Building, Oxygen Vent In Central East Portion Of Roof
Facility:

Percent Asbestos:
PC 8.2 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
91.8

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587242 **Client No.:** 08102018-20	**Analyst Observation:** Sample Not Analyzed **Client Description:** Grey-Black Roofing Cement	**Location:** NW Building, Flashing Seam On North Wall At Center Of Roof **Facility:**
Percent Asbestos: *Sample Not Analyzed*	Percent Non-Asbestos Fibrous Material: Sample Not Analyzed	Percent Non-Fibrous Material:
Lab No.: 6587243 **Client No.:** 08102018-21	**Analyst Observation:** Sample Not Analyzed **Client Description:** Grey-Black Roofing Cement	**Location:** NW Building, Pipe Penetration At SW Corner Of Roof **Facility:**
Percent Asbestos: *Sample Not Analyzed*	Percent Non-Asbestos Fibrous Material: Sample Not Analyzed	Percent Non-Fibrous Material:
Lab No.: 6587244 **Client No.:** 08102018-22	**Analyst Observation:** Off-White Insulation **Client Description:** Loose White Insulation	**Location:** NW Building, Inside Cinderblock Voids At NE Corner Of Roof **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587245 **Client No.:** 08102018-23	**Analyst Observation:** Off-White Insulation **Client Description:** Loose White Insulation	**Location:** NW Building, Inside Cinderblock Voids At NE Corner Of Roof **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587246 **Client No.:** 08102018-24	**Analyst Observation:** Off-White Insulation **Client Description:** Loose White Insulation	**Location:** NW Building, Inside Cinderblock Voids At NE Corner Of Roof **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587247 **Client No.:** 08102018-25	**Analyst Observation:** Off-White Caulk **Client Description:** White Caulk	**Location:** NW Building, North Air Intake On Roof, South Side Of Intake **Facility:**
Percent Asbestos: ***PC 2.1*** *Chrysotile*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 97.9

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587248
Client No.: 08102018-26

Analyst Observation: Sample Not Analyzed
Client Description: White Caulk

Location: NW Building, North Air Intake On Roof, North Side Of Intake
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587249
Client No.: 08102018-27

Analyst Observation: Sample Not Analyzed
Client Description: White Caulk

Location: NW Building, South Air Intake On Roof, North Side Of Intake
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587250
Client No.: 08102018-28

Analyst Observation: Off-White Insulation
Client Description: Grey-White Loose Insulation

Location: NW Building, North Wall Cold Box
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
90 Mineral Wool

Percent Non-Fibrous Material:
10

Lab No.: 6587251
Client No.: 08102018-29

Analyst Observation: Off-White Insulation
Client Description: Grey-White Loose Insulation

Location: NW Building, Debris On Floor East Of Cold Box
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
90 Mineral Wool

Percent Non-Fibrous Material:
10

Lab No.: 6587252
Client No.: 08102018-30

Analyst Observation: Off-White Insulation
Client Description: Grey-White Loose Insulation

Location: NW Building, Debris On Floor West Of Cold Box
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
90 Mineral Wool

Percent Non-Fibrous Material:
10

Lab No.: 6587253
Client No.: 08102018-31

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 10" Pipe

Location: NW Building, NW Corner Pipe Elbow
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587254 **Client No.:** 08102018-32	**Analyst Observation:** Yellow Insulation **Client Description:** White Wrap On Fiberglass PI 10" Pipe	**Location:** NW Building, NW Corner Vertical Pipe **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 95 Mineral Wool	Percent Non-Fibrous Material: 5
Lab No.: 6587254(L2) **Client No.:** 08102018-32	**Analyst Observation:** Off-White/Silver Wrap **Client Description:** White Wrap On Fiberglass PI 10" Pipe	**Location:** NW Building, NW Corner Vertical Pipe **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 40 Cellulose 20 Fibrous Glass	Percent Non-Fibrous Material: 40
Lab No.: 6587255 **Client No.:** 08102018-33	**Analyst Observation:** Yellow Insulation **Client Description:** White Wrap On Fiberglass PI 10" Pipe	**Location:** NW Building, West Hall Horizontal Pipe Run In Center Of Room **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 95 Mineral Wool	Percent Non-Fibrous Material: 5
Lab No.: 6587255(L2) **Client No.:** 08102018-33	**Analyst Observation:** Off-White/Silver Wrap **Client Description:** White Wrap On Fiberglass PI 10" Pipe	**Location:** NW Building, West Hall Horizontal Pipe Run In Center Of Room **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 40 Cellulose 20 Fibrous Glass	Percent Non-Fibrous Material: 40
Lab No.: 6587256 **Client No.:** 08102018-34	**Analyst Observation:** Yellow Insulation **Client Description:** White Wrap On Fiberglass PI 4-6" Pipe	**Location:** NW Building, NW Corner West Pipe Run **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 95 Mineral Wool	Percent Non-Fibrous Material: 5

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587256(L2)
Client No.: 08102018-34

Analyst Observation: Off-White/Silver Wrap
Client Description: White Wrap On Fiberglass PI 4-6" Pipe

Location: NW Building, NW Corner West Pipe Run
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587257
Client No.: 08102018-35

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 4-6" Pipe

Location: NW Building, NW Corner East Pipe Run
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587257(L2)
Client No.: 08102018-35

Analyst Observation: Off-White Wrap
Client Description: White Wrap On Fiberglass PI 4-6" Pipe

Location: NW Building, NW Corner East Pipe Run
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587258
Client No.: 08102018-36

Analyst Observation: Off-White/Silver Wrap
Client Description: White Wrap On Fiberglass PI 4-6" Pipe

Location: NW Building, Pipe Run Along West Wall Just South Of Air Dryer
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587258(L2)
Client No.: 08102018-36

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 4-6" Pipe

Location: NW Building, Pipe Run Along West Wall Just South Of Air Dryer
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587259
Client No.: 08102018-37

Analyst Observation: Grey/Silver Wrap
Client Description: Grey Wrap On Fiberglass Insulation

Location: NW Building, Air Dryer Top
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
20

Lab No.: 6587260
Client No.: 08102018-38

Analyst Observation: Grey/Silver Wrap
Client Description: Grey Wrap On Fiberglass Insulation

Location: NW Building, Air Dryer Middle
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
20

Lab No.: 6587261
Client No.: 08102018-39

Analyst Observation: Grey/Silver Wrap
Client Description: Grey Wrap On Fiberglass Insulation

Location: NW Building, Air Dryer Bottom
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
60 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
20

Lab No.: 6587262
Client No.: 08102018-40

Analyst Observation: Orange Foam
Client Description: Orange-Red Foam Sealant

Location: NW Building, East Wall At Floor Seam
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587263
Client No.: 08102018-41

Analyst Observation: Orange Foam
Client Description: Orange-Red Foam Sealant

Location: NW Building, North Wall Pipe Penetrations
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587264
Client No.: 08102018-42

Analyst Observation: Off-White Foam
Client Description: Orange-Red Foam Sealant

Location: NW Building, NE Corner Interior At Server Room
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587265
Client No.: 08102018-43

Analyst Observation: Off-White/Silver Wrap
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building, SW Corner Of Building Interior
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587265(L2)
Client No.: 08102018-43

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building, SW Corner Of Building Interior
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587266
Client No.: 08102018-44

Analyst Observation: Off-White/Silver Wrap
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building, Vertical Pipe Run At Building Exterior South Wall
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
40 Cellulose
20 Fibrous Glass

Percent Non-Fibrous Material:
40

Lab No.: 6587266(L2)
Client No.: 08102018-44

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building, Vertical Pipe Run At Building Exterior South Wall
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587267
Client No.: 08102018-45

Analyst Observation: Tan Wrap
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building,Horizontal Pipe Run At Building Exterior SW Corner
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
85 Cellulose

Percent Non-Fibrous Material:
15

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PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587267(L2)
Client No.: 08102018-45

Analyst Observation: Yellow Insulation
Client Description: White Wrap On Fiberglass PI 1.5" Pipe

Location: NW Building,Horizontal Pipe Run At Building Exterior SW Corner
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	95 Mineral Wool	5

Lab No.: 6587268
Client No.: 08102018-46

Analyst Observation: Silver Caulk
Client Description: Grey Caulk

Location: NW Building, Exterior Wall Seam In SE Corner
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587269
Client No.: 08102018-47

Analyst Observation: Grey Putty
Client Description: Grey Caulk

Location: NW Building, Exterior South Wall Doorway Interior
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587270
Client No.: 08102018-48

Analyst Observation: White Caulk
Client Description: White Caulk

Location: NW Building, NE Corner Exterior Doorway
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587271
Client No.: 08102018-49

Analyst Observation: White Caulk
Client Description: White Caulk

Location: NW Building, Exterior Roll Down Doorway East Wall
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587272
Client No.: 08102018-50

Analyst Observation: Grey Insulation
Client Description: Grey Fibrous Fire Door Insulation

Location: NW Building, NE Corner Exterior Door
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	95 Mineral Wool	5

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Laboratory Director

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587273
Client No.: 08102018-51

Analyst Observation: Grey Insulation
Client Description: Grey Fibrous Fire Door Insulation

Location: NW Building, NE Corner Exterior Door
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587273(L2)
Client No.: 08102018-51

Analyst Observation: Black Wrap
Client Description: Grey Fibrous Fire Door Insulation

Location: NW Building, NE Corner Exterior Door
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
20 Cellulose

Percent Non-Fibrous Material:
80

Lab No.: 6587274
Client No.: 08102018-52

Analyst Observation: Grey Insulation
Client Description: Grey Fibrous Fire Door Insulation

Location: NW Building, South Wall Exterior Door
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
95 Mineral Wool

Percent Non-Fibrous Material:
5

Lab No.: 6587275
Client No.: 08102018-53

Analyst Observation: Grey Gasket
Client Description: Grey Gasket

Location: NW Building, Cooling Tower Water Pipe In SW Corner Of Building, East Pipe Run
Facility:

Percent Asbestos:
20 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
40 Cellulose

Percent Non-Fibrous Material:
40

Lab No.: 6587276
Client No.: 08102018-54

Analyst Observation: Sample Not Analyzed
Client Description: Grey Gasket

Location: NW Building, Cooling Tower Water Pipe In SW Corner Of Building, West Pipe Run
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
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Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
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Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587277 **Client No.:** 08102018-55	**Analyst Observation:** Black Foam **Client Description:** Black-Grey PI	**Location:** NW Building, Horizontal Pipe Run Along Ground At South Wall - West **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587278 **Client No.:** 08102018-56	**Analyst Observation:** Black Foam **Client Description:** Black-Grey PI	**Location:** NW Building, Horizontal Pipe Run Along Ground At South Wall - Center **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 3 Fibrous Glass	Percent Non-Fibrous Material: 97
Lab No.: 6587279 **Client No.:** 08102018-57	**Analyst Observation:** Black Foam **Client Description:** Black-Grey PI	**Location:** NW Building, Horizontal Pipe Run Along Ground At South Wall - East **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587280 **Client No.:** 08102018-58	**Analyst Observation:** Grey Gasket **Client Description:** Dark Grey Gasket	**Location:** NW Building, Gasket On Ground By South Wall **Facility:**
Percent Asbestos: ***20*** *Chrysotile*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 80
Lab No.: 6587281 **Client No.:** 08102018-59	**Analyst Observation:** Sample Not Analyzed **Client Description:** Dark Grey Gasket	**Location:** NW Building, Gasket On Ground By South Wall **Facility:**
Percent Asbestos: *Sample Not Analyzed*	Percent Non-Asbestos Fibrous Material: Sample Not Analyzed	Percent Non-Fibrous Material:
Lab No.: 6587282 **Client No.:** 08102018-60	**Analyst Observation:** Off-White Glazing **Client Description:** White Window Glazing	**Location:** NW Building, Exterior Door In NE Corner Of Building **Facility:**
Percent Asbestos: ***PC 1.2*** *Chrysotile*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 98.8

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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Client: Philadelphia Gas Works
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Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
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Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587283
Client No.: 08102018-61

Analyst Observation: Sample Not Analyzed
Client Description: White Window Glazing

Location: NW Building, Exterior Door In NE Corner Of Building
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587284
Client No.: 08102018-62

Analyst Observation: Grey Gasket
Client Description: Dark Grey To Black Gasket

Location: Main Building, 24" Manway On Red Storage Tank In The NW Corner Of Building
Facility:

Percent Asbestos:
75 *Chrysotile*

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
25

Lab No.: 6587285
Client No.: 08102018-63

Analyst Observation: Sample Not Analyzed
Client Description: Dark Grey To Black Gasket

Location: Main Building, 24" Manway On Red Storage Tank In The NW Corner Of Building
Facility:

Percent Asbestos:
Sample Not Analyzed

Percent Non-Asbestos Fibrous Material:
Sample Not Analyzed

Percent Non-Fibrous Material:

Lab No.: 6587286
Client No.: 08102018-64

Analyst Observation: Black Rubber
Client Description: Grey-Black Conveyor Belt

Location: Main Building, Conveyor Belt In NW Corner Of Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
5 Synthetic

Percent Non-Fibrous Material:
95

Lab No.: 6587287
Client No.: 08102018-65

Analyst Observation: Black Rubber
Client Description: Grey-Black Conveyor Belt

Location: Main Building, Conveyor Belt In NW Corner Of Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
5 Synthetic

Percent Non-Fibrous Material:
95

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587288
Client No.: 08102018-66

Analyst Observation: Grey Cementitious
Client Description: Grey Cement

Location: Main Building, SW Corner Of Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587289
Client No.: 08102018-67

Analyst Observation: Grey Cementitious
Client Description: Grey Cement

Location: Main Building, SW Corner Of Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Lab No.: 6587290
Client No.: 08102018-68

Analyst Observation: Grey Cementitious
Client Description: Grey Cement

Location: Main Building, SW Corner Of Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
None Detected

Percent Non-Fibrous Material:
100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Rodney Redman

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587291
Client No.: 08102018-69

Analyst Observation: Beige Wrap
Client Description: Grey Vibration Collar

Location: Main Building, Ductwork In NE Corner Of Building
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	90 Fibrous Glass	10

Lab No.: 6587291(L2)
Client No.: 08102018-69

Analyst Observation: Tan Mastic
Client Description: Grey Vibration Collar

Location: Main Building, Ductwork In NE Corner Of Building
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587292
Client No.: 08102018-70

Analyst Observation: Beige Wrap
Client Description: Grey Vibration Collar

Location: Main Building, Ductwork In NE Corner Of Building
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	90 Fibrous Glass	10

Lab No.: 6587292(L2)
Client No.: 08102018-70

Analyst Observation: Black Mastic
Client Description: Grey Vibration Collar

Location: Main Building, Ductwork In NE Corner Of Building
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587293
Client No.: 08102018-71

Analyst Observation: Grey Ash
Client Description: Grey Ash/Debris

Location: Main Building, Base Of Central Smokestack
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587294
Client No.: 08102018-72

Analyst Observation: Grey Ash
Client Description: Grey Ash/Debris

Location: Main Building, Base Of Central Smokestack
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Erik Swanson

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
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Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587295 **Client No.:** 08102018-73	**Analyst Observation:** Grey Ash **Client Description:** Grey Ash/Debris	**Location:** Main Building, Base Of Central Smokestack **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587296 **Client No.:** 08102018-74	**Analyst Observation:** Grey Mastic **Client Description:** Grey Mastic And Fibrous Cloth	**Location:** Main Building, Patches On Base Of Hopper Structure **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587296(L2) **Client No.:** 08102018-74	**Analyst Observation:** White Rope **Client Description:** Grey Mastic And Fibrous Cloth	**Location:** Main Building, Patches On Base Of Hopper Structure **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 99 Fibrous Glass	Percent Non-Fibrous Material: 1
Lab No.: 6587297 **Client No.:** 08102018-75	**Analyst Observation:** Grey Mastic **Client Description:** Grey Mastic And Fibrous Cloth	**Location:** Main Building, Patches On Base Of Hopper Structure **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587297(L2) **Client No.:** 08102018-75	**Analyst Observation:** White Rope **Client Description:** Grey Mastic And Fibrous Cloth	**Location:** Main Building, Patches On Base Of Hopper Structure **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 99 Fibrous Glass	Percent Non-Fibrous Material: 1
Lab No.: 6587298 **Client No.:** 08102018-76	**Analyst Observation:** Black Shingle **Client Description:** Black Asphaltic Roofing Material	**Location:** Small Utility Building Adj. To North Of Main Building; Roof East Side **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 10 Cellulose	Percent Non-Fibrous Material: 90

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Erik Swanson

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587299 **Client No.:** 08102018-77	**Analyst Observation:** Black Shingle **Client Description:** Black Asphaltic Roofing Material	**Location:** Small Utility Building Adj. To North Of Main Building; Roof North Side **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: 10 Cellulose	Percent Non-Fibrous Material: 90
Lab No.: 6587300 **Client No.:** 08102018-78	**Analyst Observation:** Tan Fire Brick **Client Description:** Tan Fire Brick	**Location:** Main Building, Rotary Furnace Interior Lining **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587301 **Client No.:** 08102018-79	**Analyst Observation:** Tan Fire Brick **Client Description:** Tan Fire Brick	**Location:** Main Building, Rotary Furnace Interior Lining **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587302 **Client No.:** 08102018-80	**Analyst Observation:** Tan Fire Brick **Client Description:** Tan Fire Brick	**Location:** Main Building, Rotary Furnace Interior Lining **Facility:**
Percent Asbestos: *None Detected*	Percent Non-Asbestos Fibrous Material: None Detected	Percent Non-Fibrous Material: 100
Lab No.: 6587303 **Client No.:** 08102018-81	**Analyst Observation:** Grey Gasket **Client Description:** White Woven Gasket	**Location:** Main Building, Gasket At Base Of Hopper Sturcture **Facility:**
Percent Asbestos: ***80*** *Chrysotile*	Percent Non-Asbestos Fibrous Material: 15 Cellulose	Percent Non-Fibrous Material: 5
Lab No.: 6587304 **Client No.:** 08102018-82	**Analyst Observation:** Grey Gasket **Client Description:** White Woven Gasket	**Location:** Main Building, Gasket At Base Of Hopper Sturcture **Facility:**
Percent Asbestos: ***80*** *Chrysotile*	Percent Non-Asbestos Fibrous Material: 15 Cellulose	Percent Non-Fibrous Material: 5

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Erik Swanson

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

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CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6587305
Client No.: 08102018-83

Analyst Observation: Tan Cementitious
Client Description: Cementitious Pipe Lining

Location: Large Diameter Metal Piping On Ground By Exterior Rotary Furnaces, West Pipe Top
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587306
Client No.: 08102018-84

Analyst Observation: Tan Cementitious
Client Description: Cementitious Pipe Lining

Location: Large Diameter Metal Piping On Ground By Exterior Rotary Furnaces, West Pipe Bottom
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Lab No.: 6587307
Client No.: 08102018-85

Analyst Observation: Tan Cementitious
Client Description: Cementitious Pipe Lining

Location: Large Diameter Metal Piping On Ground By Exterior Rotary Furnaces, East Pipe Bottom
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	None Detected	100

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 8/21/2018
Date Analyzed: 08/23/2018
Signature:
Analyst: Erik Swanson

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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CERTIFICATE OF ANALYSIS

Client:	Philadelphia Gas Works	Report Date:	8/23/2018
	3100 Passyunk Ave.	Report No.:	571112 - PLM
	Philadelphia PA 19145	Project:	Franklin Smelting ACM Survey
		Project No.:	
Client:	PHI907		

Appendix to Analytical Report

Customer Contact: Jeff Ham
Method: US EPA 600, R93-116

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: cdavis@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Bulk Building Materials
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

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Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. PC Trace represents a <0.25% amount. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB)

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)

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	Philadelphia PA 19145	Project:	Franklin Smelting ACM Survey
		Project No.:	
Client:	PHI907		

Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com**.

1) Note: No mastic provided for analysis.
2) Note: Insufficient mastic provided for analysis.
3) Note: Insufficient material provided for analysis.
4) Note: Insufficient sample provided for QC reanalysis.
5) Note: Different material than indicated on Sample Log / Description.
6) Note: Sample not submitted.
7) Note: Attached to asbestos containing material.
8) Note: Received wet.
9) Note: Possible surface contamination.
10) Note: Not building material. 1% threshold may not apply.
11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
12) Note: Asbestos detected but not quantifiable.
13) Note: Multiple identical samples submitted, only one analyzed.
14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.
16) Note: This sample contains >10% vermiculite mineral. See Appendix for Recommendations for Vermiculite Analysis.

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

For New York State customers, NYSDOH requires disclaimers and qualifiers for various vermiculite containing samples that direct analysis via ELAP198.6 and ELAP198.8 for samples that contain >10% vermiculite mineral where ELAP198.6 may be used to evaluate the asbestos content of the material. However, any test result using ELAP198.6 will be reported with the following disclaimer: “ELAP198.6 method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing >10% vermiculite.”

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

1)**Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116
Requirements/Comments: Minimum of 0.1 g of sample. ~0.25% LOQ for most samples.

2)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

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Client: PHI907

Report Date: 8/23/2018
Report No.: 571112 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

3)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Floats" only.

4)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

5)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Suspension" only.

LOQ, Limit of Quantitation estimates for mass and volume analyses.
*With advance notice and confirmation by the laboratory.
**Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

–Bulk Asbestos –

Contact Information

Client Company:	Philadelphia Gas Works	**Project Number:**	
Office Address:	3100 W. Passyunk Avenue	**Project Name:**	Franklin Smelting ACM Survey
City, State, Zip:	Philadelphia, PA 19145	**Primary Contact:**	Jeff Ham
Fax Number:	(215) 787-4802	**Office Phone:**	(215) 787-4849
Email Address:	jeffrey.ham@pgworks.com	**Cell Phone:**	(267) 249-7068

PLM Instructions:

- ■ PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993
- ☐ PLM: Bulk Asbestos Building Materials EPA 600 M-4/82-020, 1982
- ☐ PLM: Bulk Asbestos Building Materials NIOSH 9002, 1985
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010
- ☐ TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009

- ☐ PLM: Point Counting
  - ☐ PC: via ELAP 198.1
  - ☐ PC: 400 Points
  - ☐ PC: 800 Points *
  - ☐ PC: 1600 Points *
- ■ PLM: Analyze Until Positive (Positive Stop)
  - ☐ AUP: by Homogenous Area as Noted
  - ☐ AUP: by Material Type as Noted
- ☐ PLM: NOB via 198.6
  - ☐ PLM: Friable via EPA 600 2.3
  - ☐ If <1% by PLM, to TEM via 198.4 *
  - ☐ If <1% by PLM, Hold for Instructions
- ■ PLM: Instructions for Multi-Layered Samples
  - ■ Analyze and Report All Separable Layers per EPA 600
  - ☐ Report Composite for Drywall Systems per NESHAP
  - ☐ Report All Layers and Composite Where Applicable
  - ☐ Only Analyze and Report Specifically Noted Layer
- ☐ PLM: Non-Building Material *,** (Dust, Wipe, Tape)
  - ☐ Soil or Vermiculite Analysis *
  - ☐ CARB 435

Special Instructions: _____

** Additional charge and turnaround may be required* *** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory*

Turnaround Time

Preliminary Results Requested Date: _____ (Specific date / time)

☐ Verbal ■ Email ☐ Fax

☐ 10 Day ☐ 5 Day ■ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	[signature]	Date:	8/21/18	Time:	6:00 PM
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):	[signature]	Date:	8/23/18	Time:	AUG 21 2018
QA/QC Review (Name / iATL):	[signature]	Date:	8-24-18	Time:	
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	

RECEIVED
IATL - DV

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

–Bulk Asbestos –

Contact Information

Client Company:	Philadelphia Gas Works	**Project Number:**	
Office Address:	3100 W. Passyunk Avenue	**Project Name:**	Franklin Smelting ACM Survey
City, State, Zip:	Philadelphia, PA 19145	**Primary Contact:**	Jeff Ham
Fax Number:	(215) 787-4802	**Office Phone:**	(215) 787-4849
Email Address:	jeffrey.ham@pgworks.com	**Cell Phone:**	(267) 249-7068

PLM Instructions:

- ■ PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993
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- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010
- ☐ TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009

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  - ☐ PC: via ELAP 198.1
  - ☐ PC: 400 Points
  - ☐ PC: 800 Points *
  - ☐ PC: 1600 Points *
- ■ PLM: Analyze Until Positive (Positive Stop)
  - ☐ AUP: by Homogenous Area as Noted
  - ☐ AUP: by Material Type as Noted
- ☐ PLM: NOB via 198.6
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  - ☐ If <1% by PLM, to TEM via 198.4 *
  - ☐ If <1% by PLM, Hold for Instructions
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  - ☐ Report Composite for Drywall Systems per NESHAP
  - ☐ Report All Layers and Composite Where Applicable
  - ☐ Only Analyze and Report Specifically Noted Layer
- ☐ PLM: Non-Building Material *,** (Dust, Wipe, Tape)
  - ☐ Soil or Vermiculite Analysis *
  - ☐ CARB 435

Special Instructions: _____

** Additional charge and turnaround may be required* *** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory*

Turnaround Time

Preliminary Results Requested Date: _____ Specific date / time ☐ Verbal ■ Email ☐ Fax

☐ 10 Day ☐ 5 Day ■ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	[signature]	Date:	8/21/18	Time: 6:00 AM
Received (Name / iATL):		Date:		Time:
Sample Login (Name / iATL):		Date:		Time:
Analysis(Name(s) / iATL):	[signature]	Date:	8/23/18	Time:
QA/QC Review (Name / iATL):	[signature]	Date:	8-24-18	Time:
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:

RECEIVED
AUG 21 2018
IATL - PHL

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Laboratory: International Asbestos Testing Laboratories (IATL)
9000 Commerce Parkway, Suite B
Mount Laurel, NJ 08054
Phone: 877-428-4285 Fax: 856-231-9818

Client: Philadelphia Gas Works
3100 W. Passyunk Avenue
Philadelphia, PA 19145
Phone: (215) 787-4850 Fax: (215) 787-4802

Project: Former Franklin Smelting ACM Survey
3030 Castor Avenue
Philadelphia, PA 19134

Sample Date: 8/10/2018

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-01	6587223	Roof Membrane	NW Building, SE Corner of Roof	Roof membrane consists of black tar, yellow foam insulation, and tan-brown loose insulation
08102018-02	6587224		NW Building, NE Corner of Roof	
08102018-03	6587225		NW Building, Near West Wall at Center of Roof	
08102018-04	6587226	Perimeter Roof Flashing	NW Building, SE Corner of Roof	Black asphaltic felt roof flashing
08102018-05	6587227		NW Building, Near East Wall at Center of Roof	
08102018-06	6587228		NW Building, NW Corner of Roof	
08102018-07	6587229	Roof Flashing at Penetrations	NW Building, NE Quadrant of Roof	Black asphaltic felt roof flashing
08102018-08	6587230		NW Building, Air Duct in North Central Portion of Roof	
08102018-09	6587231		NW Building, Pipe Support in NW Corner of Roof	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-10	6587232	Silver-Gray Caulk	NW Building, NW Pipe Support on Roof	
08102018-11	6587233		NW Building, Center West Electrical Penetration on Roof	
08102018-12	6587234		NW Building, Center West Pipe Insulation Seam on Roof	
08102018-13	6587235	White-Silver Wrap on Fiberglass Pipe Insulation (PI) - 10" Pipe	NW Building, 10" Pipe on Roof - Center	
08102018-14	6587236		NW Building, 10" Pipe on Roof - North	
08102018-15	6587237		NW Building, 10" Pipe on Roof - South	
08102018-16	6587238	White-Silver Wrap on Fiberglass PI - 1.5" Pipe	NW Building, 1.5" PI for Cooling Tower on Roof - Top	
08102018-17	6587239		NW Building, 1.5" PI for Cooling Tower on Roof - Middle	
08102018-18	6587240		NW Building, 1.5" PI for Cooling Tower on Roof - Bottom	
08102018-19	6587241	Gray-Black Roofing Cement	NW Building, Oxygen Vent in Central East Portion of Roof	
08102018-20	6587242		NW Building, Flashing Seam on North Wall at Center of Roof	
08102018-21	6587243		NW Building, Pipe Penetration at SW Corner of Roof	
08102018-22	6587244	Loose White Insulation	NW Building, Inside Cinderblock Voids at NE Corner of Roof	
08102018-23	6587245		NW Building, Inside Cinderblock Voids at NE Corner of Roof	
08102018-24	6587246		NW Building, Inside Cinderblock Voids at NE Corner of Roof	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-25	6587247	White Caulk	NW Building North Air Intake on Roof, South Side of Intake	
08102018-26	6587248		NW Building North Air Intake on Roof, North Side of Intake	
08102018-27	6587249		NW Building South Air Intake on Roof, North Side of Intake	
08102018-28	6587250	Gray-White Loose Insulation	NW Building, North Wall Cold Box	
08102018-29	6587251		NW Building, Debris on Floor East of Cold Box	
08102018-30	6587252		NW Building, Debris on Floor West of Cold Box	
08102018-31	6587253	White Wrap on Fiberglass PI 10" Pipe	NW Building, NW Corner Pipe Elbow	
08102018-32	6587254		NW Building, NW Corner Vertical Pipe	
08102018-33	6587255		NW Building, West Wall Horizontal Pipe Run in Center of Room	
08102018-34	6587256	White Wrap on Fiberglass PI 4-6" Pipe	NW Building, NW Corner West Pipe Run	
08102018-35	6587257		NW Building, NW Corner East Pipe Run	
08102018-36	6587258		NW Building, Pipe Run Along West Wall Just South of Air Dryer	
08102018-37	6587259	Gray Wrap Over Fiberglass Insulation	NW Building, Air Dryer Top	
08102018-38	6587260		NW Building, Air Dryer Middle	
08102018-39	6587261		NW Building, Air Dryer Bottom	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-40	6587262	Orange-Red Foam Sealant	NW Building, East Wall at Floor Seam	
08102018-41	6587263		NW Building, North Wall Pipe Penetrations	
08102018-42	6587264		NW Building, NE Corner Interior at Server Room	
08102018-43	6587265	White Wrap on Fiberglass PI 1.5" Pipe	NW Building, SW Corner of Building Interior	
08102018-44	6587266		NW Building, Vertical Pipe Run at Building Exterior South Wall	
08102018-45	6587267		NW Building, Horizontal Pipe Run at Building Exterior SW Corner	
08102018-46	6587268	Gray Caulk	NW Building, Exterior Wall Seam in SE Corner	
08102018-47	6587269		NW Building, Exterior South Wall Doorway Interior	
08102018-48	6587270	White Caulk	NW Building, NE Corner Exterior Doorway	
08102018-49	6587271		NW Building, Exterior Roll Down Doorway East Wall	
08102018-50	6587272	Gray Fibrous Fire Door Insulation	NW Building, NE Corner Exterior Door	
08102018-51	6587273		NW Building, NE Corner Exterior Door	
08102018-52	6587274		NW Building, South Wall Exterior Door	
08102018-53	6587275	Gray Gasket	NW Building, Cooling Tower Water Pipe in SW Corner of Building, East Pipe Run	
08102018-54	6587276		NW Building, Cooling Tower Water Pipe in SW Corner of Building, West Pipe Run	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-55	6587277	Black-Gray PI	NW Building, Horizontal Pipe Run Along Ground at South Wall - West	
08102018-56	6587278		NW Building, Horizontal Pipe Run Along Ground at South Wall - Center	
08102018-57	6587279		NW Building, Horizontal Pipe Run Along Ground at South Wall - East	
08102018-58	6587280	Dark Gray Gasket	NW Building, Gasket on Ground by South Wall	
08102018-59			NW Building, Gasket on Ground by South Wall	
08102018-60	6587281 6587282	White Window Glazing	NW Building, Exterior Door in NE Corner of Building	Sample from exterior
08102018-61	6587283		NW Building, Exterior Door in NE Corner of Building	Sample from interior
08102018-62	6587284	Dark Gray to Black Gasket	Main Building, 24" Manway on Red Storage Tank in the NW Corner of Building	
08102018-63	6587285		Main Building, 24" Manway on Red Storage Tank in the NW Corner of Building	
08102018-64	6587286	Gray-Black Conveyor Belt	Main Building, Conveyor Belt in NW Corner of Bldg	
08102018-65	6587287		Main Building, Conveyor Belt in NW Corner of Bldg	
08102018-66	6587288	Gray Cement	Main Building, SW Corner of Building	
08102018-67	6587289		Main Building, SW Corner of Building	
08102018-68	6587290		Main Building, SW Corner of Building	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-69	6587291	Gray Vibration Collar	Main Building, Ductwork in NE Corner of Building	
08102018-70	6587292		Main Building, Ductwork in NE Corner of Building	
08102018-71	6587293	Gray Ash/Debris	Main Building, Base of Central Smokestack	
08102018-72	6587294		Main Building, Base of Central Smokestack	
08102018-73	6587295		Main Building, Base of Central Smokestack	
08102018-74	6587296	Gray Mastic and Fibrous Cloth	Main Building, Patches on Base of Hopper Structure	
08102018-75	6587297		Main Building, Patches on Base of Hopper Structure	
08102018-76	6587298	Black Asphaltic Roofing Material	Small Utility Building Adj. to North of Main Building; Roof East Side	
08102018-77	6587299		Small Utility Building Adj. to North of Main Building; Roof North Side	
08102018-78	6587300	Tan Fire Brick	Main Building, Rotary Furnace Interior Lining	
08102018-79	6587301		Main Building, Rotary Furnace Interior Lining	
08102018-80	6587302		Main Building, Rotary Furnace Interior Lining	
08102018-81	6587303	White Woven Gasket	Main Building, Gasket at Base of Hopper Structure	
08102018-82	6587304		Main Building, Gasket at Base of Hopper Structure	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-83	6587305	Cementitious Pipe Lining	Large Diameter Metal Piping on Ground by Exterior Rotary Furnaces, West Pipe Top	
08102018-84	6587306		Large Diameter Metal Piping on Ground by Exterior Rotary Furnaces, West Pipe Bottom	
08102018-85	6587307		Large Diameter Metal Piping on Ground by Exterior Rotary Furnaces, East Pipe Bottom	

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 11/19/2018
Report No.: 577534 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6652697
Client No.: 08102018-01
Analyst Observation: Grey/White Gasket
Client Description: White Woven Gasket w/Grey Mastic
Location: Exhaust Stack Laid Along Castor Ave, Rectangular Stack
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 50 Fibrous Glass
Percent Non-Fibrous Material: 50

Lab No.: 6652698
Client No.: 08102018-02
Analyst Observation: Grey/White Gasket
Client Description: White Woven Gasket w/Grey Mastic
Location: Exhaust Stack Laid Along Castor Ave, Round Stack
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 50 Fibrous Glass
Percent Non-Fibrous Material: 50

Lab No.: 6652699
Client No.: 08102018-03
Analyst Observation: Brown Insulation
Client Description: Brown Insulating Board
Location: Transformer 78E710111, Vertical Board
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 90 Cellulose
Percent Non-Fibrous Material: 10

Lab No.: 6652700
Client No.: 08102018-04
Analyst Observation: Brown Insulation
Client Description: Brown Insulating Board
Location: Transformer 78E710111, Horizontal Board
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 90 Cellulose
Percent Non-Fibrous Material: 10

Lab No.: 6652701
Client No.: 08102018-05
Analyst Observation: Pink Insulation
Client Description: Pink Insulating Board
Location: Transformer TAT1711-01, Bottom
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 25 Fibrous Glass
Percent Non-Fibrous Material: 75

Lab No.: 6652702
Client No.: 08102018-06
Analyst Observation: Pink Insulation
Client Description: Pink Insulating Board
Location: Transformer TAT1711-01, Top
Facility:
Percent Asbestos: *None Detected*
Percent Non-Asbestos Fibrous Material: 25 Fibrous Glass
Percent Non-Fibrous Material: 75

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 11/15/2018
Date Analyzed: 11/19/2018
Signature:
Analyst: Zach Schwartz

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
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3100 Passyunk Ave.
Philadelphia PA 19145

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Report Date: 11/19/2018
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Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6652703
Client No.: 08102018-07

Analyst Observation: White Insulation
Client Description: White Block Pipe Insulation

Location: On 1" Piping Adjacent To Red Tank In The NW Corner Of The Main Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
5 Synthetic
3 Fibrous Glass

Percent Non-Fibrous Material:
92

Lab No.: 6652704
Client No.: 08102018-08

Analyst Observation: White Insulation
Client Description: White Block Pipe Insulation

Location: On 1" Piping Adjacent To Red Tank In The NW Corner Of The Main Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
5 Synthetic
2 Cellulose

Percent Non-Fibrous Material:
93

Lab No.: 6652705
Client No.: 08102018-09

Analyst Observation: White Insulation
Client Description: White Block Pipe Insulation

Location: On 1" Piping Adjacent To Red Tank In The NW Corner Of The Main Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
4 Synthetic
3 Cellulose

Percent Non-Fibrous Material:
93

Lab No.: 6652706
Client No.: 08102018-10

Analyst Observation: Red Insulation
Client Description: Red Insulating Board

Location: Electrical Panel In SE Corner Of NW Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
25 Fibrous Glass

Percent Non-Fibrous Material:
75

Lab No.: 6652707
Client No.: 08102018-11

Analyst Observation: Red Insulation
Client Description: Red Insulating Board

Location: Electrical Panel In SE Corner Of NW Building
Facility:

Percent Asbestos:
None Detected

Percent Non-Asbestos Fibrous Material:
25 Fibrous Glass

Percent Non-Fibrous Material:
75

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 11/15/2018
Date Analyzed: 11/19/2018
Signature:
Analyst: Zach Schwartz

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 11/19/2018
Report No.: 577534 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

PLM BULK SAMPLE ANALYSIS SUMMARY

Lab No.: 6652708
Client No.: 08102018-12

Analyst Observation: White Gasket
Client Description: White Woven Gasket w/White Caulk

Location: Exhaust Stacks Laid On Western Property Line
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	97 Fibrous Glass	3

Lab No.: 6652708(L2)
Client No.: 08102018-12

Analyst Observation: Clear Caulk
Client Description: White Woven Gasket w/White Caulk

Location: Exhaust Stacks Laid On Western Property Line
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	1 Cellulose	99

Lab No.: 6652709
Client No.: 08102018-13

Analyst Observation: White Gasket
Client Description: White Woven Gasket w/White Caulk

Location: Exhaust Stacks Laid On Western Property Line
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	97 Fibrous Glass	3

Lab No.: 6652709(L2)
Client No.: 08102018-13

Analyst Observation: Clear Caulk
Client Description: White Woven Gasket w/White Caulk

Location: Exhaust Stacks Laid On Western Property Line
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	1 Cellulose	99

Lab No.: 6652710
Client No.: 08102018-14

Analyst Observation: Black Rubber
Client Description: Black Rubber w/Fiber Mesh

Location: Saddle Of Propane Tank Along Castor Ave, North End
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	7 Synthetic	93

Lab No.: 6652711
Client No.: 08102018-15

Analyst Observation: Black Rubber
Client Description: Black Rubber w/Fiber Mesh

Location: Saddle Of Propane Tank Along Castor Ave, South End
Facility:

Percent Asbestos:	Percent Non-Asbestos Fibrous Material:	Percent Non-Fibrous Material:
None Detected	7 Synthetic	93

Please refer to the Appendix of this report for further information regarding your analysis.

Date Received: 11/15/2018
Date Analyzed: 11/19/2018
Signature:
Analyst: Zach Schwartz

Approved By:
Frank E. Ehrenfeld, III
Laboratory Director

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Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 11/19/2018
Report No.: 577534 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

Appendix to Analytical Report

Customer Contact: Jeff Ham
Method: US EPA 600, R93-116

This appendix seeks to promote greater understanding of any observations, exceptions, special instructions, or circumstances that the laboratory needs to communicate to the client concerning the above samples. The information below is used to help promote your ability to make the most informed decisions for you and your customers. Please note the following points of contact for any questions you may have.

iATL Customer Service: customerservice@iatl.com
iATL Office Manager: cdavis@iatl.com
iATL Account Representative: Shirley Clark
Sample Login Notes: See Batch Sheet Attached
Sample Matrix: Bulk Building Materials
Exceptions Noted: See Following Pages

General Terms, Warrants, Limits, Qualifiers:

General information about iATL capabilities and client/laboratory relationships and responsibilities are spelled out in iATL policies that are listed at www.iATL.com and ir our Quality Assurance Manual per ISO 17025 standard requirements. The information therein is a representation of iATL definitions and policies for turnaround times, sample submittal, collection media, blank definitions, quantification issues and limit of detection, analytical methods and procedures, sub-contracting policies, results reporting options, fees, terms, and discounts, confidentiality, sample archival and disposal, and data interpretation.

iATL warrants the test results to be of a precision normal for the type and methodology employed for each sample submitted. iATL disclaims any other warrants, expressed or implied, including warranty of fitness for a particular purpose and warranty of merchantability. iATL accepts no legal responsibility for the purpose for which the client uses test results. Any analytical work performed must be governed by our Standard Terms and Conditions. Prices, methods and detection limits may be changed without notification. Please contact your Customer Service Representative for the most current information.

This confidential report relates only to those item(s) tested and does not represent an endorsement by NIST-NVLAP, AIHA LAP LLC, or any agency of local, state or province governments nor of any agency of the U.S. government.

Information Pertinent to this Report:

Analysis by US EPA 600 93-116: Determination of Asbestos in Bulk Building Materials by Polarized Light Microscopy (PLM).

Certifications:

- NIST-NVLAP No. 101165-0
- NYSDOH-ELAP No. 11021
- AIHA-LAP, LLC No. 100188

Quantification at <0.25% by volume is possible with this method. (PC) Indicates Stratified Point Count Method performed. (PC-Trace) means that asbestos was detected but is not quantifiable under the Point Counting regimen. PC Trace represents a <0.25% amount. Analysis includes all distinct separable layers in accordance with EPA 600 Method. If not reported or otherwise noted, layer is either not present or the client has specifically requested that it not be analyzed (ex. analyze until positive instructions). Small asbestos fibers may be missed by PLM due to resolution limitations of the optical microscope. Therefore, PLM is not consistently reliable in detecting asbestos in non-friable organically bound (NOB) materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can pronounce materials as non-asbestos containing.

Analytical Methodology Alternatives: Your initial request for analysis may not have accounted for recent advances in regulatory requirements or advances in technology that are routinely used in similar situations for other qualified projects. You may have the option to explore additional analysis for further information. Below are a few options, listed as the matrix followed by the appropriate methodology. Also included are links to more information on our website.

Bulk Building Materials that are Non-Friable Organically Bound (NOB) by Gravimetric Reduction techniques employing PLM and TEM: ELAP 198.6 (PLM-NOB), ELAP 198.4 (TEM-NOB)

Loose Fill Vermiculite Insulation, Attic Insulation, Zonolite (copyright), etc.: US EPA 600 R-4/004 (multi-tiered analytical process)

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client:	Philadelphia Gas Works	Report Date:	11/19/2018
	3100 Passyunk Ave.	Report No.:	577534 - PLM
	Philadelphia PA 19145	Project:	Franklin Smelting ACM Survey
		Project No.:	
Client:	PHI907		

Sprayed On Insulation/Fireproofing with Vermiculite (SOF-V): ELAP 198.8 (PLM-SOF-V)

Soil, sludge, sediment, aggregate, and like materials analyzed for asbestos or other elongated mineral particles (ex. erionite, etc.): ASTM D7521, CARB 435, and other options available

Asbestos in Surface Dust according to one of ASTM's Methods (very dependent on sampling collection technique – by TEM): ASTM D 5755, D5756, or D6480

Various other asbestos matrices (air, water, etc.) and analytical methods are available.

Disclaimers / Qualifiers:

There may be some samples in this project that have a "NOTE:" associated with a sample result. We use added disclaimers or qualifiers to inform the client about something that requires further explanation. Here is a list with highlighted disclaimers that may be pertinent to this project. For a full explanation of these and other disclaimers, please inquire at **customerservice@iatl.com**.

1) Note: No mastic provided for analysis.
2) Note: Insufficient mastic provided for analysis.
3) Note: Insufficient material provided for analysis.
4) Note: Insufficient sample provided for QC reanalysis.
5) Note: Different material than indicated on Sample Log / Description.
6) Note: Sample not submitted.
7) Note: Attached to asbestos containing material.
8) Note: Received wet.
9) Note: Possible surface contamination.
10) Note: Not building material. 1% threshold may not apply.
11) Note: Recommend TEM-NOB analysis as per EPA recommendations.
12) Note: Asbestos detected but not quantifiable.
13) Note: Multiple identical samples submitted, only one analyzed.
14) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.080%.
15) Note: Analyzed by EPA 600/R-93/116. Point Counting detection limit at 0.125%.
16) Note: This sample contains >10% vermiculite mineral. See Appendix for Recommendations for Vermiculite Analysis.

Recommendations for Vermiculite Analysis:

Several analytical protocols exist for the analysis of asbestos in vermiculite. These analytical approaches vary depending upon the nature of the vermiculite mineral being tested (e.g. un-processed gange, homogeneous exfoliated books of mica, or mixed mineral composites).Please contact your client representative for pricing and turnaround time options available.

iATL recommends initial testing using the EPA 600/R-93/116 method. This method is specifically designed for the analysis of asbestos in bulk building materials. It provides an acceptable starting point for primary screening of vermiculite for possible asbestos.

Results from this testing may be inconclusive. EPA suggests proceeding to a multi-tiered analysis involving wet separation techniques in conjunction with PLM and TEM gravimetric analysis (EPA 600/R-04/004).

For New York State customers, NYSDOH requires disclaimers and qualifiers for various vermiculite containing samples that direct analysis via ELAP198.6 and ELAP198.8 for samples that contain >10% vermiculite mineral where ELAP198.6 may be used to evaluate the asbestos content of the material. However, any test result using ELAP198.6 will be reported with the following disclaimer: “ELAP198.6 method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing >10% vermiculite.”

Further information on this method and other vermiculite and asbestos issues can be found at the following: Agency for Toxic Substances and Disease Registry (ATSDR) www.atsdr.cdc.gov, United States Geological Survey (USGS) www.minerals.usgs.gov/minerals/, US EPA www.epa.gov/asbestos. The USEPA also has an informative brochure "Current Best Practices for Vermiculite Attic Insulation" EPA 747F03001 May 2003, that may assist the health and remediation professional.

The following is a summary of the analytical process outlines in the EPA 600/R-04/004 Method:

1)**Analytical Step/Method:** Initial Screening by PLM, EPA 600R-93/116
Requirements/Comments: Minimum of 0.1 g of sample. ~0.25% LOQ for most samples.

2)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

9000 Commerce Parkway Suite B
Mt. Laurel, New Jersey 08054
Telephone: 856-231-9449
Email: customerservice@iatl.com

CERTIFICATE OF ANALYSIS

Client: Philadelphia Gas Works
3100 Passyunk Ave.
Philadelphia PA 19145

Client: PHI907

Report Date: 11/19/2018
Report No.: 577534 - PLM
Project: Franklin Smelting ACM Survey
Project No.:

3)**Analytical Step/Method:** Wet Separation by PLM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Floats" only.

4)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Sinks" only.

5)**Analytical Step/Method:** Wet Separation by TEM Gravimetric Technique, EPA R-04/004
Requirements/Comments: Minimum 50g** of dry sample. Analysis of "Suspension" only.

LOQ, Limit of Quantitation estimates for mass and volume analyses.
*With advance notice and confirmation by the laboratory.
**Approximately 1 Liter of sample in double-bagged container (~9x6 inch bag of sample).

iATL INTERNATIONAL
ASBESTOS TESTING LABORATORIES

9000 Commerce Parkway, Suite B • Mount Laurel, NJ 08054
Phone: 877-428-4285/856-231-9449 • Fax: 856-231-9818

Chain of Custody

–Bulk Asbestos –

Contact Information

Client Company:	Philadelphia Gas Works	**Project Number:**	
Office Address:	3100 W. Passyunk Avenue	**Project Name:**	Franklin Smelting ACM Survey
City, State, Zip:	Philadelphia, PA 19145	**Primary Contact:**	Jeff Ham
Fax Number:	(215) 787-4802	**Office Phone:**	(215) 787-4849
Email Address:	jeffrey.ham@pgworks.com	**Cell Phone:**	(267) 249-7068

PLM Instructions:

- ■ PLM: Bulk Asbestos Building Materials EPA 600 R-93/116, 1993
- ☐ PLM: Bulk Asbestos Building Materials EPA 600 M-4/82-020, 1982
- ☐ PLM: Bulk Asbestos Building Materials NIOSH 9002, 1985
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.1, 2002
- ☐ PLM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.6, 2010
- ☐ TEM: Bulk Asbestos Building Materials NYSDOH-ELAP 198.4, 2009

- ☐ PLM: Point Counting
  - ☐ PC: via ELAP 198.1
  - ☐ PC: 400 Points
  - ☐ PC: 800 Points *
  - ☐ PC: 1600 Points *
- ■ PLM: Analyze Until Positive (Positive Stop)
  - ☐ AUP: by Homogenous Area as Noted
  - ☐ AUP: by Material Type as Noted
- ☐ PLM: NOB via 198.6
  - ☐ PLM: Friable via EPA 600 2.3
  - ☐ If <1% by PLM, to TEM via 198.4 *
  - ☐ If <1% by PLM, Hold for Instructions
- ■ PLM: Instructions for Multi-Layered Samples
  - ■ Analyze and Report All Separable Layers per EPA 600
  - ☐ Report Composite for Drywall Systems per NESHAP
  - ☐ Report All Layers and Composite Where Applicable
  - ☐ Only Analyze and Report Specifically Noted Layer
- ☐ PLM: Non-Building Material*,** (Dust, Wipe, Tape)
  - ☐ Soil or Vermiculite Analysis*
  - ☐ CARB 435

Special Instructions: _____

** Additional charge and turnaround may be required* *** Alternative Method (ex: EPA 600/R-04/004) may be recommended by Laboratory*

Turnaround Time

Preliminary Results Requested Date: _____ (Specific date / time) ☐ Verbal ■ Email ☐ Fax

☐ 10 Day ☐ 5 Day ■ 3 Day ☐ 2 Day ☐ 1 Day* ☐ 12 Hour** ☐ 6 Hour** ☐ RUSH**

* End of next business day unless otherwise specified. ** Matrix Dependent. ***Please notify the lab before shipping***

Chain of Custody

Relinquished (Name/Organization):	Jeff Ham/PGW	Date:	11/15/2018	Time:	7:32am
Received (Name / iATL):		Date:		Time:	
Sample Login (Name / iATL):		Date:		Time:	
Analysis(Name(s) / iATL):	JS	Date:	11/19/18	Time:	
QA/QC Review (Name / iATL):		Date:	11/20/18	Time:	9:15pm
Archived / Released: _____	QA/QC InterLAB Use: _____	Date:		Time:	NOV 15 2018

Drop off

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Laboratory: International Asbestos Testing Laboratories (IATL)
9000 Commerce Parkway, Suite B
Mount Laurel, NJ 08054
Phone: 877-428-4285 Fax: 856-231-9818

Client: Philadelphia Gas Works
3100 W. Passyunk Avenue
Philadelphia, PA 19145
Phone: (215) 787-4850 Fax: (215) 787-4802

Project: Former Franklin Smelting ACM Survey
3030 Castor Avenue
Philadelphia, PA 19134

Sample Date: 11/14/2018

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-01	6652697	White Woven Gasket with Gray Mastic	Exhaust Stack Laid Along Castor Ave, Rectangular Stack	
08102018-02	6652698		Exhaust Stack Laid Along Castor Ave, Round Stack	
08102018-03	6652699	Brown Insulating Board	Transformer 78E710111, Vertical Board	~12 SF
08102018-04	6652700		Transformer 78E710111, Horizontal Board	
08102018-05	6652701	Pink Insulating Board	Transformer TAT1711-01, Bottom	~18 SF
08102018-06	6652702		Transformer TAT1711-01, Top	
08102018-07	6652703	White Block Pipe Insulation	On 1" Piping Adjacent to Red Tank in the NW Corner of the Main Building	~20 LF
08102018-08	665270-		On 1" Piping Adjacent to Red Tank in the NW Corner of the Main Building	
08102018-09	6652705		On 1" Piping Adjacent to Red Tank in the NW Corner of the Main Building	

Suspect Asbestos Containing Material (ACM) Bulk Sample Log

Client Sample #	IATL#	Material Type and Description	Location	Notes
08102018-10	6652706	Red Insulating Board	Electrical Panel in SE Corner of NW Building	~5 SF
08102018-11	6652707		Electrical Panel in SE Corner of NW Building	
08102018-12	6652708	White Woven Gasket with White Caulk	Exhaust Stacks Laid on Western Property Line	
08102018-13	6652709		Exhaust Stacks Laid on Western Property Line	
08102018-14	6652710	Black Rubber with Fiber Mesh	Saddle of Propane Tank Along Castor Ave, North End	
08102018-15	6652711		Saddle of Propane Tank Along Castor Ave, South End	

ALS Environmental

34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

December 3, 2018

Mr. Jeffrey Ham
Philadelphia Gas Works (PGW)
3100 West Passyunk Avenue
Philadelphia, PA 19145

Certificate of Analysis

Project Name:	**Soils**	Workorder:	**3000905**
Purchase Order:		Workorder ID:	**Franklin Smelting**

Dear Mr. Ham:

Enclosed are the analytical results for samples received by the laboratory on Friday, November 16, 2018.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Mrs. Vanessa N Badman (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

CC: Ms. Amy Brown , Mr. Eric Hendrickson , Jobi Cherian , Mr. Kevin Grooms , Mr. Larry Gould , Ms. Jessica Mason , Mr. Dan McKenna , Mr. Chin So

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

ALS Environmental

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

SAMPLE SUMMARY

Workorder: 3000905 Franklin Smelting

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
3000905001	TAT1711-01	Oil/Other	11/14/2018 10:55	11/16/2018 20:47	Collected by Client
3000905002	78E710111	Oil/Other	11/14/2018 11:25	11/16/2018 20:47	Collected by Client
3000905003	11142018-01	Solid	11/14/2018 13:20	11/16/2018 20:47	Collected by Client
3000905004	11142018-02	Solid	11/14/2018 13:30	11/16/2018 20:47	Collected by Client
3000905005	11142018-03	Solid	11/14/2018 13:40	11/16/2018 20:47	Collected by Client

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SAMPLE SUMMARY

Workorder: 3000905 Franklin Smelting

Notes

-- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
-- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
-- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
-- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
-- The Chain of Custody document is included as part of this report.
-- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
-- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are preformed in the laboratory and are therefore analyzed out of hold time.
-- Method references listed on this report beginning with the prefix “S” followed by a method number (such as S2310B-97) refer to methods from “Standard Methods for the Examination of Water and Wastewater”.
-- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.
-- An Analysis-Prep Method Cross Reference Table is included after Analytical Results & Qualifiers section in this report.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905001** Date Collected: 11/14/2018 10:55 Matrix: Oil/Other

Sample ID: **TAT1711-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	8.6	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1016	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1221	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1232	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1242	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1248	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1254	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1260	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1262	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Aroclor-1268	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	98.4		%	64 - 150	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A
Tetrachloro-m-xylene (S)	90.5		%	74 - 152	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:10	KJH	A

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905002** Date Collected: 11/14/2018 11:25 Matrix: Oil/Other

Sample ID: **78E710111** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
PCBs										
Total Polychlorinated Biphenyl	ND		mg/kg	8.6	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1016	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1221	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1232	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1242	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1248	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1254	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1260	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1262	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Aroclor-1268	ND		mg/kg	0.95	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
Decachlorobiphenyl (S)	96.2		%	64 - 150	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A
Tetrachloro-m-xylene (S)	87.4		%	74 - 152	600/4-81-045	11/29/18 06:21	BS	11/29/18 11:45	KJH	A

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
SEMIVOLATILES										
Acenaphthene	ND	59	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Acenaphthylene	104	56	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Acetophenone	ND	14	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Anthracene	66.8	85,86	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Atrazine	ND	80,81	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzaldehyde	ND		ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(a)anthracene	253	96,97	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(a)pyrene	300	104,105	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(b)fluoranthene	555	101	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(g,h,i)perylene	286	110,111	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Benzo(k)fluoranthene	570	102,103	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Biphenyl	ND	46,47,48	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Bromophenyl-phenylether	ND	77	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Butylbenzylphthalate	ND	93	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Caprolactam	ND		ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Carbazole	ND	87,88	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chloro-3-methylphenol	ND	34,35	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chloroaniline	ND	31,32	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroethoxy)methane	ND	27	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroethyl)ether	ND	9	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Chloronaphthalene	ND	49	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Chlorophenol	ND	10,11	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Chlorophenyl-phenylether	ND	70	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Chrysene	393	98,99	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
mp-Cresol	ND	17,18	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
o-Cresol	ND	12,13	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Di-n-Butylphthalate	ND	89,90	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Di-n-Octylphthalate	ND		ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dibenzo(a,h)anthracene	79.6	108, 109	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dibenzofuran	ND	63	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
3,3-Dichlorobenzidine	ND	94,95	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dichlorophenol	ND	28,29	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Diethylphthalate	ND	68,69	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dimethylphenol	ND	25,26	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Dimethylphthalate	ND	52,53	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dinitrophenol	ND	60,61	ug/kg	479	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4-Dinitrotoluene	ND	64,65	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,6-Dinitrotoluene	ND	54,55	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
1,4-Dioxane	ND	5,6	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
bis(2-Ethylhexyl)phthalate	125	100	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Fluoranthene	578	91	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Fluorene	ND	71	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorobenzene	ND	78,79	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorobutadiene	ND	33	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachlorocyclopentadiene	ND	40,41	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Hexachloroethane	ND	19,20	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Indeno(1,2,3-cd)pyrene	281	106, 107	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Isophorone	ND	22	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Methyl-4,6-dinitrophenol	ND	74,75	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Methylnaphthalene	ND	36,37	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Naphthalene	ND	30	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Nitroaniline	ND	50,51	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
3-Nitroaniline	ND	57,58	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Nitroaniline	ND	72,73	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
Nitrobenzene	ND	21	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Nitrophenol	ND	23,24	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
4-Nitrophenol	ND	62	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
N-Nitroso-di-n-propylamine	ND	15,16	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
N-Nitrosodiphenylamine	ND	76	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
n-Nonane	ND	112, 113, 114	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Pentachlorophenol	ND	82,83	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenanthrene	253	84	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenol	ND	7,8	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Pyrene	495	92	ug/kg	59.8	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
1,2,4,5-Tetrachlorobenzene	ND	38,39	ug/kg	120	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,3,4,6-Tetrachlorophenol	ND	66,67	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4,5-Trichlorophenol	ND	44,45	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2,4,6-Trichlorophenol	ND	42,43	ug/kg	239	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	32.9		%	19 - 132	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Fluorobiphenyl (S)	33.5	3	%	40 - 110	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
2-Fluorophenol (S)	29.4		%	26 - 116	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Nitrobenzene-d5 (S)	31.3	2	%	38 - 112	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Phenol-d5 (S)	31.2	1	%	35 - 111	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
Terphenyl-d14 (S)	33	4	%	45 - 126	SW846 8270D	11/26/18 04:45	JTH	11/27/18 17:29	CGS	A3
WET CHEMISTRY										
Moisture	18.6		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	81.4		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	12500		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Antimony, Total	259		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Arsenic, Total	ND		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Barium, Total	94.3		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Beryllium, Total	ND		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Cadmium, Total	18.0		mg/kg	5.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905003** Date Collected: 11/14/2018 13:20 Matrix: Solid

Sample ID: **11142018-01** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Calcium, Total	7670		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Chromium, Total	107		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Cobalt, Total	15.2		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Copper, Total	4040		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Iron, Total	69700		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Lead, Total	2380		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Magnesium, Total	8170		mg/kg	118	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Manganese, Total	598		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Mercury, Total	0.69		mg/kg	0.054	SW846 7471B	11/27/18 07:30	MNP	11/27/18 09:56	MNP	A1
Nickel, Total	174		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Potassium, Total	1390	115	mg/kg	591	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Selenium, Total	ND		mg/kg	59.1	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Silver, Total	ND		mg/kg	5.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Sodium, Total	ND		mg/kg	591	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Thallium, Total	ND		mg/kg	35.4	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Vanadium, Total	65.1		mg/kg	11.8	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2
Zinc, Total	6750		mg/kg	23.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:24	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
SEMIVOLATILES										
Acenaphthene	166		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Acenaphthylene	1560		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Acetophenone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Anthracene	1240		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Atrazine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzaldehyde	ND	1	ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(a)anthracene	3010		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(a)pyrene	2720		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(b)fluoranthene	2500		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(g,h,i)perylene	2180		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Benzo(k)fluoranthene	2680		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Biphenyl	118		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Bromophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Butylbenzylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Caprolactam	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Carbazole	359		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chloro-3-methylphenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chloroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroethoxy)methane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroethyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Chloronaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Chlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Chlorophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Chrysene	3210		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
mp-Cresol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
o-Cresol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Di-n-Butylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Di-n-Octylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dibenzo(a,h)anthracene	499		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dibenzofuran	244		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
3,3-Dichlorobenzidine	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Diethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dimethylphenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Dimethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4-Dinitrophenol	ND		ug/kg	441	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,6-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
1,4-Dioxane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
bis(2-Ethylhexyl)phthalate	157		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Fluoranthene	5010		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Fluorene	333		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorobutadiene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachlorocyclopentadiene	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Hexachloroethane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Indeno(1,2,3-cd)pyrene	1960		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Isophorone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Methyl-4,6-dinitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Methylnaphthalene	631		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Naphthalene	832		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
3-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Nitroaniline	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Nitrobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Nitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
4-Nitrophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
N-Nitroso-di-n-propylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
N-Nitrosodiphenylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
n-Nonane	ND	2	ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Pentachlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenanthrene	3370		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Pyrene	4840		ug/kg	55.2	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,3,4,6-Tetrachlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4,5-Trichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2,4,6-Trichlorophenol	ND		ug/kg	221	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	83.2		%	19 - 132	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Fluorobiphenyl (S)	73.3		%	40 - 110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
2-Fluorophenol (S)	77.4		%	26 - 116	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Nitrobenzene-d5 (S)	84.5		%	38 - 112	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
Phenol-d5 (S)	76.6		%	35 - 111	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905004** Date Collected: 11/14/2018 13:30 Matrix: Solid

Sample ID: **11142018-02** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Terphenyl-d14 (S)	76.8		%	45 - 126	SW846 8270D	11/28/18 18:15	J1H	11/29/18 18:35	DHF	A3
WET CHEMISTRY										
Moisture	13.4		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	86.6		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	8920	3	mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Antimony, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Arsenic, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Barium, Total	434		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Beryllium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Cadmium, Total	ND		mg/kg	54.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Calcium, Total	11000		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Chromium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Cobalt, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Copper, Total	10400		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Iron, Total	34500		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Lead, Total	2050		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Magnesium, Total	2800		mg/kg	1100	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Manganese, Total	899		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Mercury, Total	0.51		mg/kg	0.050	SW846 7471B	11/27/18 07:30	MNP	11/27/18 09:57	MNP	A1
Nickel, Total	ND		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Potassium, Total	ND		mg/kg	5490	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Selenium, Total	ND		mg/kg	549	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Silver, Total	ND		mg/kg	54.9	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Sodium, Total	ND		mg/kg	5490	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Thallium, Total	ND		mg/kg	329	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Vanadium, Total	ND		mg/kg	110	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2
Zinc, Total	12500		mg/kg	220	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:27	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
SEMIVOLATILES										
Acenaphthene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Acenaphthylene	101		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Acetophenone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Anthracene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Atrazine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzaldehyde	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(a)anthracene	181		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(a)pyrene	211		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(b)fluoranthene	214		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(g,h,i)perylene	197		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Benzo(k)fluoranthene	193		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Biphenyl	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Bromophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Butylbenzylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Caprolactam	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Carbazole	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chloro-3-methylphenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chloroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroethoxy)methane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroethyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Chloroisopropyl)ether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Chloronaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Chlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Chlorophenyl-phenylether	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Chrysene	224		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
mp-Cresol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
o-Cresol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Di-n-Butylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Di-n-Octylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dibenzo(a,h)anthracene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dibenzofuran	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
3,3-Dichlorobenzidine	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Diethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dimethylphenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Dimethylphthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4-Dinitrophenol	ND		ug/kg	438	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	Cntr
2,4-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,6-Dinitrotoluene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
1,4-Dioxane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
bis(2-Ethylhexyl)phthalate	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Fluoranthene	306		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Fluorene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorobutadiene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachlorocyclopentadiene	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Hexachloroethane	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Indeno(1,2,3-cd)pyrene	165		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Isophorone	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Methyl-4,6-dinitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Methylnaphthalene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Naphthalene	ND		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
3-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Nitroaniline	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Nitrobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Nitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
4-Nitrophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
N-Nitroso-di-n-propylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
N-Nitrosodiphenylamine	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
n-Nonane	ND	1	ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Pentachlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenanthrene	128		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Pyrene	323		ug/kg	54.8	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,3,4,6-Tetrachlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4,5-Trichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2,4,6-Trichlorophenol	ND		ug/kg	219	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

Surrogate Recoveries	*Results*	*Flag*	*Units*	*Limits*	*Method*	*Prepared*	*By*	*Analyzed*	*By*	*Cntr*
2,4,6-Tribromophenol (S)	100		%	19 - 132	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Fluorobiphenyl (S)	85.3		%	40 - 110	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
2-Fluorophenol (S)	90.9		%	26 - 116	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Nitrobenzene-d5 (S)	93.8		%	38 - 112	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
Phenol-d5 (S)	89.4		%	35 - 111	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3

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ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

Lab ID: **3000905005** Date Collected: 11/14/2018 13:40 Matrix: Solid

Sample ID: **11142018-03** Date Received: 11/16/2018 20:47

Parameters	Results	Flag	Units	RDL	Method	Prepared	By	Analyzed	By	*Cntr*
Terphenyl-d14 (S)	94.8		%	45 - 126	SW846 8270D	11/28/18 18:15	J1H	11/29/18 19:01	DHF	A3
WET CHEMISTRY										
Moisture	9.3		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
Total Solids	90.7		%	0.1	S2540G-11			11/17/18 10:49	AXD	A
METALS										
Aluminum, Total	7860	2	mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Antimony, Total	ND		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Arsenic, Total	ND		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Barium, Total	103		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Beryllium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Cadmium, Total	30.3		mg/kg	23.3	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Calcium, Total	3990		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Chromium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Cobalt, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Copper, Total	2610		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Iron, Total	17400		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Lead, Total	956		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Magnesium, Total	6840		mg/kg	466	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Manganese, Total	269		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Mercury, Total	ND		mg/kg	0.055	SW846 7471B	11/27/18 08:15	MNP	11/27/18 10:00	MNP	A1
Nickel, Total	109		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Potassium, Total	3710		mg/kg	2330	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Selenium, Total	ND		mg/kg	233	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Silver, Total	ND		mg/kg	23.3	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Sodium, Total	ND		mg/kg	2330	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Thallium, Total	ND		mg/kg	140	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Vanadium, Total	ND		mg/kg	46.6	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2
Zinc, Total	2840		mg/kg	93.2	SW846 6010C	11/21/18 13:55	AHI	11/28/18 12:30	SRT	A2

Vanessa N. Badman

Mrs. Vanessa N Badman
Project Coordinator

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
3000905003	1	11142018-01	SW846 8270D	Phenol-d5
The surrogate Phenol-d5 for method SW846 8270D was outside of control limits. The % Recovery was reported as 31.2 and the control limits were 35 to 111. This result was reported at a dilution of 1.				
3000905003	2	11142018-01	SW846 8270D	Nitrobenzene-d5
The surrogate Nitrobenzene-d5 for method SW846 8270D was outside of control limits. The % Recovery was reported as 31.3 and the control limits were 38 to 112. This result was reported at a dilution of 1.				
3000905003	3	11142018-01	SW846 8270D	2-Fluorobiphenyl
The surrogate 2-Fluorobiphenyl for method SW846 8270D was outside of control limits. The % Recovery was reported as 33.5 and the control limits were 40 to 110. This result was reported at a dilution of 1.				
3000905003	4	11142018-01	SW846 8270D	Terphenyl-d14
The surrogate Terphenyl-d14 for method SW846 8270D was outside of control limits. The % Recovery was reported as 33 and the control limits were 45 to 126. This result was reported at a dilution of 1.				
3000905003	5	11142018-01	SW846 8270D	1,4-Dioxane
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 27.2 and the control limits were 37 to 98.				
3000905003	6	11142018-01	SW846 8270D	1,4-Dioxane
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 1,4-Dioxane. The % Recovery was reported as 34.8 and the control limits were 37 to 98.				
3000905003	7	11142018-01	SW846 8270D	Phenol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Phenol. The % Recovery was reported as 39.4 and the control limits were 53 to 118.				
3000905003	8	11142018-01	SW846 8270D	Phenol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Phenol. The % Recovery was reported as 51.9 and the control limits were 53 to 118.				
3000905003	9	11142018-01	SW846 8270D	bis(2-Chloroethyl)ether
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Chloroethyl)ether. The % Recovery was reported as 46.7 and the control limits were 51 to 105.				
3000905003	10	11142018-01	SW846 8270D	2-Chlorophenol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Chlorophenol. The % Recovery was reported as 40.9 and the control limits were 61 to 111.				
3000905003	11	11142018-01	SW846 8270D	2-Chlorophenol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Chlorophenol. The % Recovery was reported as 51.9 and the control limits were 61 to 111.				
3000905003	12	11142018-01	SW846 8270D	o-Cresol
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte o-Cresol. The % Recovery was reported as 41.1 and the control limits were 62 to 113.				
3000905003	13	11142018-01	SW846 8270D	o-Cresol
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte o-Cresol. The % Recovery was reported as 53.5 and the control limits were 62 to 113.				
3000905003	14	11142018-01	SW846 8270D	Acetophenone
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acetophenone. The % Recovery was reported as 36.7 and the control limits were 45 to 87.				

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	15	11142018-01	SW846 8270D	N-Nitroso-di-n-propylamine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte N-Nitroso-di-n-propylamine. The % Recovery was reported as 39.3 and the control limits were 55 to 109.

3000905003	16	11142018-01	SW846 8270D	N-Nitroso-di-n-propylamine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte N-Nitroso-di-n-propylamine. The % Recovery was reported as 50.7 and the control limits were 55 to 109.

3000905003	17	11142018-01	SW846 8270D	mp-Cresol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte mp-Cresol. The % Recovery was reported as 42.1 and the control limits were 60 to 112.

3000905003	18	11142018-01	SW846 8270D	mp-Cresol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte mp-Cresol. The % Recovery was reported as 55.3 and the control limits were 60 to 112.

3000905003	19	11142018-01	SW846 8270D	Hexachloroethane

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachloroethane. The % Recovery was reported as 25 and the control limits were 50 to 103.

3000905003	20	11142018-01	SW846 8270D	Hexachloroethane

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachloroethane. The % Recovery was reported as 29.7 and the control limits were 50 to 103.

3000905003	21	11142018-01	SW846 8270D	Nitrobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Nitrobenzene. The % Recovery was reported as 41.3 and the control limits were 53 to 108.

3000905003	22	11142018-01	SW846 8270D	Isophorone

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Isophorone. The % Recovery was reported as 43.2 and the control limits were 51 to 112.

3000905003	23	11142018-01	SW846 8270D	2-Nitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Nitrophenol. The % Recovery was reported as 35.4 and the control limits were 61 to 114.

3000905003	24	11142018-01	SW846 8270D	2-Nitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Nitrophenol. The % Recovery was reported as 46.1 and the control limits were 61 to 114.

3000905003	25	11142018-01	SW846 8270D	2,4-Dimethylphenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dimethylphenol. The % Recovery was reported as 44.4 and the control limits were 65 to 114.

3000905003	26	11142018-01	SW846 8270D	2,4-Dimethylphenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dimethylphenol. The % Recovery was reported as 58.4 and the control limits were 65 to 114.

3000905003	27	11142018-01	SW846 8270D	bis(2-Chloroethoxy)methane

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Chloroethoxy)methane. The % Recovery was reported as 44.6 and the control limits were 56 to 108.

3000905003	28	11142018-01	SW846 8270D	2,4-Dichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dichlorophenol. The % Recovery was reported as 43.5 and the control limits were 65 to 111.

3000905003	29	11142018-01	SW846 8270D	2,4-Dichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dichlorophenol. The % Recovery was reported as 57.1 and the control limits were 65 to 111.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	30	11142018-01	SW846 8270D	Naphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Naphthalene. The % Recovery was reported as 42.6 and the control limits were 56 to 105.

3000905003	31	11142018-01	SW846 8270D	4-Chloroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chloroaniline. The % Recovery was reported as 18.3 and the control limits were 21 to 115.

3000905003	32	11142018-01	SW846 8270D	4-Chloroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Chloroaniline. The RPD was reported as 25 and the upper control limit is 22.

3000905003	33	11142018-01	SW846 8270D	Hexachlorobutadiene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorobutadiene. The % Recovery was reported as 45.4 and the control limits were 58 to 123.

3000905003	34	11142018-01	SW846 8270D	4-Chloro-3-methylphenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chloro-3-methylphenol. The % Recovery was reported as 45.3 and the control limits were 65 to 118.

3000905003	35	11142018-01	SW846 8270D	4-Chloro-3-methylphenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Chloro-3-methylphenol. The % Recovery was reported as 59.6 and the control limits were 65 to 118.

3000905003	36	11142018-01	SW846 8270D	2-Methylnaphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Methylnaphthalene. The % Recovery was reported as 43.8 and the control limits were 58 to 96.

3000905003	37	11142018-01	SW846 8270D	2-Methylnaphthalene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Methylnaphthalene. The % Recovery was reported as 56.8 and the control limits were 58 to 96.

3000905003	38	11142018-01	SW846 8270D	1,2,4,5-Tetrachlorobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 1,2,4,5-Tetrachlorobenzene. The % Recovery was reported as 42 and the control limits were 56 to 107.

3000905003	39	11142018-01	SW846 8270D	1,2,4,5-Tetrachlorobenzene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 1,2,4,5-Tetrachlorobenzene. The % Recovery was reported as 52.7 and the control limits were 56 to 107.

3000905003	40	11142018-01	SW846 8270D	Hexachlorocyclopentadiene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorocyclopentadiene. The % Recovery was reported as 0 and the control limits were 33 to 109.

3000905003	41	11142018-01	SW846 8270D	Hexachlorocyclopentadiene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachlorocyclopentadiene. The % Recovery was reported as 0 and the control limits were 33 to 109.

3000905003	42	11142018-01	SW846 8270D	2,4,6-Trichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4,6-Trichlorophenol. The % Recovery was reported as 44.8 and the control limits were 68 to 119.

3000905003	43	11142018-01	SW846 8270D	2,4,6-Trichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4,6-Trichlorophenol. The % Recovery was reported as 58.7 and the control limits were 68 to 119.

3000905003	44	11142018-01	SW846 8270D	2,4,5-Trichlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4,5-Trichlorophenol. The % Recovery was reported as 46.9 and the control limits were 68 to 121.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	45	11142018-01	SW846 8270D	2,4,5-Trichlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4,5-Trichlorophenol. The % Recovery was reported as 60.2 and the control limits were 68 to 121.

3000905003	46	11142018-01	SW846 8270D	Biphenyl

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Biphenyl. The % Recovery was reported as 42.5 and the control limits were 60 to 111.

3000905003	47	11142018-01	SW846 8270D	Biphenyl

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Biphenyl. The % Recovery was reported as 55.2 and the control limits were 60 to 111.

3000905003	48	11142018-01	SW846 8270D	Biphenyl

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Biphenyl. The RPD was reported as 14.9 and the upper control limit is 14.

3000905003	49	11142018-01	SW846 8270D	2-Chloronaphthalene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Chloronaphthalene. The % Recovery was reported as 45 and the control limits were 55 to 111.

3000905003	50	11142018-01	SW846 8270D	2-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Nitroaniline. The % Recovery was reported as 48.2 and the control limits were 61 to 120.

3000905003	51	11142018-01	SW846 8270D	2-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Nitroaniline. The RPD was reported as 21 and the upper control limit is 19.

3000905003	52	11142018-01	SW846 8270D	Dimethylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dimethylphthalate. The % Recovery was reported as 46.6 and the control limits were 59 to 111.

3000905003	53	11142018-01	SW846 8270D	Dimethylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Dimethylphthalate. The % Recovery was reported as 58.7 and the control limits were 59 to 111.

3000905003	54	11142018-01	SW846 8270D	2,6-Dinitrotoluene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,6-Dinitrotoluene. The % Recovery was reported as 42.1 and the control limits were 61 to 115.

3000905003	55	11142018-01	SW846 8270D	2,6-Dinitrotoluene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,6-Dinitrotoluene. The % Recovery was reported as 50.2 and the control limits were 61 to 115.

3000905003	56	11142018-01	SW846 8270D	Acenaphthylene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acenaphthylene. The % Recovery was reported as 46.7 and the control limits were 59 to 114.

3000905003	57	11142018-01	SW846 8270D	3-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 3-Nitroaniline. The % Recovery was reported as 34 and the control limits were 52 to 115.

3000905003	58	11142018-01	SW846 8270D	3-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 3-Nitroaniline. The % Recovery was reported as 45.3 and the control limits were 52 to 115.

3000905003	59	11142018-01	SW846 8270D	Acenaphthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Acenaphthene. The % Recovery was reported as 47.5 and the control limits were 59 to 115.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	60	11142018-01	SW846 8270D	2,4-Dinitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrophenol. The % Recovery was reported as 2.12 and the control limits were 36 to 131.

3000905003	61	11142018-01	SW846 8270D	2,4-Dinitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrophenol. The % Recovery was reported as 2.6 and the control limits were 36 to 131.

3000905003	62	11142018-01	SW846 8270D	4-Nitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Nitrophenol. The % Recovery was reported as 45.4 and the control limits were 49 to 134.

3000905003	63	11142018-01	SW846 8270D	Dibenzofuran

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dibenzofuran. The % Recovery was reported as 46.7 and the control limits were 61 to 111.

3000905003	64	11142018-01	SW846 8270D	2,4-Dinitrotoluene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrotoluene. The % Recovery was reported as 39.7 and the control limits were 61 to 117.

3000905003	65	11142018-01	SW846 8270D	2,4-Dinitrotoluene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,4-Dinitrotoluene. The % Recovery was reported as 50.4 and the control limits were 61 to 117.

3000905003	66	11142018-01	SW846 8270D	2,3,4,6-Tetrachlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2,3,4,6-Tetrachlorophenol. The % Recovery was reported as 43.1 and the control limits were 60 to 111.

3000905003	67	11142018-01	SW846 8270D	2,3,4,6-Tetrachlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2,3,4,6-Tetrachlorophenol. The % Recovery was reported as 52.8 and the control limits were 60 to 111.

3000905003	68	11142018-01	SW846 8270D	Diethylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Diethylphthalate. The % Recovery was reported as 45.7 and the control limits were 59 to 112.

3000905003	69	11142018-01	SW846 8270D	Diethylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Diethylphthalate. The % Recovery was reported as 58.2 and the control limits were 59 to 112.

3000905003	70	11142018-01	SW846 8270D	4-Chlorophenyl-phenylether

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Chlorophenyl-phenylether. The % Recovery was reported as 46 and the control limits were 58 to 112.

3000905003	71	11142018-01	SW846 8270D	Fluorene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Fluorene. The % Recovery was reported as 48.5 and the control limits were 61 to 112.

3000905003	72	11142018-01	SW846 8270D	4-Nitroaniline

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Nitroaniline. The % Recovery was reported as 42.4 and the control limits were 50 to 106.

3000905003	73	11142018-01	SW846 8270D	4-Nitroaniline

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 4-Nitroaniline. The RPD was reported as 20.3 and the upper control limit is 19.

3000905003	74	11142018-01	SW846 8270D	2-Methyl-4,6-dinitrophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 2-Methyl-4,6-dinitrophenol. The % Recovery was reported as 5.73 and the control limits were 53 to 131.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	75	11142018-01	SW846 8270D	2-Methyl-4,6-dinitrophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 2-Methyl-4,6-dinitrophenol. The % Recovery was reported as 5.74 and the control limits were 53 to 131.

3000905003	76	11142018-01	SW846 8270D	N-Nitrosodiphenylamine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte N-Nitrosodiphenylamine. The % Recovery was reported as 53.4 and the control limits were 65 to 134.

3000905003	77	11142018-01	SW846 8270D	4-Bromophenyl-phenylether

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 4-Bromophenyl-phenylether. The % Recovery was reported as 47 and the control limits were 60 to 111.

3000905003	78	11142018-01	SW846 8270D	Hexachlorobenzene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Hexachlorobenzene. The % Recovery was reported as 45.8 and the control limits were 59 to 109.

3000905003	79	11142018-01	SW846 8270D	Hexachlorobenzene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Hexachlorobenzene. The % Recovery was reported as 57.6 and the control limits were 59 to 109.

3000905003	80	11142018-01	SW846 8270D	Atrazine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Atrazine. The % Recovery was reported as 38 and the control limits were 54 to 128.

3000905003	81	11142018-01	SW846 8270D	Atrazine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Atrazine. The % Recovery was reported as 47.6 and the control limits were 54 to 128.

3000905003	82	11142018-01	SW846 8270D	Pentachlorophenol

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Pentachlorophenol. The % Recovery was reported as 42 and the control limits were 60 to 145.

3000905003	83	11142018-01	SW846 8270D	Pentachlorophenol

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Pentachlorophenol. The % Recovery was reported as 57.3 and the control limits were 60 to 145.

3000905003	84	11142018-01	SW846 8270D	Phenanthrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Phenanthrene. The % Recovery was reported as 50.4 and the control limits were 62 to 109.

3000905003	85	11142018-01	SW846 8270D	Anthracene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Anthracene. The % Recovery was reported as 47.6 and the control limits were 63 to 112.

3000905003	86	11142018-01	SW846 8270D	Anthracene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Anthracene. The % Recovery was reported as 59.9 and the control limits were 63 to 112.

3000905003	87	11142018-01	SW846 8270D	Carbazole

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Carbazole. The % Recovery was reported as 45.8 and the control limits were 65 to 117.

3000905003	88	11142018-01	SW846 8270D	Carbazole

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Carbazole. The % Recovery was reported as 57.9 and the control limits were 65 to 117.

3000905003	89	11142018-01	SW846 8270D	Di-n-Butylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Di-n-Butylphthalate. The % Recovery was reported as 45.4 and the control limits were 58 to 118.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	90	11142018-01	SW846 8270D	Di-n-Butylphthalate

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Di-n-Butylphthalate. The % Recovery was reported as 57.4 and the control limits were 58 to 118.

3000905003	91	11142018-01	SW846 8270D	Fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Fluoranthene. The % Recovery was reported as 50.9 and the control limits were 61 to 116.

3000905003	92	11142018-01	SW846 8270D	Pyrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Pyrene. The % Recovery was reported as 51.7 and the control limits were 60 to 114.

3000905003	93	11142018-01	SW846 8270D	Butylbenzylphthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Butylbenzylphthalate. The % Recovery was reported as 48.4 and the control limits were 56 to 126.

3000905003	94	11142018-01	SW846 8270D	3,3-Dichlorobenzidine

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte 3,3-Dichlorobenzidine. The % Recovery was reported as 16.4 and the control limits were 27 to 106.

3000905003	95	11142018-01	SW846 8270D	3,3-Dichlorobenzidine

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte 3,3-Dichlorobenzidine. The % Recovery was reported as 23.5 and the control limits were 27 to 106.

3000905003	96	11142018-01	SW846 8270D	Benzo(a)anthracene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(a)anthracene. The % Recovery was reported as 47.4 and the control limits were 61 to 118.

3000905003	97	11142018-01	SW846 8270D	Benzo(a)anthracene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(a)anthracene. The % Recovery was reported as 59.4 and the control limits were 61 to 118.

3000905003	98	11142018-01	SW846 8270D	Chrysene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Chrysene. The % Recovery was reported as 51.4 and the control limits were 63 to 111.

3000905003	99	11142018-01	SW846 8270D	Chrysene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Chrysene. The % Recovery was reported as 62 and the control limits were 63 to 111.

3000905003	100	11142018-01	SW846 8270D	bis(2-Ethylhexyl)phthalate

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte bis(2-Ethylhexyl)phthalate. The % Recovery was reported as 49 and the control limits were 51 to 126.

3000905003	101	11142018-01	SW846 8270D	Benzo(b)fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(b)fluoranthene. The % Recovery was reported as 53 and the control limits were 64 to 113.

3000905003	102	11142018-01	SW846 8270D	Benzo(k)fluoranthene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(k)fluoranthene. The % Recovery was reported as 42.8 and the control limits were 62 to 113.

3000905003	103	11142018-01	SW846 8270D	Benzo(k)fluoranthene

The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(k)fluoranthene. The % Recovery was reported as 51.9 and the control limits were 62 to 113.

3000905003	104	11142018-01	SW846 8270D	Benzo(a)pyrene

The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(a)pyrene. The % Recovery was reported as 46.5 and the control limits were 61 to 114.

ANALYTICAL RESULTS

Workorder: 3000905 Franklin Smelting

3000905003	105	11142018-01	SW846 8270D	Benzo(a)pyrene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(a)pyrene. The % Recovery was reported as 56.7 and the control limits were 61 to 114.				
3000905003	106	11142018-01	SW846 8270D	Indeno(1,2,3-cd)pyrene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Indeno(1,2,3-cd)pyrene. The % Recovery was reported as 43.3 and the control limits were 62 to 113.				
3000905003	107	11142018-01	SW846 8270D	Indeno(1,2,3-cd)pyrene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Indeno(1,2,3-cd)pyrene. The % Recovery was reported as 52.8 and the control limits were 62 to 113.				
3000905003	108	11142018-01	SW846 8270D	Dibenzo(a,h)anthracene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Dibenzo(a,h)anthracene. The % Recovery was reported as 43.9 and the control limits were 64 to 117.				
3000905003	109	11142018-01	SW846 8270D	Dibenzo(a,h)anthracene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Dibenzo(a,h)anthracene. The % Recovery was reported as 53.3 and the control limits were 64 to 117.				
3000905003	110	11142018-01	SW846 8270D	Benzo(g,h,i)perylene
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte Benzo(g,h,i)perylene. The % Recovery was reported as 45.4 and the control limits were 61 to 118.				
3000905003	111	11142018-01	SW846 8270D	Benzo(g,h,i)perylene
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte Benzo(g,h,i)perylene. The % Recovery was reported as 55 and the control limits were 61 to 118.				
3000905003	112	11142018-01	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905003	113	11142018-01	SW846 8270D	n-Nonane
The QC sample type MS for method SW846 8270D was outside the control limits for the analyte n-Nonane. The % Recovery was reported as 24.8 and the control limits were 50 to 150.				
3000905003	114	11142018-01	SW846 8270D	n-Nonane
The QC sample type MSD for method SW846 8270D was outside the control limits for the analyte n-Nonane. The % Recovery was reported as 27.7 and the control limits were 50 to 150.				
3000905003	115	11142018-01	SW846 6010C	Potassium, Total
Due to the zinc content, this sample required a 1/10 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				
3000905004	1	11142018-02	SW846 8270D	Benzaldehyde
The QC sample type LCS for method SW846 8270D was outside the control limits for the analyte Benzaldehyde. The % Recovery was reported as 133 and the control limits were 52 to 108.				
3000905004	2	11142018-02	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905004	3	11142018-02	SW846 6010C	Aluminum, Total
Due to the zinc content, this sample required a 1/100 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				
3000905005	1	11142018-03	SW846 8270D	n-Nonane
ALS-Middletown does not hold PADEP NELAP accreditation for this analyte by this method of analysis.				
3000905005	2	11142018-03	SW846 6010C	Aluminum, Total
Due to the zinc content, this sample required a 1/50 dilution for the 6010C total metals analysis. The detection limit was raised accordingly. SRT 11/28/2018				

ALS Environmental

34 Dogwood Lane ▪ Middletown, PA 17057 ▪ Phone: 717-944-5541 ▪ Fax: 717-944-1430 ▪ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYSIS - PREP METHOD CROSS REFERENCE TABLE

Workorder: 3000905 Franklin Smelting

Lab ID	Sample ID	Analysis Method	Prep Method
3000905001	TAT1711-01	600/4-81-045	600/4-81-045
3000905002	78E710111	600/4-81-045	600/4-81-045
3000905003	11142018-01	S2540G-11	
3000905003	11142018-01	SW846 6010C	SW846 3051
3000905003	11142018-01	SW846 7471B	SW846 7471B
3000905003	11142018-01	SW846 8270D	SW846 3546
3000905004	11142018-02	S2540G-11	
3000905004	11142018-02	SW846 6010C	SW846 3051
3000905004	11142018-02	SW846 7471B	SW846 7471B
3000905004	11142018-02	SW846 8270D	SW846 3546
3000905005	11142018-03	S2540G-11	
3000905005	11142018-03	SW846 6010C	SW846 3051
3000905005	11142018-03	SW846 7471B	SW846 7471B
3000905005	11142018-03	SW846 8270D	SW846 3546

ALS Environmental
34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT / SAMPLER. INSTRUCTIONS ON THE BACK.

3000905

1 of 1

Client Name: Philadelphia Gas Works
Address: 3100 W. Passyunk Avenue
Philadelphia, PA 19145
Contact: Jeff Ham
Phone#: (215) 787-4849
Project Name/#: Franklin Smelting
Bill To: jeffrey.ham@pgworks.com

TAT [X] Normal-Standard TAT is 10-12 business days.
[ ] Rush-Subject to ALS approval and surcharges.
Date Required: _____ Approved By: _____
Email? [X] -Y jeffrey.ham@pgworks.com
Fax? [ ] -Y No.: _____

Sample Description/Location (as it will appear on the lab report)	Sample Date	Time	*G or C	**Matrix	PCBs	TCL SVOCs	TAL Metals							
Container Type			CG	CG	CG									
Container Size			8 Oz	16 Oz	16 Oz									
Preservative			None	None	None									
			ANALYSES/METHOD REQUESTED											
			Enter Number of Containers Per Sample or Field Results Below.											
TAT1711-01	11/14/18	10:55	G	OI	1									
78E710111	11/14/18	11:25	G	OI	1									
11142018-01	11/14/18	13:20	G	SO		1	X							
11142018-02	11/14/18	13:30	G	SO		1	X							
11142018-03	11/14/18	13:40	G	SO		1	X							

Receiving Lab)
Cooler Temp: 2.1° Therm ID: 403
No. of Coolers: _____

	Y	N	Initial
Custody Seals Present?			KM
(if present) Seals Intact?			
Received on Ice?			
COC/Labels Complete/Accurate?			
Cont. in Good Cond.?			
Correct Containers?			
Correct Sample Volumes?			
Correct Preservation?			
Headspace/Volatiles?			

Courier/Tracking #: SP18111e0052

Sample/COC Comments

Transformer S/N is sample ID; light amber	
Transformer S/N is sample ID; dark amber	
Black soil; NE Corner of Main Bldg	
Black soil; SE Corner of Main Bldg	
Brown soil; SW Corner of Main Bldg	

ALS Field Services: _Pickup _Labor _Composite Sampling _Rental Equipment _Other: _____

Project Comments: Franklin Smelting Transformer Oil Samples for Waste Characterization and Soil Samples for Fence Installation

LOGGED BY(signature): Date: Time:
REVIEWED BY(signature): Date: Time:

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Amy Brown / PGW	111618	13 15	2 Chris Greene	111618	1215
3 Chris Greene	111618	1645	4 COMMON COURIER / ALS COURIER		
5 COMMON COURIER / ALS COURIER			6	11/16/2018	2047
7			8		
9			10		

Data Deliverables: [ ] Standard [X] CLP-like [ ] USACE [ ]
Special Processing: USACE [ ] Navy [ ] [ ]
State Samples Collected In: [ ] NY [ ] NJ [X] PA [ ] NC [ ]
Reportable to PADEP? Yes [ ] PWSID # _____
Sample Disposal: Lab [X] Special [ ]
EDDS: Format Type- _____

* G=Grab; C=Composite ** Matrix - AI=Air; DW=Drinking Water; GW=Groundwater; OI=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

ALS ENVIRONMENTAL SHIPPING ADDRESS: 34 DOGWOOD LANE, MIDDLETOWN, PA 17057

Rev 10/11

Appendix D

Appendix D

Railroad Requirements for Demo of 3030 Project

8-1-2019

The Contractor shall enter into A Temporary Entry Permit Agreement with Conrail for this Work.

Following are Conrail's CE-6 Specifications for work on Conrail right of way, Entry Permit Application and updated insurance requirements.

Railroad Protective Liability Insurance is covered with the $1,500.00 fee for the permit, all other insurances must be evidenced on a Certificate of Insurance per attached updated insurance requirements. A Certificate of Insurance is required for all contractor firms that will be on Conrail right of way.

Railroad Safety Training is required for all personnel working on the property. Conrail's Project Engineer conducts the class (usually about 2 hours) and will schedule it with the Contractor. This will cost about $200.00.

The Conrail Project Engineer assigned to this job will determine the flagging protection necessary. The cost will be about $800.00 per 8 hour day.

The Contractor shall submit all drawings and work plan with the application.

Appendix F


Building A
Building B
Building C
Appendix F
Appendix F
03/26/2011
© 2011 Pictometry

Appendix G

Exhibit G
EROSION AND SEDIMENT CONTROL PLAN

PROJECT:

Former Franklin Smelting
Demolition of Three Buildings and Associated Items
3036 Castor Avenue
Philadelphia, PA 19134

Prepared by:

PHILADELPHIA GAS WORKS
800 W. Montgomery Avenue,
Philadelphia, PA 19122

August 6, 2019

INTRODUCTION

This Erosion and Sediment (E&S) Control Plan has been developed for the demolition and removal of three existing buildings and associated items located at 3030 Castor Avenue, Philadelphia, Pennsylvania.

This project is expected to include **1,000 s.f. of earth disturbance.**

Site Description

Former Franklin Smelting
Demolition of Three Buildings and Associated Items

With the assistance of a contractor, PGW plans to demolish and remove three buildings at the Former Franklin Smelting property. This project includes (but is not limited to) the following tasks that related to E&S control:

- The Contractor shall furnish and install temporary fencing.
- The Contractor shall dismantle and properly dispose of the buildings (including 3030 Castor and 3000R Castor).
- The Contractor shall excavate, cut and cap the old three inch natural gas line to a depth of 3 feet.
- The Contractor shall provide the Company with a Health and Safety Plan.
- The Contractor shall protect all inlets and drains on the property with a compost sock or synthetic filter. The inlet protection shall be installed, inspected, cleaned and replaced according to manufacturer's specifications.
- Once the building has been removed, the Contractor shall break up the floor of the building at 10, marked out, locations so that rain water can soak into the ground. The area of each location shall be 10 feet by 10 feet.
- The Contractor shall furnish and install approximately 400 LF of new 8' high chain link fence with three stands of barbed wire angles 45 degrees to the outside.

Topography and Soils

The site is located in an urban area, with the underlying soils classified as "Urban Land (Ub)". "The soils and foundations are highly variable. Urban structures and works cover so much of the land type that identification of the soils is not practical. Most areas have been smoothed and the original soil material has been disturbed, filled over or otherwise destroyed prior to construction." (Source: USDA, Soil Survey of Camden, 2016). The Site is generally flat to slightly sloping (0-8%) with the surface flow generally expected to runoff to the south.

The nearest body of water is the Delaware River slightly downgradient to the south approximately ¼-mile from the closest project location adjacent to Delaware Avenue. The nearest stream is the Frankford Creek slightly upgradient to the northeast approximately ½-mile from the closest project location adjacent to Lewis Street (see Appendix A – USGS Topographic Map).

Erosion Control Supervisor

PGW's Manager of Environmental Compliance will fulfill the roll of the Erosion Control Supervisor (ECS) on the jobsite. Contact information is as follows:

Kevin M. Grooms
Philadelphia Gas Works
800 W. Montgomery Avenue
Philadelphia, Pennsylvania 19153-3802

Office:	215-684-6604
Office FAX:	215-684-6350
Cell:	267-249-6635
e-mail:	kevin.grooms@pgworks.com

Orientation Meeting

The ECS (or designee) shall schedule and moderate a meeting with all personnel and contractor personnel ***prior to*** any work beginning on site. The primary agenda for this meeting shall be to discuss the erosion control methods in place to control storm water pollution run off during construction.

This meeting will be repeated for those contractors and personnel who may perform work later in the construction schedule.

The ECS (or designee) shall stress to all at the orientation meeting(s) that all workers are responsible for the integrity of the installed erosion control systems. All workers are to report any damage, breaches or other such problems with the installed system to the ECS (or designee) immediately for corrective action to be taken.

Sediment Control

Sediment control procedures and practices shall be implemented during the beginning of the project (mobilization) and remain in place throughout the duration of the project. Once the work is completed, temporary sediment controls may be removed or left in place at the request of Philadelphia Gas Works.

The ECS (or designee) will ensure the layout of the expected project work sequences and review the current construction schedule as needed. Any major deviations will be reviewed with regard to the potential effect on the sediment control plan.

The schedule will be reviewed with the supervisory personnel for any and all subcontractors performing work on this site.

Sediment (Erosion) Control Plans

Sediment Controls shall be installed per the requirements of the project plans and specifications described below. All subcontractors will be familiar with the requirements of the project specifications regarding sediment control protection.

Sediment Controls shall be installed as indicated on the plans which are included in Appendix A-Erosion and Sediment Control Site Plan.

Sediment Control Measures

A. Sediment control measures shall consist of any and all Best Management Practices (BMPs) for storm water discharges and will include a stone tracking pad/construction entrance and inlet protection within the project area and adjacent areas impacted by the project.

   i. Inlet protection will be installed downgradient of the project to protect all inlets impacted by the project. All trenches will be backfilled on the same day on which they were excavated, unless weather or unforeseen circumstances prevent work from being completed. If the stockpiles must be left overnight, they are to be covered by plastic to prevent sediment runoff.

   ii. A stone tracking pad will be installed in areas of construction vehicle egress at the site construction entrance.

EROSION / SEDIMENT CONTROL PLAN STANDARD NOTES

- **Stockpile heights must not exceed 35 feet; stockpile slopes must not exceed 2:l,**

- **The operator/responsible person (O/RP) on site shall assure that the approved erosion and sediment control plan is properly and completely implemented.**

- **Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the O/RP shall implement appropriate Best Management Practices (BMPs) to eliminate the potential for accelerated erosion and/or sediment pollution.**

- **All pumping of sediment-laden water shall be through a sediment control BMP such as a pumped water filter bag discharging over undisturbed areas.**

- **A copy of the approved erosion and sediment control plan must be available on the project site at all times.**

- **Erosion and sediment BMPs must be constructed, stabilized and functional before site disturbance begins within the tributary areas of those BMPs.**

- **After final site stabilization has been achieved, temporary erosion and sediment BMP controls must be removed. Areas disturbed during the removal of the BMPs must be stabilized immediately.**

- **Until a site is stabilized, all erosion and sediment BMPs must be maintained properly. Maintenance must include inspections of all erosion control BMPs after each runoff event and on a weekly basis.**

- **Sediment removed from BMPs shall be disposed of on-site in landscaped areas outside of steep slopes, wetlands, floodplains or drainage swales and immediately stabilized or placed in soil stockpiles and stabilized.**

Weather monitoring procedure

The ECS (or designee) will monitor the weather forecast each day. The ECS (or designee) will communicate with key subcontractor supervisors to discuss implications of the day's forecast relative to work activities ongoing at the site for the week.

Adjustments to work schedule may be made at that time based on the significance and likelihood of bad weather for a particular work day or days for the week in question. The contractor will provide notification to PGW of weather related work stoppages as far in advance as is practical, though typically not more than 48 hours, based on the inherent uncertainty in weather forecasting.

Accidental Discharge Notice

PGW will immediately notify the Philadelphia Water Department (PWD) of any accidental discharge or release. In addition, the ECS (or designee) shall generate a written report within seven (7) days to any agency having jurisdiction with the details of said release.

The report shall address the following items:

- The date, time, location, nature of operation, and type of discharge, including the cause or nature of the notice letter (if as a result of a notice from PGW).
- The Best Management Practices put into action before the discharge event, or prior to receiving the notice or order from PGW.
- The date of deployment and type(s) of Best Management Practice(s) deployed after the discharge event, or after receiving the notice or order, including additional Best Management Practices installed or planned to reduce or prevent re-occurrence.
- An implementation and maintenance schedule for any affected Best Management Practices.

Plan Revisions

Revisions may be required to this plan based on any number of changing conditions. Any changes shall be presented by the contractor to PGW in writing for approval ***prior to*** implementation of the changes or system modifications.

Any such approved changes shall be implemented at the site no later than 7 working days after the approval.

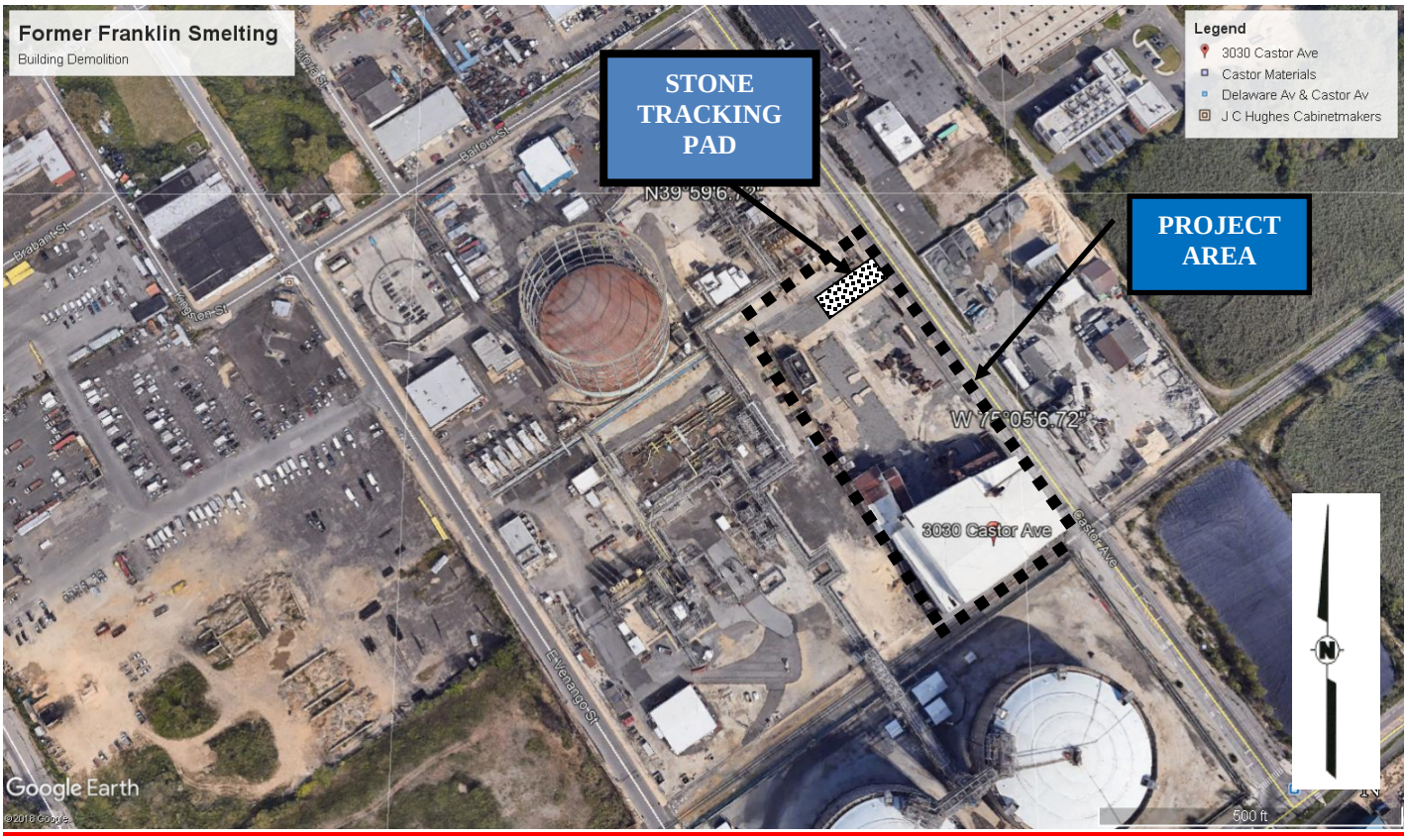
Throughout the course of the project, the contractor and all subcontractors shall be required to follow normal construction work area practices. The entire site shall be kept orderly and daily clean up shall occur as required.

There is a public paved roadway leading up to the site entrance. This is the only access to and from the work site. It will be the responsibility of the particular subcontractors to maintain the roadway throughout the course of the project. Debris and dirt shall not be allowed to accumulate on this roadway.

IN GENERAL, THE PROJECT SUPERINTENDENT AND THE EROSION CONTROL SUPERVISOR WILL ENSURE THAT ALL SUBCONTRACTORS ARE USING THE BEST MANAGEMENT PRACTICES (STANDARD FOR THEIR PARTICULAR INDUSTRY) FOR THEIR AREA OF WORK THROUGHOUT THE COURSE OF WORK ON THIS PROJECT WHETHER OR NOT THOSE PRACTICES ARE DETAILED HEREIN OR NOT.

APPENDIX A

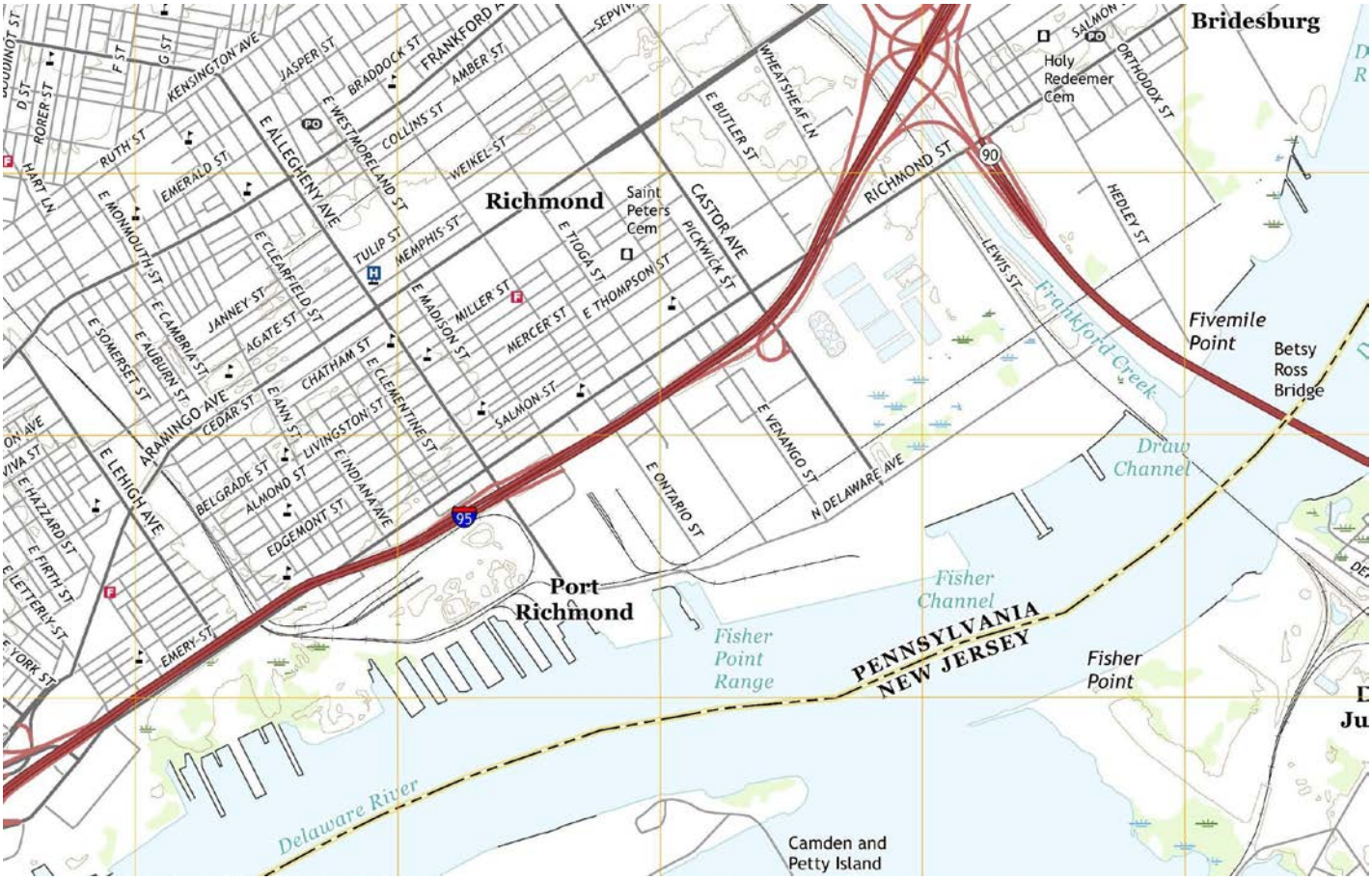
Erosion and Sediment Control Site Plan
& USGS Topographic Map



PGW – Former Franklin Smelting

Key: **= Stone Tracking Pad** **= Project Area**

*NOTE- Drawing delineations are approximate.



APPENDIX B

Construction Entrance

STANDARD CONSTRUCTION DETAIL #16
Rock Construction Entrance