

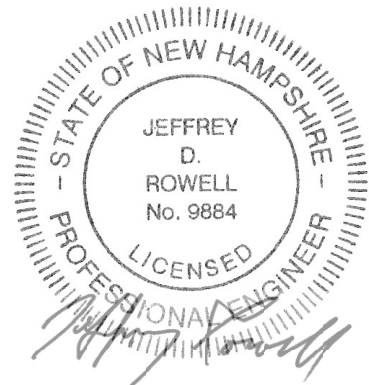
# **CONTRACT DOCUMENTS**

**SARL DRIVE  
SALEM, NH**

**SITE DEMOLITION – FORMER WASTE  
WATER TREATMENT FACILITY**

**TOWN OF SALEM, NH**

**October 2016**



**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NEW HAMPSHIRE**

October 2016

*Prepared for:*

**THE TOWN OF SALEM**  
Municipal Services  
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Salem, New Hampshire

*Prepared by:*



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FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**NOTICE TO BIDDERS**

## ***Notice to Bidders***

SITE DEMOLITION –  
FORMER WASTE WATER TREATMENT FACILITY –  
ANAEROBIC DIGESTER BUILDING, HOLDING TANKS, TRICKLING FILTERS AND  
SEDIMENTATION BASINS  
SARL DRIVE  
SALEM, NH

The Former Waste Water Treatment Facility is located on Sarl Drive, in Salem, NH (herein referred to as the “Site”).

Bids for demolition of the Former Waste Water Treatment Facility – Anaerobic Digester Building, Holding Tanks, Trickling Filters and Sedimentation Basins at Sarl Drive (“project”) will be received by Christine Wholley, Purchasing Agent, at Salem, NH Town Hall, 33 Geremonty Drive, Salem, NH 03079, until the time of and date specified by the Owner.

In general, this project involves asbestos, polychlorinated biphenyl (PCB), lead paint, and universal waste hazardous materials removal and demolition associated with the Former Waste Water Treatment Facility – Anaerobic Digester Building, an approximately 1,100-square-foot, two-story, split-level masonry structure and associated holding tanks. The building exterior is finished with brick siding. The flat roofing system is comprised of concrete substrate covered with asphalt roofing felts and compound. The windows throughout the building are single pane metal windows. Two attached holding tanks are located on the east and west sides of the building and are approximately 45 feet in diameter and two stories in height. The tanks are wrapped in a metal jacket with underlying fiberglass foam insulation. The flat roofing system on the east tank is comprised of concrete substrate covered with asphalt roofing felts and compound. The west tank has a metal tracked roofing system to allow for content expansion, with a concrete cap around the perimeter. The tanks may contain water and sludge. In addition, this project also involves the demolition of two trickling filters and two sedimentation basins located at the Site.

To complete the project, the work will include, but is not limited to, preparation of certain plans and submittals; mobilization; permits and notifications; site preparation; traffic control; site security; dust, noise, vibration and vermin control; health and safety measures; implementation of demolition facilities, temporary utilities and controls; asbestos removal; polychlorinated biphenyl (PCB) abatement; lead paint abatement; universal waste removal; hazardous materials removal; erosion and sedimentation control; utility termination; demolition of certain structures and site features; off-site waste transportation and disposal; site restoration; final site cleaning; demobilization; and preparation of project records and drawings.

All Bidders must attend a Pre-Bid Conference to discuss special requirements for the contract. The Pre-Bid Conference will be held on the date and time at the location identified by the Owner. All visitors to the site will be required to provide and wear hard hats, safety glasses, reflective safety vests, and steel toed work boots.

All questions should be submitted in writing to the Purchasing Agent:

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**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**TOWN OF SALEM, NEW HAMPSHIRE GENERAL CONDITIONS  
(INCORPORATED BY REFERENCE)**

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**PROJECT SPECIFICATIONS**



**ASBESTOS ABATEMENT AND HAZARDOUS MATERIALS REMOVAL**  
**FORMER WASTE WATER TREATMENT FACILITY – CLARIFIER BUILDING**  
**THE TOWN OF SALEM**  
**SARL DRIVE**  
**SALEM, NH**

**TECHNICAL REQUIREMENTS**

**1.1 BACKGROUND**

- A. The Clarifier Building and the two attached holding tanks are located at the Former Waste Water Treatment Facility at Sarl Drive in Salem, NH (Site). The Site is to be abated of asbestos-containing materials (ACMs). Additionally, all hazardous, non-hazardous, suspected/potential hazardous, and/or other regulated waste materials present are to be removed.
- B. Provide all facilities, labor, materials, tools, temporary utilities, equipment, appliances, transportation, supervision and related work necessary to complete the work specified in this section, as described in the Contract Documents.
- C. All work performed under this section of the specifications shall be subject to the provisions of the Agreement.
- D. The work described in this section consists of performing certain activities designed to address the complete and proper abatement, cleaning, removal, containerizing, loading, transportation and off-site disposal/recycling of materials not indicated to remain. No attempt is made in this section to list the entire scope of required abatement or to describe each element to be removed, transported, and disposed/recycled. It is the responsibility of the Contractor to determine and verify the present location, condition and nature of existing hazards, quantities and types of materials and/or wastes requiring removal, based on the information provided in the Contract Documents, and by a full, complete, and thorough examination of the Site by the Contractor. Bidders are required to verify the quantities of all materials prior to the bid deadline, including dimensions and locations of areas requiring abatement as well as the types of material to be abated. The following is provided as an attachment to and included within these Specifications for informational purposes:

Attachment A – Asbestos Laboratory Reports and Chain of Custody Forms;  
Attachment B – Lead Laboratory Reports and Chain of Custody Forms; and  
Attachment C – Polychlorinated Biphenyls Laboratory Reports and Chain of Custody Forms

Tables are included in the TABLES section as an attachment.

Table A – Submittal List  
Table 1 – Asbestos Containing Materials Inventory  
Table 2 – Lead-Based Paint Sampling Summary  
Table 3 – Hazardous Materials Inventory  
Table 4 – Polychlorinated Biphenyl Bulk Sample Summary

- E. The Owner's third-party Project Monitor will perform perimeter air monitoring, air clearance testing for asbestos throughout asbestos abatement activities. The Contractor will perform personnel air monitoring required for performance of the Work.

## 1.2 INTRODUCTION

- A. The work to be performed includes the abatement of ACMs and removal of hazardous, non-hazardous, and/or other regulated building, waste and/or other materials present. The Work shall be performed in accordance with the Town of Salem, NH Department of Environmental Services, U.S. Environmental Protection Agency (EPA) and local, State and federal requirements.
- B. The work associated with the Site includes:
  - 1. Preparation of project specific submittals as detailed in these technical requirements and attached ***Table A – Submittal List***;
  - 2. Obtaining and maintaining all applicable Federal, State and local permits and notifications and associated fees necessary to complete the Work;
  - 3. Notifying utility companies and other authorities having jurisdiction;
  - 4. Abatement of both interior and exterior ACMs and removal of hazardous, non-hazardous, and/or other regulated waste present within the Clarifier Building and attached holding tanks; and
  - 5. Segregation, characterization, handling, containerization, loading, transportation and disposal of ACMs and hazardous materials generated during the performance of the Work.
- C. The Contractor shall have examined existing Site conditions and reviewed all Contract Bid Documents prior to the commencement of the work.
- D. Site Access – The Contractor's access to the Site will be via Sarl Drive.
- E. Working hours at the Site are 7:00 AM to 5:00 PM Monday through Friday. If necessary and pre-approved by The Town of Salem (Owner) and the Engineer, Saturday work hours will be permitted from 7:00 AM to 5:00 PM. All work shall be conducted in accordance with other local ordinances. No work is to be conducted on Sunday. **Weekend work must be authorized by the Owner/Engineer 72 hours prior to the scheduled work.**
- F. Before beginning work, the Contractor must provide workers with the required protective equipment and require that appropriate protective equipment be used at all times. The Contractor shall perform appropriate personnel exposure monitoring in accordance with NHDES and Occupational Safety and Health Administration (OSHA) requirements.
- G. The Contractor is responsible for conducting all OSHA related safety and structural investigations for roofing and general conditions within the building that could pose a hazard to their workers. The Contractor shall include in their bid all costs for performing these investigations and corrective measures required to abate any unsafe conditions and protect workers during abatement activities.

- H. Prior to the initiation of abatement activities, the Contractor shall seal existing drains and drain outlets within the Site building to prevent discharge to the environment during the course of the work.
- I. The Contractor shall conduct the work in a manner giving prime consideration to protection of the public; protection from the weather, control of noise, shocks and vibrations; control of dirt and dust; orderly access for storage of materials; protection of existing structures, surfaces, property and features not part of the work; coordination and cooperation with the Owner at all times.
- J. Temporary Facilities: The Contractor is responsible for providing and paying fees for all necessary temporary facilities to include sanitary facilities including portable toilet(s) and potable water for personal hygiene, decontamination, and employee, Engineer, and Owner use.
- K. Contractor shall install temporary electrical and water service as necessary for the completion of abatement activities. Contractor is responsible for all electrical and water usage charges throughout Site activities.
- L. The Contractor is responsible for clearing and off-site disposal of trees and brush over growth around the Clarifier Building within the Limits of Work and in the Contractor Staging Area as shown on **Figure 1 – Demolition Plan** as needed to complete the Work. No grubbing shall occur as part of tree and brush cutting operations.
- M. The Contractor shall conform to building, fire, electrical, environmental, OSHA, State and local requirements, and all other applicable codes for abatement work, safety of structure, preservation of property, dust control, disposal of generated waste materials, etc. The Contractor shall immediately report all accidents or near miss accidents to the Engineer.
- N. The Contractor shall conform to applicable laws and regulations when hazardous or potentially hazardous materials or contaminated substances not previously identified are encountered. Contractor is directed not to disturb or attempt to remove any discovered hazardous or potentially hazardous materials or contaminated substances without first notifying the Engineer. Immediately notify the Engineer upon the discovery of such conditions.
- O. The Contractor shall conform to applicable environmental regulations such as wetlands and Site runoff controls. The Contractor shall use materials acceptable to authorities having jurisdiction, Owner, and Engineer.
- P. The Contractor shall notify and comply with the requirements of DIG SAFE®, affected utility companies, fire, police, building departments and other agencies having jurisdiction, and Engineer prior to starting work.
- Q. Pre-construction Meeting: A pre-construction meeting will be convened by the Engineer prior to the start of any work. This meeting will be held to review the scope-of-work and the Contractor's work plan, schedule of submittals and other items that may affect the work. The Engineer will prepare the agenda for the pre-construction meeting as well as a meeting summary.

- R. Periodic Construction Meetings: The Contractor shall meet with the Engineer and others as necessary on at least a weekly basis throughout the duration of the project to review work completed, review work in progress, to review work to begin and resolve any items from prior meetings. The Contractor shall prepare the agenda and minutes for periodic construction meetings and submit minutes to Engineer the following day.

### 1.3 SUBMITTALS

The Contractor shall prepare submittals for review, comment and acceptance by the Engineer in accordance with **Table A – Submittal List** attached. The Contractor shall provide one electronic copy (.pdf format) of the submittals required to the Engineer. Work covered under a submittal shall not commence until accepted by the Engineer.

- A. Pre-construction Submittals – No work shall begin at the Site until pre-construction submittals are approved by the Engineer. Pre-construction submittals identified below are to be provided to the Engineer within 10 days following Notice of Award.
1. *Project Schedule* – The Contractor shall prepare an accurate project work schedule. The schedule shall be written in sufficient detail to identify the various tasks to be performed, the duration, expected start and completion date and the linking with other activities for each activity to be performed. The anticipated hours of operation are to be identified on this schedule. The project schedule is to be updated weekly by the Contractor during the work.
  2. *Asbestos Abatement Work Plan* – A project-specific Asbestos Abatement Work Plan is to be prepared by the Contractor, in sufficient detail to identify how the Contractor intends to sequence abatement activities; handle, segregate, characterize, transport and dispose of the various waste streams to be generated; abatement of friable and non-friable asbestos materials for off-site disposal. The Work Plan shall address worker decontamination procedures for the various materials abated. The Work Plan is to identify the location for temporary storage of all ACMs.
  3. *Poly-chlorinated Biphenyls Work Plan* – A project-specific PCB Abatement Work Plan is to be prepared by the Contractor, in sufficient detail to identify how the Contractor intends to sequence abatement activities; handle, segregate, characterize, transport, and dispose of the various waste streams to be generated; abatement of PCB-containing materials for off-site disposal. The Work Plan shall address worker decontamination procedures for the various materials being abated. The Work Plan is to identify the location for temporary storage of all PCB containing materials.
  4. *Site Safety and Health Plan* – The Contractor is to prepare and implement a project specific Site Health and Safety Plan (HASP) which addresses Site activities. The Contractor's HASP is to be developed to provide guidance for compliance with standards set forth by OSHA 29 CFR 1926, Safety and Health Regulation for Construction. Compliance with OSHA 29 CFR 1920, Safety and Health Regulation for General Industry, 29 CFR 1910.120, and Hazardous Waste Site Operations and Emergency Response are also required through the development, implementation and enforcement of this HASP.

5. *Waste Handling and Disposal Plan* – Prepare a project-specific Waste Handling and Disposal Plan to outline procedures to be used in management of waste materials generated during asbestos abatement and hazardous materials removal activities. Waste Handling and Disposal Plan shall address, at a minimum, the Contractor's intended methods for handling, preparing, storing, treating, shipping, and disposing of waste and outline the areas of the Site in which waste handling activities will occur. This plan shall specifically identify the disposal facilities to be used for each waste stream. The Waste Handling and Disposal Plan shall also include a waste tracking log to be utilized throughout the entire duration of the project to document all materials transported off-site for disposal and/or recycling. The waste tracking log shall include but not be limited to pertinent shipping information such as date, time, material, transporter I.D., estimated quantity/volume, and disposal facility for the material being transported.
6. *Environmental Protection Plan* – The Environmental Protection Plan shall address protection of soil and water resources, debris disposal, dust control, odor control, noise/vibration control, spill control, and decontamination.
7. *Emergency Contacts* – The Contractor is to prepare a list of emergency service telephone numbers and addresses including, fire, police, hospital, and ambulance, names and 24-hour phone numbers for Project Site Supervisor and other key personnel for the Contractor.

B. Construction Submittals

1. *Transporter Documentation* – At least 10 days prior to shipment of any materials from the Site, the Contractor is to prepare and submit written documentation to the Owner to verify that the transporter of materials from the Site for disposal, recycling or salvage are properly permitted and registered for the materials that they are transporting. The submittal is to include the name, address and telephone number of each transporter of regulated, non-hazardous, hazardous, or potentially hazardous materials, etc. The Town of Salem shall be identified as the Generator of any wastes from the Site that will be disposed under a manifest. ***The contractor shall provide disposal manifests requiring signature to the Engineer 72 hours prior to shipment of material off-site.***
2. *Shipping Documentation* – The Contractor is to provide shipping receipts, bills of lading and/or manifests as appropriate for all materials disposed or recycled off-site. Documents are to be provided to the Engineer within 30 working days for materials requiring hazardous waste manifests, 10 working days for all other materials.
3. *Asbestos Abatement and Hazardous Material Removal Permits/Notifications* – The Contractor is to submit copies of notifications and permits to the Engineer for review and acceptance 10 days prior to proceeding with the work covered by the Permit. Notifications are to be submitted or obtained from the appropriate federal, State of NH, or local agency in accordance with current regulatory requirements.

4. *Waste Disposal and Recycling Certificates* – The Contractor is to provide certificates for wastes that are disposed or recycled off-site in accordance with current regulations. Certificates verifying proper disposal or recycling by a permitted facility are to be provided to the Engineer as soon as possible or within 30 days of transport off-site.
5. *Other Submittals* – The Contractor is to maintain the following documents on-site for review during asbestos abatement and hazardous material removal operations.
  - a. Copies of asbestos contractor license as well as personnel training records for each individual associated with abatement operations indicating proper training as required in this specification and by federal, State and local regulations.
  - b. Current State of NH license/certification for each asbestos abatement worker/supervisor.
  - c. Current 40-hour OSHA HAZWOPER training certificates for each asbestos abatement worker/supervisor in accordance with 29 CFR 1910.120.
  - d. Report from Medical Examination conducted within last 12 months as part of compliance with OSHA medical surveillance requirements for each worker who is to enter the work area. Submit the name and social security number for each worker, and a written opinion from examining physician including the following:
    - i. Whether worker has any detected medical conditions that would place the worker at an increased risk of material health impairment from exposure to asbestos;
    - ii. Any recommended limitations on the worker or on the use of personal protective equipment such as respirators;
    - iii. Statement that the worker has been informed by the physician of the results of the medical examination and of any medical conditions that may result from asbestos exposure;
    - iv. Copy of information that was provided to physician in compliance with 29 CFR 1926.1101;
    - v. Statement that worker is able to wear and use the type of respiratory protection proposed for the project, and is able to work safely in an environment capable of producing heat stress in the worker; and
    - vi. Respirator fit test documentation for each worker required to wear respiratory protection.
  - e. Certifications: Submit certification signed by an officer of the abatement contracting firm stating that medical surveillance, and worker training records are being kept in conformance with 29 CFR 1926.1101.

- f. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA at 29 CFR 1910.134.
- g. Respiratory Protection Schedule: Submit level of respiratory protection intended for each operation including any historical air monitoring data to be considered.
- h. Air Monitoring: Results of air monitoring performed in accordance with any of the plans called for in the Contract Documents or any other air monitoring performed by the Contractor.
- i. Safety Data Sheets: For all materials to be used on-site not limited to encapsulants, spray adhesives, etc. Note: It is Contractor's responsibility to notify other Contractor's working at the Site in accordance with applicable OSHA regulations.

C. Daily Report

- 1. Maintain at the Site a daily report documenting the dates and time of, but not limited to the following items. Daily reports shall be submitted to the Engineer by 10:00 AM the following work day:
  - a. Visitations; authorized and unauthorized
  - b. Personnel entering and leaving the work area (name, certification, expirations)
  - c. Special or unusual events, (i.e., barrier breaching, equipment failures, accidents)
  - d. Documentation of Contractor's completion of the following:
    - i. Daily inspections and test results;
    - ii. Removal of any sheet plastic barriers;
    - iii. Inspections prior to application of encapsulation, enclosure or any other operation that will conceal the condition of ACMs or the substrate from which such materials have been removed;
    - iv. Removal of waste materials from work area and Site, including exact number of waste bags/containers;
    - v. Decontamination of work area and equipment; and
    - vi. Final inspection.

D. Post Construction Submittals

- 1. Post Construction Submittals will be provided to the Engineer within 30 days of project completion. They must be received and accepted prior to final payment to the Contractor. Post Construction Submittals include:
  - a. Summary of work, progress, and detailed account of any unusual events or accidents;

- b. Copies of daily Site and work area logs indicating personnel on-site and in containment areas, visitations, waste materials removed from Site, and inspections and testing;
- c. Copies of analytical results and calculations for air sampling completed by the Contractor during the project; and
- d. A copy of each waste manifest and chain-of-custody form signed by the transporter and disposal facility operator, indicating that waste was packaged and disposed of properly. All waste manifest documentation is to be submitted to the Engineer as soon as possible or within 30 days from transport of waste from the Site.

#### 1.4 REFERENCES

- A. The publications listed below form a part of these Bid Documents to the extent referenced. The publications are referred to in the text by the basic designation only.
  - 1. American National Standards Institute (ANSI);
  - 2. ANSI A10.6 (1990) Demolition Operations;
  - 3. Code of Federal Regulations (CFR);
  - 4. CFR 761 - Toxic Substances Control Act (TSCA);
  - 5. CFR 61 - SUBPART M - National Emissions Standard for Asbestos;
  - 6. CFR 82 - Protection of Stratospheric Ozone; Refrigerant Recycling;
  - 7. CFR 173.301 - Shipment of Compressed Gas Cylinders;
  - 8. NHDES Env-A 1800: Asbestos Management and Control;
  - 9. NHDES RSA 141-E: Asbestos Management and Control;
  - 10. NHDES ENV-Sw 900: Management of Certain Wastes
  - 11. NHDOT Specifications: New Hampshire Department of Transportation Standard Specifications of 2016;
  - 12. ASTM: American Society for Testing and Materials
    - a. Maximum dry density and optimum moisture content shall be determined in accordance with the ASTM Test Designation D1557;
    - b. Gradation analyses shall be determined by ASTM Test Designation D422; and
    - c. Field density tests shall be performed in accordance with ASTM Test Designation D1556.
  - 13. AASHTO: American Association of State Highway and Transportation Officials



## 1.5 SCOPE OF WORK

### A. Abatement and Disposal of Asbestos-Containing Materials

1. Asbestos abatement shall be performed in accordance with all applicable Town of Salem, NHDES, and EPA requirements.
2. The Contractor shall provide and/or submit all required agency notifications of commencement of the work, work plans, obtain permits, licenses, inspections, and similar documentation, as well as payments and similar requirements associated with codes, regulations, and standards.
3. The Contractor is responsible for performing all work consistent with the Engineer approved work plans including, but not limited to, work area preparation, including pre-cleaning, installation of critical barriers and polyethylene sheeting, construction of decontamination facilities, work area enclosures, sealing, isolation, and other activities associated with ACM removal. Work shall be completed in such a manner as to keep it confined within the Limits of Work as shown on **Figure 1 – Demolition Plan**.
4. The Contractor shall remove, properly containerize, and dispose of all ACMs within and outside of the Clarifier Building as outlined in **Table 1 – Confirmed Asbestos Containing Material Results** attached and as identified by the Contractor. The Contractor is responsible for identifying and verifying quantity of ACMs requiring removal and disposal. The materials referenced in **Table 1** are not intended to be a comprehensive list of all ACM materials present at the Clarifier Building.
5. The Owner is responsible for subcontracting the services of a third party Project Monitor for services outlined below in the technical requirements.
6. The Contractor is responsible for decontamination, tear down and clean up following abatement activities and clearance approval by the Owner's third-party Project Monitor.
7. The Contractor is responsible for determining the proper abatement procedures and proper disposal of ACMs in accordance with current regulatory requirements.
8. The Contractor is responsible for implementing proper engineering controls for protection of public, employees, and subcontractors during the work and to prevent contamination outside of the designated work areas.
9. Asbestos removal will not begin until the Engineer and the Owner's third party Project Monitor has given authorization to proceed. This authorization will be given after the removal area has passed a pre-abatement visual inspection by the Engineer and third party Project Monitor. The Engineer reserves the right to inspect all work areas prior to and during the start of abatement.
10. Dry removal will not be permitted at any time during this project.
11. All ACM shall be carefully removed and placed into double 6-mil polyethylene bags or fiber drums for disposal. All bags, containers or wrapped materials transported out of the work area shall be labeled with the name of the waste

generator and the address where the waste was generated. The Contractor name and address shall also be included. Attach label in a sufficient manner so that they are firmly affixed to the bag, wrapped material, or fiber drum.

12. All visible ACM is to be removed by the Contractor before encapsulation procedures are allowed to begin. The Engineer and Owner's third party Project Monitor will conduct an inspection of the work area prior to giving approval to begin encapsulation of the work area. The removal substrate must be clean and bare, and the entire work area must be free and clear of any suspect material for the Contractor to pass this visual inspection and begin encapsulation.
13. The Contractor is responsible for personal sampling to check personal asbestos exposure levels for the purpose of establishing respiratory protection needs. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken every day after the first day if working conditions remain consistent, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work, or during any changes in personnel. Sampling will be to determine eight-hour Time Weighted Averages. The Contractor is responsible for personal sampling as outlined in OSHA Standard 1926.1101.
14. The Contractor shall provide health and safety equipment required to protect workers and to comply with the HASP.
15. The Contractor is responsible for access control into the asbestos Work areas.
  - a. Isolate the work area to prevent entry by site occupants and the public into the work area or surrounding controlled areas. Notify the Engineer of all doors and other openings that must be secured to isolate work area. Access to stairwells and building exits must be maintained as indicated by the Engineer.
  - b. Arrange access to work area so that only access into Work area is through securable doors to personnel and equipment decontamination units.
  - c. Provide solid construction barriers to prohibit unauthorized access and visibility. At a minimum provide solid barriers as necessary to isolate all work areas with abatement activity.
  - d. Provide warning signs at each door and barrier leading to the work area as follows:

Legend:  
Danger  
Keep Out  
Beyond This Point  
Construction Work in Progress

Immediately inside door (leading to work area) and outside all accessible critical barriers post a manufactured caution sign, approximately 20-inch by 14-inch, displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend:  
Danger  
Asbestos  
Cancer and Lung Disease Hazard  
Authorized Personnel Only  
Respirators and Protective Clothing Are Required in This Area

- e. The signs shall be posted at the perimeters of asbestos removal, demolition or construction areas where the asbestos-containing material to be removed exists.
  - f. The Contractor shall maintain all temporary and critical barriers, facilities and controls as long as necessary for the safe and proper completion of the work. All containments shall consist of floors, ceilings, and walls covered with 2 layers of 6-mil polyethylene sheeting, except in those instances where such surfaces are deemed contaminated or are to be abated.
  - g. Any breaches in the containment will be corrected at the beginning of each shift and as necessary during the workday. Work will not be allowed to commence until all control systems are in place and operable.
  - h. No critical and primary barriers shall be removed until the work areas are thoroughly cleaned and all debris has been properly bagged and removed from work areas, and the air has passed final clearance tests, in accordance with provisions detailed herein and NHDES regulations.
16. The Contractor shall remove, segregate, transport, and dispose of miscellaneous ACMs in conformance with current regulatory requirements and the Contract Documents.
17. The Owner will subcontract the services of a third-party Project Monitor to monitor work practices and performance, inspection of the work areas, bulk fiber identification, perimeter and clearance air sampling and analysis, and visual clearance inspections throughout asbestos abatement activities.
- a. The air clearance criterion for this project is less than 0.010 fibers per cubic centimeter (f/cc) of air by phase contrast microscopy (PCM).
  - b. Background (pre-testing) air samples must be taken to represent conditions before the Contractor starts masking and sealing operations.
  - c. During removal, the Owner's third party Project Monitor will collect area air samples outside major openings in the containment: in the clean room, at other critical points outside the work areas, perimeter of exterior work areas, just outside the clean room, inside the contained work areas, and at high efficiency particulate air (HEPA) exhaust locations. If fiber concentrations exceed 0.010 fibers/cc, or background

- levels, work shall stop and the Contractor shall perform clean-up activities in the affected areas and check the integrity of all barriers.
- d. Final clearance air samples will be collected by the Owner's third-party Project Monitor inside each removal area after acceptance of visual inspection. A sufficient number of clearance samples to reliably characterize the work place air quality will be taken. The results of the clearance samples must comply with the regulations set forth in this specification. Failure to meet the specified criteria will require the Contractor to re-clean the designated work area and then repeat the final air clearance testing. Cleaning and retesting will be repeated until the specified criteria are met.
18. The Contractor shall provide new materials and new or used equipment in undamaged and serviceable condition. Only materials and equipment that are recognized as being suitable for the intended use, by compliance with appropriate standards, are to be used during the project.
- a. Fire Extinguishers: The Contractor shall provide multi-purpose ABC minimum rating to A40BC fire extinguishers. The Contractor shall comply with the applicable recommendations of National Fire Protection Association Standard 10 "Standard for Portable Fire Extinguishers." Fire extinguishers shall be located where they are most convenient and effective for their intended purpose, but provide not less than one extinguisher inside each work area in the Equipment Room and one outside each work area in the Clean Room.
  - b. Construction Lumber: Construction lumber used for critical barrier walls shall consist of nominal, 2-inch by 4-inch framing, sixteen inches center to center.
  - c. Plastic Sheeting: The Contractor shall provide non-combustible, fire-retardant, 6-mil thick clear, frosted, or black plastic sheeting in the largest size possible to minimize seams in accordance with State and local requirements. Spray plastic will not be allowed for use on this project.
  - d. Adhesive Materials: The Contractor shall provide duct tape in 2-inch or 3-inch widths, with an adhesive that is formulated to aggressively stick to plastic sheeting. The Contractor may also provide spray adhesive in aerosol cans that is specifically formulated to stick tenaciously to plastic sheeting.
  - e. Shower Assembly: The Contractor shall provide a leak-tight shower enclosure with integrated drain pan fabricated from fiberglass or other durable waterproof material, approximately 3-foot by 3-foot square with minimum 6-foot high sides and back. The Contractor shall structurally support the unit as necessary for stability and equip it with a hose bib, mounted at approximately 4'-0" above drain pan.

The Contractor shall provide a factory made shower-head producing a spray of water that can be adjusted for spray size and intensity. The Contractor shall feed shower with water mixed from hot and cold supply

lines, arranged so that control of water temperature, flow rate, and shutoff is from inside shower without outside aid.

The Contractor shall provide a totally submersible waterproof sump pump with an integral float switch. The unit shall be sized to pump two times the flow capacity of all showers or hoses supplying water to the sump, through the filters specified herein when they are loaded to the extent that replacement is required. The unit shall be capable of pumping debris, sand, plaster or other materials washed off during decontamination procedures without damage to mechanism of pump. The Contractor shall adjust float switch so that a minimum of 3 inches remains between top of liquid and top of sump pan.

- f. Negative Air Filtration System: The Contractor shall provide air-filtering equipment capable of filtering particles to 0.3 micrometers at 99.97% efficiency and of sufficient quantity and capacity to cause a complete air change within the work area at least once every 15 minutes. Such equipment shall exhaust the filtered air so as to maintain a negative pressure inside the work area. Air shall flow in through the Decontamination Unit and exhaust through the negative air filtration unit by means of flexible duct leading outside the work area to the exterior of the building, in accordance with State of New Hampshire regulations. Negative air filtration shall be in operation at all times.
  - g. HEPA Vacuum: The Contractor shall utilize high efficiency filter vacuums to filter particles of 0.3 micrometers or larger at 99.97% efficiency or greater. The Contractor shall obtain HEPA vacuum attachments, such as various size brushes, crevice tools, and angular tools to be used for varied application, and service the HEPA vacuum routinely to assure proper operation. Caution shall be used any time the vacuum is opened for HEPA filter replacement or debris removal. Operators shall wear protective clothing and respirators when using the HEPA vacuum. Vacuuming by conventional means is unacceptable.
  - h. Amended Water: For wetting prior to disturbance of asbestos-containing materials, the Contractor shall use an amended water solution. The Contractor shall provide water to which a commercial surfactant (i.e., not dish detergent) has been added. The Contractor shall use a mixture of surfactant and water, which results in wetting of the asbestos-containing material and retardation of fiber release during disturbance of the material, equal to or greater than that provided by the use of one ounce of a surfactant, consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.
- 19. The Contractor is responsible for securing work areas during and after working hours at the Site.
  - 20. The Contractor is responsible for the demolition of flooring and/or wood/sheetrock/plaster walls and ceilings, drop ceilings, etc. to access and remove all ACMs specified.

21. Where the Contractor encounters suspect asbestos-containing building materials during the demolition phase, work shall cease and the area abated by the Contractor at no additional cost to the Owner. The quantity of ACMs in each area requiring abatement is to be verified by the Contractor prior to abatement.
  22. Data regarding the presence of asbestos has been provided for use by the Engineer. If there is any question whether a material not identified herein contains asbestos, it should be directed in writing to the Engineer before beginning work in the area.
  23. The Contractor is responsible for properly segregating and characterizing the various waste streams and to determine the proper method for disposal of materials off-site. The Contractor is responsible for proper disposal of asbestos-containing wastes in accordance with current regulatory requirements.
  24. The Contractor is responsible for implementing proper engineering controls for protection of employees, subcontractors, and other Site occupants or trades during the work and to prevent contamination of the buildings outside of the designated work areas.
  25. It is the responsibility of the Contractor to determine or verify the present location, condition and nature of existing ACMs requiring removal, based on information provided in the Contract Documents, and by a full, complete, and thorough examination of the Site to be made by the Contractor.
- B. Removal and Disposal of Hazardous, Non-Hazardous, Suspected/Potential Hazardous, and/or other regulated Materials/Wastes.
1. Removal and disposal of hazardous, non-hazardous, suspected/potential hazardous, and/or other regulated materials/wastes shall be performed in accordance with all applicable Town of Salem, NHDES, and EPA requirements.
  2. The Contractor shall provide and/or submit all required agency notifications of commencement of the work, work plans, obtain permits, licenses, inspections, and similar documentation, as well as payments and similar requirements associated with codes, regulations, and standards.
  3. The Contractor shall be responsible for performing all work consistent with the Engineer approved work plan including but not limited to, the complete and proper removal, cleaning, characterization, containerization, profiling, loading and off-site disposal/recycling of hazardous, potentially hazardous and/or suspected hazardous materials present at the Site and not indicated to remain. Work shall be conducted in such a manner as to keep it confined within the Limits of Work which are defined on **Figure 1 – Demolition Plan**.
  4. The Contractor shall remove, properly containerize, and dispose/recycle all hazardous and potentially hazardous materials located within and outside of the Clarifier Building and the two holding tanks as outlined in **Table 3 – Hazardous Materials Inventory** attached and as identified by the Contractor. The Contractor is responsible for identifying and verifying quantity of hazardous and potentially hazardous materials requiring removal and disposal/recycling. The materials referenced in **Table 3** are not intended to be comprehensive list of all

hazardous, non-hazardous and/or suspected hazardous materials present at the Clarifier Building and the two holding tanks.

5. Workers who handle hazardous materials shall be licensed and trained in safe and proper hazardous materials handling procedures. At a minimum, this shall include OSHA 40 Hour Hazardous Waste Health and Safety Training in accordance with CFR 1910.120.
6. The Contractor shall provide health and safety equipment required to protect workers and to comply with their HASP.
7. The Contractor shall be responsible for the removal; sizing; containerizing (including the provision of container, liner and other disposal facility required packaging), processing, segregating, loading, transportation and disposal/recycling off-site of waste materials present within and exterior to the Site building. All items must be properly containerized and staged in a location pre-approved by the Engineer once removed from existing locations within the building. Waterproof sheeting utilized in the lay-down segregation area(s) shall be a strong, durable, impermeable, flexible, minimum 10-millimeter thickness sheeting or other Engineer-approved material. It shall be capable of resisting tears or punctures due to material or equipment placement.
8. The Contractor shall remove, segregate, transport and dispose of PCB and/or non-PCB containing items in conformance with current regulatory requirements.
9. The Contractor shall remove, package and/or containerize, load, transport and dispose of all mercury containing items in a manner consistent with current regulations.
10. Electrical equipment is present within and exterior to the Site buildings. If present, the Contractor shall remove dielectric fluids in existing electrical equipment and dispose of the same in a manner consistent with current regulatory requirements.
11. The Contractor shall recover, collect, drain, rinse, and containerize all equipment fluids and facility system fluids including but not limited to oils, antifreeze, surfactant, sludge and hydraulic fluids. Collect, containerize and characterize all fluids by compatible classification (i.e., polychlorinated biphenyls, antifreeze, No. 2 oil, etc.) and dispose in accordance with applicable regulations.
12. The Contractor shall take all necessary precautions to preclude any release of hazardous materials. If Contractor causes contamination during the work, Contractor shall clean-up and restore contaminated area consistent with all applicable local, State and federal regulations at no cost to the Owner.
13. Do not mix potentially hazardous waste streams. Where feasible, separate each type of hazardous material from other types of hazardous waste.
14. Segregate, package, label, transport, and dispose of hazardous materials in accordance with New Hampshire Department of Transportation and Department of Environmental Services, EPA, and Town of Salem requirements.

15. Maintain all containers in a sealed condition after they have been filled. Do not reopen sealed containers or place additional waste in previously sealed containers.
16. Care must be taken not to break identified hazardous materials, as that may cause exposure to individuals handling them and may require additional clean-up and decontamination.
17. The Contractor shall collect and containerize all hazardous materials and shall characterize and dispose of in accordance with applicable State and federal regulations.
18. Off-site disposal/recycling of contaminated materials shall be performed by the Contractor at an approved disposal facility in accordance with all applicable regulatory requirements.
19. The Contractor shall not proceed with the off-site disposal/recycling without written notification to proceed from Engineer.
20. Waste characterization sampling and analytical testing for the disposal characterization of segregated waste materials generated during the course of work shall be performed by the Contractor consistent with all applicable regulations and transported only to approved disposal facilities.
21. It is the responsibility of the Contractor to determine or verify the present location, condition and nature of existing hazards, materials and/or wastes requiring removal, based on information provided in the Contract Documents, and by a full, complete, and thorough examination of the Site to be made by the bidder.

C. Abatement and Disposal of PCB Bulk Product Waste

1. PCB-containing materials abatement shall be performed in accordance with all applicable Town of Salem, NHDES, and EPA requirements.
2. The Contractor shall provide and/or submit all required agency notifications of commencement of the work, work plans, obtain permits, licenses, inspections, and similar documentation, as well as payments and similar requirements associated with codes, regulations, and standards.
3. The Contractor is responsible for performing all work consistent with the Engineer approved work plans including, but not limited to, work area preparation, including pre-cleaning, installation of critical barriers and polyethylene sheeting, construction of decontamination facilities, work area enclosures, sealing, isolation, and other activities associated with PCB removal. Work shall be completed in such a manner as to keep it confined within the Limits of Work as shown on **Figure 1 – Demolition Plan**.
4. The Contractor shall remove, properly containerize, and dispose of all PCBs as outlined in **Table 4 – PCB Sample Summary** attached and as identified by the Contractor. Additionally, the Contractor will remove one foot of all impacted adjacent building materials and dispose as a PCB Bulk Product waste. The Contractor is responsible for identifying and verifying quantity of PCBs requiring removal and disposal. The materials referenced in **Table 4** are not



intended to be comprehensive list of all PCB-containing materials present at the Clarifier Building and the two holding tanks.

5. The Engineer will conduct PCB verification sampling of remaining building materials as needed following PCB removal activities. The Contractor is responsible for coordinating and scheduling PCB verification sampling with the Engineer and allowing adequate time for receipt of sample results (six work days) from the laboratory. Should the PCB verification sample results indicate PCB concentration's in the adjacent impacted materials are not <1 ppm then the Contractor shall remove three inches of additional impacted material at no cost to owner.
6. Prior to exterior work, ground cover consisting of minimum 6-mil polyethylene sheeting or equivalent will be placed along the building walls and ground to a minimum of ten (10) feet beyond the work area to serve as containment for any and all debris or building materials removed. The area shall be pre-cleaned consisting of the removal of loose PCB impacted debris prior to work area preparation. Such ground cover shall be sufficient to prevent contact of any and all PCB-containing building materials debris with soil or pavement. The Contractor shall extend ground covering farther if deemed necessary. For remediation work performed from lift equipment, the Contractor shall tape the polyethylene sheeting to the wall of the building such that dust and debris is funneled onto and temporarily contained on the lift. Any debris collected on ground cover sheeting will be gathered and placed in the appropriate containers at the end of each work day;
7. The Contractor is responsible for decontamination, tear down and clean up following abatement activities and visual clearance approval by the Owner's third-party representative.
8. The Contractor is responsible for determining the proper abatement procedures and proper disposal of PCBs at owner-approved facility in accordance with current regulatory requirements.
9. The Contractor is responsible for implementing proper engineering controls for protection of public, employees, and subcontractors during the work and to prevent contamination outside of the designated work areas.
10. PCB-containing materials removal will not begin until the Engineer has given authorization to proceed. This authorization will be given after the removal area has passed a visual inspection by the Engineer. The Engineer reserves the right to inspect all work areas prior to the start of abatement.
11. Dry removal will not be permitted at any time during this project.
12. All PCB-containing materials shall be carefully removed and placed into double 6-mil polyethylene bags or fiber drums for disposal. All bags, containers or wrapped materials transported out of the work area shall be labeled with 6" x 6" PCB Warning Labels in accordance with 40 CFR 761 – Toxic Substances Control Act. Attach labels in a sufficient manner so that they are firmly affixed to the bag, wrapped material, or fiber drum.

13. The Contractor is responsible for personal sampling to check personal PCB exposure levels for the purpose of establishing respiratory protection needs. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken every day after the first day if working conditions remain consistent, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work, or during any changes in personnel. Sampling will be to determine eight-hour Time Weighted Averages. The Contractor is responsible for personal sampling as outlined in OSHA Standard 1926.1101.
14. The Contractor shall provide health and safety equipment required to protect workers and to comply with the HASP.
15. The Contractor is responsible for controlling access into the PCB Work areas.
  - a. Isolate the work area to prevent entry by site occupants and the public into the work area or surrounding controlled areas. Notify the Engineer of all doors and other openings that must be secured to isolate work area. Access to stairwells and building exits must be maintained as indicated by the Engineer.
  - b. Arrange access to work area so that only access into Work area is through securable doors to personnel and equipment decontamination units.
  - c. Provide solid construction barriers to prohibit unauthorized access and visibility. At a minimum provide solid barriers as necessary to isolate all work areas with abatement activity.
  - d. Provide warning signs at each door and barrier leading to the work area as follows:

Legend:  
Danger  
Keep Out  
Beyond This Point  
Construction Work in Progress

Immediately inside door (leading to work area) and outside all accessible critical barriers post a manufactured caution sign, approximately 20-inch by 14-inch, displaying the following legend with letter sizes and styles of a visibility required by 29 CFR 1926:

Legend:  
Danger  
Poly-chlorinated Biphenyls  
Cancer and Lung Disease Hazard  
Authorized Personnel Only  
Respirators and Protective Clothing Are Required in This Area

- e. The signs shall be posted at the perimeters of PCB removal, demolition or construction areas where the PCB-containing material to be removed exists.
  - f. The Contractor shall maintain all temporary and critical barriers, facilities and controls as long as necessary for the safe and proper completion of the work. All containments shall consist of floors, ceilings, and walls covered with 2 layers of 6-mil polyethylene sheeting, except in those instances where such surfaces are deemed contaminated or are to be abated.
  - g. Any breaches in the containment will be corrected at the beginning of each shift and as necessary during the workday. Work will not be allowed to commence until all control systems are in place and operable.
  - h. No critical and primary barriers shall be removed until the work areas are thoroughly cleaned and all debris has been properly bagged and removed from work areas, and the air has passed final clearance tests, in accordance with provisions detailed herein and NHDES regulations.
16. The Contractor shall remove, segregate, transport, and dispose of miscellaneous PCBs in conformance with current regulatory requirements and the Contract Documents.

END OF SECTION

## DEMOLITION

### ANAEROBIC DIGESTER, TRICKLING FILTERS AND SEDIMENTATION BASINS THE TOWN OF SALEM SARL DRIVE SALEM, NH

#### PART 1 - TECHNICAL REQUIREMENTS

##### 1.1 BACKGROUND

- A. The Anaerobic Digester building, two attached holding tanks, two trickling filters and the two sedimentation basins located at the Former Waste Water Treatment Facility on Sarl Drive, in Salem, NH (Site) are to be demolished. Existing structure footings, foundation walls, and concrete slabs are to be removed to two feet (2') below grade from the Site.
- B. Identified asbestos and other hazardous materials shall be removed from the Site prior to the start of demolition per the Asbestos Abatement and Hazardous Materials Removal Technical Requirements section. If during demolition activities the Contractor encounters any suspect asbestos or other hazardous material, the Contractor shall stop work in the area of identified material and notify the Engineer immediately.
- C. Provide all facilities, labor, materials, tools, equipment, temporary utilities, appliances, transportation, supervision and related work necessary to complete the work specified in this section and as described in the Contract Documents.
- D. All Work performed under this section of the specifications shall be subject to the provisions of the Agreement.
- E. The Work described in this section consists of the complete demolition, removal, containerization, loading, transportation and off-site disposal/recycling of the Site structures, equipment, miscellaneous items, footings, foundations, and slabs not indicated to remain. No attempt is made in this section to list the entire scope of required demolition or to describe each element to be removed, transported and disposed/recycled. It is the responsibility of the Contractor to determine or verify the present location, condition and nature of existing hazards, materials and/or wastes requiring removal, based on information provided in the Contract Documents, and by a full, complete, and thorough examination of the Site to be made by the Contractor.

##### 1.2 INTRODUCTION

- A. The Work to be performed under this Contract includes the demolition of the Anaerobic Digester Building and attached holding tanks, two trickling filters and two sedimentation basins on Site as shown on the **Figure 1 – Demolition Plan** and the **Figure 2 – Alternate Structures for Demolition Plan**. The work shall be performed in accordance with the Town of Salem, NH Department of Environmental Services (NHDES), U.S. Environmental Protection Agency (EPA) and all other applicable local, State and Federal requirements.
- B. The Work associated with the Site includes:
  - 1. Preparation of project specific submittals as detailed in these technical requirements and attached **Table A – Submittal List**;

2. Obtaining and maintaining all applicable Federal, State, and local permits and notifications and associated fees necessary to complete the work;
  3. Notifying utility companies and other authorities having jurisdiction;
  4. Locating and properly terminating and removing or abandoning utilities in accordance with the appropriate utility authority and the Contract Documents including the **Figure 1 – Demolition Plan** and the **Figure 2 – Alternate Structures for Demolition Plan**;
  5. Locating and properly protecting storm drains, monitoring wells/standpipes and utilities remaining at the Site.
  6. Segregation, characterization, handling, containerization, loading, transportation and disposal/recycling of materials, equipment and debris remaining in the building and/or generated during the performance of the Work;
  7. Site demolition, including but not limited to removal, containerization, loading, transportation and disposal/recycling of the Anaerobic Digester Building and the two attached holding tanks, two trickling filters and two sedimentation basins:
    - a. Interior/Exterior above-ground structures and systems;
    - b. Interior/Exterior structure components and systems;
    - c. Structure footings, foundations, and slabs to two feet (2') below grade; and
    - d. Interior/Exterior abandoned extraneous systems, components and materials.
  8. Securing the Site and protecting adjacent properties from demolition activities including, but not limited to:
    - a. Installation and maintenance of temporary perimeter fencing and locking access gate;
    - b. Installation and maintenance of vermin control in accordance with local regulations; and
    - c. Installation and maintenance of erosion controls including silt fence and hay bales as noted on the **Figure 1 – Demolition Plan** and/or the **Figure 2 – Alternate Structures for Demolition Plan**;
- C. The Contractor shall have examined existing Site conditions and reviewed all Contract Documents prior to the commencement of the Work.
- D. Site Access – The Contractor's access to the Site will be via Sarl Drive in Salem, NH. The Owner shall construct a temporary gravel road south of the Main Building (see **Figure 1** for proposed location) to allow for additional space during demolition activities. In addition, the owner shall construct a temporary gravel road along the eastern boundary of the site (see **Figure 2** for proposed location), should the demolition of the two trickling filters and two sedimentation basins be added to the Scope of Work by the Owner.
- E. Working hours at the Site are 7:00 AM to 5:00 PM Monday through Friday. If necessary and pre-approved by the Town of Salem (Owner), Saturday work hours will be permitted; Saturday work hours are 7:00 AM to 5:00 PM. All Work shall be conducted in accordance with other local ordinances. No work is to be conducted on Sunday. Weekend work must be authorized by Owner/Engineer 72 hours prior to the scheduled work.

- F. Before beginning work, the Contractor must provide workers with the required protective equipment and require that appropriate protective equipment be used at all times. The Contractor shall perform appropriate personnel exposure monitoring in accordance with Occupational Safety and Health Administration (OSHA) requirements.
- G. The Contractor shall be aware that painted materials encountered during demolition activities may contain lead-based paint. It is the responsibility of the Contractor to control potentially hazardous emissions resulting from demolition activities and to protect the health and safety of workers and the public due to the potential lead-based paint hazard via appropriate methods. Lead-based paint has been identified on painted surfaces within the Site structure. Results of limited paint chip sampling conducted within the Site structures are attached in **Table 2 – Lead-Based Paint Chip Sample Summary**. In addition, the Engineer will collect and submit for Toxicity Characteristic Leaching Procedure (TCLP) composite samples of painted waste streams for disposal characterization.
- H. Temporary Facilities: The Contractor is responsible for providing and paying fees for all necessary temporary facilities and sanitary facilities including portable toilet(s) and potable water for personal hygiene and employee, Engineer, and Owner use.
- I. Contractor shall install temporary electrical and water service as necessary for the completion of demolition activities. Contractor is responsible for all electrical and water usage charges throughout Site activities. Additionally, the Contractor is responsible for supplying a water source sufficient for dust control as needed.
- J. The Owner is responsible for clearing and off-site disposal of trees and brush overgrowth around the Site structures and within the Limits of Work and Contractor Staging Area (see **Figure 1 – Demolition Plan** and the **Figure 2 – Alternate Structures for Demolition Plan**), as needed to complete the work.
- K. The Owner is responsible for decommissioning any monitoring wells within the Limits of Work and Contractor Staging Area (see **Figure 1 – Demolition Plan** and **Figure 2 – Alternate Structures for Demolition Plan**).
- L. The Contractor shall conform to building, fire, electrical, environmental, OSHA, and all other applicable codes for demolition work, safety of structure, preservation of property, dust control, noise control, disposal of demolition generated waste materials, etc. The Contractor shall immediately report all accidents or near miss accidents to the Engineer.
- M. The Contractor shall conform to applicable laws and regulations when hazardous or potentially hazardous materials or contaminated substances are encountered. Contractor is directed not to disturb or attempt to remove any discovered hazardous or potentially hazardous materials or contaminated substances without first notifying the Engineer. Immediately notify Engineer upon the discovery of such conditions.
- N. The Contractor shall provide protection and take extreme care not to disturb existing Site structures and existing access drives on Site.
- O. The Contractor shall conform to applicable environmental regulations such as wetlands and Site runoff controls. The Contractor shall use materials acceptable to authorities having jurisdiction and Engineer.
- P. The Contractor shall coordinate demolition activities with all trades which may be working on-Site throughout the duration of the project at no additional cost to the Owner.

- Q. The Contractor shall notify and comply with the requirements of DIG SAFE®, affected utility companies, fire, police, building departments and other agencies having jurisdiction, and Engineer prior to starting work.
- R. Pre-construction Meeting: A pre-construction meeting will be convened by the Engineer prior to the start of any Work. This meeting will be held to review the scope-of-work and the Contractor's work plan, schedule of submittals and other items that may affect the Work. The Engineer will prepare the agenda for the pre-construction meeting as well as a meeting summary.
- S. Periodic Construction Meetings: The Contractor shall meet with the Engineer and others as necessary on at least a weekly basis throughout the duration of the project to review work completed, review work in progress, to review work to begin and resolve any items from prior meetings. The Contractor shall prepare the agenda and minutes for periodic construction meetings and submit minutes to Engineer the following day.

### 1.3 SUBMITTALS

The Contractor shall prepare submittals for review, comment and acceptance by the Engineer in accordance with **Table A – Submittal List** attached. The Contractor shall provide one electronic copy (PDF format) of the submittals required to the Engineer. Work covered under a submittal shall not commence until accepted by the Engineer.

- A. Pre-construction Submittals: No work shall begin at the Site until pre-construction submittals are approved. Pre-construction submittals identified below are to be provided to the Engineer within ten days (10 days) following Notice of Award.
  - 1. *Project Schedule* – The Contractor shall prepare an accurate project work schedule. The schedule shall be written in sufficient detail to identify the various tasks to be performed, the duration, expected start and completion date and the linking with other activities for each activity to be performed. The anticipated hours of operation are to be identified on this schedule. The project schedule is to be updated weekly by the Contractor during the work.
  - 2. *Demolition Work Plan* – A project-specific demolition work plan shall be prepared by the Contractor, in sufficient detail to identify how the Contractor intends to sequence demolition activities; handle, segregate, characterize, transport and dispose/recycle of the various waste streams to be generated; disposal/off-site recycling of concrete and other masonry products (painted or unpainted); salvage clean metal building materials for recycling off-site; and segregate wood and other deleterious or organic building debris for proper off-site disposal or recycling. The demolition work plan shall identify the location for temporary storage of all building materials generated during demolition activities.
  - 3. *Lead Management Plan* – A project-specific lead management plan to outline procedures to be used in the management of lead-based paint coated demolition debris during demolition including waste segregation and emissions control shall be prepared by the Contractor. The lead management plan must conform to all federal, State, and local regulations.
  - 4. *Site Safety and Health Plan* - The Contractor is to prepare and implement a project specific Site Health and Safety Plan (HASP) which addresses Site activities. The Contractor's HASP is to be developed to provide guidance for compliance with standards set forth by OSHA 29 CFR 1926, Safety and Health Regulation for Construction. Compliance with OSHA 29 CFR 1920, Safety and Health

Regulation for General Industry and 29 CFR 1910.120, and Hazardous Waste Site Operations and Emergency Response are also required through the development, implementation and enforcement of this HASP.

5. *Waste Handling and Disposal Plan* – Prepare a project-specific Waste Handling and Disposal Plan to outline procedures to be used in management of waste materials generated during demolition activities. Waste Handling and Disposal Plan shall address, at a minimum, the Contractor's intended methods for handling, preparing, storing, treating, shipping, and disposing of waste and outline the areas of the Site in which waste handling activities will occur. This plan shall specifically identify the disposal facilities to be used for each waste stream. The Waste Handling and Disposal Plan shall also include a waste tracking log to be utilized throughout the entire duration of the project to document all materials transported off-site for disposal and /or recycling. The waste tracking log shall include but not be limited to pertinent shipping information such as date, time, material, transporter I.D., estimated quantity/volume, and disposal facility for the material being transported.
6. *Environmental Protection Plan* – The Environmental Protection Plan shall address protection of soil and water resources, debris disposal, dust control, odor control, noise/vibration control, vermin control, spill control, and decontamination.
7. *Emergency Contacts* - The Contractor is to prepare a list of emergency service telephone numbers and addresses including, fire, police, hospital, and ambulance, names and 24-hour phone numbers for Project Site Supervisor and other key personnel for the Contractor.

B. Construction Submittals

1. *Transporter Documentation* - At least ten (10) days prior to shipment of any materials from the Site, the Contractor is to prepare and submit written documentation to the Engineer to verify that the transporter of materials from the Site for disposal, recycling or salvage are properly permitted and registered for the materials that they are transporting. The submittal is to include the name, address and telephone number of each transporter of regulated, non-hazardous, hazardous, or potentially hazardous materials, demolition debris, metal debris, etc. The Owner shall be identified as the Generator of any wastes from the Site that will be disposed under a manifest. ***The Contractor shall provide disposal manifests requiring signature to the Engineer 72 hours prior to shipment of material off-site.***
2. *Shipping Documentation* - The Contractor is to provide shipping receipts, bills of lading and/or manifests as appropriate for all materials disposed or recycled off-site. Documents are to be provided to the Engineer as soon as possible or within thirty (30) working days for materials requiring hazardous waste manifests, ten (10) working days for all other materials.
3. *Demolition Permits/Notifications* - The Contractor is to submit copies of notifications and permits to the Engineer for review and acceptance ten (10) days prior to proceeding with the work covered by the Permit. Notifications are to be submitted or obtained from the appropriate federal, State of NH, or local agency in accordance with current regulatory requirements.



4. *Waste Disposal and Recycling Certificates* - The Contractor is to provide certificates for wastes that are disposed or recycled off-site in accordance with all applicable regulations. Certificates verifying proper disposal or recycling by a permitted facility are to be provided to the Engineer as soon as possible or within thirty (30) days of disposal or recycling.
5. *Other Submittals* – The Contractor is to provide the following documents on-Site for review during demolition operations.
  - a. Copies of personnel training records for each individual associated with demolition operations indicating proper training as required in this specification and by federal and State of NH regulations.
  - b. Respiratory Protection Program: Submit Contractor's written respiratory protection program manual as required by OSHA at 29 CFR 1910.134.
  - c. Respiratory Protection Schedule: Submit level of respiratory protection intended for each operation including any historical air monitoring data to be considered.
  - d. Air Monitoring: Results of air monitoring performed in accordance with any of the plans called for in the Contract Documents or any other air monitoring performed by the Contractor.
  - e. Safety Data Sheets: For all materials to be used on Site not limited to encapsulant, spray adhesives, etc. Note: It is Contractor's responsibility to notify other Contractors working at the Site in accordance with applicable OSHA regulations.

C. Daily Report

1. Maintain at the Site a daily report documenting the dates and time of, but not limited to the following items. Daily reports shall be submitted to the Engineer by 10:00 AM the following work day:
  - a. Visitations; authorized and unauthorized;
  - b. Personnel entering and leaving the work area (name, certification, expirations);
  - c. Special or unusual events, (i.e., barrier breaching, equipment failures, accidents/near misses);
  - d. Documentation of Contractor's completion of the following:
    - i. Work completed; and
    - ii. Transportation of materials off-site, including number of trucks/containers.

D. Post Construction Submittals

1. Post Construction Submittals will be provided to the Engineer within thirty (30) days of project completion. They must be received and accepted prior to final payment to the Contractor. Post Construction Submittals include:
  - a. Summary of work, progress, and detailed account of any unusual events or accidents;

- b. Copies of daily Site and work area logs indicating personnel on-Site and visitations, waste materials removed from Site, and inspections and testing;
- c. Copies of analytical results and calculations for air sampling completed by the Contractor during the project; and
- d. A copy of each waste manifest and chain-of-custody form signed by the transporter and disposal facility operator, indicating that waste was packaged and disposed of properly. All waste manifest documentation is to be submitted to the Engineer as soon as possible or within thirty (30) days from transport of waste from the Site.

#### 1.4 REFERENCES

- A. The publications listed below form a part of these Contract Documents to the extent referenced. The publications are referred to in the text by the basic designation only.
  - 1 American National Standards Institute (ANSI);
  - 2. ANSI A10.6 (1990) Demolition Operations;
  - 3. Code of Federal Regulations (CFR);
  - 4. CFR 761 - Toxic Substances Control Act (TSCA); and
  - 5. CFR 173.301 - Shipment of Compressed Gas Cylinders

#### 1.5 SCOPE OF WORK

- A. Demolition of Anaerobic Digester Building and associated Holding Tanks
  - 1. The Contractor is responsible for the installation of a 6-foot-high temporary chain link fence and gate needed to secure the Site throughout demolition of Site structures. The extent of the temporary chain link fence is detailed in **Figure 1 – Demolition Plan**.
  - 2. The Contractor is responsible for the protection of all structures, utilities, access drives, and miscellaneous items located on the Site not scheduled for demolition, abutting properties, and public ways. Cease operations immediately if abutting properties appear to be in danger, and notify Engineer immediately. The Contractor is responsible for all costs associated with the replacement of items damaged and/or destroyed during on-Site activities.
  - 3. The Contractor shall pay special attention to the abutting building structures and paved parking and driveway areas. The Contractor shall coordinate all access and protection of abutting properties with the Engineer and the abutting property owners.
  - 4. The Contractor is responsible for coordinating on-Site construction traffic in accordance with local ordinances and with any other on-Site operations. The Contractor shall not close or obstruct roadway or Site traffic without prior approval by the Engineer and Owner. Special attention shall be given to traffic associated with abutting properties. The Owner shall construct a temporary gravel road south of the Main Building (see Figure 1 for proposed location) to allow for additional space and access to the western portion of the site during demolition activities.

5. Prior to the initiation of demolition activities, the Contractor shall install erosion controls as detailed in **Figure 1 – Demolition Plan**, seal existing drains, drain outlets and plumbing fixture outlets within the Site building to prevent discharge to the environment during the course of the Work.
6. Prior to the initiation of demolition activities, the Contractor shall install vermin control in accordance with the requirements of local authorities having jurisdiction.
7. Prior to the initiation of demolition activities, the Contractor shall characterize, dewater and dispose of tanks. Discharge of tank contents that are characterized and contain no contaminants into existing sewer lines will be permitted.
8. The Contractor shall conduct the Work in a manner giving prime consideration to protection of the public; protection from the weather, control of noise, shocks and vibrations; control of dirt and dust; orderly access for storage of materials; protection of existing structures, surfaces, property and features not part of the Work; coordination and cooperation with the Owner and Engineer at all times.
9. Contractor shall provide dust control measures as necessary as not to exceed 75% of the OSHA Nuisance Dust Standard during all Site activities. Visible dust shall not be permitted to leave the Limits of Work.
10. The Owner and/or Engineer reserve the right to suspend Work at any time, if necessary, due to dust generation which causes a safety or an air quality problem or which may cause contamination of adjacent areas. Contractor shall not be entitled to any additional compensation for suspension of Work under such conditions.
11. The Owner and/or Engineer reserve the right to suspend Work at any time, if necessary, due to noise generation causing a safety or excessive vibration hazard. In the event the OSHA limit of 85dBA is exceeded for 8 hours per day or a peak level of 140dBA is exceeded at the boundary of the Site, a hearing protection program shall be implemented. The Contractor is responsible for conducting Work in accordance with the Town of Salem local noise ordinances as well as modifying operations in the event of neighborhood noise or vibration complaints at no additional cost to the Owner/Engineer.
12. Locate and mark underground utilities to remain in service before beginning the work. Protect all existing utilities to remain during operations. Do not interrupt existing utilities except when authorized in writing by authorities having jurisdiction. The Contractor shall pay special attention to the protection of any existing storm water drainage systems and wells on-Site.
13. The Contractor shall be responsible for the removal and/or abandonment of utility lines and associated appurtenances, including but not limited to, natural gas, sewer, floor drains and associated piping, electrical, fire alarm, telephone, cable, and water in accordance with Town of Salem and local utility provider requirements. The Contractor is responsible for verifying that any additional utilities are removed and/or abandoned prior to the commencement of demolition activities. The Contractor is responsible for cutting all utilities servicing the Anaerobic Digester Building and attached holding tanks below grade and installing a permanent cap or concrete plug. The location of such utilities shall be noted on Record Drawings and reported in writing to the Engineer.

14. When an active utility line is exposed during construction, its location and elevation shall be plotted on the Record Drawings by the Contractor and both the Engineer and the utility owner notified in writing.
15. The Contractor shall be responsible for the demolition and removal of the Anaerobic Digester Building, interior building contents, building footings / foundations / slabs / piers / supports to a depth of 2 feet below the footprint of the building, two associated holding tanks, miscellaneous concrete debris, and rubbish located on the Site as indicated on the **Figure 1 – Demolition Plan**.
16. The Contractor shall utilize hydraulically operated and/or shear equipment or approved alternative, including hand tools, to dismantle the building. Use of explosives, wrecking balls, or other demolition methods likely to generate dust, excessive vibration, and other debris are not permitted unless approved in writing by Owner and Engineer.
17. A Hot Work Permit shall be required for the use of equipment that generates sparks from welding, cutting or brazing. Hot Work shall be minimized to the extent possible. The Contractor shall also be responsible for obtaining and maintaining all permits from the Town of Salem Fire Department to perform Hot Work at the Site. All costs associated with any required fire watch or monitoring is the responsibility of the Contractor.
18. The Contractor shall be responsible for conducting demolition in a manner designed to minimize interference with adjacent areas, in compliance with governing laws and building codes, with prime considerations given to safety, protection and convenience of the public, Engineer and Owner's personnel. At no time shall trucks or equipment be staged on Sarl Drive. Equipment staging shall be limited to the area demarcated on **Figure 1 – Demolition Plan**.
19. Non-asbestos-containing gypsum board, fiberboard, other composition sheeting boards, wood, metal, roofing materials, and all other miscellaneous building materials shall be properly handled and transported for recycling or disposal by the Contractor at an approved disposal facility and in accordance with the Contractor's Waste Handling and Disposal Plan.
20. All characterization sampling of waste for disposal or for potential recycling and reuse will be performed by the Engineer in accordance with all applicable federal, State, and local regulations and individual waste haulers and disposal facilities selected by the Contractor and approved by the Engineer. The Contractor shall provide sufficient notice to the Engineer regarding collection of characterization samples. Turnaround time for all characterization samples is anticipated to be 5 to 7 business days. The Engineer will conduct pre-characterization sampling as applicable throughout demolition activities.
21. As Work progresses, demolition material, trash and debris shall be stockpiled or containerized on-Site until appropriate documentation has been prepared and accepted by the Engineer. Debris shall be kept covered and contents wetted, where required, to prevent fires or off-site dust migration in accordance with the Contractor's Waste Handling and Disposal Plan. The Contractor shall remove demolished materials from the Site on a periodic basis and arrange for legal disposal of the same.

22. Covering of stockpiled demolition debris capable of becoming airborne or generating dust shall be with a strong, durable, impermeable, tear resistant material. Contractor shall be responsible for maintaining coverings on stockpiles or transport containers.
23. The Contractor shall not burn demolished materials or components off-site nor shall the Contractor bury any materials or components on-site. Upon completion of demolition work, remove tools, equipment and temporary work barricade(s).
24. The Contractor shall fracture the slab in the basement of the Anaerobic Digester and two associated holding tanks every 10 feet on center and leave in place.
25. The Contractor shall use suitable site materials to backfill excavations on site. Suitable materials consist of the following:
  - a. Materials generated during excavation and grading to achieve elevations specified on the Drawings or during demolition activities that are deemed acceptable for re-use as on-Site fill by the Engineer; and/or
  - b. Coated and uncoated brick, concrete, and masonry materials that are crushed on Site to 3-inch minus and deemed acceptable for re-use as on-Site fill by the Engineer.
26. The Contractor shall prevent surface water from flowing into and accumulating in excavations. The Contractor shall dewater excavations to allow Work to be performed in dry conditions as necessary. Discharge of groundwater into existing sewer lines will be permitted.

**B. Site Restoration**

1. The Contractor shall provide, place and compact fill materials in excavated areas of the Site where foundation and footing removal has been completed and provide certified clean fill materials required in addition to the reuse of suitable materials excavated and stockpiled as specified herein.
  - a. Common Fill/Ordinary Borrow: Shall be well graded, natural inorganic soil, meeting the following requirements:
    - i. It shall be free of organic or other weak or compressible materials, or frozen materials, and of stones larger than twelve inches (12") maximum dimension;
    - ii. It shall be of such nature and character that it can be placed and compacted to the specified densities in a reasonable length of time;
    - iii. It shall contain no more than 25 percent passing the #200 sieve and shall be free from highly plastic clays, from all materials subject to decay, decomposition, or dissolution and from cinders or other materials which will corrode piping or other metal;
    - iv. It shall have a maximum dry density of not less than 105 pounds per cubic foot;
    - v. Clean fill deposits from excavation on the site including subsoil may be used as ordinary fill if it meets the above requirements and is approved by the Engineer; and

- vi. Documentation shall be provided that common fill from off-site sources meets NH State Department of Transportation Standard Specifications of latest issue.
  - b. Crushed Gravel: The top 12 inches of material in the former Anaerobic Digester building area shall be crushed gravel conforming to the requirements for NH State Department of Transportation Standard Specifications of latest issue.
  - c. Crushed Concrete/Masonry: Shall consist of clean concrete and masonry materials, free from metal, leachable contaminants and other deleterious material. The concrete/masonry material shall be blended as required to meet the gradation requirements of the NH State Department of Transportation Standard Specifications of latest issue.
  - d. Topsoil: The cover soil material shall consist primarily of imported soil that is capable of supporting vegetative growth, free of any metals, trees, stumps, concrete, construction debris, or any other deleterious material, and meet the requirements specified in the NH State Department of Transportation Standard Specifications of latest issue.
2. Remove all construction debris, rubbish, obstructions, and deleterious materials from bottom of excavations immediately prior to placing fill and backfill materials. All off-site backfill materials must be approved by the Engineer prior to delivery and again upon delivery to the Site.
  3. Prior to placing fill in excavations, the Contractor shall place Mirafi 180N, non-woven, needle-punched polypropylene geotextile to prevent migration of sediments from the excavation(s).
  4. Prior to placing fill in open areas or on existing subgrades, as applicable, proof-roll to achieve at least 95% of the maximum dry density per ASTM D-1557 (modified Proctor). If in the judgment of the Engineer, compaction of receiving surfaces is not required, or will disturb the natural soil, the subgrade compaction requirements will be waived.
  5. Place and compact designated fill materials in the manner and to the limits specified herein. Maximum lift thickness in the fill shall be 18 inches when utilizing a vibratory roller for compaction and 8 inches when utilizing a plate compactor for compaction. Control soil compaction during construction for compliance with the percentage of density specified. Do not backfill over wet, frozen or spongy subgrade surfaces.
  6. Compaction of each lift shall be as specified herein and as determined by ASTM Test, Designation D1556. Fill shall be placed in successive horizontal lifts no thicker than eighteen inches (18") and compacted to the required density as specified herein. Maximum dry density shall be determined in accordance with ASTM D1557. The following percentages of maximum dry densities shall be achieved for fill materials or prepared subgrades.
    - a. Under future paved and/or gravel surfaces, drainage piping, utilities and other improvements:
 

1. All fills	92% Max. 18" lift
2. Top twelve inches to final grade	95%

b. Within future lawn and planting areas:

1. All fills to finished subgrade 90% Max. 18" lift
7. The Engineer reserves the right to perform in-situ density and soil moisture testing during backfilling and compacting operations as well as performance of laboratory testing on materials used during backfilling and compacting operations. The Contractor may be requested to provide samples of backfill material for gradation and proctor analysis at no additional cost to the Owner.
8. The Contractor shall use water to prevent the spread of dust. Chemical materials may not be used. Water as required or as directed by the Engineer. The Contractor is to arrange for and maintain a reliable water source for work on this contract. The Contractor is responsible for all costs associated with temporary water source.
9. The Contractor shall grade and compact fill surface to readily shed water. Site shall be left in a "parking lot" ready state at the completion of Site activities. Topsoil and seed shall be placed in areas disturbed by Site activities.
10. At the end of all excavation, filling and grading operations and before acceptance of the work, the Contractor shall remove all debris, rubbish, etc., from the Site. The Site shall be left clean, presentable, and satisfactory to the Engineer.

C. Add Alternates - Demolition of the Trickling Filters and/or the Sedimentation Basins

1. The Contractor is responsible for the protection of all structures, utilities, access drives, and miscellaneous items located on the Site not scheduled for demolition, abutting properties, and public ways. Cease operations immediately if abutting properties appear to be in danger, and notify Engineer immediately. The Contractor is responsible for all costs associated with the replacement of items damaged and/or destroyed during on-Site activities.
2. The Contractor shall pay special attention to the abutting building structures and paved parking and driveway areas. The Contractor shall coordinate all access and protection of abutting properties with the Engineer and the abutting property owners.
3. The Contractor is responsible for coordinating on-Site construction traffic in accordance with local ordinances and with any other on-Site operations. The Contractor shall not close or obstruct roadway or Site traffic without prior approval by the Engineer and Owner. Special attention shall be given to traffic associated with abutting properties. The Owner shall construct a temporary gravel road along the east boundary of the site (see **Figure 2** for proposed location) to allow for additional space and access to the northeastern portion of the site during demolition activities.
4. Prior to the initiation of demolition activities, the Contractor shall install erosion controls as detailed in **Figure 2 – Alternate Structures for Demolition Plan**, seal existing drains, drain outlets and plumbing fixture outlets within the Site building to prevent discharge to the environment during the course of the Work.

5. Prior to the initiation of demolition activities, the Contractor shall install vermin control in accordance with the requirements of local authorities having jurisdiction.
6. Prior to the initiation of demolition activities, the Contractor shall characterize, dewater and dispose of trickling filter and sedimentation basin contents. Discharge of filter and basin contents that are characterized and contain no contaminants into existing sewer lines will be permitted.
7. The Contractor shall conduct the Work in a manner giving prime consideration to protection of the public; protection from the weather, control of noise, shocks and vibrations; control of dirt and dust; orderly access for storage of materials; protection of existing structures, surfaces, property and features not part of the Work; coordination and cooperation with the Owner and Engineer at all times.
8. Contractor shall provide dust control measures as necessary as not to exceed 75% of the OSHA Nuisance Dust Standard during all Site activities. Visible dust shall not be permitted to leave the Limits of Work.
9. The Owner and/or Engineer reserve the right to suspend Work at any time, if necessary, due to dust generation which causes a safety or an air quality problem or which may cause contamination of adjacent areas. Contractor shall not be entitled to any additional compensation for suspension of Work under such conditions.
10. The Owner and/or Engineer reserve the right to suspend Work at any time, if necessary, due to noise generation causing a safety or excessive vibration hazard. In the event the OSHA limit of 85dBA is exceeded for 8 hours per day or a peak level of 140dBA is exceeded at the boundary of the Site, a hearing protection program shall be implemented. The Contractor is responsible for conducting Work in accordance with the Town of Salem local noise ordinances as well as modifying operations in the event of neighborhood noise or vibration complaints at no additional cost to the Owner/Engineer.
11. Locate and mark underground utilities to remain in service before beginning the work. Protect all existing utilities to remain during operations. Do not interrupt existing utilities except when authorized in writing by authorities having jurisdiction. The Contractor shall pay special attention to the protection of any existing storm water drainage systems and wells on-Site.
12. The Contractor shall be responsible for the removal and/or abandonment of utility lines and associated appurtenances, including but not limited to, natural gas, sewer, floor drains and associated piping, electrical, fire alarm, telephone, cable, and water in accordance with Town of Salem and local utility provider requirements. The Contractor is responsible for verifying that any additional utilities are removed and/or abandoned prior to the commencement of demolition activities. The Contractor is responsible for cutting all utilities servicing the two trickling filters and two sedimentation basins below grade and installing a permanent cap or concrete plug. The location of such utilities shall be noted on Record Drawings and reported in writing to the Engineer.



13. When an active utility line is exposed during construction, its location and elevation shall be plotted on the Record Drawings by the Contractor and both the Engineer and the utility owner notified in writing.
14. The Contractor shall be responsible for the demolition and removal of the two trickling filters and/or the two sedimentation basins, structure footings / foundations / slabs / piers / supports to a depth of 2 feet below the footprint of the structure, miscellaneous concrete debris, and rubbish located on the Site as indicated on the Figure 2 – Alternate Structures for Demolition Plan.
15. The Contractor shall utilize hydraulically operated and/or shear equipment or approved alternative, including hand tools, to dismantle the structures. Use of explosives, wrecking balls, or other demolition methods likely to generate dust, excessive vibration, and other debris are not permitted unless approved in writing by Owner and Engineer.
16. A Hot Work Permit shall be required for the use of equipment that generates sparks from welding, cutting or brazing. Hot Work shall be minimized to the extent possible. The Contractor shall also be responsible for obtaining and maintaining all permits from the Town of Salem Fire Department to perform Hot Work at the Site. All costs associated with any required fire watch or monitoring is the responsibility of the Contractor.
17. The Contractor shall be responsible for conducting demolition in a manner designed to minimize interference with adjacent areas, in compliance with governing laws and building codes, with prime considerations given to safety, protection and convenience of the public, Engineer and Owner's personnel. At no time shall trucks or equipment be staged on Sarl Drive. Equipment staging shall be limited to the area demarcated on Figure 2 – Alternate Structures for Demolition Plan.
18. Non-asbestos-containing gypsum board, fiberboard, other composition sheeting boards, wood, metal, roofing materials, and all other miscellaneous building materials shall be properly handled and transported for recycling or disposal by the Contractor at an approved disposal facility and in accordance with the Contractor's Waste Handling and Disposal Plan.
19. All characterization sampling of waste for disposal or for potential recycling and reuse will be performed by the Engineer in accordance with all applicable federal, State, and local regulations and individual waste haulers and disposal facilities selected by the Contractor and approved by the Engineer. The Contractor shall provide sufficient notice to the Engineer regarding collection of characterization samples. Turnaround time for all characterization samples is anticipated to be 5 to 7 business days. The Engineer will conduct pre-characterization sampling as applicable throughout demolition activities.
20. As Work progresses, demolition material, trash and debris shall be stockpiled or containerized on-Site until appropriate documentation has been prepared and accepted by the Engineer. Debris shall be kept covered and contents wetted, where required, to prevent fires or off-site dust migration in accordance with the Contractor's Waste Handling and Disposal Plan. The Contractor shall remove demolished materials from the Site on a periodic basis and arrange for legal disposal of the same.

21. Covering of stockpiled demolition debris capable of becoming airborne or generating dust shall be with a strong, durable, impermeable, tear resistant material. Contractor shall be responsible for maintaining coverings on stockpiles or transport containers.
22. The Contractor shall not burn demolished materials or components off-site nor shall the Contractor bury any materials or components on-site. Upon completion of demolition work, remove tools, equipment and temporary work barricade(s).
23. If the Town awards the additional alternative bid items, installation of a 6' chain-link temporary chain link fence will not be required and a deduct for that item from the base bid will be applicable.
24. The Contractor shall fracture the slabs of the two trickling filters and two sedimentation basins every 10 feet on center and leave in place.
25. The Contractor shall use suitable site materials to backfill excavations on site. Suitable materials consist of the following:
  - a. Materials generated during excavation and grading to achieve elevations specified on the Drawings or during demolition activities that are deemed acceptable for re-use as on-Site fill by the Engineer; and/or
  - b. Coated and uncoated brick, concrete, and masonry materials that are crushed on Site to 3-inch minus and deemed acceptable for re-use as on-Site fill by the Engineer.

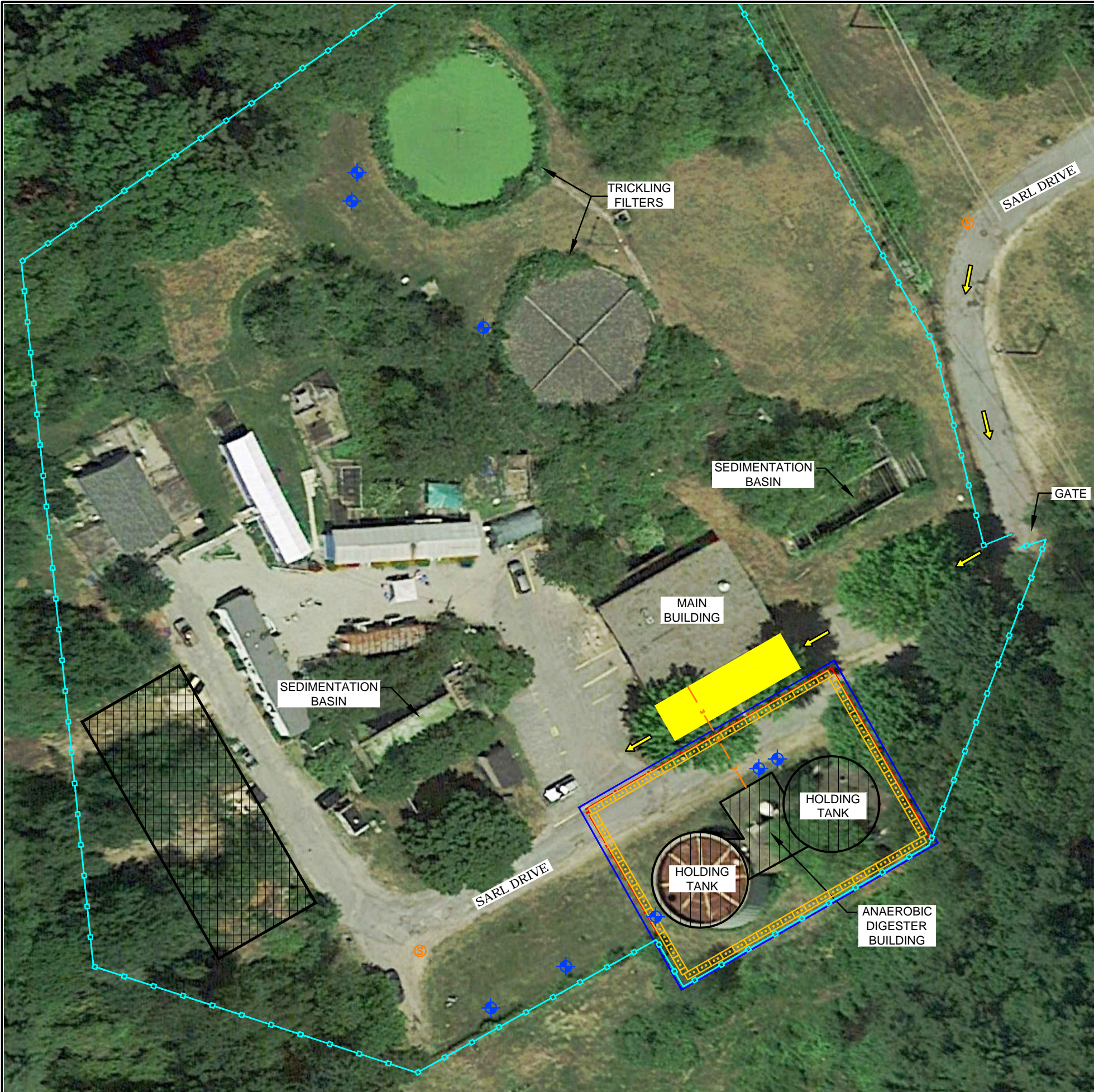
END OF SECTION

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**CONTRACT DRAWINGS**



©2013 - GZA GeoEnvironmental, Inc. GZA-P:\04\Jobs\0190500s\04.0190505.00\Figures-CAD\Figure 1 - Demolition Plan.dwg [Figure 1] September 29, 2016 - 3:40pm samuel.deaspins



LEGEND:

- SITE BOUNDARY/LIMITS OF WORK
- HAYBALES & SILT FENCING (EROSION CONTROL)
- TEMPORARY 6-FOOT HIGH CHAIN LINK FENCING
- EXISTING 5-FOOT HIGH CHAIN LINK FENCING
- UNDERGROUND ELECTRICAL LINE
- CONTRACTOR ACCESS DIRECTIONS
- PROPOSED ACCESS GRAVEL ROAD
- CONTRACTOR STAGING AREA
- STRUCTURES FOR DEMOLITION
- MONITORING WELL LOCATION
- EXISTING SEWER MANHOLE FOR DISCHARGE

NOTES:

- BASE MAP DEVELOPED FROM GOOGLE PROFESSIONAL ELECTRONIC IMAGE FILE. DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS COLLECTED FOR DEMOLITION PLAN IN JUNE 2016.
- CONTRACTOR SHALL PROTECT ALL STRUCTURES, UTILITIES, AND MISCELLANEOUS ITEMS WITHIN THE LIMITS OF WORK NOT SCHEDULED FOR DEMOLITION. ITEMS DAMAGED OR DESTROYED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.
- GATES TO BE LOCKED AT ALL TIMES UNLESS MANNED BY CONTRACTOR PERSONNEL.
- TEMPORARY WORK PLATFORMS AND STAGING AREAS TO BE CONSTRUCTED BY CONTRACTOR, WITHIN THE LIMITS OF WORK, AS NEEDED FOR TEMPORARY FACILITIES, UTILITIES, EQUIPMENT, MATERIAL STOCKPILES, DEBRIS, LOADING AND BUILDING ACCESS.
- CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING ANY NECESSARY TEMPORARY ELECTRICAL AND WATER SERVICE INCLUDING ALL ASSOCIATED PERMITS AND FEES.
- CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS PRIOR TO THE START OF ANY GROUND DISTURBING ACTIVITIES.
- CONTRACTOR SHALL COMPLETE TERMINATION OF ALL UTILITIES IN ACCORDANCE WITH REQUIREMENTS OF AND COORDINATION WITH LOCAL UTILITY PROVIDERS.
- CONTRACTOR SHALL COMPLETE INTERIOR AND EXTERIOR ASBESTOS ABATEMENT AND HAZARDOUS MATERIAL REMOVAL PRIOR TO THE START OF DEMOLITION ACTIVITIES.
- CONTRACTOR SHALL COMPLETE DEMOLITION OF THE BUILDING STRUCTURES IDENTIFIED ON THIS PLAN INCLUDING REMOVAL OF FOOTINGS AND FOUNDATIONS TO TWO FEET BELOW GROUND SURFACE AND FRACTURING OF SLABS.
- THE CONTRACTOR IS RESPONSIBLE FOR CHARACTERIZATION OF BUILDING MATERIALS PRIOR TO OFF-SITE DISPOSAL.
- MONITORING WELLS TO BE DECOMMISSIONED BY OWNER.



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SARL DRIVE  
SALEM, NEW HAMPSHIRE

DEMOLITION PLAN

PREPARED BY:

GZA GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:

TOWN OF SALEM, NH

PROJ MGR: JTB

REVIEWED BY: JDR

CHECKED BY: JDR

DESIGNED BY: JTB

DRAWN BY: MR

SCALE: 1" = 20'

DATE:

JULY 2016

PROJECT NO.

04.0190505.00

REVISION NO.

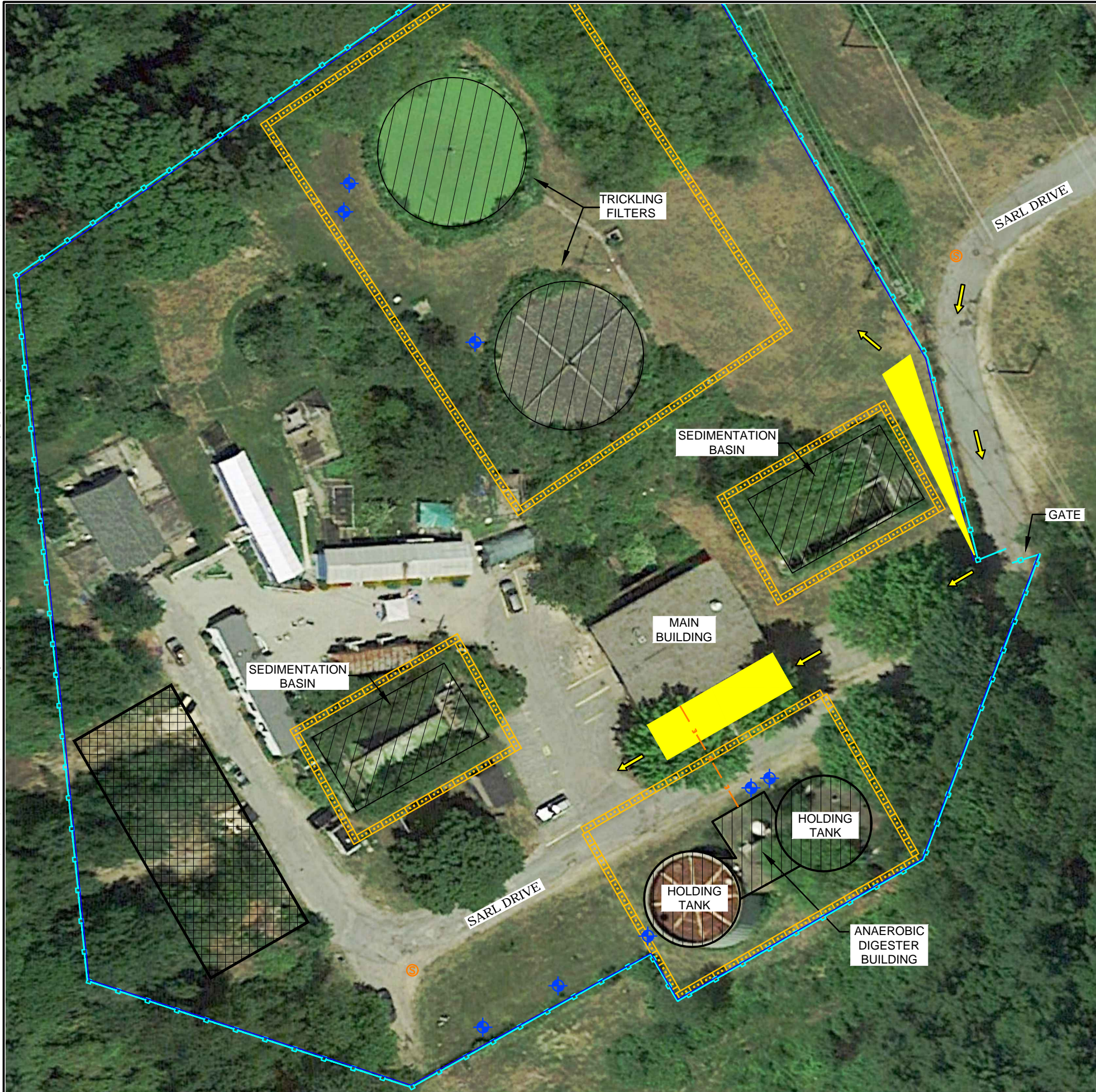
FIGURE

1

SHEET NO. 1 OF 2



©2013 - GZA GeoEnvironmental, Inc. GZA-P:\04\Jobs\0190500s\04.0190505.00\Figures-CAD\Figure 2 - Alt Demolition Plan.dwg [Figure 1] September 29, 2016 - 3:39pm samuel.despins



LEGEND:

- SITE BOUNDARY/LIMITS OF WORK
- HAYBALES & SILT FENCING (EROSION CONTROL)
- EXISTING 5-FOOT HIGH CHAIN LINK FENCING
- UNDERGROUND ELECTRICAL LINE
- CONTRACTOR ACCESS DIRECTIONS
- PROPOSED ACCESS GRAVEL ROAD
- CONTRACTOR STAGING AREA
- STRUCTURES FOR DEMOLITION
- MONITORING WELL LOCATION
- EXISTING SEWER MANHOLE FOR DISCHARGE

NOTES:

- BASE MAP DEVELOPED FROM GOOGLE PROFESSIONAL ELECTRONIC IMAGE FILE. DIGITAL AERIAL ORTHOPHOTOGRAPHY WAS COLLECTED FOR DEMOLITION PLAN IN JUNE 2016.
- CONTRACTOR SHALL PROTECT ALL STRUCTURES, UTILITIES, AND MISCELLANEOUS ITEMS WITHIN THE LIMITS OF WORK NOT SCHEDULED FOR DEMOLITION. ITEMS DAMAGED OR DESTROYED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTORS EXPENSE.
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- CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING ANY NECESSARY TEMPORARY ELECTRICAL AND WATER SERVICE INCLUDING ALL ASSOCIATED PERMITS AND FEES.
- CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS PRIOR TO THE START OF ANY GROUND DISTURBING ACTIVITIES.
- CONTRACTOR SHALL COMPLETE TERMINATION OF ALL UTILITIES IN ACCORDANCE WITH REQUIREMENTS OF AND COORDINATION WITH LOCAL UTILITY PROVIDERS.
- CONTRACTOR SHALL COMPLETE INTERIOR AND EXTERIOR ASBESTOS ABATEMENT AND HAZARDOUS MATERIAL REMOVAL PRIOR TO THE START OF DEMOLITION ACTIVITIES.
- CONTRACTOR SHALL COMPLETE DEMOLITION OF THE BUILDING STRUCTURES IDENTIFIED ON THIS PLAN INCLUDING REMOVAL OF FOOTINGS AND FOUNDATIONS TO TWO FEET BELOW GROUND SURFACE AND FRACTURING OF SLABS.
- THE CONTRACTOR IS RESPONSIBLE FOR CHARACTERIZATION OF BUILDING MATERIALS PRIOR TO OFF-SITE DISPOSAL.

MONITORING WELLS TO BE DECOMMISSIONED BY OWNER.



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SARL DRIVE  
SALEM, NEW HAMPSHIRE

ALTERNATE STRUCTURES FOR DEMOLITION PLAN

PREPARED BY:

GZA GeoEnvironmental, Inc.  
Engineers and Scientists  
www.gza.com

PREPARED FOR:

TOWN OF SALEM, NH

PROJ MGR: JTB

REVIEWED BY: JDR

CHECKED BY: JDR

FIGURE

DESIGNED BY: JTB

DRAWN BY: MR

SCALE: 1" = 20'

2

DATE:

PROJECT NO.

REVISION NO.

SHEET NO. 1 OF 2

SEPT 2016

04.0190505.00



**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**BID FORM**

BID FORM

ANAEROBIC DIGESTER BUILDING, HOLDING TANKS, TRICKLING FILTERS AND SEDIMENTATION BASINS DEMOLITION

SARL DRIVE

SALEM, NEW HAMPSHIRE

Item No.	Estimated Quantity	Unit Bid Price in Words*	Lump Sum or Unit Price in Figures	Total Price in Figures
1	1 Lump Sum	Work Plans and Submittals		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
2	1 Lump Sum	Mobilization and Site Preparation		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
3	1 Lump Sum	Dewatering and Hazardous Waste Removal		
		The Lump Sum of: _____ per Lump Sum	_____	_____
4	1 Lump Sum	Abatement and Disposal of Polychlorinated Biphenyl and Asbestos-Containing Materials		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
5	1 Lump Sum	Demolition of Anaerobic Digester and Holding Tanks		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
8	1 Lump Sum	Site Cleanup and Restoration		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
9	1 Lump Sum	Demobilization		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
TOTAL BASE BID AMOUNT				
		_____		\$ _____
		in Words		

Item No.	Estimated Quantity	Unit Bid Price in Words*	Lump Sum or Unit Price in Figures	Total Price in Figures
A-1	1 Lump Sum	Add Alternate: Demolition of Trickling Filters		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
A-2	1 Lump Sum	Add Alternate: Demolition of Sedimentation Basins		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	\$ _____
D-1	1 Lump Sum	Deduction: Temporary Fence Installation		
		The Lump Sum of: _____ per Lump Sum	_____ per Lump Sum	_____
TOTAL BID AMOUNT WITH ADD ALTERNATES AND DEDUCTIONS				
		_____		\$ _____
		in Words		

\* Brief Descriptions of Bid Items are provided for bidder convenience only.

Bidder: \_\_\_\_\_

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date \_\_\_\_\_

Addenda Acknowledged: \_\_\_\_\_

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**TABLES**



**TABLE A - SUBMITTAL LIST**

The following represents the initial list of project submittals. If additional submittals are identified in the Bid Package, they should be brought to the attention of Owner and Engineer.

<b>Submittal</b>	<b>Submittal Timeframe</b>
Completed Bid Form	With bid
Identification of any exceptions to the Terms and Conditions and Supplemental Conditions or acknowledgment that no exceptions are noted	With bid
List of equipment and equipment rates anticipated to be used on-Site; also state if the equipment is owned or rented	With bid
List of labor wage rates and related labor charges such as per diem, minimum hours per day, etc.	With bid
Direct purchase and subcontractor markup rate(s)	With bid
Qualifications of firm	With bid
Site Manager (name and qualifications)	With bid
Standby rate for equipment and labor	With bid
Proposed hours of Workday and days per week Work schedule	With bid
Assumptions	With bid
OSHA Form 300 and 300A for bidder and all subcontractors for 2016 and the previous calendar year	With bid
List of subcontractors and major equipment and material providers	With Bid
Identify NH State-permitted waste transporters and treatment/disposal facilities to be used	With Bid
Preliminary construction schedule including duration per task	With Bid
Asbestos Contractor Information (copies of applicable licenses, including but not limited to: asbestos contractor license; resume of proposed asbestos supervisor and proof of valid asbestos supervisor certification)	With Bid
Identify Hot Work	With bid
Proposed substitutions for materials or modifications to procedures specified in Contract Documents	With bid and/or 20 days prior to commencement of related Work
Submittal Register	Within 5 days of Notice of Award
Certificates of Insurance	Within 5 days of Notice of Award
Emergency Contacts	Within 10 days of Notice of Award
Health and Safety Plan (including documentation of personnel training, documentation of medical monitoring, certification of HASP acknowledgment by workers, personnel respirator qualification and fit testing)	Within 10 days of Notice of Award
Project Schedule	Within 10 days of Notice of Award
Demolition Work Plan	Within 10 days of Notice of Award
Lead Management Plan	Within 10 days of Notice of Award
Asbestos Abatement Work Plan	Within 10 days of Notice of Award
PCB Remediation Work Plan	Within 10 days of Notice of Award
Waste Handling and Disposal Plan	Within 10 days of Notice of Award
Environmental Protection Plan	Within 10 days of Notice of Award
SDS for other chemicals brought to the Site	Within 10 days of Notice of Award
Permits	10 days prior to executing permitted activities
Application for Payment	10 days before date for consideration of payment

<b>Submittal</b>	<b>Submittal Timeframe</b>
Clean fill certification and associated analytical laboratory results	2 days prior to importing any fill to the Site
Schedule to Complete Outstanding or Correct Defective Work	Within 2 days following notice to Contractor
Change in Work	As stipulated by owner.
Proof of notification to regulatory agencies	10 days prior to start of asbestos related Work
Documentation of regulatory agency inspections	10 a.m. the following Workday
Daily Reports	10 a.m. the following Workday
Results of air monitoring performed in accordance with any of the plans called for in the Contract Documents or any other air monitoring performed by contractor	10 a.m. the following Workday during the Work Provide full report of air monitoring activities within 14 days of completing the Work
Post Construction Submittals	Within 14 days of completing the Work
Shipping Documents, Disposal Certifications, and Waste Manifests	ASAP or 30 days maximum following shipment of waste

**TABLE 1**  
**CONFIRMED ASBESTOS-CONTAINING MATERIAL RESULTS**  
Former Sewage Treatment Plant - Clarifier Building  
Sarl Drive  
Salem, New Hampshire

MATERIAL DESCRIPTION	MATERIAL LOCATION	PERCENT/TYPE ASBESTOS	USEPA CATEGORY	CONDITION	ESTIMATED QUANTITY
<b>Clarifier Building</b>					
Window caulk, gray (pliable)	Exterior, north metal framed windows	3% Chrysotile	Cat. II Nonfriable	Good	65 LF
Door caulk, gray	Exterior, east and west entries	4% Chrysotile	Cat. II Nonfriable	Good	48 LF
Window glazing, gray-white	Exterior, basement, mid-level stairwell, 2nd floor HVAC room	2% Chrysotile	Cat. II Nonfriable	Good	138 LF
Pipe fitting insulation, gray	Basement boiler room, 2nd floor HVAC room	3% Chrysotile	RACM	Damaged to significantly damaged	80 Fittings
Duct Insulation cover, black	2nd floor, HVAC room	5% Chrysotile	Cat. II Nonfriable	Damaged	100 SF
Pipe flange gasket, black	2nd floor, HVAC room	40% Chrysotile	Cat. II Nonfriable	Good	1 SF*
Flashing compound	Exterior, east tank roof	10% Chrysotile	Cat. I Nonfriable	Damaged	150 SF
Flashing compound	Exterior, main roof	5% Chrysotile	Cat. I Nonfriable	Good	260 SF
Caulk, white	Exterior, west tank , roof cap	3% Chrysotile	Cat. II Nonfriable	Good	10 LF
Caulk, gray	Exterior, west tank , roof cap	8% Chrysotile	Cat. II Nonfriable	Good	28 LF
Breeching insulation, gray-white	Basement, boiler room	5% Anthophyllite, 35% Chrysotile	Cat. II Nonfriable	Good	150 SF

**NOTES:**

1. LF = Linear Feet, SF = Square Feet
2. RACM: Includes materials that, when dry, may be crumbled, pulverized or reduced to powder by hand pressure.
3. Category I Non-friable: Includes asbestos-containing packings, gaskets, asphaltic roofing products, resilient floorings, pliable sealants and mastics.
4. Category II Non-friable: Includes any non-friable materials other than Category I materials that contain more than 1% asbestos.
5. \* The sampled gasket was located on the floor.

This summary includes the location, material type, and approximate quantities of accessible asbestos identified in the site building. Quantities of materials were assessed by a non-calibrated wheeled tape measure or visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the site.

**TABLE 2**  
**LEAD-BASED PAINT CHIP SAMPLE SUMMARY**  
Former Salem Sewage Treatment Plant - Clarifier Building  
SarI Drive  
Salem, New Hampshire

SAMPLE NUMBER	MATERIAL DESCRIPTION	MATERIAL LOCATION	LEAD CONTENT (% by weight)	ESTIMATED QUANTITY
<b>Clarifier Building</b>				
071012LBP100	Paint, blue	First floor, stair rail, metal substrate	5	200 SF
071012LBP101	Paint, white	First floor, stairwell, wall, concrete substrate	4.7	1,000 SF
071012LBP102	Paint, yellow	Second floor, piping, metal substrate	7.1	200 SF
071012LBP103	Paint, gray	Second floor, floor, concrete substrate	0.044	600 SF
071012LBP104	Paint, beige	Basement, boiler room, boiler, metal substrate	0.049	650 SF
	USEPA level of lead content in material defined as lead-based paint		>0.5	

**NOTES:**

1. LF = Linear Feet, SF = Square Feet
2. Analysis conducted for lead via NIOSH Method SW846-74202.
3. Samples analyzed by ProScienceAnalytical, Inc. of Woburn, MA. Samples were collected by GZA's Industrial Hygienist David Oliver.

**TABLE 3**  
**HAZARDOUS MATERIALS INVENTORY**  
Former Salem Sewage Treatment Plant - Clarifier Building  
SarI Drive  
Salem, New Hampshire

MATERIAL DESCRIPTION	HAZARD	ESTIMATED QUANTITY	NOTES
<b>Clarifier Building</b>			
<b>Exterior</b>			
Holding Tanks	Contaminated water	2 Units	Approximately 8,500 gallons each
<b>Second floor</b>			
Gas lines	Explosion	1 Unit	
Animal feces, guano	Biological, respiratory		Throughout
<b>Stairwells</b>			
Animal feces, guano	Biological, respiratory		Throughout
<b>Basement</b>			
Animal feces, guano	Biological, respiratory		Throughout
Sludge pipe lines	Biological	2 Units	
Surfactant pipe lines	Chemical	2 Units	
Transformer	PCBs	1 Unit	5 gallons

**NOTES:**

LF = Linear Feet, SF = Square Feet, CF = Cubic Feet, N/A = Not Available

This summary includes the location, material type, and approximate quantities of accessible hazardous materials identified in the site building. Quantities of materials were assessed by a non-calibrated wheeled tape measure or visual estimation and should be considered as approximate values. It should be noted that these are only estimates, and are based on limited visual observations of accessible areas of the site.

**TABLE 4**  
**POLYCHLORINATED BIPHENYL BULK SAMPLE SUMMARY**

Former Sewage Treatment Plant - Clarifier Building

Sarl Drive

Salem, New Hampshire

SAMPLE NUMBER	MATERIAL DESCRIPTION	MATERIAL LOCATION	CONCENTRATION (PPM)- TYPE PCB	ESTIMATED QUANTITY
<b>Clarifier Building</b>				
071012PCB100	Window caulk (pliable), gray	Exterior, north, south and west windows	34.0-Aroclor 1254	320 LF
071012PCB101	Door caulk, gray	Exterior, east and west doorways	2,390-Aroclor 1254	60 LF
071012PCB102	Window glazing, gray-white	Exterior, east and south windows	14.0-Aroclor 1254	140 LF
071012PCB103	Caulk, gray-white	Exterior, west tank, under concrete edge cap	44.4-Aroclor 1254	10 LF
071012PCB104	Caulk, gray	Exterior, west tank, on concrete edge cap seams	1.72*-Aroclor 1254	36 LF
	USEPA level of PCB content in material defined as PCB bulk waste		>50	

**NOTES:**

1. \* Due to a laboratory error analyzing the sample collected on July 10, 2012, the result shown is for the repeat caulk sample collected and submitted on July 27, 2012.
2. LF = Linear Feet, SF = Square Feet
3. PPM = Parts per million
4. BDL = Below Detection Limit.
5. Analysis conducted for PCBs via USEPA Method 8082.
6. Samples analyzed by ESS Laboratory of Cranston, RI. Samples were collected by GZA's Industrial Hygienist David Oliver.

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**ATTACHMENT A**

Asbestos Laboratory Reports and Chain of Custody Forms

**AmeriSci New York**

117 EAST 30TH STREET  
NEW YORK, NY 10016

TEL: (212) 679-8600 • FAX: (212) 679-9392

July 18, 2012

GZA Geo Environmental  
Attn: Jeff Rowell  
380 Harvey Street  
Manchester, NH 03103

RE: GZA Geo Environmental  
Job Number 212073379  
P.O. #04.0029636  
04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

Dear Jeff Rowell:

Enclosed are the results for PLM asbestos analysis of the following GZA Geo Environmental samples received at AmeriSci on Friday, July 13, 2012, for a 5 day turnaround:

071012B100, 071012B100B, 071012B101, 071012B101B, 071012B102, 071012B102B, 071012B103, 071012B103B, 071012B104, 071012B104B, 071012B105, 071012B105B, 071012B105C, 071012B106, 071012B106B, 071012B107, 071012B107B, 071012B108, 071012B108B, 071012B109, 071012B109B, 071012B110, 071012B110B, 071012B111, 071012B111B, 071012B111C, 071012B112, 071012B112B, 071012B113, 071012B113B, 071012B114, 071012B114B, 071012B115, 071012B115B, 071012B115C

The 35 samples contained in Zip Lock Bag were shipped to AmeriSci via UPS. These samples were prepared and analyzed according to the EPA Interim Method (EPA 600/M4-82-020 per 40 CFR 763, subpt F, App. A). The required analytical information, analysis results, analyst signature and laboratory identification is contained in the Analyst's Report.

This report relates ONLY to the sample analysis expressed as percent asbestos. AmeriSci assumes no responsibility for customer supplied data such as "sample type", "location", or "area sampled". This report must not be used to claim product endorsement by AmeriSci, NVLAP or any agency of the U. S. Government. This report must not be reproduced, except in full without the written approval of the laboratory. This report may contain specific data not covered by NVLAP or ELAP accreditations respectively, if so identified in relevant footnotes.

AmeriSci appreciates this opportunity to serve your organization. Please contact us for any further assistance or with any questions.

Sincerely,

Paul J. Mucha  
Laboratory Director



**AmeriSci New York**

117 EAST 30TH ST.

NEW YORK, NY 10016

TEL: (212) 679-8600 • FAX: (212) 679-3114

**PLM Bulk Asbestos Report**

GZA Geo Environmental  
Attn: Jeff Rowell  
380 Harvey Street  
  
Manchester, NH 03103

**Date Received** 07/13/12    **AmeriSci Job #** 212073379  
**Date Examined** 07/18/12    **P.O. #**  
**Page** 1 of 7  
**RE:** 04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem,  
NH

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B100 1 Location: Exterior, NE Window, Window Caulk	212073379-01	Yes	3 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 3.0 % <b>Other Material:</b> Non-fibrous 97 %			
071012B100B 1 Location: Exterior, NW Window, Window Caulk	212073379-02		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B101 2 Location: Stair Landing, West Entry, Door Caulk	212073379-03	Yes	4 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 4.0 % <b>Other Material:</b> Non-fibrous 96 %			
071012B101B 2 Location: Exterior, East Entry, Door Caulk	212073379-04		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B102 3 Location: Stair Landing, West Entry, Door Core Insulation	212073379-05	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Brown/OffWhite, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 90 %, Non-fibrous 10 %			

See Reporting notes on last page

# PLM Bulk Asbestos Report

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B102B 3	212073379-06 Location: Stair Landing, West Entry, Door Core Insulation	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Brown/OffWhite, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 90 %, Non-fibrous 10 %			
071012B103 4	212073379-07 Location: Basement, South Window, Window Glazing	Yes	2 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 2.0 % <b>Other Material:</b> Non-fibrous 98 %			
071012B103B 4	212073379-08 Location: 2nd Floor, South Window, Window Glazing		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B104 5	212073379-09 Location: 2nd Floor, HVAC Area, Pipe Insulation Cover	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Tan, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 35 %, Fibrous glass 20 %, Non-fibrous 45 %			
071012B104B 5	212073379-10 Location: 2nd Floor, HVAC Area, Pipe Insulation Cover	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Tan/Silver, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 45 %, Fibrous glass 10 %, Non-fibrous 45 %			
071012B105 6	212073379-11 Location: 2nd Floor, HVAC Area, Pipe Fitting Insulation	Yes	3 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 3.0 % <b>Other Material:</b> Cellulose Trace, Fibrous glass 35 %, Non-fibrous 62 %			

**PLM Bulk Asbestos Report**

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B105B 6	212073379-12 Location: 2nd Floor, HVAC Area, Pipe Fitting Insulation		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B105C 6	212073379-13 Location: 2nd Floor, HVAC Area, Pipe Fitting Insulation		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B106 7	212073379-14 Location: 2nd Floor, HVAC Area, Duct Expansion Cloth	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 85 %, Non-fibrous 15 %			
071012B106B 7	212073379-15 Location: 2nd Floor, HVAC Area, Duct Expansion Cloth	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 85 %, Non-fibrous 15 %			
071012B107 8	212073379-16 Location: 2nd Floor, HVAC Area, Duct Insulation Cover	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey/Black, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 10 %, Fibrous glass 10 %, Non-fibrous 80 %			
071012B107B 8	212073379-17 Location: 2nd Floor, HVAC Area, Duct Insulation Cover	Yes	5 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Grey/Black, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 5.0 % <b>Other Material:</b> Cellulose 10 %, Fibrous glass 15 %, Non-fibrous 70 %			

# PLM Bulk Asbestos Report

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B108 9	212073379-18 Location: 2nd Floor, HVAC Area, Pipe Flange Gasket	Yes	40 % (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Black/Grey, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 40.0 % Other Material: Non-fibrous 60 %			
071012B108B 9	212073379-19 Location: 2nd Floor, HVAC Area, Pipe Flange Gasket		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
071012B109 10	212073379-20 Location: Exterior, East Tank Roof, Flashing Compound	Yes	10 % (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 10.0 % Other Material: Non-fibrous 90 %			
071012B109B 10	212073379-21 Location: Exterior, East Tank Roof, Flashing Compound		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
071012B110 11	212073379-22 Location: Exterior, Main Roof, Joint With West Tank, Flashing Compound	Yes	5 % (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Black, Homogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 5.0 % Other Material: Non-fibrous 95 %			
071012B110B 11	212073379-23 Location: Exterior, Main Roof, Center Vent, Flashing Compound		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			

# PLM Bulk Asbestos Report

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B111 12	212073379-24 <b>Location:</b> Exterior, Main Roof, South, Built - Up Roofing Felts & Compound	<b>No</b>	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Black, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 45 %, Fibrous glass 10 %, Non-fibrous 45 %			
071012B111B 12	212073379-25 <b>Location:</b> Exterior, Main Roof, North, Built - Up Roofing Felts & Compound	<b>No</b>	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Black, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 35 %, Fibrous glass 5 %, Non-fibrous 60 %			
071012B111C 12	212073379-26 <b>Location:</b> Exterior, Main Roof, West, Built - Up Roofing Felts & Compound	<b>No</b>	NAD (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Black, Heterogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b> Cellulose 40 %, Fibrous glass 5 %, Non-fibrous 55 %			
071012B112 13	212073379-27 <b>Location:</b> Exterior, West Tank, Roof Cap, Caulk	<b>Yes</b>	3 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> OffWhite, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 3.0 % <b>Other Material:</b> Non-fibrous 97 %			
071012B112B 13	212073379-28 <b>Location:</b> Exterior, West Tank, Roof Cap, Caulk		NA/PS
<b>Analyst Description:</b> Bulk Material <b>Asbestos Types:</b> <b>Other Material:</b>			
071012B113 14	212073379-29 <b>Location:</b> Exterior, West Tank, Roof Cap, Caulk	<b>Yes</b>	8 % (by CVES) by Ivan H. Reyes on 07/18/12
<b>Analyst Description:</b> Black, Homogeneous, Fibrous, Bulk Material <b>Asbestos Types:</b> Chrysotile 8.0 % <b>Other Material:</b> Fibrous Talc Trace, Non-fibrous 92 %			

# PLM Bulk Asbestos Report

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

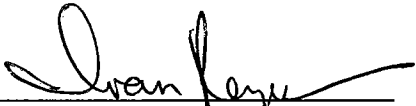
Client No. / HGA	Lab No.	Asbestos Present	Total % Asbestos
071012B113B 14	212073379-30 Location: Exterior, West Tank, Roof Cap, Caulk		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
071012B114 15	212073379-31 Location: Staircase Penthouse, Electrical Wire Insulation	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Blue, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 20 %, Non-fibrous 80 %			
071012B114B 15	212073379-32 Location: Staircase Penthouse, Electrical Wire Insulation	No	NAD (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Blue, Homogeneous, Fibrous, Bulk Material Asbestos Types: Other Material: Fibrous glass 20 %, Non-fibrous 80 %			
071012B115 16	212073379-33 Location: Boiler Room, Breeching Insulation	Yes	40 % (by CVES) by Ivan H. Reyes on 07/18/12
Analyst Description: Grey/White, Heterogeneous, Fibrous, Bulk Material Asbestos Types: Chrysotile 35.0 %, Amosite 5.0 % Other Material: Non-fibrous 60 %			
071012B115B 16	212073379-34 Location: Boiler Room, Breeching Insulation		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			
071012B115C 16	212073379-35 Location: Boiler Room, Breeching Insulation		NA/PS
Analyst Description: Bulk Material Asbestos Types: Other Material:			

## PLM Bulk Asbestos Report

04.0029636; Salem STP, Clarifier Bldg.; Sarl Drive, Salem, NH

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### Reporting Notes:

Analyzed by: Ivan H. Reyes 

\*NAD/NSD =no asbestos detected; NA =not analyzed; NA/PS=not analyzed/positive stop; PLM Bulk Asbestos Analysis by EPA 600/M4-82-020 per 40 CFR 763 (NVLAP Lab Code 200546-0), ELAP PLM Method 198.1 for NY friable samples or 198.6 for NOB samples (NY ELAP Lab ID11480);

Note:PLM is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. NAD or Trace results by PLM are inconclusive, TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos-containing in NY State (also see EPA Advisory for floor tile, FR 59,146,38970,8/1/94) National Institute of Standards and Technology Accreditation requirements mandate that this report must not be reproduced except in full without the approval of the lab.This PLM report relates ONLY to the items tested. AIHA Lab # 102843, RI Cert#AAL-094, CT Cert#PH-0186, Mass Cert#AA000054.

Reviewed By: 

END OF REPORT

Relinquished By: [Signature] Date/Time: 7/12/12 15:00  
 Received By: [Signature] Date/Time: 7/13/12 14:22  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

AMERISCI  
 WWW.AMERISCI.COM

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Company: GZA  
 Street Address: 380 HARVEY ROAD  
 City: MANCHESTER State: NH Zip: 03103  
 Phone: 603.232-8745 Fax: \_\_\_\_\_  
 Cell: 603.315.4999 Fax: 603.624.9463  
 E-mail: david.oliver@gza.com Verbal Results: Y / N  
 Results to: DAVID OLIVER  
 Special Instructions or Comments: \_\_\_\_\_

Project: SALEM SFP, BLDG. CLARIFIER AMERISCI #:  
 Proj Mgr: DAVID OLIVER Proj #: 04.0029636  
 Proj Address: SARL DRIVE, SALEM Proj State: NH  
 Analysis: ☒ PLM; ☐ Positive Stop; ☐ TEM; ☐ NY ELAP PLM/TEM w/ NOB Prep.  
 ASTM Dust ☐ (Microvac) ☐ (Wipe); ☐ Qualitative; ☐ Other (describe in comments)  
 Turnaround Time: 5 DAY Material Type: ☒ Bulk ☐ Dust ☐ Water  
 Sampled By: DDO Date Sampled: 7/10/12

212073379

Lab ID	Field ID	Location	Sample Description (dust area)	Homogenous Area
	071012B100	EXTERIOR, NE WINDOW	WINDOW CAULK	1
	100B	NW WINDOW		1
	101	STAIR LANDING, WEST ENTRY	DOOR CAULK	2
	101B	EXTERIOR, EAST ENTRY		2
	102	STAIR LANDING, WEST ENTRY	DOOR CORE INSULATION	3
	102B			3
	103	BASEMENT, SOUTH WINDOW	WINDOW GLAZING	4
	103B	2nd Floor		4
	104	HVAC AREA	PIPE INSULATION COVER	5
	104B			5
	105		PIPE FITTING INSULATION	6
	105B			6
	105C			6
	106		DUCT EXPANSION CLOTH	7
	106B			7
	107		DUCT INSULATION COVER	8
	107B			8



Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: [Signature] Date/Time: 7/13/12 14:22  
 Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

AMERISCI  
 WWW.AMERISCI.COM

BULK CHAIN OF CUSTODY

AMERISCI NEW YORK  
 117 EAST 30TH STREET  
 NEW YORK, NY 10016  
 TOLL FREE: (800) 705-5227  
 PHONE: (212) 679-8600  
 FAX: (212) 679-9392

Company: GZA  
 Street Address: 380 HARVEY ROAD  
 City: MANCHESTER State: NH Zip: 03103  
 Phone: 603-232-8745 Fax: \_\_\_\_\_  
 Cell: 603-315-4999 Fax: 603-624-9463  
 E-mail: david.oliver@gza.com Verbal Results: Y / N  
 Results to: DAVID OLIVER  
 Special Instructions or Comments: \_\_\_\_\_

CLARIFIER AMERISCI #:  
 Project: SALEM STP, BLDG.  
 Proj Mgr: DAVID OLIVER Proj #: 04.0029636  
 Proj Address: SARL DRIVE, SALEM Proj State: NH  
 Analysis: PLM; Positive Stop; TEM; NY ELAP PLM/TEM w/ NOB Prep.  
 ASTM Dust (Microvac) (Wipe); Qualitative; Other (describe in comments)  
 Turnaround Time: 5 DAY Material Type: Bulk Dust Water  
 Sampled By: DGO Date Sampled: 7/10/12

212073379

Lab ID	Field ID	Location	Sample Description (dust area)	Homogenous Area
	071012.B108	2nd FLOOR, HVAC AREA	PIPE FLANGE GASKET	9
	109B			9
	109	EXTERIOR, EAST TANK ROOF	FLASHING COMPOUND	10
	109B			10
	110	MAIN ROOF, JOINT WITH WEST TANK		11
	110B	CENTER VENT		11
	111	SOUTH	BUILT-UP ROOFING FELT & COMPOUND	12
	111B	NORTH		12
	111C	WEST		12
	112	WEST TANK, ROOF CAP	CAULK	13
	112B			13
	113			14
	113B			14
	114	STAIRCASE PENITHOUSE	ELECTRICAL WIRE INSULATION	15
	114B			15
	115	BOILER ROOM	BREECHING INSULATION	16
	115B			16

Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received By: John S Date/Time: 7/13/12 14:20  
Relinquished By: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received By: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Company: GZA

Street Address: 380 HARVEY ROAD

City: MANCHESTER State: NH Zip: 03103

Phone: 603.232-8745 Fax:

Cell: 603.315.4999 Fax: 603.624.9463

E-mail: david.oliver@gza.com Verbal Results: Y / N

Results to: DAVID OLIVER

Special Instructions or Comments:

**WWW.AMERISCI.COM**

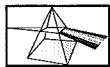
## BULK CHAIN OF CUSTODY

[illegible]

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**ATTACHMENT B**

Lead Laboratory Reports and Chain of Custody Forms



**ProScience Analytical Services, Inc.**  
22 Cummings Park, Woburn, MA 01801

Telephone: 781-935-3212  
Facsimile: 781-932-4857  
Email: [chemistry@proscience.net](mailto:chemistry@proscience.net)

## Laboratory Report

**Contact:** David Oliver  
**Client:** GZA GeoEnvironmental  
**Address:** 380 Harvey Road  
Manchester, NH 03103

**Batch #:** C 271161  
**Date received:** 7/16/2012  
**Date analyzed:** 7/16/2012  
**Date of report:** 7/16/2012

**Project #** 04.0029636  
**P.O.#** 4-11975  
**Project Site:** Salem STP - Clarifier Bldg  
Salem, NH

AIHA-LAP, LLC Lab ID 102754

**Lead Analysis In Paint Using SOP Based on SW846-7420/3051**  
Results in weight percent on an "as received" weight basis

Lab ID	Client ID	Sample date	Description	Result	Reporting Limit	Comments
C 436534	LBP-100	7/10/12	Paint/Staircase Handrail	5.0	0.020	
C 436535	LBP-101	7/10/12	Paint/Wall	4.7	0.018	
C 436536	LBP-102	7/10/12	Paint/Piping	7.1	0.021	
C 436537	LBP-103	7/10/12	Paint/Floor	0.044	0.020	
C 436538	LBP-104	7/10/12	Paint/Boiler	0.049	0.019	

  
Simona Peavey, Tech. Manager Chemistry  
Aimee Cormier, Lab Director

Page 1 of 1

Unless otherwise indicated, all samples were received in acceptable condition.

All results apply only to the samples as received and are accurate to no more than two significant figures.

Unless otherwise indicated, all the quality control criteria for the method above have been met.

RL-Reporting Limit(%by weight)

Note on units: mg/Kg is the same as ppm by weight.

# ProScience Analytical Services, Inc.

## Chemistry Chain of Custody Record

### LABORATORY/HEADQUARTERS

22 Cummings Park, Woburn, MA 01801  
T:781-935-3212 F:781-932-4857

www.proscience.net  
general@proscience.net

<input type="checkbox"/>	Rush/<6 Hours	Turn Around Time Requested				
<input type="checkbox"/>	Same Day	<input type="checkbox"/>	Next Day	<input type="checkbox"/>	2 Day	3 Day
<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	5 Days

Client GZA  
Address Street 380 HARVEY ROAD  
Town MALDEN State/Zip NH 03825  
Project Site Line 1 SALEM STP- CLARIFIER Bldg Project Number 04.0029636  
Line 2 SALEM, NH PO 4-11975  
Contact DAVID OLIVER Phone 603-232-5745  
FAX  Alt/Pager

☐ NELAC analysis

TYPE OF ANALYSIS (circle)		
DUST WIPES	PAINT (0.1 g)	SOIL (1 g)
AIR	TSP	TCLP (100g)
(min)	PM10	Other

Element gravimetric  
Pb Cd Cr As  
Se Ag Ba Fe  
Other (please specify under Comments)  
For Laboratory Use  
BATCH NUMBER C271121

☐ QC

☐ ASTM E1792 FOR LABORATORY USE ONLY

Date and Time Sampled	Field I.D.	Sample Description/Location	Air Sampling Information					Wiped area			ANALYSIS				Lab I.D.
			Start Time	End Time	Start Flowrate	End Flowrate	Volume (liters)	length (inch)	width (inch)	Area (sq in)	Weight (grams)	Dil'n	AA/ICP Reading	RESULT	
7/10/12	LBR-100	PAINT / STAIRCASE HANDRAIL													436534
	101	WALL													35
	102	PIPING													36
	103	FLOOR													37
	104	BOILER													38

Relinquished By: [Signature] Date: 7/12/12 Time: 15:00  
Received By: [Signature] Date: 7/16/12 Time: [Signature]  
Comments:   
ver 5.3  
PAGE  OF

Field blanks are required for airs and wipes per the sampling method.  
Proscience Analytical Services reserves the right to subcontract samples to an appropriately accredited laboratory when we are unable to perform the analysis in house.

**BID DOCUMENTS  
FOR  
DEMOLITION OF THE CLARIFIER BUILDING  
THE TOWN OF SALEM  
FORMER WASTE WATER TREATMENT FACILITY  
SARL DRIVE  
SALEM, NH**

**ATTACHMENT C**

Polychlorinated Biphenyls Laboratory Reports and Chain of Custody Forms



*CERTIFICATE OF ANALYSIS*

David Oliver  
GZA GeoEnvironmental, Inc.  
380 Harvey Road  
Manchester, NH 03103

**RE: Salem STP (04.0029636)**  
**ESS Laboratory Work Order Number: 1207174**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**

**By ESS Laboratory at 5:11 pm, Jul 20, 2012**

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207174

**SAMPLE RECEIPT**

The following samples were received on July 13, 2012 for the analyses specified on the enclosed Chain of Custody Record.

<b>Lab Number</b>	<b>SampleName</b>	<b>Matrix</b>	<b>Analysis</b>
1207174-01	PCB-100	Bulk	8082
1207174-02	PCB-101	Bulk	8082
1207174-03	PCB-102	Bulk	8082
1207174-04	PCB-103	Bulk	8082





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207174

**PROJECT NARRATIVE**

**8082 Polychlorinated Biphenyls (PCB)**

1207174-02      Surrogate recovery(ies) diluted below the MRL (SD).  
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene  
(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1207174-04      Surrogate recovery(ies) diluted below the MRL (SD).  
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene  
(% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

[Definitions of Quality Control Parameters](#)  
[Semivolatile Organics Internal Standard Information](#)  
[Semivolatile Organics Surrogate Information](#)  
[Volatile Organics Internal Standard Information](#)  
[Volatile Organics Surrogate Information](#)  
[EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP  
Client Sample ID: PCB-100  
Date Sampled: 07/10/12 00:00  
Percent Solids: N/A  
Initial Volume: 4.62  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1207174  
ESS Laboratory Sample ID: 1207174-01  
Sample Matrix: Bulk  
Units: mg/kg wet  
Analyst: SEP  
Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1221	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1232	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1242	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1248	ND (2.16)		10	07/18/12 11:49		CG21918
<b>Aroclor 1254</b>	<b>34.0</b> (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1260	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1262	ND (2.16)		10	07/18/12 11:49		CG21918
Aroclor 1268	ND (2.16)		10	07/18/12 11:49		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	76 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	99 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	87 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	95 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP  
Client Sample ID: PCB-101  
Date Sampled: 07/10/12 00:00  
Percent Solids: N/A  
Initial Volume: 4.08  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1207174  
ESS Laboratory Sample ID: 1207174-02  
Sample Matrix: Bulk  
Units: mg/kg wet  
Analyst: TAJ  
Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1221	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1232	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1242	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1248	ND (245)		1000	07/18/12 19:04		CG21918
<b>Aroclor 1254</b>	<b>2390</b> (245)		1000	07/18/12 19:04		CG21918
Aroclor 1260	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1262	ND (245)		1000	07/18/12 19:04		CG21918
Aroclor 1268	ND (245)		1000	07/18/12 19:04		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	%	SD	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	%	SD	30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP  
Client Sample ID: PCB-102  
Date Sampled: 07/10/12 00:00  
Percent Solids: N/A  
Initial Volume: 10.04  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1207174  
ESS Laboratory Sample ID: 1207174-03  
Sample Matrix: Bulk  
Units: mg/kg wet  
Analyst: ML  
Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1221	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1232	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1242	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1248	ND (0.0996)		1	07/17/12 20:03		CG21918
<b>Aroclor 1254</b>	<b>14.0</b> (0.996)		10	07/18/12 14:58		CG21918
Aroclor 1260	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1262	ND (0.0996)		1	07/17/12 20:03		CG21918
Aroclor 1268	ND (0.0996)		1	07/17/12 20:03		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	58 %		30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	80 %		30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	85 %		30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	93 %		30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP  
Client Sample ID: PCB-103  
Date Sampled: 07/10/12 00:00  
Percent Solids: N/A  
Initial Volume: 10.53  
Final Volume: 10  
Extraction Method: 3540

ESS Laboratory Work Order: 1207174  
ESS Laboratory Sample ID: 1207174-04  
Sample Matrix: Bulk  
Units: mg/kg wet  
Analyst: TAJ  
Prepared: 7/16/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1221	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1232	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1242	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1248	ND (4.75)		50	07/18/12 19:23		CG21918
<b>Aroclor 1254</b>	<b>44.4 (4.75)</b>		50	07/18/12 19:23		CG21918
Aroclor 1260	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1262	ND (4.75)		50	07/18/12 19:23		CG21918
Aroclor 1268	ND (4.75)		50	07/18/12 19:23		CG21918

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	%	SD	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	%	SD	30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207174

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8082 Polychlorinated Biphenyls (PCB)**

**Batch CG21918 - 3540**

**Blank**

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0178		mg/kg wet	0.02500		71	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0206		mg/kg wet	0.02500		82	30-150			
Surrogate: Tetrachloro-m-xylene	0.0235		mg/kg wet	0.02500		94	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0239		mg/kg wet	0.02500		96	30-150			

**LCS**

Aroclor 1016	0.508	0.0500	mg/kg wet	0.5000		102	40-140			
Aroclor 1260	0.500	0.0500	mg/kg wet	0.5000		100	40-140			

Surrogate: Decachlorobiphenyl	0.0194		mg/kg wet	0.02500		78	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0226		mg/kg wet	0.02500		90	30-150			
Surrogate: Tetrachloro-m-xylene	0.0243		mg/kg wet	0.02500		97	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0240		mg/kg wet	0.02500		96	30-150			

**LCS Dup**

Aroclor 1016	0.525	0.0500	mg/kg wet	0.5000		105	40-140	3	50	
Aroclor 1260	0.509	0.0500	mg/kg wet	0.5000		102	40-140	2	50	

Surrogate: Decachlorobiphenyl	0.0194		mg/kg wet	0.02500		78	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0227		mg/kg wet	0.02500		91	30-150			
Surrogate: Tetrachloro-m-xylene	0.0246		mg/kg wet	0.02500		99	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0248		mg/kg wet	0.02500		99	30-150			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207174

**Notes and Definitions**

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207174

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01  
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179  
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750  
[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water: RI0002  
[http://www.maine.gov/dep/blwq/topic/vessel/lab\\_list.pdf](http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf)

Massachusetts Potable and Non Potable Water: M-RI002  
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424  
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313  
<http://www.wadsworth.org/labcert/elap/comm.html>

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301  
[http://www.mde.state.md.us/assets/document/WSP\\_labs-2009apr20.pdf](http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf)

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01  
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)  
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141  
Lead Paint, Lead in Children's Metals Jewelry  
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>



**Sample and Cooler Receipt Checklist**

Client: GZA GeoEnvironmental, Inc. NH  
Client Project ID: \_\_\_\_\_  
Shipped/Delivered Via: ESS Courier

ESS Project ID: 12070174  
Date Project Due: 7/20/12  
Days For Project: 5 Day

**Items to be checked upon receipt:**

1. Air Bill Manifest Present?

☒ No

Air No.:

2. Were Custody Seals Present?

☐ No

3. Were Custody Seals Intact?

☐ N/A

4. Is Radiation count &lt; 100 CPM?

☐ Yes

5. Is a cooler present?

☐ YesCooler Temp: 4.2Iced With: Icepacks

6. Was COC included with samples?

☐ Yes

7. Was COC signed and dated by client?

☐ Yes

8. Does the COC match the sample

☐ Yes

9. Is COC complete and correct?

☐ Yes

10. Are the samples properly preserved?

☐ Yes

11. Proper sample containers used?

☐ Yes

12. Any air bubbles in the VOA vials?

☐ N/A

13. Holding times exceeded?

☐ No

14. Sufficient sample volumes?

☐ Yes

15. Any Subcontracting needed?

☐ No

16. Are ESS labels on correct containers?

☒ Yes ☐ No

17. Were samples received intact?

☒ Yes ☐ No

ESS Sample IDs: \_\_\_\_\_

Sub Lab: \_\_\_\_\_

Analysis: \_\_\_\_\_

TAT: \_\_\_\_\_

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: \_\_\_\_\_

By whom? \_\_\_\_\_

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	Plastic Bag	1	NP
2	Yes	Plastic Bag	1	NP
3	Yes	Plastic Bag	1	NP
4	Yes	Plastic Bag	1	NP
5	Yes	Plastic Bag	1	NP

Completed By: JKDate/Time: 7/13/12 1650Reviewed By: [Signature]Date/Time: 7/13/12





*CERTIFICATE OF ANALYSIS*

David Oliver  
GZA GeoEnvironmental, Inc.  
380 Harvey Road  
Manchester, NH 03103

**RE: Salem STP (04.0029636)**  
**ESS Laboratory Work Order Number: 1207420**

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard  
Laboratory Director

**REVIEWED**

**By ESS Laboratory at 6:34 pm, Jul 31, 2012**

**Analytical Summary**

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

ESS Laboratory certifies that the test results meet the requirements of NELAC and A2LA, except where noted within this project narrative.



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207420

**SAMPLE RECEIPT**

The following samples were received on July 27, 2012 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	SampleName	Matrix	Analysis
1207420-01	PCB-104	Bulk	8082



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207420

**PROJECT NARRATIVE**

**8082 Polychlorinated Biphenyls (PCB)**

1207420-01

Surrogate recovery(ies) diluted below the MRL (SD).

Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

**No other observations noted.**

**End of Project Narrative.**

**DATA USABILITY LINKS**

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP  
Client Sample ID: PCB-104  
Date Sampled: 07/27/12 00:00  
Percent Solids: N/A  
Initial Volume: 10.1  
Final Volume: 30  
Extraction Method: 3540

ESS Laboratory Work Order: 1207420  
ESS Laboratory Sample ID: 1207420-01  
Sample Matrix: Bulk  
Units: mg/kg wet  
Analyst: TAJ  
Prepared: 7/30/12 18:00

**8082 Polychlorinated Biphenyls (PCB)**

<u>Analyte</u>	<u>Results (MRL)</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Aroclor 1016	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1221	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1232	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1242	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1248	ND (1.49)		5	07/31/12 15:02		CG23025
<b>Aroclor 1254</b>	<b>1.72 (1.49)</b>		5	07/31/12 15:02		CG23025
Aroclor 1260	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1262	ND (1.49)		5	07/31/12 15:02		CG23025
Aroclor 1268	ND (1.49)		5	07/31/12 15:02		CG23025

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: Decachlorobiphenyl</i>	%	SD	30-150
<i>Surrogate: Decachlorobiphenyl [2C]</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene</i>	%	SD	30-150
<i>Surrogate: Tetrachloro-m-xylene [2C]</i>	%	SD	30-150



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207420

**Quality Control Data**

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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**8082 Polychlorinated Biphenyls (PCB)**

**Batch CG23025 - 3540**

**Blank**

Aroclor 1016	ND	0.0500	mg/kg wet							
Aroclor 1221	ND	0.0500	mg/kg wet							
Aroclor 1232	ND	0.0500	mg/kg wet							
Aroclor 1242	ND	0.0500	mg/kg wet							
Aroclor 1248	ND	0.0500	mg/kg wet							
Aroclor 1254	ND	0.0500	mg/kg wet							
Aroclor 1260	ND	0.0500	mg/kg wet							
Aroclor 1262	ND	0.0500	mg/kg wet							
Aroclor 1268	ND	0.0500	mg/kg wet							

Surrogate: Decachlorobiphenyl	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0199		mg/kg wet	0.02500		80	30-150			
Surrogate: Tetrachloro-m-xylene	0.0184		mg/kg wet	0.02500		74	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0200		mg/kg wet	0.02500		80	30-150			

**LCS**

Aroclor 1016	0.506	0.0500	mg/kg wet	0.5000		101	40-140			
Aroclor 1260	0.490	0.0500	mg/kg wet	0.5000		98	40-140			

Surrogate: Decachlorobiphenyl	0.0210		mg/kg wet	0.02500		84	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0208		mg/kg wet	0.02500		83	30-150			
Surrogate: Tetrachloro-m-xylene	0.0201		mg/kg wet	0.02500		80	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0214		mg/kg wet	0.02500		86	30-150			

**LCS Dup**

Aroclor 1016	0.499	0.0500	mg/kg wet	0.5000		100	40-140	2	50	
Aroclor 1260	0.481	0.0500	mg/kg wet	0.5000		96	40-140	2	50	

Surrogate: Decachlorobiphenyl	0.0204		mg/kg wet	0.02500		82	30-150			
Surrogate: Decachlorobiphenyl [2C]	0.0202		mg/kg wet	0.02500		81	30-150			
Surrogate: Tetrachloro-m-xylene	0.0197		mg/kg wet	0.02500		79	30-150			
Surrogate: Tetrachloro-m-xylene [2C]	0.0206		mg/kg wet	0.02500		83	30-150			



*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207420

**Notes and Definitions**

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report





*CERTIFICATE OF ANALYSIS*

Client Name: GZA GeoEnvironmental, Inc.  
Client Project ID: Salem STP

ESS Laboratory Work Order: 1207420

**ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS**

**ENVIRONMENTAL**

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179

<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750

[http://www.ct.gov/dph/lib/dph/environmental\\_health/environmental\\_laboratories/pdf/OutOfStateCommercialLaboratories.pdf](http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutOfStateCommercialLaboratories.pdf)

Maine Potable and Non Potable Water: RI0002

[http://www.maine.gov/dep/blwq/topic/vessel/lab\\_list.pdf](http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf)

Massachusetts Potable and Non Potable Water: M-RI002

<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424

<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313

<http://www.wadsworth.org/labcert/elap/comm.html>

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301

[http://www.mde.state.md.us/assets/document/WSP\\_labs-2009apr20.pdf](http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf)

**CHEMISTRY**

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

# Sample and Cooler Receipt Checklist

Client: GZA GeoEnvironmental, Inc. NH

Client Project ID: \_\_\_\_\_

Shipped/Delivered Via: ESS Courier

ESS Project ID: 12070420

Date Project Due: 8/1/12

Days For Project: 2 Day

ASAP

## Items to be checked upon receipt:

1. Air Bill Manifest Present?

☒ No

Air No.: \_\_\_\_\_

2. Were Custody Seals Present?

☐ No

3. Were Custody Seals Intact?

☐ N/A

4. Is Radiation count < 100 CPM?

☐ Yes

5. Is a cooler present?

☐ Yes

Cooler Temp: 3.2

Iced With: Icepacks

6. Was COC included with samples?

☐ Yes

7. Was COC signed and dated by client?

☐ Yes

8. Does the COC match the sample

☐ Yes

9. Is COC complete and correct?

☐ Yes

10. Are the samples properly preserved?

☐ Yes

11. Proper sample containers used?

☐ Yes

12. Any air bubbles in the VOA vials?

☐ N/A

13. Holding times exceeded?

☐ No

14. Sufficient sample volumes?

☐ Yes

15. Any Subcontracting needed?

☐ No

16. Are ESS labels on correct containers?

☒ Yes ☐ No

17. Were samples received intact?

☒ Yes ☐ No

ESS Sample IDs: \_\_\_\_\_

Sub Lab: \_\_\_\_\_

Analysis: \_\_\_\_\_

TAT: \_\_\_\_\_

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: \_\_\_\_\_

By whom? \_\_\_\_\_

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	Plastic Bag	1	NP
Completed By: <u>JK</u> Date/Time: <u>7/30/12 1036</u>				
Reviewed By: <u>ED</u> Date/Time: <u>7/30/12</u>				

## CHAIN-OF-CUSTODY RECORD

(for lab use only)

1207420

[illegible]

PRESERVATIVE (Cl-HCl, M-Methanol, N-HNO<sub>3</sub>, S-H<sub>2</sub>SO<sub>4</sub>, Na-NaOH, O-Other) \*

CONTAINER TYPE (P-Plastic, G-Glass, V-Vial, T-Teflon, O-Other)\*

RELINQUISHED BY:	DATE/TIME	RECEIVED BY
------------------	-----------	-------------

7/12/12 15:00 C/S 7/27

RELINQUISHED BY: DATE/TIME RECEIVED BY:

~~7/12/12 10:17 EST~~ ~~End~~ 7/12/12

RELINQUISHED BY: DATE/TIME RECEIVED BY:

SS Fridge 7/30/15 Kiri

Project Manager: DAVID OLIVER 7/30/11

**GZA GEOENVIRONMENTAL, INC.**

Airport Business Center  
380 Harvey Road  
Manchester, NH 03103-3347  
(603) 623-3600  
FAX (603) 624-9463

NOTES: (Unless otherwise noted, all samples have been refrigerated to 4 +/- 2°C)  
\*Specify "Other" preservatives and container types in this space.


REPLACEMENT SAMPLE FOR CONTAMINATED ANALYSIS  
ANALYZE ASAP PLEASE.  
THANK YOU

TURNAROUND TIME: Standard Rush \_\_\_\_\_ Days, Approved by: \_\_\_\_\_ LAB USE: \_\_\_\_\_  
TEMP. OF COOLER 3.0 °F Temp Blank \_\_\_\_\_ Cooler Air \_\_\_\_\_

PROJECT NO: 04.0029636 TASK NO: \_\_\_\_\_ W.O. NO. MANNH 1015

PROJECT SALEM STP - CLARIFIER BUDG.

LOCATION SARL DRIVE, SALEM, NH

COLLECTOR(S) 

SHEET 1 OF 1