Asbestos Abatement Project Specifications
Old Encycle/ASARCO Facility
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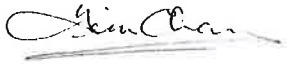

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Project No. 10-1393

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PART 1 GENERAL INFORMATION

1.1 Scope of Work

1.1.1 Remove all ACM including vinyl sheet flooring, floor tiles and mastics, thermal system insulation on pipe and boilers, and pipe wrap on building interiors. All friable Regulated Asbestos Containing Materials, including damaged Category I and Category II will be removed from the exterior of facilities including black asphaltic coatings on concrete pillars, Galbestos panels on buildings, tar and gravel roofs, and red coating on the concrete smoke stack on exteriors of facilities. Intact Category I Asbestos Containing Materials may be left in place if they will remain intact during demolition.

1.1.2 The onsite Contractor's Asbestos Abatement Supervisor/NESHAP trained person will make a determination as to whether or not Category I and Category II materials are intact prior to work to determine acceptable work practices.

1.1.3 Prevent any personnel exposure to asbestos fibers.

1.1.4 Prevent any contamination of uncontaminated areas, furniture, carpets, fixtures, etc.

1.1.5 Assure proper disposal of all ACM and ACM contaminated materials.

1.1.6 Fully and completely document all activities.

1.1.7 The ACM which is scheduled to be removed for this project is identified on the drawings and plans. Drawings and general provisions of the contract, including general and supplementary conditions, apply to the work in this section.

1.1.8 A windscreen consisting of continuous 10-foot tall tarps shall be in place during all asbestos work, waste removal, or demolition. Tarps will be placed on the south side of buildings or facilities and will extend at least 20 feet beyend the eastern and western ends of the buildings or facilities.

1.1.9 Wind speed and direction will be recorded by the contractor at the beginning of each day's and at least at four hour intervals, or any time the wind seems to increase during work, on any day that abatement or demolition is occuring. If the wind direction is from the Encycle faciltity toward the residential neighborhoods to the south and wind speed exceeds 15 miles per hour (mph), abatement, waste removal, or demolition work will cease until the sustained wind speed falls to or below 15 mph.

1.1.10 All buildings, piping, and debris above the concrete are to be demolished.

1.2 Reserved

1.3 Definitions

1.3.1 Abatement - The process of removal, encapsulation, or enclosure of asbestos containing materials.

1.3.2 Airlock - A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways blocking air movement in either direction, thereby preventing flow through contamination.

1.3.3 Air Monitoring - The process of measuring the fiber concentration of a known volume of air collected during a specific period of time. The analysis procedure utilized for asbestos is the NIOSH Standard Analytical Method for Asbestos in Air, Method 7400. Transmission electron microscopy (TEM) may be utilized for lower detection limits and/or specific fiber identification.

1.3.4 Air Monitoring Technician - The person trained to conduct air monitoring for an asbestos abatement project or related activity in a facility. The Air Monitoring Technician may obtain area and personal air samples, and may only perform analysis of air samples after completion of the NIOSH-582 equivalent course. In public buildings he air monitoring technician must be licensed by TDSHS shall be an employee of a Licensed Asbestos Laboratory or a Licensed Asbestos Consultant Agency.

1.3.5 Amended Water - Water to which a surfactant has been added.

1.3.6 ANSI - American National Standards Institute

1.3.7 Asbestos - The asbestiform varieties of serpentines and amphiboles. Specifically, chrysotile, riebeckite crocidolite, cummingtonite, grunerite, amosite, anthophyllite, actinolite, and tremolite.

1.3.8 Asbestos Containing Material (ACM) - Material composed of asbestos of any type and in an amount greater than 1% by weight, either alone or mixed with other fibrous or non-fibrous materials.

1.3.9 Asbestos containing waste material - asbestos containing material or asbestos contaminated objects requiring disposal.

1.3.10 Asbestos Project Manager - The person trained in the AHERA Contractor/Supervisor course who has authority to perform as the Facility Owner's representative so as to oversee all regulatory requirements of an asbestos abatement project.

1.3.11 ASTM - American Society for Testing and Materials

1.3.12 Authorized personnel - Any person authorized by the Contractor and required by work duties to be present in the work area or other regulated areas.

1.3.13 Authorized visitor - The Facility Owner, his designated representatives, and any representative of a regulatory or other agency having jurisdiction over the project.

1.3.14 Facility Owner - The owner or owners or their authorized representatives of the building, site, structure, or installation to which these specifications pertain.

1.3.15 Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

1.3.16 Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

1.3.17 Class I asbestos work includes removal of thermal system insulation (TSI) and surfacing ACM and PACM.

1.3.18 Class II asbestos work includes the removal of ACM which is not thermal system insulation (TSI) or surfacing material. This includes removal of floor tile, roofing products, construction mastics, etc.

1.3.19 Class III asbestos work means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.

1.3.20 Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

1.3.21 Clean Room - An uncontaminated area or room which is a part of the decontamination enclosure system with provisions for storage of worker's street clothes and clean protective equipment.

1.3.22 Consultant - That person licensed by the Texas Department of State Health Services and having Accreditation under AHERA to perform the following asbestos related functions:

(1) Project design; (2) Asbestos surveys and condition assessment of ACM; (3) Asbestos Management Planning; (4) The collection of bulk material samples, airborne substance samples and the planning of sampling strategies; (5) Owner-representative services for asbestos abatement projects or O&M programs, including air monitoring and project management; (6) Consultation regarding regulatory compliance and all aspects of technical specifications and contract documents; and (7) the selection, fit testing, and appropriate use of personal protection equipment and the development of asbestos related engineering controls.

1.3.23 Contractor - The company, agency, or entity that has been retained by the Facility Owner to perform asbestos abatement and other associated functions.

1.3.24 Contractor Asbestos Supervisor – The individual working for the Asbestos Abatement Contractor responsible for asbestos work practices, worker personal protective equipment, and all aspects of asbestos related activities. This individual may also be the NESHAP trained person. The Supervisor must have successfully completed the AHERA Model Accreditation Plan course for Contractor/Supervisors, and taken yearly refresher training.

1.3.25 Decontamination unit - A series of connected rooms consisting of a clean room, a shower room, and an equipment room separated from each other and from the work area by airlocks and curtained doorways. This system is used for all worker entrances to and exits from the work area. It is also used for all equipment and waste pass out from the work area, if a separate waste transfer airlock is not used.

1.3.26 Demolition - The wrecking or taking out of any load-supporting structural member of a facility, along with any related handling operations.

1.3.27 Encapsulation - The spray application of encapsulant, a specific adhesive designed to lock down and minimize the fiber release of asbestos containing materials and asbestos contaminated materials.

1.3.28 Equipment room - A contaminated area or room which is part of the decontamination enclosure system with provisions for storage of contaminated clothing and equipment.

1.3.29 Facility - the building, site, structure, or installation, to which these specifications pertain.

1.3.30 Fixed object - A piece of equipment or furniture in the work area which cannot be removed from the work area.

1.3.31 Friable asbestos - Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.

1.3.32 Galbestos – The registered trademark for galvanized panels consisting of thick gauge, corrugated galvanized metal sheeting with thin, double-sided asbestos felt-like coatings. **Note:** Galbestos materials were identified as "Galvestos" coating on buildings (metal walls, roofs, I-beams, concrete pillars) and mechanical components in the inspection report.

1.3.33 Glovebag technique - A method with limited applications for removing small amounts of friable asbestos containing material from HVAC ducts, short piping runs, valves, joints, elbows, and other non-planar surfaces in a non-contained, plasticized work area. The glovebag assembly is a manufactured or fabricated device consisting of a glovebag (typically constructed of 6-mil transparent polyethylene or polyvinylchloride plastic), two inward projecting long sleeves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste. Glovebags are seamless at the bottom. The glovebag is constructed and installed in such a manner that it surrounds the object or material to be removed and contains all asbestos fibers released during the process. Glovebags may be used during Class I, Class II, or Class III work, so long as the bag completely covers the material to be used.

1.3.34 HVAC - Heating, ventilation and air conditioning system.

1.3.35 HEPA Filter - A high efficiency particulate air filter capable of removing particles > 0.3 microns in diameter with 99.97% efficiency.

1.3.36 Intact – Entire, undamaged, and nonfriable as concerning asbestos.

1.3.37 Project Manager - The person who supervises all abatement procedures, and whose primary function is to ensure that all personnel and the environment are properly protected from asbestos contamination. The Project Manager shall be an individual who has completed within the last year, an EPA approved asbestos abatement training course for Contractors and Supervisors, and who has specialized experience in asbestos abatement. The Project Manager and the Air Monitoring Professional may be the same person. The Project Manager shall not be affiliated with the Contractor performing the abatement work, in any other way than through the performance of hygiene supervision. The Project Manager will have the AHERA Contractor/Supervisor 40 hour training.

1.3.38 Movable object - A piece of equipment or furniture in the work area which can be removed from the work area.

1.3.39 Pressure differential ventilation system - A portable exhaust system equipped with HEPA filtration and capable of maintaining a pressure gradient in which the enclosed work area is lower in pressure than the area outside of the enclosed work area. The pressure gradient is maintained by moving air from the work area to the environment outside of the work area at a rate that will support the desired air flow and pressure differential (-0.02 inches of water column). Pressure differential will be measured by Manometric measurement.

1.3.40 NESHAP - The National Emission Standards for Hazardous Air Pollutants (40 CFR Part 61).

1.3.41 NESHAP trained person – The on-site representative, such as a foreman or management-level person or other authorized representative, trained in the provisions of the Asbestos NESHAP and the means of complying with them, who must be present during all asbestos abatement activities. Every 2 years, the trained on-site individual shall receive refresher training in the provisions of this regulation. The required training shall include as a minimum: applicability; notifications; material identification; control procedures for removals including, at least, wetting, local exhaust ventilation, negative pressure enclosures, glove-bag procedures, and High Efficiency Particulate Air (HEPA) filters; waste disposal work practices; reporting and record keeping; and asbestos hazards and worker protection. Evidence that the required training has been completed shall be posted and made available for inspection by the Administrator at the demolition or renovation site.

1.3.42 NIOSH - The National Institute for Occupational Safety and Health.

1.3.43 Nonfriable asbestos-containing material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

1.3.44 OSHA - The Occupational Safety and Health Administration.

1.3.45 Plasticize - To cover floors and walls with plastic sheeting as herein specified.

1.3.46 Prior experience - Experience required of the Contractor on asbestos projects of similar nature and scope to insure capability of performing the asbestos abatement in a satisfactory manner. Similarities shall be in areas related to project size, abatement methods required, number of employees, and material composition, as well as required engineering controls, work practices, and personal protection.

1.3.47 Regulated asbestos-containing material (RACM) means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

1.3.48 Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

1.3.49 Resilient floor covering means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

1.3.50 Renovation - Altering the facility in any way excluding removal or demolition of load-supporting structural members.

1.3.51 Shower room - A room between the clean room and the equipment room in the decontamination enclosure equipped with hot and cold running water controllable inside the shower and a drain pan to prevent water leakage. The shower room is suitably arranged for complete showering during decontamination.

1.3.52 Staging area - Some area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

1.3.53 Strip - To take out friable asbestos materials from any part of the facility.

1.3.54 Surfactant - A chemical wetting agent added to water to improve penetration.

1.3.55 Warning signs – Asbestos warning signs are to use the following language as required by OSHA:

DANGER

ASBESTOS

CANCER AND LUNG DISEASE HAZARD

AUTHORIZED PERSONNEL ONLY

1.3.56 Waste load out or bag out - A decontamination enclosure system utilized exclusively for transferring containerized waste from the inside to the outside of the work area.

1.4 Description of Work

1.4.1 The work specified herein shall be the removal of asbestos containing materials by capable persons trained, knowledgeable, and qualified in the techniques of abatement, handling, and disposal of asbestos containing materials and asbestos contaminated materials, and the subsequent cleaning of contaminated areas. These persons shall be capable of and willing to perform the work of these specifications, and they shall comply with all applicable Federal, State, and Local regulations. Materials to be removed include coating

on the cement stack, insulation on piping throughout the facility, asphalt coating on cement support members, and floor tile and associated mastic.

1.4.2 Work will be in accordance with these specifications. Some areas of the specifications are general, and apply to all work (such as respiratory protection requirements and personal protective equipment). The Execution section provides guidance for specific removal activities. Proper glovebag technique can be used, where feasible, and where approved by the Facility Owner/Consultant.

1.4.3 Work will consist of stripping of paint on the Concrete Stack, Stripping of Pipe, Boiler, and Related Insulation, Abatement of Crawl Spaces and Tunnels, Removal of Floor Tile/Mastic, Vinyl Sheet Flooring, Removal of Transite Material, Removal of Galbestos Panels, and Possible Removal of Damaged Asphalt Roofing (if applicable).

1.5 Applicable Standards and Guidelines

1.5.1 General Requirements

1.5.1.1 All work under these specifications shall be done in strict accordance with all applicable Federal, State, and Local regulations, standards, and codes governing asbestos abatement and any other trade work done in conjunction with the asbestos abatement. Contractor will follow work practices as taught in the AHERA MAP Contractor/Supervisor course.

1.5.1.2 The most recent edition of any relevant regulation, standard, or code shall be in effect. Where there exists conflict between the regulations, standards, codes, or these specifications, the most stringent requirements shall be utilized.

1.5.1.3 The Contractor shall furnish copies of all standards, regulations, codes, and other applicable documents, including these specifications and those listed in Section 1.5.2. These documents shall be available at the work site, to all personnel involved in the abatement project.

1.5.2 The Contractor shall comply with, at minimum, the following specific requirements:

1.5.2.1 Occupational Safety and Health Administration (OSHA) including but not limited to:

1.5.2.1.1 Title 29 code of Federal Regulations Section 1910.1001 - General Industry Standard for Asbestos.

1.5.2.1.2 Title 29 Code of Federal Regulations Section 1910.134 - General Industry Standard for Respiratory Protection.

1.5.2.1.3 Title 29 Code of Federal Regulations Section 1926.1101 - Construction Industry.

1.5.2.1.4 Title 29 Code of Federal Regulations Section 1910.2 - Access to Employee Exposure and Medical Records.

1.5.2.1.5 Title 29 Code of Federal Regulations Section 1910.1200 - Hazard Communication.

1.5.2.2 Environmental Protection Agency (EPA) including but not limited to:

1.5.2.2.1 Title 40 Code of Federal Regulations Part 61 Subpart M - National Emission Standard for Asbestos.

1.5.2.2.2 Title 40 Code of Federal Regulations Appendix C to Subpart E of Part 763 - AHERA Model Accreditation Plan for public buildings.

1.5.2.3 Those sections of the Texas Asbestos Health Protection Regulations (TAHPR) which apply to non-public facilities.

1.5.2.3.1 Texas Department of Health - Texas Administrative Code, Title 25, Chapter 325 - Texas Solid Waste Regulations.

1.5.2.3.2 Texas Department of Health - Texas Civil Statutes, Article 4477-A, Section 12, General Provisions 295.31 to 295.71.

1.5.3 American National Standards Institute (ANSI)

1.5.4 American Society for Testing and Materials (ASTM)

1.5.5 Department of Transportation - HM 181

1.6 Submittals and Notices

1.6.1 The Contractor shall:

1.6.1.1 Document all training records, certifications, medical records, proof of Insurance and laboratory qualifications will be submitted for review as well as the following:

1.6.1.1.1 Submit written notification in accordance with 40 CFR Part 61.145 of Subpart M, (November 20, 1990) to the Texas Department of State Health Services, Asbestos Programs Branch. Notification fee will be the responsibility of the Facility Owner.

1.6.1.1.2 The contractor will submit proof satisfactory to the Facility Owner/Consultant that required permits, site location and arrangements for transport and disposal of asbestos containing waste materials have been made. Obtain and submit a

copy of handling procedures and a list of protective equipment utilized for asbestos disposal at the landfill, signed by the landfill owner.

1.6.1.1.3 Submit documentation satisfactory to the Facility Owner/Consultant that the Contractor's employees, including foremen, supervisors and any other company personnel or agents who may be exposed to airborne asbestos fibers or who may be responsible for any aspects of abatement activities, have received adequate training in compliance with applicable rules and regulations listed in section 1.5.2.

1.6.1.1.4 Submit documentation to the Facility Owner/Consultant from a physician that all personnel who may be required to wear a respirator are medically monitored to determine whether they are physically capable of working while wearing the required respiratory protection without suffering adverse health effects. In addition, document that personnel have received medical monitoring as is required in compliance with applicable rules and regulations listed in Section 1.5.2.
filtration capabilities for all cartridges and filters.

1.6.1.1.5 Submit to the Facility Owner/Consultant documentation of respirator fit testing for all Contractor employees and agents who must enter the work area. This fit testing shall be in accordance with qualitative procedures as detailed in the OSHA Standard 29 CFR 1910.134. Optionally, the fit testing may be quantitative in nature.

1.6.1.1.6 Project air monitoring, including personnel, baseline, ambient, and clearance monitoring, is to be performed by the on-site 3rd party Asbestos Project Manager. All samples will be PCM and will be collected and analyzed in accordance with the NIOSH 7400 Method. See Section 1.8, Required Air Samples.

1.7 Site Security

1.7.1 The work area is to be restricted to all persons except authorized personnel and authorized visitors, who are both properly trained, and protected. Authorized personnel and visitors may include the Contractor's employees, employees of subcontractors, Facility Owner's employees and representatives, State and Local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to the start of the job and posted immediately outside of the clean room of the decontamination facility.

1.7.2 Entry into the work area by unauthorized individuals shall be reported immediately to the Facility Owner by the Contractor.

1.7.3 A log book shall be maintained immediately outside of the clean room of the decontamination system. Anyone who enters the work area must record name, affiliation, time in, and time out for each entry.

1.7.4 For work performed outdoors, access to the work area will be at a single location to be determined by the Contractor. Entry to the work area will be only at this point at the perimeter of the Regulated Area. A Decontamination Area consisting of impermeable dropcloth will be located at this point, large enough to allow decontamination of waste bags and changing of disposable work clothing without spreading contamination beyond the drop cloth.

1.7.5 For interior work, access to the work area shall be through a single decontamination enclosure system to be approved by the Facility Owner/Consultant prior to abatement activities. All other means of access (doors, windows, hallways, etc.) shall be blocked or locked so as to prevent entry to or exit from the work area. The only exceptions to this rule are the waste transfer airlock, which shall be sealed except during the removal of containerized asbestos waste from the work area, and emergency exits in case of fire or accident. Emergency exits shall not be locked from the inside, however, they shall be sealed with polyethylene sheeting and tape until needed.

1.7.6 The Contractor shall have control of site security during abatement operations whenever possible, in order to protect work efforts and equipment.

1.8 Required Air Samples

1.8.1. The Project Manager will conduct air monitoring of Contractor employees as required to meet OSHA requirements for thirty (30) minute Short Term Excursion Limit (STEL) and eight (8) hour Permissible Exposure Limit (PEL). The requirements of the Federal Regulations Title 29, Part 1910 and 1928 and all revisions applicable will be administered. All samples will be tested by an AIHA certified testing laboratory using standard Phase Contrast Microscopy (PCM). OSHA required personal air sampling shall be conducted on 25% of workers per containment per day by the Contractor. All testing dates will be reviewed by the Owner before a final acceptance of the completed project. The Contractor may not take his own samples unless he is licensed by the TDH to conduct personnel air monitoring.

1.8.2. No employee shall be exposed at any time to airborne concentrations of asbestos fibers in excess of 0.1 fibers longer than 5 micrometers, per cubic centimeter of air. Project Manager shall stop work immediately and notify the Consultant. Refer to section 3.3.2.2.

1.8.3 The Consultant will provide all other air monitoring as required.

1.8.4 All work inside negative pressure enclosures will require PCM baseline and clearance sampling. 3 baseline samples will be required per containment. Numbers of clearance samples to be determined by the onsite project manager.

1.9 Authority to Stop Work

1.9.1 The Consultant (through the On-Site Project Manager) has the authority to stop the abatement work at any time he determines that conditions are not within these specifications or applicable laws. Further, any governmental authority pursuant to an applicable law shall have the right to stop the Work as permitted under applicable law.

1.9.2 The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the Consultant. Stand-by time and expenses required to resolve violations of these specifications or applicable laws shall be at the Contractor's sole expense.

PART 2 MATERIALS AND EQUIPMENT

2.1 Materials

2.1.1 General – This material is for all abatement projects.

2.1.1.1 Deliver all materials in the original packages, containers or bundles bearing the name of the manufacturer and the brand name (where applicable).

2.1.1.2 Store all materials subject to damage off the ground, away from wet or damp surfaces and under cover sufficient enough to prevent damage or contamination. Replacement materials shall be stored outside of the work area until abatement is completed.

2.1.1.3 Damaged, deteriorating, or previously used materials shall not be used and shall be removed from the work site and disposed of properly.

2.1.2 Pre-Removal

2.1.2.1 Polyethylene sheeting for walls and stationary objects shall be a minimum of 4-mil thickness. For floors and all other uses, sheeting of at least 6- mil thickness shall be used in widths selected to minimize the frequency of joints.

2.1.2.2 Polyethylene sheeting utilized for the decontamination enclosure shall be opaque white, black, or clear in color.

2.1.2.3 Warning signs and barrier tape shall be used as required by OSHA 29 CFR 1910.1001 and 40 CFR 61. Warning signs shall be in both English and Spanish.

2.1.3 Removal (General)

2.1.3.1 Full body disposable protective clothing, including head, body and foot coverings (unless using footwear as described in 2.2.1.2) consisting of material impenetrable by asbestos fibers (Tyvek or equivalent) shall be

provided to all workers and authorized visitors in sizes adequate to accommodate movement without tearing.

2.1.3.2 Surfactant (wetting agent) shall be a 50/50 mixture of polyoxyethylene ether and polyoxyethylene ester, or equivalent, mixed in a proportion of 1 fluid ounce to 5 gallons of water or as specified by manufacturer.

2.1.3.3 (An equivalent surfactant shall be understood to mean a material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM method D1331-56 "Surface and Interfacial Tension of Solutions of Surface Active Agents.") Where work area temperatures may cause freezing of the amended water solution, the addition of ethylene glycol in amounts sufficient to prevent freezing is permitted.

2.1.3.4 A sufficient supply of disposable mops, rags and sponges for work area decontamination shall be available.

2.1.3.5 Disposal bags shall be of 6-mil polyethylene, pre-printed with labels as required by EPA regulation 40 CFR 61.150 (a)(1)(iv) or OSHA requirement 29 CFR1910.1001 (g)(2)(ii).

2.1.3.6 Stick on labels shall be applied to disposal drums and asbestos bags as per EPA, OSHA, and Department of Transportation HM 181 requirements.

2.2 Equipment

2.2.1 General

2.2.1.1 A sufficient quantity of pressure differential ventilation units equipped with HEPA filtration and operated in accordance with ANSI 29.2-79 (local exhaust ventilation requirements) and EPA guidance document EPA 560/5-83-002 Guidance for Controlling Friable Asbestos-Containing Materials in Buildings Appendix F. The pressure differential ventilation system shall be utilized so as to provide one work area air change every 15 minutes.

To calculate total air flow requirement:
Total cubic ft./min = Vol. of work area (cubic ft.) 15 minutes

To calculate the number of units needed for the abatement:
Number of units needed = Total cubic ft./min / flow rate of unit (cu. ft./min)

If air supplied respirators are utilized, estimate the volume of supplied air and add to work place air volume when calculating ventilation requirements. For small enclosures and glovebags, a HEPA filtered vacuum system may be utilized to provide negative air pressure.

2.2.1.2 Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.

2.2.1.3 Personal protective clothing as required by 3.3.3.1.

2.2.2 Removal Equipment

2.2.2.1 A sufficient supply of scaffolds, ladders, lifts and safety harnesses shall be provided as required to accomplish the specified work, and shall meet all applicable safety regulations.

2.2.2.2 Sprayers with pumps capable of providing 500 pounds per square inch (PSI) at the nozzle tip at a flow rate of 2 gallons per minute for spraying amended water shall be provided.

2.2.2.3 A sufficient supply of HEPA filtered vacuum systems shall be available during cleanup.

2.2.2.4 Hand tools such as scrapers, wire cutters, brushes, utility knives, wire saws, etc. shall be provided as needed.

2.2.2.4.1 Tools such as shovels, dustpans and squeegees shall be made of rubber or plastic, and shall be round edged to prevent damage to plastic work area barriers.

2.2.2.4.2 Brushes utilized for removing loose asbestos containing material shall have nylon or fiber bristles, not metal.

2.2.2.5 Transportation equipment, as required shall be suitable for loading, temporary storage, transporting, and unloading of contaminated waste without exposure to persons or property.

2.3 Respiratory Equipment

2.3.1 For minimum legal respiratory requirements, see 29 CFR 1910.134, 29 CFR 1910.1001, and 29 CFR 1926.1101.

2.3.2 All respiratory equipment, such as respirators, filters, regulators, batteries, etc. shall be tested and approved by the National Institute of Occupational Safety and Health (NIOSH) for use in asbestos contaminated atmospheres.

2.3.3 If required at any point in the operation, Type "C" air supplied respirators shall be pressure demand type with full face pieces and HEPA filters which provide a 15 minute escape time in the event of compressor failure or malfunction. Type "C" respirators shall be worn with a belt to minimize the possibility of dislodging the face mask if a hose becomes snagged.

2.3.4 Powered air purifying respirators (PAPR) shall be equipped with HEPA filters and full face pieces.

2.3.5 Air purifying respirators (APR) shall be equipped with dual high efficiency (HEPA) filters and may be either full face piece or half face piece depending on the required level of respiratory protection.

2.3.6 All workers, foremen, and superintendents who are required to wear a respirator shall be provided with personally issued respiratory equipment.

2.3.7 A sufficient supply of appropriate, unused filters shall be available for all types of respirators used during this project.

2.3.8 Charged replacement batteries and a flow test meter shall be available in the clean room for use with powered air purifying respirators.

2.3.9 Spectacle kits and eyeglasses must be provided for employees who wear glasses and who must wear full face piece respirators. Contact lense use is forbidden during respirator use.

2.3.10 Approved wipes for sterilizing respirators shall be provided.

2.3.11 At least 2 spare units of each type of respirator shall be available at all times for use by authorized visitors.

PART 3 EXECUTION

3.1 Preparation for Work Areas

3.1.1 Negative pressure enclosure. See section 3.11, Floor Tile and Mastic Removal for specific procedures for flooring. The following procedures are for Class I removal.

3.1.1.1 Post warning signs and barricade tape meeting the specification of OSHA 29 CFR 1926.1101 and 40 CFR 61 at any location and approaches to a location where airborne concentration of asbestos may exceed ambient background levels. Signs shall be posted at a distance sufficiently far enough away from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional signs may need to be posted following construction of work place enclosure barriers. Maintain constant security against unauthorized entry past warning signs and barrier tape Signs will be in both English and Spanish.

3.1.1.2 Provide temporary power and lighting. Insure safe installation (including ground fault interrupters) of temporary power sources and equipment by compliance with all applicable electrical code requirements and OSHA requirements for temporary electrical systems.

3.1.1.3 Appropriate equipment and control measures shall be utilized to prevent contamination of building spaces outside of containments during removal of floor tile/mastic or other interior ACM. Investigate the work area and agree on pre-abatement conditions with the Facility Owner. Seal all intake and exhaust vents in the work area with tape and 6 mil polyethylene bags for staging and eventual disposal as asbestos contaminated waste.

3.1.1.4 All movable objects within the work area shall be removed from the work area and stored by the Contractor in an uncontaminated location.

3.1.1.5 Seal off all windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, skylights and any other openings between the work area and uncontaminated areas outside of the work area (including the outside of the building, tunnels and crawl spaces) with 4 mil polyethylene sheeting and tape.

3.1.1.6 Copies of the Texas Commission on Environmental Quality Waste Manifest will be supplied by the Contractor and signed by Facility Owner as required by Section 3.16.3.

3.1.1.7 The contaminated work area shall be separated from uncontaminated, occupied areas of the building by the construction of air tight barriers.

3.1.1.8 Frames shall be constructed of wood or metal framing to support barriers in all openings larger than 32 square feet (4' x 8'). A sheathing material (e.g., plywood, drywall) of at least 3/8" thickness shall be applied to the work side of the barrier.

3.1.2 Poly floors and walls. For floor tile/mastic removal, only 4 foot splash guards on walls and doors are required. No floor poly is required.

3.1.2.1 Floor and wall sheeting shall be installed in the following order: 1st floor, 1st wall, 2nd floor, 2nd wall, etc. This staggering minimizes leakage at the floor/wall seams.

3.1.2.2 Cover floors in the work area with polyethylene sheeting.

3.1.2.3 Floors shall be covered with a minimum of two layers of 6 mil sheeting.

3.1.2.4 Plastic polyethylene sheeting and other covering and sheeting shall be tight and leak proof. Plastic shall be sized to minimize seams. If the floor area necessitates seams, those on successive layers of sheeting shall be staggered to reduce the potential for water to penetrate to the flooring material. A distance of at least 6 feet between seams is sufficient. Do not locate any seams at wall/floor joints.

3.1.2.5 Floor sheeting shall extend at least 12 inches up the side walls of the work area.

3.1.2.6 Sheeting shall be installed in a fashion so as to prevent slippage between successive layers of material. (Vinyl sheeting may be used for improved traction of floors.)

3.1.2.7 Cover walls in the work area with polyethylene sheeting. They can be decontaminated using HEPA vacuums and wet cleaning techniques. Walls with mortar joints (e.g., tile) are considered porous. In addition, openings through these walls to uncontaminated areas of the building must be sealed as described in Section 3.1.1.5.

3.1.2.8 Walls shall be covered with a minimum of two layers of 4-mil polyethylene sheeting.

3.1.2.9 Plastic shall be sized to minimize seams. Seams shall be staggered and separated by a distance of at least 6 feet.

3.1.2.10 Wall sheeting shall overlap floor sheeting by at least 12 inches beyond the wall/floor joint to provide a better seal against water damage and for a better pressure differential.

3.1.2.11 Wall sheeting shall be secured adequately to prevent it from falling away from the walls. This may require additional support, or attachment because pressure differential ventilation systems will pull the sheeting away from the walls.

3.1.2.12 The Contractor shall install a clear plastic viewing port to allow visibility into the work area.

3.1.3 Decontamination enclosure systems for interior work.

3.1.3.1 Decontamination enclosure systems shall be provided at all locations where workers will enter or exit the work area. One system at a single location for each contained work area is preferred. These systems may consist of existing rooms outside of the work area, if the layout is appropriate, that can be enclosed in plastic sheeting and are accessible from the work area. When this situation does exist, enclosure systems may be constructed out of metal, wood, or plastic as appropriate.

3.1.3.2 Decontamination enclosure systems constructed at the work site shall utilize 6-mil polyethylene sheeting or other acceptable materials for privacy. Use of portable, prefabricated units or portable decontamination trailers are acceptable for work performed outdoors.

3.1.3.3 The decontamination enclosure system shall consist of at least an equipment room adjacent to the work area, a shower room separating the equipment room and the clean room, and a clean room with access to outside of the work

area. Each room shall be separated from the other and from the work area by airlocks.

3.1.3.4 Entry to and exit from all decontamination enclosure system chambers shall be through curtained doorways (airlocks) consisting of two sheets of overlapping polyethylene sheeting. Both sheets shall be secured at the top. Other doorway designs, providing equivalent protection, and acceptable to the Consultant/Project Manager, may be utilized.

3.1.3.5 Pathways into (from clean to contaminated) and out (from contaminated to clean) of the work area shall be clearly designated.

3.1.3.6 Clean rooms shall be sized to adequately accommodate the work crew. Benches shall be provided as well as hooks for hanging up street clothes. (Lockers may be provided for valuables. However, workers may be requested to secure their valuables elsewhere.) Shelves for storing respirators shall also be provided in this area. Clean work clothes (if required under disposables), clean disposable clothing, replacement filters for respirators, towels and other necessary items shall be provided in adequate supply at the clean room. A location for posting shall also be provided in this area. Whenever possible, a lockable door shall be used to permit access into the clean room from outside the work area. Lighting, heat and electricity shall be provided as necessary for comfort. This space shall not be used for storage of tools, equipment, or materials (except as specifically designated), or as office space.

3.1.3.7 The shower room shall contain one or more showers as necessary to adequately accommodate workers. Each shower head shall be supplied with hot and cold water adjustable at the tap. The shower enclosure shall be constructed to ensure against leakage of any kind. An adequate supply of soap, shampoo, nail brushes, and towels shall be supplied by the Contractor and shall be available at all times. The shower room shall be equipped with a freely draining floor in the shower pan, and with non- porous drainboards to keep workers above any standing water. All contaminated water from shower areas and abatement area shall be disposed of in compliance with all applicable laws. All waste water must be filtered prior to release into a sanitary sewer system. The filter shall be, at a minimum, a two-stage cascaded unit. The primary filter shall stop particles larger than 20 microns. The secondary filter shall stop particles larger than 5 microns. The entire filter unit shall be placed in a water tight pan capable of containing any water which may drain or leak from it. The filters shall be changed at least daily.

3.1.3.8 The equipment room shall be used for storage of equipment and tools at the end of a shift after they have been decontaminated using a HEPA filtered vacuum and/or wet cleaning technique as appropriate. Replacement filters (in sealed containers until used) for HEPA vacuums and pressure differential ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement may also be stored here as needed. A walk-off pan (a small children's swimming pool, or equivalent) filled with water, shall be located in the work area just outside the

equipment room for workers to clean off foot coverings after leaving the work area and prevent excessive contamination of the decontamination enclosure system. A drum lined with a labeled 6-mil polyethylene bag for collection of disposable clothing shall be located in this room. Contaminated footwear (e.g. rubber boots, other reusable footwear) shall be stored in this area for reuse the following work day.

3.1.4 Waste transfer airlock (optional).

3.1.4.1 The waste transfer airlock shall be constructed at some location away from the decontamination enclosure system if possible. Wherever possible, this shall be located where there is direct access from the work area to the outside of the building.

3.1.4.2 This airlock system shall consist of an inner airlock adjacent to the work area, a container staging area between the inner and outer airlocks, and an outer airlock with access to outside the work area.

3.1.4.3 The waste transfer airlock shall be constructed in similar fashion to the decontamination enclosure system using similar materials, airlocks, and curtain doorway designs.

3.1.4.4 The waste transfer airlock system shall not be used to enter or exit the work site.

3.1.5 Establishing emergency exits

3.1.5.1 Emergency exits shall be established and clearly marked with duct tape arrows or other effective indicators to permit easy location from anywhere within the work area. All emergency exit indicators shall be either illuminated with, or fabricated from fluorescent materials which can be seen in a smoky environment.

3.1.5.2 Emergency exits shall be secured to prevent access from uncontaminated areas and still permit emergency exiting. These exits shall be properly sealed with polyethylene sheeting which can be cut to permit egress if needed. The emergency exit shall be provided with means of rapidly cutting through the containment.

3.1.5.3 All emergency exits shall be equipped outside the containment area with two full sets of protective clothing and respirators at all times.

3.1.5.4 Emergency exits shall be clearly identified and maintained throughout the abatement process. Debris, tools, materials, and other items shall not block emergency exits at any time during the abatement process.

3.1.6 Install and initiate operation of pressure differential ventilation equipment as needed to provide one air change in the work area every 15 minutes (see Section 2.2.1.1).

3.1.6.1 In addition, a pressure differential of at least -0.02 inches water column will be maintained by the pressure differential ventilation equipment.

3.1.6.2 Provide a pressure differential measuring device such as a chart recorder or water manometer or equivalent for use to verify the pressure differential. This shall be documented hourly per 8-hour shift by the Project Supervisor.

3.1.6.3 Openings made in the enclosure system to accommodate these units shall be made airtight with tape and/or caulking as needed. If more than one unit is installed, they should be turned on one at a time, checking the integrity of the wall barriers for secure attachment and the need for additional reinforcement. Insure that adequate power supply is available to satisfy the requirements of the ventilating units.

3.1.6.4 Pressure differential ventilation units shall be exhausted to the outside of the building. They shall not be exhausted into occupied areas of the building. Twelve inch extension ducting shall be used to reach from the work area to the outside of the building when required. Careful installation, air monitoring and daily inspections shall be done to insure that fiber release into uncontaminated building areas does not occur.

3.1.6.5 Once constructed and reinforced as necessary, with pressure differential ventilation units in operation as required, test enclosure for leakage utilizing smoke tubes. Repair or reconstruct as needed.

3.1.7 Maintenance of work place barriers and decontamination enclosure systems.

3.1.7.1 Following completion of the construction of all polyethylene barriers and decontamination system enclosures, and following installation and initiation of pressure differential ventilation units, but prior to abatement activities, the Contractor shall inspect the work area containment to insure that barriers will remain intact and secured to walls and fixtures.

3.1.7.2 All polyethylene barriers inside the work place, in the decontamination enclosure system, in the waste transfer airlock and at partitions constructed to isolate the work area shall be inspected at least twice daily, prior to the start of each day's abatement activities and following the completion of the day's abatement activities. Document inspections and observations in the daily project log.

3.1.7.3 Damage and defects in the enclosure system are to be repaired immediately upon discovery.

3.1.7.4 Use smoke tubes to test the effectiveness of the barrier system.

3.1.7.5 At any time during the abatement activities, after barriers have been erected, if visible material is observed outside of the work area or if damage occurs to barriers, work shall stop immediately, repairs shall be made to barriers, and

debris/residue shall be cleaned up using appropriate HEPA vacuuming and wet cleaning procedures.

3.1.7.6 If air samples collected outside of the work area during abatement activities indicate airborne fiber concentrations greater than 0.01 fibers per cc, or greater than pre-abatement background levels outside of the work area, whichever is higher, work shall stop immediately for inspection and repair of barriers. Surfaces outside of the work area shall be cleaned using HEPA vacuums or wet cleaning techniques as necessary.

3.1.8 Removing fixtures from area

3.1.8.1 Remove, clean and enclose in polyethylene the ceiling mounted objects such as lights and other items that may interfere with the abatement process, and that were not previously cleaned and sealed off. Utilize localized spraying of amended water and/or HEPA vacuums to reduce fiber dispersal during the removal of these fixtures.

3.2 Commencement of Asbestos Abatement

3.2.1 Commencement of asbestos abatement shall not occur until:

3.2.1.1 The enclosure systems have been constructed and tested.

3.2.1.2 Pressure differential ventilation systems are functioning properly.

3.2.1.3 All pre-abatement submissions, notifications, postings, and permits have been provided and are satisfactory to the Facility Owner/Consultant (see Section 1.6).

3.2.1.4 All equipment for abatement, clean up and disposal are on hand.

3.2.1.5 All worker training and certification is completed, and available on site.

3.2.1.6 The Contractor receives written permission from the Facility Owner/Consultant to commence abatement.

3.3 Personnel Protection Requirements

3.3.1 Training

3.3.1.1 Prior to commencement of abatement activities, all personnel who will be required to enter the work area or handle containerized asbestos containing materials must have received adequate training in accordance with Section 4.1 of this document.

3.3.1.2 Special on-site training on equipment and procedures unique to this job site shall be performed as required.

3.3.1.3 Training in emergency response and evacuation procedures shall be provided.

3.3.2 Respiratory Protection (For descriptions of respirators, see Section 2.3, Respiratory Equipment.)

3.3.2.1 Asbestos abatement activity for Class I work shall begin in Type "C" respiratory protection or PAPR unless a negative exposure assessment has been established.

3.3.2.2 Any changes (downgrade or upgrade) in respiratory protection will be based upon an 8 hour time weighted average (TWA) of fiber concentrations in the work area. 8 hour TWA's will be calculated at least daily by the Project Manager, for personnel samples in the work area. The highest calculated 8 hour TWA shall be used in the following schedule to determine the type of respirator to be worn:

8 hour TWA	**Respirator type**	**Equivalent Work**
> 1.0 fibers/cc	Type "C"	Dry removal of insulation in containment
0.1 - 1.0 fibers/cc	PAPR	Removal of insulation in containment (Class I Work)
< 0.1 f/cc	Half face APR	Removal of floor tile/mastic Glove bag removal of insulation Operation of heavy equipment during demolition of ACM containing structures (all Class II Work)

3.3.2.3 All respiratory protection shall be provided to workers in accordance with the submitted written respiratory protection program, which includes all items in OSHA 29 CFR 1910.134 (b)(1-11). This program shall be posted immediately outside of the clean room of the decontamination enclosure system.

3.3.2.4 Workers shall be provided with personally issued, individually identified (marked with waterproof designations) respirators.

3.3.2.5 Fit Testing

3.3.2.5.1 Workers must perform positive and negative air pressure fit checks each time a respirator is put on, whenever the respirator design so permits. Powered air purifying respirators shall be tested for adequate flow as specified by the manufacturer.

3.3.2.5.2 Workers shall be given a qualitative fit test in accordance with procedures detailed in the OSHA 29 CFR 1910.134 for all respirators to be used on this abatement project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.

3.3.2.5.3 Documentation of adequate respirator fit must be provided to the Project Manager.

3.3.2.6 No one with facial hair that would interfere with the face to respirator seal or respirator valve function shall be permitted to don a respirator and enter the work area.

3.3.2.7 Additional respirators (minimum of 2) and training on their donning and use must be available at the work site for authorized visitors who may be required to enter the work area.

3.3.3 Protective Clothing

3.3.3.1 Full body Tyvek type disposable protective clothing shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors.

3.3.3.2 Launderable clothing, if used, shall be provided in sufficient quantities and adequate sizes for all workers and authorized visitors.

3.3.3.3 Hard hats, protective eye wear, gloves, rubber boots, and/or other footwear shall be provided as required for workers and authorized visitors. Safety shoes may be required for some activities as determined by the Owner and/or Contractor.

3.4 Work Place Entry and Exit Procedures

3.4.1 Personnel entry procedures

3.4.1.1 All workers and authorized personnel shall enter the work area through the decontamination unit or area. Areas without containment – the decontamination unit will be a sheet of polyethylene at the edge of the Regulated Area.

3.4.1.2 All personnel who enter the work area must sign the entry log, located immediately outside of the clean room or decontamination area, upon entry and exit.

3.4.1.3 All personnel, before entering the work area, shall read and be familiar with all posted regulations, personal protection requirements (including work place entry and exit procedures) and emergency procedures. A sign-off sheet shall be used to acknowledge that these have been reviewed and understood by all personnel prior to entry.

3.4.1.4 All personnel shall proceed first to the clean room, remove all street clothing, don adequate respiratory protection (as deemed adequate for the job conditions) and disposable Tyvek type full body clothing. Hard hats, eye protection and gloves shall also be utilized if required. Clean protective

clothing, and clean respirators with new HEPA filters shall be provided and utilized by each person for each separate entry into the work area.

3.4.1.5 Personnel wearing designated personal protective equipment shall proceed from the clean room through the shower room and equipment room to the main work area.

3.4.2 Personnel exit procedures

3.4.2.1 Before leaving the work area all personnel shall remove gross contamination from the outside of respirators and protective clothing by HEPA vacuuming, brushing, and/or wet wiping procedures.

3.4.2.2 Personnel shall proceed to the equipment room where they remove all protective equipment except respirators. Deposit disposable (and launderable) clothing into appropriately labeled containers for disposal (or laundering).

3.4.2.3 Reusable, contaminated footwear shall be stored in the equipment room when not in use in the work area. Upon completion of abatement, the contaminated footwear shall be disposed of as asbestos contaminated waste. (Rubber boots may be decontaminated at the completion of the abatement project.)

3.4.2.4 Still wearing respirators, personnel shall proceed to the shower area, clean the outside of the respirators and their exposed face area under running water prior to removal of the respirator. Personnel shall then remove their respirator and then shower and shampoo to remove residual asbestos contamination from their bodies. Various types of respirators will require slight modification of these procedures. An airline respirator with HEPA filtered disconnect protection may be disconnected in the equipment room and worn into the shower. A powered air-purifying respirator face piece will have to be disconnected from the filter/power pack assembly which is not waterproof, upon entering the shower. A dual cartridge respirator may be worn into the shower. Cartridges must be replaced for each new entry into the work area.

3.4.2.5 Personnel exiting the work area shall shower for a minimum of two minutes. Workers should take extra care in cleaning under fingernails, and should use the provided nylon fingernail brush.

3.4.2.6 After showering and drying off, proceed to the clean room and don street clothes.

3.4.2.7 Personnel entry and exit procedures shall be posted immediately outside of the clean room and inside the work area immediately outside of the equipment room.

3.4.3 Waste container pass out procedures

3.4.3.1 Asbestos contaminated waste that has been containerized shall be transported out of the work area through the waste transfer airlock, or through the worker decontamination enclosure if a separate airlock has not been constructed.

3.4.3.2 Waste pass out procedures shall utilize two teams of workers, an "inside" and an "outside" team.

3.4.3.3 The inside team wearing appropriate protective clothing and respirators for inside the work area shall clean the outside, including bottoms, of properly labeled containers (bags, drums, or wrapped components) using HEPA vacuums and wet/wiping techniques and transport them into the container staging area of the waste transfer airlock, or the shower room of the worker decontamination enclosure. No worker from the inside team shall exit the work area any further than this airlock.

3.4.3.4 The outside team shall wear protective clothing and appropriately assigned respirators. (Note: Outside team workers may wear street clothes underneath their protective clothing.) The outside team shall enter the waste transfer airlock or decontamination enclosure from outside of the work area, and shall enclose the properly labeled containers (bags, drums, or wrapped components) in clean, labeled, 6 mil polyethylene bags and remove them from the container staging area or the shower room to the outside. No worker from the outside team shall enter the work area any further than this airlock.

3.4.3.5 The exit from this airlock shall be secured to prevent unauthorized entry.

3.4.3.6 For work not requiring containment, the decontamination area will be a sheet of plastic at the edge of the work area of sufficient size to accommodate removal of protective coveralls and cleaning of equipment. Entry and exit from the Regulated Area will only be allowed at this location.

3.5 Removal Procedures, General (Personal Protection as required by Section 3.3 shall be followed)

3.5.1 Clean and isolate the area in accordance with Section 3.2.

3.5.2 Wet all asbestos containing material with an amended water solution using equipment capable of providing a fine spray mist, in order to reduce airborne fiber concentrations when the material is disturbed. Saturate the material to the substrate. However, do not allow excessive water to accumulate in the work area. Keep all removed material wet enough to prevent fiber release until it can be containerized for disposal. Maintain a high humidity in the work area by misting or spraying to assist in fiber settling and reduce airborne concentrations. Wetting procedures are not equally effective on all types of asbestos containing materials, but shall none the less be used in all possible cases. (See Section 3.5.3., Special circumstances.)

3.5.3 Special circumstances (e.g., live electrical equipment, high amosite content of material, materials previously coated with an encapsulant or paint) may prohibit the adequate use of wet methods to reduce fiber concentrations. For these situations, a dry removal may be required. The Contractor will have to acquire special permits, different from those mentioned herein, and inform the NESHAP enforcement agency.

3.5.4 Saturated asbestos containing material shall be removed in manageable sections. Removed material should be containerized before moving to a new location for continuance of work. Surrounding areas shall be periodically sprayed and maintained in a wet condition until visible material is cleaned up.

3.5.5 Previous structural investigation conducted at the site indicated that several of the buildings at the facility that contain ACM are structurally unsound, including the East and West Cell House, Facility 2 east of the blue curtain, the Old Casting Building, and the Reagent Storage Building. A current structural assessment of ACM-containing buildings scheduled for demolition was conducted during March 2011 by Mr. Gary W. Jaster, P.E., of Jaster-Quintanilla & Associates, Inc. The Structural Assessment report is provided as a separate document and a copy will be maintained at the project office trailer.

The Project Team will conduct ACM removal in these structurally unsound areas at the time of building and structure demolition activities as needed to safely access the ACM for removal.

(a) Materials removed from building structures or components shall not be dropped or thrown to the floor or ground. Material should be removed as intact sections whenever possible and carefully lowered to the floor. If this cannot be done for materials greater than 50 feet above the floor, transport the material to the ground via leak-tight chutes or containers at elevated levels (e.g. on scaffolds) and lowered to ground by mechanical means, if it has been removed or stripped more than 50 feet above ground level and was not removed as units or in sections. If the material becomes RACM, it shall be stripped and contained in leak-tight wrapping.

3.5.6 Containers (6 mil polyethylene bags or drums) shall be sealed when full. Waste material shall be double bagged. Bags shall not be overfilled. Bags should be securely sealed to prevent accidental opening and leakage by tying tops of bags in an overhand knot or by taping in goose neck fashion. Do not seal bags with wire or cord. Bags may be placed in drums for staging and transportation to the landfill. Bags shall be decontaminated on exterior surfaces by wet cleaning and HEPA vacuuming before being placed in clean drums and sealed with locking ring tops.

3.5.7 Large components removed intact may be wrapped in 2 layers of 6 mil polyethylene sheeting secured with tape for disposal staging.

3.5.8 Asbestos containing waste with sharp edged components (e.g., nails, screws, metal lathe, tin sheeting), will tear the polyethylene bags and sheeting, and therefore shall be placed into drums for disposal staging.

3.5.9 Clean up shall proceed in accordance with Section 3.1.3. The clean up procedures in the Plan are referenced in Section 3.1.7. After completion of all stripping work, surfaces from which asbestos containing materials have been removed shall be wet brushed and sponged, or cleaned by some equivalent method to remove all visible residue. All areas which, after removal, leave exposed ends of asbestos containing pipe insulation, shall be sealed with a bridging encapsulant which has been approved by the Facility Owner/Consultant.

3.5.10 Clean up shall proceed in accordance with Section 3.13.

3.6 Glovebag Techniques

3.6.1 Preparation.

3.6.1.1 The glovebag technique shall be used where appropriate. For any removal of ACM requiring more than one glovebag, follow specification 3.1.

3.6.1.2 The work area shall be restricted to unauthorized personnel by posting warning signs and barrier tape on the perimeter.

3.6.1.3 Glovebags shall be 6 mil minimum and seamless at the bottom.

3.6.1.4 A minimum of two persons are required to perform glovebag removal. A third person may be required to assist with supplies. Each of these team members must have received training on the use and limitations of glovebag removal projects.

3.6.1.5 Employees shall be trained in emergency procedures should the glovebag rupture. This usually includes wet cleaning and/or HEPA vacuuming procedures and a shower available at a remote location.

3.6.1.6 Never perform glovebag removal on hot pipes (over 150 degree Fahrenheit). This may cause the bag or gloves to melt over the workers' hands and arms.

3.6.1.7 Before any work begins, all necessary materials and supplies shall be brought into the work area.

3.6.1.8 Place a sheet of 6 mil plastic beneath the entire length of pipe to be abated and extending approximately 2 feet to either side of the pipe.

3.6.1.9 Check the pipe where the work will be performed. For pipe with damaged insulation cover, wrap the entire length of the pipe in polyethylene plastic and "candystripe" it with duct tape. Pipe will then be glovebagged in sections to

accommodate the waste dumpster. A common error when doing glovebag work is forgetting that loose pipe lagging several feet or even several yards away from the glovebag work may be jarred loose by the activity. This is one of the common causes of high airborne fiber concentrations during glovebag work.

3.6.1.10 Glovebags may only be used once and may not be moved to a new location on the pipe.

3.6.2 Removal

3.6.2.1 Wrap duct tape around the pipe where the glovebag is to be attached. This will provide a firm seal for the glovebag, and will also help prevent additional fiber release when the glovebag is removed.

3.6.2.2 Slit the top of the glovebag open (if necessary) and cut down the sides to accommodate the size of the pipe (about two inches longer than the pipe diameter). One brand has a zipper top and straps at each end facilitating installation of the bag on the pipe.

3.6.2.3 Place the necessary tools into the pouch located inside the glovebag. This will usually include the bone saw, utility knife, rags, scrub brush, wire cutters, tin snips and solid encapsulant.

3.6.2.4 Place one strip of duct tape along the edge of the open top slit of the glovebag for reinforcement.

3.6.2.5 Place the glovebag around the section of pipe to be worked on and seal the top ends together. Next, fold the sealed top flap back and tape it down with a strip of duct tape. This should provide an adequate seal along the top. Next, duct tape the ends of the glovebag to the pipe itself, previously covered with plastic or duct tape.

3.6.2.6 Using the smoke tube and aspirator bulb, place the tube into the water sleeve (two inch opening to glovebag). By squeezing the bulb, fill the bag with the smoke. Remove the smoke tube and twist the water sleeve closed. While holding the water sleeve tightly, gently squeeze the glovebag and look for smoke leaking out, especially at the top and ends of the glovebag. If leaks are found they should be taped closed using duct tape and the bag should be smoke tested again, until no leaks are detected.

3.6.2.7 Insert the wand from the water sprayer through the water sleeve. Using duct tape, tape the water sleeve tightly around the wand to prevent air leakage.

3.6.2.8 One person places his hands into the long-sleeved gloves while the second person directs the water spray at the work.

3.6.2.9 If the section of pipe is covered with an aluminum jacket, this is removed first using the wire cutters to cut any bands and the tin snips to remove the

aluminum. It is important to fold the sharp edges in to prevent cutting the bag when it is placed in the bottom. Use caution to prevent cuts. Some insulation may have wire to be clipped as well.

3.6.2.10 With the insulation exposed, cut the insulation at each end of the section to be removed inside the glovebag. Throughout this process, water is sprayed on the cutting area to keep dust to a minimum.

3.6.2.11 Once the ends are cut, the section of insulation should be slit from end to end. The cut should be made along the bottom of the pipe and water continuously applied. Care should be taken when using the knife not to puncture the bag.

3.6.2.12 Spray all tools with water inside the bag and place back into pouch.

3.6.2.13 The insulation can now be lifted off the pipe and gently placed in the bottom of the bag.

3.6.2.14 Using the scrub brush, rags and water, scrub and wipe down the exposed pipe inside the glovebag.

3.6.2.15 Thoroughly encapsulate all abated surfaces and exposed ends of insulation with an approved encapsulant.

3.6.2.16 Remove the water wand from the water sleeve and insert the small nozzle from a HEPA-filtered vacuum into the water sleeve. Turn on the vacuum, but only briefly to collapse the bag.

3.6.2.17 Remove the vacuum nozzle and twist the water sleeve closed and seal with duct tape.

3.6.2.18 From outside the bag, pull the tool pouch away from the bag and twist it to separate it from the bag. Or, invert one of the arms so it is outside the bag and place the tools in the sleeve and twist it. Place duct tape over the twisted portion and then cut the tool bag from the glovebag, cutting through the twisted, taped section. In this manner, the contaminated tools may be placed directly into the next glovebag without cleaning. Alternately, the tool pouch with the tools can be placed in a bucket of water, opened underwater, and the tools cleaned and dried without releasing asbestos into the air. Note: Rags and the scrub brush cannot be cleaned in this manner and should be discarded with the asbestos waste.

3.6.2.19 With the removed insulation in the bottom of the bag, twist the bag several times and tape it to keep the material in the bottom during removal of the glovebag from the pipe.

3.6.2.20 Slip a 6 mil disposal bag over the glovebag (still attached to the pipe). Remove the tape and open the top of the glovebag and fold it down into the disposal bag.

3.6.2.21 Twist the top of the bag closed, gooseneck it, and seal with duct tape.

3.6.2.22 When all glovebag removal in this area is complete, remove the disposable suits and dispose of them as ACM waste.

3.6.2.23 Using a clean damp rag, wipe the exterior of the respirator and leave the work area. Remove the respirator.

3.6.2.24 Air sampling will be conducted before, during, and after glovebag removal projects to determine if undetected leakage occurred. The number of samples to be taken is left to the discretion of the Industrial Hygienist. Once the area has met the criteria for re-entry by unprotected personnel, the barriers may be removed and re-installation completed.

3.7 Stripping of Paint/Surfacing on the Stack

3.7.1 Preparation

3.7.2 All procedures shall be performed in accordance with these specifications. Material is to be treated as Category II non-friable unless methods that sand, grind, saw cut, or abrade are used.

3.7.3 Prior to handling of Paint/Surfacing, the onsite NESHAP trained person will determine if the material is intact. A written statement to that effect will be signed, along with an assurance that the material will not be made non intact during removal or demolition.Scaffold or other similar method is to be used to access the material.

If material is removed intact and not dropped to the ground, a wind screen and plastic under the removal area may be used. Plastic should be securely attached to withstand winds. No gaps in flooring are allowed which would allow material to fall through.

3.7.4 If the material is damaged, friable, or becomes friable during removal, or is to be pulverized or reduced to powder, work must be performed in negative pressure containment, utilizing negative pressure differential units equipped with HEPA filtration.

3.7.5 Spray the asbestos-containing material with amended water, using low pressure spray equipment capable of providing a "mist" application to reduce the release of fibers. Saturate the material sufficiently to wet it to the substrate without causing excess dripping. Spray the asbestos- containing material prior to stripping and repeatedly during work process to maintain wet condition and to minimize asbestos fiber dispersion.

3.7.6 All the Paint/Surfacing in the areas specified shall be stripped to the concrete, using appropriate tools and methods such as sharp edged scrapers. Power tools equipped with HEPA attachment may be used where appropriate, as long as no visible dust is released. In all cases, asbestos-contaminated materials shall be handled carefully and deliberately. Agitation of the material is strictly prohibited. The use of high RPM power equipment is prohibited. Pressure washers are acceptable if used in negative pressure containment and water is collected for disposal. No water may leak from containment.

3.7.7 After completion of all stripping and abatement work, all surfaces from which asbestos has been removed shall be wire or nylon brushed, wet sponged, and/or cleaned by an equivalent method to remove all visible material. During this work, the surfaces being cleaned shall be kept wet with amended water.

3.7.8 Spray the Asbestos Containing Materials with amended water, using low pressure spray equipment capable of providing a "Mist" application to reduce the release of fibers. Material must be kept wet and not allowed to dry. Excessive water should not be used, as it will leak from containment and contaminate areas under the work area.

3.7.9 If material is to be removed by any other method, Class I enclosure systems shall be used.

3.7.10 Material removed from the stack must be containerized while wet. Material is to be carefully lowered to the ground either by hand or utilizing a dust tight chute. Containers of material must remain intact while being lowered to the ground.

3.7.11 Weather should be monitored during all work activities. Approaching weather systems containing adverse conditions such as lightning or potential high winds should be monitored, and work cease until favorable conditions return.

3.8 Stripping of Pipe, Boiler and Related Insulation

3.8.1 Follow procedures as outlined in Section 3.1.

3.8.2 All procedures shall be performed in accordance with these specifications.

3.8.3 Stripping of long runs of pipe shall be done in full enclosure and containment or wrapped in plastic sheet and candy wrapped, glovebagged into sections, and cut at the cleaned sections. Pipe sections are to be carefully lowered to the ground.

3.8.4 For Pipe Insulation in inaccessible areas (such as high up in buildings where access presents a special hazard or structurally unsound structures), buildings and pipe racks are to be demolished with the material in place. Demolition of buildings with in-place ACM is to be accomplished inside Regulated Areas, using adequate water under sufficient pressure to prevent dispersal of dust.

3.8.5 Abatement of boiler or other vessel insulation will be performed in full containment with negative pressure. Containment on interior boilers and vessels will consist of at least 2 layers of 6 mil minimum polyethylene sheeting on floors and 2 layers of 4 mil polyethylene sheeting on walls. For exterior boilers and vessels, polyethylene sheeting will be at least 2 layers of 10 mil nylon reinforced plastic applied over wood or scaffold framing, with two layers of 10 mil nylon reinforced plastic on the ground. Negative pressure differential units with HEPA filtration will be in continuous operation until clearance sampling is performed and the area passes visual inspection by the onsite Project Manager.

3.9 Abatement of Crawl Spaces

3.9.1 Preparation

3.9.1.1 All procedures shall be performed in accordance with these specifications.

3.9.1.2 Asbestos shall be removed from pipes and elbows in crawl spaces using full enclosure and containment techniques. Glovebag methods must be approved in writing by the Facility Owner/Consultant before work begins.

3.9.1.3 Full containment shall include the use of pressure differential air units. If the units are placed outside a vent, they must be connected to the vent by a duct and enclosed in a shelter. This is to permit removal of the filter in an enclosed space.

3.9.1.4 Contractor personnel shall wear double suits due to excessive tearing of coverings.

3.9.2 Removal

3.9.2.1 In crawl spaces or pipe basements with dirt floor, first remove all large or visible pieces of suspected asbestos contaminated material. The floor under all work areas shall next be covered by two sheets of 6 mil plastic and a hard walking surface (i.e. chipboard), or two sheets of 12 mil plastic.

3.9.2.2 After all asbestos material is removed from pipes and/or elbows, the Contractor shall remove all floor coverings and mist the soil prior to removal to reduce the dust level.

3.9.2.3 The Contractor shall excavate to a depth of six inches and remove, as asbestos waste, the soil:

3.9.2.3.1 Under abated pipes and three feet on either side of these pipes; and,

3.9.2.3.2 To a distance of at least three feet from any visible contamination on the floor.

3.9.2.4 The Contractor may also be required by the Consultant to remove soil to greater depths if additional asbestos debris is detected.

3.9.2.5 Soil removal may consist of vacuum truck removal as opposed to shoveling and bagging.

3.9.2.5.1 HEPA filtration system must be used on the vacuum truck.

3.9.2.5.2 Even with a vacuum truck, crawl spaces must be under continuous pressure differential with HEPA exhaust units.

3.9.2.6 The excavated area shall be sprayed to a depth of two inches with an approved encapsulant.

3.10 Abatement of Tunnels

3.10.1 Asbestos shall be removed from pipes and electrical conduit in tunnel areas using full enclosures and containment techniques and glovebag technique (refer to Section 3.6). Work will be performed on hard surfaces covered by 6 mil plastic sheet. Negative pressure differential units with HEPA filtration are to be used. At the conclusion the floor will be misted to reduce airborn dust. The Contractor is responsible for submitting a safety plan prior to working in tunnel areas which are electrically active. This plan is to include, but not limited to, providing a written procedure as well as type of equipment to be used in the abatement of electrically active conduit.

3.10.2 A sufficient number of negative pressure units will be used to provide –0.02" of water pressure differential inside containment compared to outside air, and 4 air changes each hour.

3.11 Floor Tile/Mastic, Vinyl Sheet Flooring Removal

3.11.1 All procedures shall be performed in accordance with these specifications.

3.11.2 All floor tile and vinyl sheet flooring removal work shall begin in Half face air purifying respirators and full body Tyvek type clothing.

3.11.3 Walls shall be covered to a height of 4 feet with a minimum of one layer of 4 mil polyethylene.

3.11.4 Negative pressure will be provided and maintained with sufficient HEPA equipped filtration units to maintain –0.02" of water pressure differential and turn over air in the containment every 15 minutes.

3.11.5 Use of sawing, drilling, sanding, or any other dust- producing technique to remove the tile is prohibited. Spud bars and electrical chippers are acceptable.

3.11.6 The tiles must be kept wet during removal, by the spraying of amended water.

3.11.7 Where free-standing walls are left in place, all asbestos containing floor tile and mastic must be removed from below the wall.

3.11.8 After the tile is removed, the mastic may require additional applications of solvent. Solvents with a flash point of 140 deg. farenheit are not allowed.

3.11.9 The mastic shall be scraped, vacuumed and wiped until no residue is visible. Mechanical buffers with abrasive pads are allowed. Concrete is to be recycled, so mastic may not be left in place.

3.12 Requirements for the Removal of Galbestos Coated Wall and Roof panels
Note: Galbestos materials were identified as "Galvestos" coating on buildings (metal walls, roofs, I-beams, concrete pillars) and mechanical components in the inspection report.

3.12.1 Prior to handling of Galbestos, the onsite NESHAP trained person will determine if the material is intact. A written statement to that effect will be signed, along with an assurance that the material will not be made non intact during removal or demolition.

3.12.2 All ACM will be handled by AHERA accredited asbestos abatement personnel.

3.12.3 A security barrier consisting of asbestos barricade tape and signs shall be placed around each work area by the contractor to prevent access by unauthorized personnel. Signs will be placed at a distance sufficiently far away from the work area to permit an employee to read the sign.

3.12.4 Intact Galbestos material will be carefully lowered from the strutures - no dropping or throwing.

3.12.5 This material, if removed intact or left in place using normal demolition methods, is Category II non-friable and not RACM as defined in 40 CFR 61 subpart M. It may be disposed of as non-regulated waste. Material is to be kept wet during removal. Nail or bolt heads should be removed by use of sharp edged tools such as chisels.

3.12.6 If left in place during demolition, it may not be sanded, ground, or abraded. Use of track shears or other heavy demolition equipment is acceptable.

3.12.7 Material is to be kept wet during demolition.

3.12.8 The disposal dumpster/trailer will be marked with asbestos warning signs and asbestos barricade tape.

3.12.9 When the dumpster/trailer is full it will be hauled away to an approved landfill for proper disposal. The manifest will be signed by a representative of the Facility Owner.

3.12.10 Galbestos siding panels that are damaged or becomed damaged during removal – Plastic sheeting (6 mil thickness) should be placed on the ground under the work area. Panels should be carefully lowered to the ground, wetted and wrapped in two layers of 6 mil polyethylene sheeting, then carefully placed in a dumpster lined with two sheets of 6 mil polyethylene sheeting.

3.13 Requirements for the Removal of Tar and Gravel Roofing Material

3.13.1 Intact Tar and Gravel roofing materials may be left in place during demolition. Material is to be kept wet during demolition to prevent the release of visible dust.

3.13.2 The determination of whether the roofing material is intact will be made by the Contractor's onsite Asbestos Supervisor.

3.13.3 In the event that the roofing material is found to be non-intact, or becomes non-intact during demolition, the roofing material is to be removed and containerized in dumpsters lined with 2 layers of 6 mil polyethylene sheeting. Such material is to removed using wet methods, unless wet methods would make the work hazardous to workers, such as on a sloped roof. Material is to be carefully placed into the dumpster by being hand carried or using a dust-tight chute to prevent the release of dust.

3.13.4 Removal of friable roofing materials should be performed by trained workers using personal protective equipment including coveralls and half-face respirators with P-100 filters.

3.14 Specific Requirements for the Removal of Category II – Black (Galbestos) Coatings on Concrete Pillars and Mecanical Components

Note: Galbestos materials were identified as "Galvestos" coating on buildings (metal walls, roofs, I-beams, concrete pillars) and mechanical components in the inspection report.

3.14.1 Prior to handling of coatings, the onsite NESHAP trained person will determine if the material is intact. A written statement to that effect will be signed, along with an assurance that the material will not be made non intact during removal or demolition.

3.14.2 All ACM will be handled by AHERA accredited asbestos abatement personnel. Material will not be sanded, ground, abraded, or reduced to dust during demolition.

3.14.3 A security barrier consisting of asbestos barricade tape and signs shall be placed around each work area by the contractor to prevent access by unauthorized personnel.

3.14.4 Material may not be sanded, ground, or abraded. Use of air tools such as air chisels is acceptable. Grinders may not be used except in negative pressure containments.

3.14.5 This material is Category II non friable, and if removed intact or left in place using normal demolition methods, is not RACM as defined in 40 CFR 61 subpart M. It may be disposed of as non-regulated waste. Material is to be kept wet during removal.

3.14.6 If left in place during demolition, Galbestos panels may not be sanded, ground, or abraded. Use of track shears or other heavy demolition equipment is acceptable.

3.14.7 Material is to be kept wet during demolition or removal.

3.14.8 The disposal dumpster/trailer will be marked with asbestos warning signs and asbestos barricade tape. The material may be disposed of at a Class II landfill if they will accept it.

3.14.9 When the dumpster/trailer is full it will be hauled away to a landfill for disposal.

3.14.10 The following requirements shall be followed as required by the regulations which govern asbestos abatement projects for the removal of Asbestos Containing Materials.

3.14.11 Worker Protection

3.14.12 At a minimum, the Contractor will construct a dry decon to be used by the Asbestos Abatement personnel.

3.14.13 Asbestos Abatement personnel will wear personal protective clothing (Tyvek type, full body suits). Two suits will be worn when using a dry decon.

3.14.14 A minimum of half-face negative pressure respirators will be worn at all times while performing manual removal of Galbestos panels.

3.14.15 Warning Signs: Communication of hazard to employees (both in English and Spanish) as required by regulations displayed at locations of access and on the temporary storage dumpster.

3.14.16 The ACM will be kept wet and placed in two 6 mil poly bags with proper labels as required by the regulations.

3.14.17 All small pieces of ACM will be picked up before the end of the work day and placed in double 6 mil poly bags and labeled as required before placing in the dumpster/trailer.

3.14.18 When the dumpster/trailer is full it will be taken to a landfill for disposal. If a Class II landfill which accepts construction debris is utilized the owner should be apprized of the asbestos content of the material.

3.14.19 RACM is to be removed prior to demolition, with the possible exception of RACM in structurally unsound areas. RACM in structurally unsound areas may be removed concurrently with demolition for worker safety. Procedures for removal of RACM in structurally unsound areas are provided in Section 3.5.5.

3.14.20 Plastic sheeting is to be placed under the work area. RACM is to be removed using manual methods such as sharp edged scrapers and misting of the material to prevent the release of dust.

3.15 Worker Protection

3.15.1 At a minimum, the Contractor will construct a dry decon to be used by the Asbestos Abatement personnel. This may consist of a piece of 6 mil polyethylene sheet at the entry to the Regulated Area.

3.15.2 Asbestos abatement personnel will wear personal protective clothing (Tyvek type full body suits) at all times during abatement activity. Two suits will be worn when using a dry decon.

3.15.3 A minimum of half-face negative pressure respirators will be worn at all times while working with the ACM. (Depending on personal air monitoring, upgrading may be necessary).

3.15.4 Personal air monitoring as required to meet OSHA Requirements for 30-minute Short Term Excursion Limit (STEL) and 8-hour time Permissible Exposure Limit (PEL) will be conducted each day of asbestos handling. All samples will be tested by a certified testing laboratory using standard Phase Contrast Microscopy (PCM). OSHA required personal air sampling shall be conducted on 25% of workers per containment per day by the Contractor. NIOSH 582 trained technicians may analyze samples on or off site.

3.15.5 The Consultant will provide all other air monitoring as required.

3.15.6 Perimeter area monitoring will be performed during all abatement activities. Monitoring will consist of upwind and downwind samples. Minimum sample volume will be 480 liters for ambient samples where feasible. Samples will also be collected between asbestos work and the neighborhood located south of the Encycle facility, if not covered by the upwind/downwind samples.

3.16 Clean Up Procedures

3.16.1 Remove and containerize all visible accumulations of asbestos containing material and asbestos contaminated debris utilizing rubber dustpans, plastic shovels and rubber squeegees to move material around. Do not use metal shovels to pick up or move accumulated waste. Special care shall be taken to minimize damage to floor sheeting.

3.16.2 Wet clean all surfaces in the work area using rags, mops and sponges as appropriate. (Note: Some HEPA vacuums might not be wet/dry vacuums. To pick up excess water and gross wet debris, a wet/dry shop vacuum may be used. This will be contaminated and require cleaning prior to removal from the work area.)

3.16.7 Remove all containerized waste from the work area and waste transfer airlock.

3.16.4 Remove the cleaned inner layer of plastic sheeting from walls and floors, containerize and remove from the work area. The outer layer of plastic sheeting will remain in place. Any openings, tears, rips, etc. in the outer layer of plastic shall be repaired immediately. Windows, doors, HVAC system vents and all other openings shall remain sealed. The pressure differential ventilation units shall remain in continuous operation. Decontamination enclosure systems shall remain in place and be utilized.

3.16.5 Decontaminate all tools and equipment and remove at the appropriate time in the cleaning sequence.

3.16.6 Inspect the work area for visible residue. If any accumulation of residue is observed, it will be assumed to be asbestos and cleaning procedures shall be repeated.

3.16.7 The work area shall be cleaned until it is in compliance with State and Local requirements and any more stringent criteria agreed upon by the Contractor and the Facility Owner/Consultant prior to initiation of abatement activities. Criteria for compliance shall be in the form of visual inspections and air sampling. Additional cleaning shall be provided, as necessary, at no cost to the Facility Owner until these criteria have been met.

3.16.8 Following the satisfactory cleaning of the work area, encapsulation may commence. (See Section 3.17 - Encapsulation).

3.17 Clearance and Perimeter Air Monitoring

3.17.1 For work in negative pressure enclosure: - After the removal is completed, the Contractor shall notify the Consultant/Project Manager that the work area is ready for clearance air monitoring.

3.17.2 The Project Manager/Air Monitoring Technician will perform a visual inspection of all surfaces in the work area to determine that no visible dust or debris is present. The Air Monitoring Technician shall then sample the work area for airborne fiber concentrations.

3.17.3 The onsite project manager will determine the number of samples required for clearance of the containment. After analysis of the samples, the Contractor will be notified that all plastic barriers, decontamination unit, and negative air machines may be removed from the area. All plastic sheeting used for critical barriers will be containerized and disposed of as asbestos waste.

3.17.4 Perimeter Monitoring during demolition of structures containing ACM materials including Galbestos, asphalt concrete coating, and insulation will be accomplished using PCM sampling. At least 480 liters will be collected per sample. Sampling will at a minimum involve collection of one upwind reference sample and 3 downwind samples. Samples will also be collected on the south side of the work area if downwind samples are not collected there, in order to document exposure to residents in the neighborhood on the south side of Up River Road. The number of downwind samples will depend on the size of the Regulated Area.

3.17.5 Areas to be monitored during abatement in negative pressure enclosure include:

4 Baselines, minimum 1200 liters
5 Negative air exhaust
6 Decontamination unit entrance
7 Load out, if applicable
8 Outside critical barrier, inside building, if applicable.

3.18 Disposal Procedures

3.18.1 As the work progresses, to prevent exceeding available storage capacity on site, sealed and labeled containers of asbestos containing waste shall be removed and transported to the prearranged disposal location.

3.18.2 Disposal must occur at an authorized site in accordance with regulatory requirements of NESHAP, Texas Commission on Environmental Quality, and Texas Department of State Health Services guidelines and regulations.

3.18.3 All dump receipts, trip tickets, Texas Commission on Environmental Quality Manifests and other documentation of disposal shall be delivered to the Facility Owner for his records. A record keeping format utilizing a chain-of-custody form which include the names and addresses of the Generator, Contractor, pickup site, and disposal site, the estimated quantity of the asbestos waste and the type of containers used is recommended. These forms will be signed by the Generator (Facility Owner staff or representative). If a

separate hauler is employed, his name, address, telephone number and signature should also appear on the form.

3.18.4 Transportation to the nearest EPA approved landfill

3.18.4.1 Once drums, bags and wrapped components have been removed from the work area, they shall be loaded into an enclosed truck or dumpster for transportation.

3.18.4.2 When moving containers, utilize hand trucks, carts and proper lifting techniques to avoid back injuries. Trucks with lift gates are helpful for raising drums during truck loading.

3.18.4.3 The enclosed cargo area of the truck or dumpster shall be free of debris and lined with 6 mil polyethylene sheeting to prevent contamination from leaking or spilled containers. Floor sheeting shall be installed first and shall extend up the side walls. Wall sheeting shall be overlapped and taped into place.

3.18.4.4 Drums shall be placed on level surfaces in the cargo area and packed tightly together to prevent shifting and tipping. Large structural components shall be secured to prevent shifting. Bags shall be placed on top of structural components. Do not throw containers into truck cargo area.

3.18.4.5 Personnel loading asbestos containing waste shall be protected by disposable clothing including head, body, and foot protection, and at a minimum, half face, air purifying, dual cartridge respirators equipped with HEPA filters.

3.18.4.6 Any debris or residue observed on containers or surfaces outside of the work area resulting from clean up or disposal activities shall be immediately cleaned up using HEPA filtered vacuum equipment and/or wet methods as appropriate.

3.18.4.7 Large metal dumpsters are sometimes used for asbestos waste disposal. These should have doors or tops that can be closed and locked to prevent vandalism, wind dispersion, or other disturbance of the bagged asbestos debris. Unbagged material shall not be placed in these containers, nor shall they be used for non-asbestos waste. Bags shall be placed, not thrown, into these containers to avoid splitting.

3.19 Protection of the site:

3.19.1 Drains are to be covered with impermeable membranes and soil sufficient to prevent asbestos contaminated water from entering.

3.19.2 Water from demolition activities will not be allowed to enter culverts or otherwise run off the work site.

3.19.3 All material will be maintained adequately wet during demolition and containerization. No visible emissions will be allowed during asbestos handling operations.

3.19.4 Upwind air samples will be used for comparison with downwind samples.

PART 4 SUPPORT ACTIVITIES AND PERSONNEL

4.1 Training

4.1.1 Training shall be provided by the Contractor to all employees or agents who may be required to disturb asbestos containing or asbestos contaminated materials for abatement and auxiliary purposes and to all supervisory personnel who may be involved in planning, execution or inspection of abatement projects as required in Section 1.4.

4.1.2 All personnel on site will have Asbestos Awareness training as defined in 40 CFR 763.92(a)(1), AHERA.

4.1.3 Training for personnel operating heavy equipment during demolition of structures containing friable ACM will be the AHERA 32 hour asbestos worker class.

4.1.4 All supervisory personnel and workers shall have skill and experience with all phases of abatement work as evidenced through participation in at least two asbestos abatement projects, including at least 30 days inside containment areas.

4.1.5 All supervisory personnel must have successfully completed an EPA approved training course for asbestos abatement contractors and supervisors as required in Section 1.4.

4.1.6 All asbestos workers must have successfully completed an EPA approved training course for asbestos abatement workers as required in Section 1.4.

4.1.7 Training courses for workers and supervisors shall provide, at a minimum, information on the following topics:

4.1.7.1 The health hazards of asbestos including the nature of various asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods for disease and health basis for standards.

4.1.7.2 The physical characteristics of asbestos including fiber size, aerodynamic properties, physical appearance and uses.

4.1.7.3 Employee personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use, maintenance and storage of respirators, field testing the face piece to face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g., facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection, and hard hats as required in Section 1.4.

4.1.7.4 Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.

4.1.7.5 Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.

4.1.7.6 Work practices for asbestos abatement including purpose, proper construction and maintenance of air tight plastic barriers, airlocks, decontamination enclosure systems and waste transfer airlocks, posting of warning signs, engineering controls, electrical and ventilation system lockout, proper working techniques, waste clean up, storage and disposal procedures.

4.1.7.7 Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking and chewing in the work area.

4.1.7.8 Special safety hazards that may be encountered including electrical hazards, air contaminants (e.g., carbon monoxide, wetting agents, encapsulants), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress and noise.

4.1.7.9 Workshops affording both supervisory personnel and abatement workers the opportunity to see and experience the construction of containment barriers and decontamination facilities.

4.1.7.10 Supervisory personnel shall, in addition, receive training on contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection, medical surveillance programs, EPA and OSHA record keeping requirements, and other topics as required.

4.1.8 Training for workers and supervisors must be provided by a Texas Department of State Health Services licensed training provider. Training for 2 hour awareness may be provided by Contractor / Supervisor trained and experienced individuals.

4.1.8 Training is to have occurred within the last 12 months.

4.1.9 Contractor must document training by providing originals or photocopies of training certificates which include: date of training, training entity, and names and qualifications of trainers. A course outline may also be requested at the Facility Owner's/Consultant's discretion. For awareness level training, a copy of the class sign in sheet with the individual's name and identification number will serve as proof of training.

4.2 Medical Monitoring

4.2.1 Medical Monitoring as required in Section 1.2 must be provided by the Contractor to any employee or agent that may be exposed to asbestos in excess of background levels during any phase of the abatement project. (Due to the synergistic effects between smoking and asbestos exposure, it is highly recommended that only non-smokers be employed in positions which may require them to enter asbestos contaminated atmospheres.)

4.2.2 Medical monitoring shall include at a minimum:

4.2.2.1 A work/medical history to elicit symptomatology of respiratory disease.

4.2.2.2 A chest x-ray (posterior-anterior, 14 x 13 inches) evaluated by a certified B-reader.

4.2.2.3 A pulmonary function test, including forced vital capacity (FVC) and forced expiratory volume at one second (FEV), administered and interpreted by a Certified Pulmonary Specialist.

4.2.3 Employees shall be given an opportunity to be evaluated by a physician to determine their capability to work safely while breathing through the added resistance of a respirator. Examining physicians shall be aware of the nature of respiratory protective devices and their contributions to breathing resistance. They shall also be informed of the specific types of respirators the employee shall be required to wear, as well as special work place conditions such as high temperature, high humidity, and chemical contaminants to which the employee may be exposed.

4.3 Laboratory Services

4.3.1 The laboratory utilized for analyzing air samples shall be satisfactory participants in a proficiency program such as the NIOSH Proficiency Analytical Testing (PAT) program for the analysis of asbestos air samples. The laboratory shall also be licensed by the Texas Department of Health.

4.3.2 The laboratory used for bulk material identification shall be satisfactory participants in the NVLAP quality assurance program for bulk asbestos analysis. The laboratory shall also be licensed by the Texas Department of Health.

4.3.3 The period of time permitted between the collection of air samples and the availability of results shall be less than 24 hours for samples collected during abatement activities.

4.4 Emergency Precautions

4.4.1 A local medical emergency facility shall be identified and their ambulance crews and hospital emergency room staff shall be notified prior to commencement of abatement operations as to the possibility of having to handle contaminated or injured workmen, and shall be advised on safe decontamination.

4.4.2 The Contractor shall be prepared to administer first aid to injured personnel after decontamination. Seriously injured personnel shall be treated immediately or evacuated without delay for decontamination. When an injury occurs the Contractor shall stop work and implement fiber reduction techniques (e.g., water spraying) until the injured person has been removed from the work area.

4.4.3 Before commencement of abatement activities, the Contractor shall notify the local police and fire departments as to the danger of entering the work area and they shall be invited to attend an informal training program to be conducted by the Contractor who shall provide information regarding abatement activities, decontamination practices, etc. The Contractor shall make every effort to help these agencies form plans of action should their personnel need to enter the contaminated area.

4.4.4 Telephone numbers of emergency response personnel shall be posted in clean area and equipment room with the location of the nearest phone.

4.4.5 Emergency procedures shall be in written form and posted in the clean change area and equipment room of the worker decontamination area. Everone prior to entering the work area must sign this procedure to acknowledte receipt and understanding of work site layout, location and emergency procedures.

4.4.6 Employees shall be trained in evacuation procedures in the event of work place emergencies.

4.5 Additional Sampling of Bulk Materials

4.5.1 At any time, the Contractor may take additional samples of previously identified Asbestos Containing Materials for analysis using Point Counting and/or TEM Gravimetric analysis to rebut their designation as ACM. Point Counted samples will supercede PLM samples, and TEM Gravimetric will supercede both PLM and Point Counting.

ATTACHMENT A

TDSHS Notification(s)

TEXAS Department of State Health Services

For Office Use Only:

Notification #:_____

ASBESTOS/DEMOLITION NOTIFICATION FORM

DO NOT WRITE IN THIS BOX- FOR DEPARTMENT USE ONLY
Date received:__/__/__ Postmark date:__/__/__ Walk-in date:__/__/__

TYPE OF NOTIFICATION: *(Select one and fill in the requested information)*

☒ **ORIGINAL** ☐ **AMENDMENT No.** __ ☐ **CANCELLATION**

☐ **EMERGENCY**
- Was emergency request made to the Regional Office or Environmental Health Notifications Group (EHNG) by phone? ☐Yes ☐No
- If yes, the DSHS reference #:_____ and name of the Regional or EHNG representative with whom you spoke? _____ Date: __/__/__ Time: _____ ☐a.m. ☐p.m.
- Describe the reason for Emergency: _____

☐ **ORDERED:** (*For structurally unsound facilities, attach copy of demolition order and identify Governmental Official)*
Name: _____ Registration No. _____
Title: _____
Date of order (MM/DD/YY): __/__/__ Date order to begin (MM/DD/YY): __/__/__

(x) Below if Amended

AMENDMENTS: You must complete the entire form and mark the appropriate check box(es) along the left-hand side of this form to indicate amended information.

TYPE OF WORK

☐ Asbestos Abatement ☐ Demolition ☐ Annual Consolidated O&M ☒ Abatement/Demolition
Is this a phased project? ☐ Yes ☒ No

FACILITY INFORMATION

1. Facility Location
☐..... Description or Facility Name: **Former ASARCO/Encycle Facility**
☐..... Physical Address: **5500 Up River River Road**
☐..... County: **Nueces** City: **Corpus Christi** Zip: **78407**
☐..... Facility Contact: **Robert Resuriz** Phone #: **(713) 562-6912**

2. Type of Facility *(Select one)*
☐ Public ☐ Federal ☒ Industrial/Manufacturing ☐ NESHAP-Only ☐ Public School K-12

3. Facility Details
☐..... Description of Area/Room Number: **53 buildings**
☐..... Age of Building: **1942** Size: **~1,500,000 sqft** Number of Floors: **10**
☐..... Is this building occupied? ☐ Yes ☒ No
☐..... Prior Use: **Zinc Smelter and metals recycling**
☐..... Future Use: **Possible re-development for commmercial/industrial use**
☐..... Date of Asbestos Survey/NESHAP Inspection: **12/01/06**
☐..... DSHS Inspector License #: **20-5050**
☐..... Analytical Method: ☒ PLM ☐ TEM ☐ Assumed Asbestos ☐ No Suspect Material
☐..... DSHS Laboratory License #: **300188**

WORK SCHEDULE/ASBESTOS AMOUNTS (*Note: if the start date(s) entered below cannot be met, the DSHS Regional or Local Program office must be notified prior to the scheduled start date. Failure to do so is a violation of TAHPA Section 295.61.)*

1. Asbestos Abatement Work Schedule:
☐..... Start date: **4/1/11** and End date: **12/15/11**
☐..... Work days: ☒Mon. ☒Tues. ☒Wed. ☒Thurs. ☒Fri. ☒Sat. ☐Sun.
☐..... Working hours: 7 ☒ a.m. ☐ p.m. to 7 ☐a.m. ☒p.m.

2. Demolition Work Schedule:
☐..... Start date: **4/1/11** and End date: **1/15/12**
☐..... Work days: ☒Mon. ☒Tues. ☒Wed. ☒Thurs. ☒Fri. ☐Sat. ☐Sun.
☐..... Working hours: 7 ☒ a.m. ☐ p.m. to 7 ☐a.m. ☒p.m.

(x) Below if Amended

C. ASBESTOS AMOUNTS

☐..... Is Asbestos Present? ☒ Yes ☐ No ***(Complete the table below if asbestos is present)***

Asbestos-Containing Building Material Type	Approximate amount of Asbestos						
Only mark the boxes below on this chart if they are being amended	**Pipes**	**Ln Ft**	**Ln M**	**Surface Area**	**SQ Ft**	**SQ M**	**Cu Ft**
☐ **RACM to be removed**	**10,000**	☒	☐	**20,000**	☒	☐	
☐ **RACM left in place during demolition**	**1,000**	☒	☐	**2,000**	☒	☐	
☐ **Interior Category I non-friable removed**	**0**	☐	☐	**10,625**	☒	☐	
☐ **Exterior Category I non-friable removed**	**0**	☐	☐	**9,395**	☒	☐	
☐ **Category I non-friable left in place during demolition**	**0**	☐	☐	**9,395**	☒	☐	
☐ **Interior Category II non-friable removed**	**0**	☐	☐	**200,000**	☒	☐	
☐ **Exterior Category II non-friable removed**	**0**	☐	☐	**10,000**	☒	☐	
☐ **Category II non-friable left in place during demolition**	**0**	☐	☐	**450,000**	☒	☐	
☐ **RACM Off-Facility Component**							

DESCRIPTION OF WORK PRACTICES AND PROCEDURES

☐..... 1. Description of procedures to be followed in the event that unexpected asbestos is found or previously non-friable asbestos material becomes crumbled, pulverized, or reduced to powder: **Stop work, notify Owner. Secure licensed contractor to isolate and barricade area, HEPA vacuum, wet removal methods, double bag for disposal.**

☐..... 2. Description of planned demolition or abatement work, type of material, and method(s) to be used: **DemoAbatement of facilty structures. RACM includes pipe/equipment insulation.Will utilize glove bag and full containment meth ods. Non-RACM includes roofing materials, tile/mastics, stack coating, and galvestos coating. Will use wet meth**

☐..... 3. Description of work practices and engineering controls to be used to prevent emissions of asbestos at the demolition site: **Will utilize SOPs and site-specific Health & Safety Plan and NESHAP and OSHA guidelines for ACM activities. Glove bag, mini-enclosures and negative pressure enclosures utilizing wet methods, HEPA vacuum, and wet wipe. Work will be completed in accordanc with EPA, OSHA, and TX DSHS.**

PROJECT INFORMATION

☐..... **A. FACILITY OWNER**

Facility Owner Name: **Former Encycle/Texas, Inc Facility**
Phone #: **(361) 693-9402**
Attention: **Mike Boudloche**
Mailing Address: **555 North Carancahua, Ste. 600**
City: **Corpus Christi** State: **TX** Zip: **78478**

☐..... **B. ASBESTOS ABATEMENT CONTRACTOR #1**

DSHS Asbestos Contractor License #: **800967**
Contractor Name: **Camacho Environmental**
Address: **7141 Hwy 77**
City: **Sinton** State: **TX** Zip: **78387**
Office Phone #: **(361) 364-9047** Job-Site Phone #: **(361) 726-8278**

☐..... **C. ASBESTOS ABATEMENT CONTRACTOR #2 (*Only if there is more than one Contractor*)**

DSHS Asbestos Contractor License #: **NA**
Contractor Name: _____
Address: _____
City: _____ State: _____ Zip: _____
Office Phone #: ( ) - Job-Site Phone #: ( ) -

D. ASBESTOS SUPERVISOR

☐..... DSHS Supervisor License #: **802376** Site Supervisor: **Santiago Reyes**
☐..... DSHS Supervisor License #: **804361** Site Supervisor: **Luis Granado**

(x) Below if Amended

E. NESHAP TRAINED INDIVIDUAL

☐ ..... NESHAP Trained Individual: **Santiago Reyes**
Certification Date: **11/13/09**

☐ .....**F. DEMOLITION CONTRACTOR**
Demolition Contractor: **Specialized Industrial Services, Inc**
Address: **14150 Vine Place**
City: **Cerritos** State: **CA** Zip: **90730** Phone #: **(562) 843-1269**

☐ .....**G. PROJECT CONSULTANT OR OPERATOR**
DSHS License No.: **10-0408**
Project Consultant or Operator: **Turnstone EH&S, Inc**
Address: **226 Enterprise Parkway, Ste 116**
City: **Corpus Christi** State: **TX** Zip: **78405** Phone #: **(361) 289-2510**

☐ ..... **H. Waste Transporter**
DSHS Waste Transporter License #: **400278**
Waste Transporter: **Allied Waste**
Address: **4542 SE Loop 410**
City: **San Antonio** State: **TX** Zip: **78222**
Contact Person: **Todd Muenster** Phone #: **(800) 275-4234**

☐ .....**I. Waste Disposal Site**
TCEQ Permit #: **H1410**
Waste Disposal Site: **Tessman Road Landfill**
Address: **7000 I-10 E**
City: **San Antonio** State: **TX** Zip: **78219**
Phone #: **(210) 661-4104**

CERTIFICATION STATEMENT

I hereby declare that I have examined this notification and, to the best of my knowledge and belief, all information provided is complete, true, and correct. I affirm that I am the owner, operator, or delegated agent and that I am responsible for the fee associated with this notification. I also understand that the owner, operator, or delegated agent is responsible for notification to the department.

_____ Date: __/__/__
(Signature of Owner, Operator or Delegated Agent)

Mike Boudloche, Chapter 7 Bankrupcty Court Trustee
(Printed Name & Title)

E-mail Address: **mboudloche@ch13boudloche.com** Phone #: **(361) 693-9402**

IMPORTANT INFORMATION

NOTIFICATION TIMELINESS REQUIREMENT:
Your Asbestos/Demolition Notification form must be postmarked no less than ten working days (not calendar days) prior to the start of any asbestos abatement or demolition.

FILING FEE: An invoice will be mailed to the facility owner upon completion of the project.

CALL FOR ASSISTANCE: (512) 834-6747 or (888) 778-9440 (toll free in Texas)

MAIL FORM TO: ENVIRONMENTAL HEALTH NOTIFICATIONS GROUP
TEXAS DEPARTMENT OF STATE HEALTH SERVICES
PO BOX 143538
AUSTIN, TX 78714-3538

ATTACHMENT B

Survey Report

Project No. 10-1393

ARCADIS
Infrastructure, environment, facilities

Mr. Mike Boudloche, Trustee
555 N. Carancahua, Suite 600
Corpus Christi, TX 78478

ARCADIS Geraghty & Miller, Inc.
711 North Carancahua
Suite 1700
Corpus Christi
Texas 78475
Tel 361 883 1353
Fax 361 883 7565

ENVIRONMENTAL SERVICES

Subject:
Asbestos Inspection Results
Encycle Facility
5500 Up River Road
Corpus Christi, Texas

Date
December 14, 2006

Contact:
Ken J. Brandner

Extension:
361-883-1353, ext. 16

Dear Mr. Boudlache:

This letter report presents the results of an asbestos inspection conducted during November and December 2006 at the Encycle facility located at 5500 Up River Road in Corpus Christi, Texas. The asbestos inspection was conducted at the 51 buildings located at the facility. Building locations are shown on Figure 1.

The scope of the inspection initially involved visual examination of each building to identify suspect asbestos-containing material (suspect ACM). Following the visual examination, samples of each homogeneous area of suspect ACM were collected for asbestos analysis. The results of the asbestos inspection are detailed below.

Visual Inspection

Prior to collection of samples for asbestos analysis, a visual examination of all 51 site buildings was conducted by Kenneth J. Brandner, a Texas Department of State Health Services-licensed asbestos inspector (License Number: 20-5050). All accessible portions of the building interiors and exteriors were visually examined to identify suspect ACM. A total of 35 homogenous areas of suspect ACM were identified in the buildings, and a description of each homogenous area of suspect ACM is provided on Table 1.

As part of the visual examination, each homogenous area of suspect ACM was assessed to determine if the material was friable. Friable is defined in 40 Code of Federal Regulations (CFR) Part 763.83 as "material, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure." The results of the friability determination are provided on Table 1. As shown on Table 1, several homogenous areas of suspect ACM at the facility were friable (fibrous pipe wrap, boiler insulation, ceiling tiles, fibrous thermal system insulation).

Suspect ACM Sample Collection

A total of 188 samples were collected for asbestos analysis during November and December 2006 (Sample IDs: A-1 through A-188). As specified in 40 CFR Part 763.86, at least three samples of each homogenous area of suspect thermal system insulation and suspect miscellaneous materials were collected for asbestos analysis. The number of samples collected from suspect surfacing materials was dependent on the area of the surfacing material. At least three samples were collected from suspect surfacing materials with an area of 1,000 ft^2 or less, at least five samples were collected from suspect surfacing materials with an area between 1,000 ft^2 and 5,000 ft^2, and at least seven samples were collected from suspect surfacing materials with an area greater than 5,000 ft^2. The suspect ACM sample locations are shown on Figure 2.

Each sample was collected by spraying the sample area with a wetting agent, and collecting each sample using new gloves and a new knife blade. Each sample was placed into a labeled plastic bag, then sealed and placed into a second labeled plastic bag. The samples were shipped to a Texas Department of State Health Services-licensed asbestos laboratory for asbestos analysis. Following sample collection, the sample areas were patched using duct tape and/or asbestos-free spackling.

A homogenous area is defined in 40 CFR Part 763.83 as "an area of surfacing material, thermal system insulation, or miscellaneous material that is uniform in color and texture." During the asbestos inspection, it was observed that several homogeneous areas of suspect ACM are present in more than one building at the facility, including black "galvestos" surfacing material on building exterior walls and roofs; linoleum floor covering; baseboard; floor tiles; ceiling tiles; pipe wrap; air duct insulation; sheet rock/gypsum board walls; asphalt roofs; and tar and gravel roofs.

During the inspection, pink, orange, and/or yellow fibrous thermal system insulation labeled "fiberglass" was observed in several of the buildings, including Facility No. 1, Facility No. 2, and Facility No. 3. Fiberglass is not suspect ACM (40 CFR Part 763.86), and therefore materials labeled "fiberglass" were not sampled.

Asbestos Analytical Results

Each sample was analyzed for asbestos using polarized light microscopy (PLM). The presence of asbestos in Sample A-162 was also verified using asbestos point count analysis. Asbestos analytical results for each sample are summarized on Table 1, copies of the analytical laboratory reports are provided in Attachment 1, and photographs of the asbestos-containing materials are provided in Attachment 2.

As shown on Table 1, 13 homogenous areas of asbestos-containing materials were identified in the buildings as follows:

- Black, non-friable, 1/16 to 1/8-inch-thick, black coating (galvestos) on metal walls, roofs, I-beams, and pipes (Homogeneous Area 1 on Table 1): Black galvestos coating (1/16" to 1/8"-thick) is present on the exterior metal walls, metal roofs, steel I-beams, steel pipes, and/or concrete pillars of several buildings, including Facility No. 1, Facility No. 2, Facility No. 3, East Product Storage Building 5, the Old Casting Building, the Sanitary Wastewater Building, the Product Storage Bins Numbered Bins Building, the Lettered Bins Building, the East Cell House, Building 17, Building 20, Building 24, the Power House, the West Cell House, the Reagent Storage Building, and the Zinc Building (see Attachment 2, photographs 1 through 5). In addition to the galvestos coating in the buildings listed above, two large steel tanks on the north side of Facility No. 1, and two large steel tanks on the west side of Facility No. 2 contain galvestos coating (see Attachment 2, photograph 6). A total of 20 samples of the black galvestos coating were collected for asbestos analysis (Sample IDs: A-1, A-2, A-3, A-19, A-28, A-41, A-56, A-57, A-61, A-63, A-68, A-69, A-79, A-85, A-86, A-88, A-92, A-94, A-116, A-121), and all 20 samples contained asbestos. The black galvestos coating was not friable, but was damaged (tears, holes).

- Brown linoleum floor covering (Homogeneous Area 3 on Table 1): Brown linoleum floor covering (1/8"-thick) is present in the offices on the 2nd floor of Facility No. 1, the 2nd and 3rd floors of Facility No. 2, the 5th floor of Facility No. 3, the 2nd floor of the West Cell House, the 1st floor at the south-center end of the Reagent Storage Building (Building 28), and the 2nd floor of the Admin Building and Lab (see Attachment 2, photographs 7 and 8). Six samples of the brown linoleum floor covering were collected for asbestos analysis (Sample IDs: A-7, A-8, A-9, A-20, A-126, and A-155), and all six samples contained asbestos. The brown linoleum floor covering was not friable and not damaged.

- Pipe wrap with white fibers and outer black tar jacket (Homogenous Area 5 on Table 1): Pipe wrap with 1" to 2"-thick white fibers and an outer black tar jacket are present on pipes ranging in diameter from ½" to 8" in Facility No. 1, Facility No. 2, Facility No. 3, Facility No. 4, the Old Casting Building, the East Cell House, the West Cell House, the Admin and Lab Building basement, the east Yard Office building, and the Guard House/Change House (see Attachment 2, photographs 9 through 12). Fifteen samples of the white pipe wrap with outer black tar jacket were collected for asbestos analysis (Sample IDs: A-13, A-14, A-15, A-25, A-26, A-27, A-29, A-30, A-44, A-62, A-87, A-118, A-160, A-161, and A-165), and eight of the samples contained asbestos. The white pipe wrap was friable and damaged (tears, deterioration, water damage).

- 12" x 12" light brown floor tile (Homogenous Area 9 on Table 1): 12" x 12" light brown floor tile (1/8"-thick) (approximately 225 square feet) is present in the office at the northeast end of the 1st floor of Facility No. 2 (see Attachment 2, photograph 13). Three samples of the floor tiles were collected for asbestos analysis (Sample IDs: A-32, A-33, and A-34), and two of the samples contained asbestos. The light brown floor tiles were not friable and not damaged.

- Tar and gravel roofs (Homogenous Area 21 on Table 1): Tar and gravel roofs with ½" to ¾"-thick black tar and tan and brown rounded gravel are present on the roofs of Building 12, the Yard Offices, Building 18, Building 19, Building 20, the Oil House, Building 29, Building 30, the Lunch Room, Building 34, Reagent Storage Building 36, Building 44, Building 45, and Building 52 (see Attachment 2, photograph 14). Eight samples of the tar and gravel roofs were collected for asbestos analysis (Sample IDs: A-73, A-78, A-90, A-91, A-93, A-128, A-132, and A-150), and four of the samples contained asbestos. The tar and gravel roofs were not friable and not damaged.

- Tan and gray checkered linoleum floor covering (Homogenous Area 25 on Table 1): Tan and gray checkered linoleum floor covering (1/8"-thick) is present in lab and office on the south side of the 1st floor of the Admin Building and Lab (Building 46), the offices on the north end of the 2nd floor of the Admin Building and Lab, and in the laundry room at the east end of the Change House (Building 47). Three samples of the tan and gray checkered linoleum floor covering were collected for asbestos analysis (Sample IDs: A-151, A-152, and A-153), and one sample contained asbestos. The tan and gray checkered linoleum floor covering was not friable and not damaged.

- 9" x 9" light brown floor tile (Homogeneous Area 26 on Table 1): 9" x 9" light brown floor tile (1/8"-thick) is present in the offices on the 2nd floor at the south end of the Power House, and the office on the 2nd floor near the northeast end of the Admin Building and Lab (Building 46) (see Attachment 2, photograph 15). Four samples of the 9" x 9" light brown floor tile were collected for asbestos analysis (Sample IDs: A-98, A-99, A-100, and A-156), and all of the samples contained asbestos. The floor tile was not friable and not damaged.

- Pipe wrap with white fibers and outer orange jacket (Homogenous Area 27 on Table 1): 18"-diameter pipe wrap with 2"-thick white fibers and an outer orange jacket is present on an approximate 14"-diameter steel pipe that runs north-south along the center of the Power House, approximately 12 feet above the 1st floor. The northern end of the 18"-diameter pipe wrap extends to the 2nd floor at the north end of the Power House (see Attachment 2,

photograph 16). Three samples of the 18"-diameter pipe wrap with an outer orange jacket were collected for asbestos analysis (Sample IDs: A-104, A-105, and A-106), and all of the samples contained asbestos. The white pipe wrap was friable and slightly damaged (tears, deterioration).

- Thermal system insulation on boilers (boiler insulation) – white fibers with gray exterior jacket (Homogeneous Area 28 on Table 1): Steel boilers on the 2nd floor at the southeast end of the Power House, and boilers in the Zinc Building (Building 32) contain 1"-thick white fibers with an outer gray jacket (see Attachment 2, photographs 17 and 18). Six samples of the white boiler insulation were collected for asbestos analysis (Sample IDs: A-107, A-108, A-109, A-129, A-130, and A-131), and all of the samples contained asbestos. The white boiler insulation is friable, and the boiler insulation in the Zinc Building is damaged (tears, deterioration).

- Pipe wrap with white fibers and outer metal jacket (Homogenous Area 29 on Table 1): Pipe wrap with 1" to 2"-thick white fibers and an outer 1/16"-thick sheet metal jacket are present on pipes ranging in diameter from 2" to 8" on the 1st floor at the east end of Facility No. 4, and the 1st floor in the southeast portion of the Power House below the boilers (see Attachment 2, photographs 19 and 20). Five samples of the white pipe wrap with outer sheet metal jacket were collected for asbestos analysis (Sample IDs: A-54, A-55, A-110, A-111, and A-112), and three of the samples contained asbestos. The white pipe wrap is friable, and slightly damaged at Facility No. 4 (tears, deterioration).

- 12" x 12" white floor tile with light gray streaks (Homogenous Area 31 on Table 1): 12" x 12" white floor tile with light gray streaks (1/8"-thick) is present in the eastern portion of the Change House/Guard House (Building 47) (see Attachment 2, photograph 21). One sample of the floor tiles was collected for asbestos analysis (Sample ID: A-162), and asbestos was detected in the central layer (black vinyl layer) of the floor tile. This floor tile sample was also analyzed for asbestos using the point count method, and the presence of asbestos (1.75% asbestos) was confirmed. Materials containing more than 1% asbestos are considered asbestos-containing materials (40 CFR Part 763.83). The white floor tiles with light gray streaks were not friable and not damaged.

- 9" x 9" cream-white floor tile (Homogeneous Area 34 on Table 1): 9" x 9" cream-white floor tile (1/8"-thick) (approximately 400 square feet) is present in the office at the northeast end of Warehouse Storage Building 51 (see Attachment 2, photograph 22). Three samples of the 9" x 9" cream-white floor tile were collected for asbestos analysis (Sample IDs: A179, A-180, and A-181), and all of the samples contained asbestos. The floor tile was not friable and not damaged.

- 1/8"-inch-thick red coating on large brick/concrete smokestack southwest of Facility No. 4 (Homogenous Area 35 on Table 1): The large (estimated 250 feet high, 18'-diameter at base) brick and concrete smokestack directly southwest of Facility No. 4 has a 1/8"-thick red exterior coating (see Attachment 2, photograph 23). Three samples of the red exterior coating were collected for asbestos analysis (Sample IDs: A-186, A-187, and A-188), and all of the samples contained asbestos. The red exterior coating was non-friable, except along damaged areas (tears) where the materials was friable.

A summary of the asbestos-containing materials in the buildings at the Encycle facility is provided on Table 2.

Asbestos Management Recommendations

Asbestos was detected in 13 homogeneous areas at the Encycle facility (black galvestos coating, brown linoleum floor covering, white pipe wrap with outer black tar jacket, 12" x 12" light brown floor tile, tar and gravel roofs, tan and gray checkered linoleum floor covering, 9" x 9" light brown floor tile, white pipe wrap with outer orange jacket, white fibrous insulation on boilers, white pipe wrap with outer sheet metal jacket, 12" x 12" white floor tile with light gray streaks, 9" x 9" cream-white floor tile, red coating on large brick/concrete smokestack). Any activities that involve disturbance of these asbestos-containing materials (cutting, drilling, scraping, removal, demolition, etc.) should be conducted by a Texas Department of State Health Services-licensed asbestos abatement contractor. Prior to removal of the asbestos-containing materials, an asbestos abatement project design should be prepared by a Texas Department of State Health Services-licensed asbestos consultant or asbestos project designer. A 10-day notification form also should be submitted to the Texas Department of State Health Services prior to abatement activities. Following completion of asbestos abatement activities, independent third party air monitoring should be conducted by a Texas Department of State Health Services-licensed air monitoring technician prior to issuing final clearance.

Please contact Ken Brandner at (361) 883-1353 if you have any questions.

Sincerely,

ARCADIS G&M Inc

Kenneth J. Brandner, P.E., P.G.
Licensed Asbestos Inspector, License No. 20-5050

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
1	Facility No. 1	A-1	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Facility No. 1. Non-friable.	East exterior metal wall of Facility No. 1. Sample collected 7' AGL, 10' SE of Feed Tank 1.	**55% asbestos.**
		A-2	1	Black galvestos coating (1/16-inch-thick) on 2 large metal cone-shaped tanks directly north of Facility No. 1. Non-friable.	Exterior metal surface of large cone-shaped tanks (2) north of Facility No. 1. Sample taken from western tank, 10' AGL.	**5% asbestos.**
		A-3	1	Black galvestos coating (1/16 to 1/8-inch-thick) is present on some of the steel structural supports (I-beams and cross beams) in Facility No. 1. Non-friable. Galvestos also present on several 1" and 3"-diameter steel pipes on 2nd floor.	2" x 3" steel cross beam (L-shape 90° angle) along west wall of Facility No. 1. 2nd floor of building, west-center wall, 3' above floor.	**6% asbestos.**
		A-4	2	2' x 4' white ceiling tile in offices on 2nd floor of Facility No. 1. 5/8"-thick ceiling tile. Friable.	Offices on 2nd floor of Facility No. 1, 8' AGL.	None detected.
		A-5	2	(same as Sample A-4)	(same as Sample A-4)	None detected.
		A-6	2	(same as Sample A-4)	(same as Sample A-4)	None detected.
		A-7	3	Brown linoleum floor covering. 1/8"-thick. Non-friable.	Offices on 2nd floor of Facility No. 1. Also present in offices in Facility No. 2 and Facility No. 3.	**15% asbestos.**
		A-8	3	(same as Sample A-7)	(same as Sample A-7)	**15% asbestos.**
		A-9	3	(same as Sample A-7)	(same as Sample A-7)	**15% asbestos.**
		A-10	4	Sheet rock/gypsum board walls. 5/8"-thick white chalky material with outer paper jacket. Non-friable.	Interior walls of Facility No. 1. Located in office areas on 2nd floor of Facility No. 1.	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-11	4	(same as Sample A-10)	(same as Sample A-10)	None detected.
		A-12	4	(same as Sample A-10)	(same as Sample A-10)	None detected.
		A-13	5	Pipe wrap. 2"-thick white pipe wrap with outer black jacket on 6"-diameter pipe. Friable.	2nd floor of Facility No. 1. Located above filters and tanks near center of 2nd floor. Sample collected 7' AGL at Filter 5113.	**5% asbestos.**
		A-14	5	Pipe wrap valve cover. 2"-thick white pipe wrap on valve. Friable.	2nd floor of Facility No. 1. Located on valve cover above filters and tanks near center of 2nd floor. Sample collected 6' AGL at Filter 5111.	None detected.
		A-15	5	Pipe wrap. 2"-thick white pipe wrap with outer black jacket on 1"-diameter pipe. Friable.	2nd floor of Facility No. 1. Located above filters and tanks near center of 2nd floor. Sample collected 1' AGL at Tank 705260.	None detected.
		A-16	6	24"-diameter grayish green vent pipe. 1/8-inch-thick. Non-friable.	2nd floor of Facility No. 1. 24" gray-green pipes located above wooden tanks to top of building.	None detected.
		A-17	6	(same as Sample A-16)	(same as Sample A-16)	None detected.
		A-18	6	(same as Sample A-16)	(same as Sample A-16)	None detected.
2	Facility No. 2	A-19	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Facility No. 2. Non-friable. Also located on exterior surface of 2 large metal cone-shaped tanks west of Facility No. 2, and I-beams and concrete pillars at south and east ends of Facility No. 2.	East exterior metal wall of Facility No. 2. Sample collected 2' AGL, 5' north of Bldg. 34.	**5% asbestos.**
		A-20	3	Brown linoleum floor covering. 1/8"-thick. Non-friable.	Offices on 2nd floor and 3rd floor at northwest end of Facility No. 2. Also located in office on 2nd floor at east end of West Cell House, and office on 5th floor at NE end of Facility No. 3.	**22% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-21	2	2' x 4' white ceiling tile in offices on 2nd and 3rd floor of Facility No. 2. 5/8"-thick ceiling tile. Friable.	Offices on 1st, 2nd & 3rd floors of Facility No. 2. Sample taken 8' AGL, 3rd floor, NW end of bldg.	None detected.
		A-22	7	Brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls in offices on 2nd and 3rd floors of Facility No. 2.	None detected.
		A-23	7	(same as Sample A-22)	(same as Sample A-22)	None detected.
		A-24	7	(same as Sample A-22)	(same as Sample A-22)	None detected.
		A-25	5	Pipe wrap. 2"-thick white pipe wrap with outer black jacket on 2"-diameter steel pipe. Friable.	2nd and 3rd floor at west end of Facility No. 2. Sample collected on 3rd floor west wall adjacent to Tank 605038.	None detected.
		A-26	5	Pipe wrap. 2"-thick white pipe wrap with outer black jacket on 6"-diameter steel pipe. Friable.	3rd floor at west end of Facility No. 2. Extends vertically upward to ceiling at west end of Facility No. 2. Sample collected 3rd floor west wall, west of Tank 605038	**55% asbestos.**
		A-27	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 1/2"-diameter steel pipe. Friable.	2nd and 3rd floor at west end of Facility No. 2. Sample collected 2nd floor, SW of Thickener 4.	**55% asbestos.**
		A-28	1	Black galvestos coating (1/8-inch-thick) on steel I-beams and 8"-diameter steel pipe at south end of Facility No. 2. Non-friable.	Black galvestos coating on steel I-beams and 8" steel pipes at south end of Facility No. 2. Sample collected at 8" pipe, 2' AGL.	**12% asbestos.**
		A-29	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 1"-diameter steel pipe. Friable.	East end of Facility No. 2, sample collected 6' AGL, 80' SW of Facility No. 2 NE corner.	None detected.
		A-30	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 3/4"-diameter steel pipe. Friable. Significant damage.	East end of Facility No. 2, sample collected 7' AGL, 80' WSW of Facility No. 2 NE corner.	**25% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-31	8	Thermal system insulation. 1"-thick orange fribers with with outer aluminum foil jacket. Friable.	Orange fibers located on 2"-diameter pipe along east wall of Facility No. 2, 12' AGL. Sample collected 12' AGL at SE corner of Facility No. 2.	None detected.
		A-32	9	Floor tile. 12" x 12" lt. brown floor tile. Non-friable.	Floor tile located in office at northeast end of Facility No. 2, 1st floor.	None detected.
		A-33	9	(same as Sample A-32)	(same as Sample A-32)	**2% asbestos.**
		A-34	9	(same as Sample A-32)	(same as Sample A-32)	**2% asbestos.**
		A-35	10	1' x 1' white ceiling tile in office on 1st floor of Facility No. 2, NE corner of bldg. 5/8"-thick ceiling tile. Friable.	Ceiling tile located in office on 1st floor at NE end of Facility No. 2, 8' AGL.	None detected.
		A-36	10	(same as Sample A-35)	(same as Sample A-35)	None detected.
		A-37	10	(same as Sample A-35)	(same as Sample A-35)	None detected.
		A-38	11	Miscellaneous suspect ACM. 1" to 2" thick, brown, non-friable "cement-like" insulation with rough, irregular surface on ceiling of 1st floor at south end of Facility No. 2.	Insulation located on 1st floor ceiling at south end of Facility No. 2, above steel I-beams, 20' AGL.	None detected.
		A-39	11	(same as Sample A-38)	(same as Sample A-38)	None detected.
		A-40	11	(same as Sample A-38)	(same as Sample A-38)	None detected.
3	Facility No. 3	A-41	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Facility No. 3. Non-friable.	East exterior metal wall of Facility No. 3. Sample collected 5' AGL, 40' N of SE corner.	**40% asbestos.**
		A-42	12	Thermal system insulation. 4"-thick yellow friable fibers with outer aluminum foil jacket on tanks on third floor of Facility No. 3.	Tanks with yellow insulation located on 3rd floor of Facility No. 3. Sample collected from western tank, 3rd floor, 50' S of north wall.	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-43	12	Thermal system insulation. 1"-thick yellow friable fibers with outer aluminum foil jacket on pipes adjacent to tanks on third floor of Facility No. 3.	Pipes with yellow pipe wrap located adjacent to tanks on 3rd floor of Facility No. 3. Collected sample 10' east of Sample A-42.	None detected.
		A-44	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 6"-diameter pipe. Friable.	East-center end of Facility No. 3, all five floors. Sample collected 2nd floor at east-center wall.	None detected.
4	Facility No. 4	A-45	2	2' x 4' white ceiling tile in offices at north end of Facility No. 4. 5/8"-thick ceiling tile. Friable.	Offices at north end of Facility No. 4, 8' AGL. Sample collected from 1st floor office.	None detected.
		A-46	14	Floor tile. 12" x 12" lt. brown floor tile. Non-friable.	Floor tile located in offices at north end of Facility No. 4; 1st through 4th floors.	None detected.
		A-47	14	(same as Sample A-46)	(same as Sample A-46)	None detected.
		A-48	14	(same as Sample A-46)	(same as Sample A-46)	None detected.
		A-49	15	Thermal system insulation. 2"-thick yellow-orange friable fibers on large cone-shaped tanks at Facility No. 4. Insulation located below outer metal jacket.	Large (30'-diameter) cone-shaped tank at north end of Facility No. 4, and two 10'-diameter tanks at south end of Facility No. 4.	None detected.
		A-50	15	(same as Sample A-49)	(same as Sample A-49)	None detected.
		A-51	15	(same as Sample A-49)	(same as Sample A-49)	None detected.
		A-52	8	Thermal system insulation. Rigid air duct with 1"-thick orange friable fibers and aluminum foil outer jacket.	Air duct located in office area at north end of Facility No. 4. Sample collected 1st floor, NW end.	None detected.
		A-53	11	Miscellaneous suspect ACM. 1" to 4" thick, brown, non-friable "cement-like" insulation with rough, irregular surface at base of metal conveyor belt at Facility No. 4.	Insulation located on 3rd floor at south-center end of Facility No. 4, below conveyor belt.	None detected.
		A-54	29	Pipe wrap. 2"-thick white pipe wrap with outer metal jacket on 2", 3", 4", and 6"-diameter pipes. Friable.	1st floor of Facility No. 4, east end of building. Sample collected 6' AGL on 2"-diameter pipe.	**2% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-55	29	(same as Sample A-54)	1st floor of Facility No. 4, east end of building. Sample collected 3' AGL on 6"-diameter pipe valve cover.	**15% asbestos.**
5	East Product Storage	A-56	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and I-beams of East Product Storage Building. Non-friable.	Sample collected from steel I-beams at south end of East Product Storage Building, 4' AGL.	**5% asbestos.**
		A-57	1	(same as Sample A-56)	Sample collected from south metal wall of of East Product Storage Building, 1' AGL.	**45% asbestos.**
6	Product Storage	A-58	17	Thermal system insulation. 2"-thick, tan friable fibers on interior walls and ceiling of office at northwest end of Product Storage building.	Sample collected in office at northwest end of Product Storage Building.	None detected.
		A-59	17	(same as Sample A-58)	(same as Sample A-58)	None detected.
		A-60	17	(same as Sample A-58)	(same as Sample A-58)	None detected.
7	Old Casting Building	A-61	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Old Casting Building. Non-friable.	West exterior metal wall of Old Casting Building. Sample collected 1' AGL.	**30% asbestos.**
		A-62	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 1" and 2"-diameter pipes at south end of building, west end of building, and at overhead pipe rack 10' south of building. Friable. Significant damage.	Pipe wrap located at south end of Old Casting Building and on overhead pipe rack 10' south of building. Sample collected 10' south of building on pipe rack, 12' AGL. Note: 3' segment also located at east Yard Office building (Bldg 13).	**60% asbestos.**
		A-63	1	Black galvestos coating (1/8-inch-thick) on 8"-diameter steel pipe on pipe rack 10' south of Old Casting Building. Galvestos located below an exterior white coating. Non-friable.	Sample collected from 8"-diameter pipe on steel pipe rack 10' south of Old Casting Building, 9' AGL. This material is also located on an 8"-diameter pipe at the north-center end of the Sanitary Wastewater Building (Building 9).	**23% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-64	18	Miscellaneous suspect ACM. 1/8" to 1/2"-thick, white granular friable coating/accretions inside metal ovens in Old Casting Building.	Sample collected inside brick oven at south-center end of Old Casting Building.	None detected.
		A-65	18	(same as Sample A-64)	(same as Sample A-64)	None detected.
		A-66	18	(same as Sample A-64)	(same as Sample A-64)	None detected.
		A-67	(see Note 1)	Thermal system insulation. 18"-diameter rigid air duct with 1"-thick pink friable fibers.	Air duct located 12' AGL at center of Old Casting Building.	None detected.
8	Hazardous waste Storage Building	NA	NA	No suspect ACM present.	No suspect ACM present.	
9	Sanitary Wastewater Bldg	A-68	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls of Sanitary Wastewater Building. Non-friable.	Sample collected 2' AGL, west wall of building.	**35% asbestos.**
10	Product Storage Bins (Numbered Bins Building)	A-69	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Numbered Bins Building. Non-friable.	Exterior metal walls and roof of Numbered Bins Building, and rail car metal canopy north of building. Sample collected 3' AGL at southeast corner of building.	**35% asbestos.**
11	Wastewater Treatment Bldg	A-70	20	Brown fabric on large metal drum filter on second floor of Wastewater Treatment Building. 1/16"-thick, friable.	Drum filter approx. 10'-diameter, 15'-long on 2nd floor of Wastewater Treatment bldg.	None detected.
		A-71	20	(same as Sample A-70)	(same as Sample A-70)	None detected.
		A-72	20	(same as Sample A-70)	(same as Sample A-70)	None detected.
12	—	A-73	21	Tar & gravel roof. 3/4"-thick black non-friable tar roof.	300 square foot brick building west of reactor/clarifier. Sample taken from roof, 15'AGL.	**20% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
13	Yard offices	A-74	22	Surfacing material. Ceiling texture on ceiling of west yard office building (600 square foot building). Ceiling texture located 14' AGL, 1/2"-thick non-friable gray "cement-like" texture with wire mesh reinforcement.	Ceiling texture located on ceiling of west yard office building, 14' AGL.	None detected.
		A-75	22	(same as Sample A-74)	(same as Sample A-74)	None detected.
		A-76	22	(same as Sample A-74)	(same as Sample A-74)	None detected.
		A-77	8	Thermal system insulation. Rigid air duct with 1"-thick orange friable fibers and aluminum foil outer jacket.	Air duct located 9' AGL in east yard office building.	None detected.
		A-78	21	Tar & gravel roof. 1/2"-thick black non-friable tar roof with underlying 1/2"-thick brown friable fibers.	Roof of Yard Office Buildings (2 adjacent buildings). Sample collected from east building.	None detected.
14	Lettered Bins Building	A-79	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof of Facility No. 1. Non-friable.	Galvestos coating on exterior metal walls and roof. Sample collected 4' AGL at north wall.	**20% asbestos.**
15	Plant Engineering	A-80	2	2' x 4' white ceiling tile in offices on 2nd floor of Plant Engineering building. 5/8"-thick ceiling tile. Friable.	Offices on 2nd floor of Plant Engineering building, 8' AGL.	None detected.
		A-81	24	Red-brown linoleum floor covering. 1/8"-thick. Non-friable.	2nd floor, west side of Plant Engineering building.	None detected.
		A-82	24	(Same as Sample A-81)	(Same as Sample A-81)	None detected.
		A-83	24	(Same as Sample A-81)	(Same as Sample A-81)	None detected.
		A-84	12	Thermal system insulation. 12"-diameter air duct with 1"-thick yellow friable fibers and outer aluminum foil jacket.	Air duct located above ceiling on 2nd floor of Plant Engineering building.	None detected.
16	East Cell House	A-85	1	Black galvestos coating (1/16-inch-thick) on steel I-beams in East Cell House. Non-friable. Significant damage.	I-beams in East Cell House. Sample collected from I-beam on 2nd floor, east-center end, 3' AGL.	**8% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-86	1	Black galvestos coating (1/8-inch-thick) on 1st floor concrete pillars and 2nd floor concrete curbs. Non-friable.	Sample collected from 1st floor concrete pillar, 3' AGL, 30' west of building SE corner.	**6% asbestos.**
		A-87	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 1" and 2"-diameter pipes on 2nd floor along north, east, and south perimeter walls. Friable.	Sample collected from 2nd floor of East Cell House, east end, 1"-diameter pipe, 8' AGL.	None detected.
17	—	A-88	1	Black galvestos coating (1/16-inch-thick) on steel walkway outside north and east ends of building. Non-friable.	Galvestos coating on exterior metal walkways north and east of building.	**5% asbestos.**
		A-89	18	Miscellaneous suspect ACM. 1/8" to 1/2"-thick, white granular friable coating/accretions on 2nd floor I-beams. Friable.	Sample collected from I-beam on 2nd floor at east end of building.	None detected.
18	—	A-90	21	Tar & gravel roof. 3/4"-thick black non-friable tar roof.	Roof of Building 18. Sample collected west end.	None detected.
19	Substation	A-91	21	Tar & gravel roof. 3/4"-thick black non-friable tar roof.	Roof of Building 19. Sample collected north end.	**2% asbestos.**
20	—	A-92	1 21	Black galvestos coating (1/16-inch-thick) on 1"-diameter steel pipe at west end of Building 20. Non-friable. (Note: This building also has a tar & gravel roof. See Sample A-93).	20'-long, 1"-diameter steel pipe with galvestos coating, sample collected 3' AGL.	**6% asbestos.**
21	Oil House	A-93	21	Tar & gravel roof. 1/2"-thick black non-friable tar roof.	Roof of Oil House. Sample collected south end.	**6% asbestos.**
22	—	NA	NA	No suspect ACM present.	No suspect ACM present.	
23	—	NA	NA	No suspect ACM present.	No suspect ACM present.	
24	—	A-94	1	Black galvestos coating (1/16-inch-thick) on metal canopy north of building. Non-friable.	Metal canopy north of building. Sample collected 6' AGL at northeast corner of canopy.	**20% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-95	18	Miscellaneous suspect ACM. 1/8" to 1/2"-thick, white granular friable coating/accretions on 1st floor walls and celling. Friable. (Note: Damaged thermal insulation (fragments) on 4th level roof bottom not accessible, not sampled).	Sample collected from 1st floor west-center wall, 3' AGL.	None detected.
25	Power House	A-96	10	1' x 1' white ceiling tile in offices on 2nd floor of Power House, south end of bldg. 5/8"-thick ceiling tile. Friable.	Ceiling tile located 9' AGL in offices on 2nd floor, south end of Power House.	None detected.
		A-97	2	2' x 4' white ceiling tile in supply room on 2nd floor of Power House, south end. 5/8"-thick ceiling tile. Friable.	Ceiling tile located 9' AGL in supply room on 2nd floor, south end of Power House.	None detected.
		A-98	26	Floor tile. 9" x 9" lt. brown floor tile. Non-friable.	Floor tile located in offices on 2nd floor, south end of Power House.	**5% asbestos.**
		A-99	26	(same as Sample A-98)	(same as Sample A-98)	**5% asbestos.**
		A-100	26	(same as Sample A-98)	(same as Sample A-98)	**5% asbestos.**
		A-101	24	Red-brown linoleum floor covering. 1/8"-thick. Non-friable.	Red-brown linoleum floor covering located in lab on 2nd floor, and west end of 2nd floor in Power House.	None detected.
		A-102	24	(same as Sample A-101)	(same as Sample A-101)	None detected.
		A-103	24	(same as Sample A-101)	(same as Sample A-101)	None detected.
		A-104	27	Pipe wrap. 18"-diameter white pipe wrap, 1"-thick, with outer orange jacket. Friable.	18"-diameter pipe wrap with orange exterior jacket runs north-south approximately 12' AGL along the center 1st foor of the Power House. Also present on the 2nd floor north end.	**35% asbestos.**
		A-105	27	(same as Sample A-104)	(same as Sample A-104)	**35% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-106	27	(same as Sample A-104)	(same as Sample A-104)	**35% asbestos.**
		A-107	28	Thermal system insulation on boiler (Boiler insulation). 1"-thick white friable fibers with outer black tar coating and gray exterior jacket.	Boiler insulation located on boilers on 2nd level at the southeast end of the Power House.	**8% asbestos.**
		A-108	28	(same as Sample A-107)	(same as Sample A-107)	**8% asbestos.**
		A-109	28	(same as Sample A-107 - sampled at valve cover)	(same as Sample A-107)	**8% asbestos.**
		A-110	29	Pipe wrap. 8"-outside diameter pipe wrap with 2"-thick white friable fibers and outer metal jacket.	Pipe wrap with outer metal jacket located on first floor at southeast corner of Power House. Sample A-110 pipe wrap labeled "Boiler Feed Water". Sample collected 5' AGL.	None detected.
		A-111	29	(same as Sample A-110 - sampled at 16" OD valve cover)	Sample collected on 1st floor, 50' SW of NE end of Power House.	None detected.
		A-112	29	(same as Sample A-110 - sampled at 18" OD valve cover)	Sample collected on 2nd floor, 100' SW of NE end of Power House.	**3% asbestos.**
		A-113	30	Thermal system insulation. Loose 36 ft^3 pile of white friable insulation located on 1st floor near center of Power House.	Insulation pile (4'x3'x3'-high) located on 1st floor of Power House, center of 1st floor.	None detected.
		A-114	30	(same as Sample A-113)	(same as Sample A-113)	None detected.
		A-115	30	(same as Sample A-113)	(same as Sample A-113)	None detected.
26	West Cell House	A-116	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls and roof, concrete pillars, 1st floor concrete ceiling, and I-beams in West Cell House. Nonfriable. Damaged.	Galvestos sample collected from 1st floor concrete pillar at east end of West Cell House, 3' AGL.	**6% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-117	23	Asphalt roof. 1/2"-thick non-friable asphalt on metal roof.	Sample collected 10' AGL from metal roof at east-center end of West Cell House. Also present on roofs at top of West Cell House.	None detected.
		A-118	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 2", 3", 4" and 6"-diameter pipe. Friable. Significant damage.	Pipe wrap located on 2nd floor of West Cell House, extends upward to roof underside. Sample taken from 3"-diameter pipe, 10' AGL.	**55% asbestos.**
		A-119	(see Note 2)	Green translucent piping with fibers, located near cooling towers. Fiberglass appearance.	Piping located near cooling towers west of East Cell House and West Cell House.	None detected.
27	South Reagent Storage Building	A-120	(see Note 3)	Pipe wrap. Cardboard boxes containing unused white fiberous friable pipe wrap. Approx. 16 cardboard boxes of unused pipe wrap/insulation present in building. (Note: This building also has a tar & gravel roof. See Sample A-93).	Cardboard boxes of unused white pipe wrap are located on a wooden shelf at the east end of the South Reagent Storage Building. Sample taken from a 3"-OD pipe wrap segment in box.	None detected.
28	Reagent Storage Building (NOR 43)	A-121	1	Black galvestos coating (1/8-inch-thick) on exterior metal walls, roof, roof drains, and exterior metal cone-shaped tanks at the Reagent Storage Building. Non-friable.	Sample collected from north exterior metal wall of building near NW corner, 3' AGL.	**30% asbestos.**
		A-122	33	Miscellaneous suspect ACM. 1/8"-thick gray exterior friable coating/accretion on 3'-diameter by 8'-high steel tank/boiler at south end of Reagent Storage Building.	Sample collected from 3'-diameter by 8'-high steel tank at south end of Reagent Storage Building, 50' east of building SW corner.	None detected.
		A-123	33	(same as Sample A-122)	(same as Sample A-122)	None detected.
		A-124	33	(same as Sample A-122)	(same as Sample A-122)	None detected.
		A-125	33	Same as Sample A-122, located on exterior of electrical conduits at south end of Reagent Storage Building.	Sample collected from exterior electrical conduit pipe (1"-diameter pipe), 10' AGL, S. end of bldg.	None detected.
		A-126	3	Brown linoleum floor covering. 1/8"-thick. Non-friable.	Brown linoleum floor covering located in office at south-center end of Reagent Storage Building.	**20% asbestos.**

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
29	—	A-127	(see Note 4) 21	White paint. 1/32"-thick paint coating on walls of Building 29. Non-friable. (Note: This building also has a tar & gravel roof. See Sample A-91, A-93 and A-128).	White paint on building 29 interior walls. Paint sample collected to confirm absence of asbestos.	None detected.
30	—	A-128	21	Tar & gravel roof. 1/2"-thick black non-friable tar roof with underlying 1/2"-thick brown friable fibers.	Roof of Building 30. Sample collected west end.	**10% asbestos.**
31	Spill Sorbent Storage Building	NA	NA	No suspect ACM present.	No suspect ACM present.	
32	Zinc Building	A-129	28	Thermal system insulation on boiler (Boiler insulation). 1"-thick white friable fibers with gray exterior jacket. Damaged. (Note: This building also galvestos on exterior metal walls and roof. See Sample A-1).	Boiler insulation located on exterior of three large boilers and attached ducts at the east end of the Zinc Building.	**15% asbestos.**
		A-130	28	(Same as Sample A-129)	(Same as Sample A-129)	**30% asbestos.**
		A-131	28	(Same as Sample A-129)	(Same as Sample A-129)	**35% asbestos.**
33	Lunch Room	A-132	21	Tar & gravel roof. 1/2"-thick black non-friable tar roof.	Roof of Lunch Room.	None detected.
34	MCC L&M		21	(Note: This building has a tar & gravel roof. See Sample A-91, A-93 and A-128).	Roof of MCC L&M Building.	
35	Scale House	A-133	23	Asphalt roof.	9' x 12' wooden building with asphalt roof.	None detected.
36	Reagent Storage	Brick	21	(Note: This building has a tar & gravel roof. See Sample A-91, A-93 and A-128).	Roof of Reagent Storage Bldg NW of Facility No. 2.	
37	MCC 29D	A-134	23	Asphalt roof. Asphalt only - no tar & gravel.	Brick building roof east of Facility No. 3.	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
38	—	A-135	2	2' x 4' white ceiling tile in Building 38. 5/8"-thick ceiling tile. Friable.	Office at northwest end of building, 8' AGL.	None detected.
		A-136	8	Thermal system insulation. Rigid air duct with 1"-thick orange-yellow friable fibers and aluminum foil outer jacket.	Air duct located in office area at north end of building. Sample collected 10' AGL.	None detected.
		A-137	4	Sheet rock/gypsum board walls. 5/8"-thick white chalky material with outer paper jacket. Non-friable.	Sheet rock located on interior walls, collected sample from west-center room, 3' AGL.	None detected.
		A-138	13	Tar & gravel roof with red "lava/pumice" gravel. 1/2"-thick black non-friable tar roof.	Roof of building 38. Sample collected at south-center end of roof.	None detected.
39	Substation	A-139	13	Tar & gravel roof with "white" gravel. 1/2"-thick black non-friable tar roof.	Roof of building 39. Sample collected at north-center end of roof.	None detected.
40	Substation	A-140	13	Tar & gravel roof with "white" gravel. 1/2"-thick black non-friable tar roof.	Roof of building 40. Sample collected at east end of roof.	None detected.
41	Lab	A-141	2	2' x 4' white ceiling tile in Building 41. 5/8"-thick ceiling tile. Friable.	Ceiling tile located 9' AGL throughout building interior, sample collected at south-center end.	None detected.
		A-142	16	Floor tile. 12" x 12" white floor tile. Non-friable.	Floor tile located on Building 41 (Lab) floor.	None detected.
		A-143	16	(same as Sample A-142)	(same as Sample A-142)	None detected.
		A-144	16	(same as Sample A-142)	(same as Sample A-142)	None detected.
		A-145	19	Blue flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls	None detected.
		A-146	19	(same as Sample A-145)	(same as Sample A-145)	None detected.
		A-147	19	(same as Sample A-145)	(same as Sample A-145)	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-148	4	Sheet rock/gypsum board walls. 5/8"-thick white chalky material with outer paper jacket. Non-friable.	Interior walls of lab. Sample collected at sheet rock joint, 4' AGL, 10' north of bldg SE corner.	None detected.
		A-149	23	Asphalt shingle roof. 1/4" thick non-friable black shingles.	Sampled at stairway at building NE corner.	None detected.
42	---	NA	NA	No suspect ACM present.	No suspect ACM present.	
43	---	NA	NA	No suspect ACM present.	No suspect ACM present.	
44	---		21	(Note: This building has a tar & gravel roof. See Sample A-91, A-93 and A-128).	Building located south of Facility No. 1.	
45	---	A-150	21	Tar & gravel roof. 1/2"-thick black non-friable tar roof.	Sample collected at north end of building roof.	None detected.
46	Admin Building and Lab	A-151	25	Tan & gray checkered linoleum floor covering. 1/8"-thick. Non-friable. Small (1/2") square checkered pattern.	Linoleum located on floor at south side of first floor, and north side of 2nd floor. Also present in laundry room at east end of Change House.	None detected.
		A-152	25	(same as Sample A-151)	(same as Sample A-151)	None detected.
		A-153	25	(same as Sample A-151)	(same as Sample A-151)	**5% asbestos in underlying mastic.**
		A-154	16	Floor tile. 12" x 12" white floor tile. Non-friable.	Floor tile located in hallways on 1st and 2nd floor.	None detected.
		A-155	3	Brown linoleum floor covering. 1/8"-thick. Non-friable.	Brown linoleum located on 2nd floor hallway and and 2nd floor offices north of hallway.	**20% asbestos.**
		A-156	26	Floor tile. 9" x 9" lt. brown floor tile. Non-friable.	9" x 9" floor tile located in 2nd floor office, north of hallway, 30' west of building NE corner.	**5% asbestos.**
		A-157	7	Gray/brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-158	2	2' x 4' white ceiling tile in offices on 1st and 2nd floor of Admin bldg and lab. 5/8"-thick ceiling tile. Friable.	Offices on 1st and 2nd floor, sample collected in lab 30' west of building SE corner, 8' AGL.	None detected.
		A-159	4	Sheet rock/gypsum board walls. 5/8"-thick white chalky material with outer paper jacket. Non-friable.	Interior walls of building. Sample collected in hallway 15' west of east-center door, 1st floor.	None detected.
		A-160	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 2"-diameter pipe. Friable. Significant damage.	Pipe wrap located on 2", 4", and 6" pipes in building basement. Sample collected 8' AGL.	**55% asbestos.**
		A-161	5	(same as Sample A-160)	(same as Sample A-160)	**65% asbestos.**
47	Change House/ Guard House	A-162	31	Floor tile. 12" x 12" white floor tile with lt. gray streaks in Change House/Guard House. 1/8"-thick. Non-friable.	White floor tile located in eastern portion of Change House/Guard House. Sample collected at doorway at east-center end of building.	**3% asbestos (PLM). 1.75% asbestos (Point Count Method)**
		A-163	7	Gray/brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls in offices at east end of building.	None detected.
		A-164	2	2' x 4' white ceiling tile in Change House. 5/8"-thick, friable.	Sample collected 30' west of east end, 8' AGL.	None detected.
		A-165	5	Pipe wrap. 1"-thick white pipe wrap with outer black jacket on 2"-diameter pipe. Friable.	Pipe wrap located on 2" pipe along outer north wall of Change House, 50' west of NE corner.	None detected.
		A-166	15	Thermal system insulation. 2"-thick yellow-orange friable fibers on tank/boiler at north-center end of Change House. Insulation located below outer metal jacket.	5'-diameter x 15'-high tank at north-center end of Change House. Sample collected 4' AGL.	None detected.
48	Visitor Center	A-167	14	Floor tile. 12" x 12" gray-brown floor tile. Non-friable.	Floor of Visitor Center, sampled at south-center.	None detected.
		A-168	7	Gray/brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls, sample collected at east-center wall.	None detected.
		A-169	2	2' x 4' white ceiling tile in Visitor Center. 5/8"-thick, friable.	Sample collected at center of building, 9' AGL.	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-170	13	Tar & gravel roof. Non-friable.	Roof of Visitor Center. Sample collected at S end.	None detected.
49	Admin Offices	A-171	14	Floor tile. 12" x 12" gray-brown floor tile. Non-friable.	Floor of Admin offices, sampled at east end.	None detected.
		A-172	7	Gray/brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls, sample collected at east-center wall.	None detected.
		A-173	2	2' x 4' white ceiling tile in Admin Offices. 5/8"-thick, friable.	Sample collected at east end of building, 9' AGL.	None detected.
		A-174	8	Thermal system insulation. Rigid air duct with 1"-thick orange friable fibers and aluminum foil outer jacket.	Air duct located in office area in southern portion of Admin Offices. Sample collected 10' AGL.	None detected.
		A-175	32	4' x4' brown ceiling tiles/ceiling panels on ceiling at north end of Admin Offices in storage room, and on ceiling of Warehouse Storage Building (Building 51). 5/8"-thick brown fiberous insulation. Friable.	Ceiling at north end of Admin Offices, and ceiling of Warehouse Storage Building (Building 51), located 15-25' AGL. Samples A-175 through A-176 collected from ceiling of Admin Offices.	None detected.
		A-176	32	(same as Sample A-175)	(same as Sample A-175)	None detected.
		A-177	32	(same as Sample A-175)	(same as Sample A-175)	None detected.
50	Fire Water Bldg.	A-178	13	Tar & gravel roof. Non-friable.	Roof of Fire Water Building. Sampled at N end.	None detected.
51	Warehouse Storage Bldg.	A-179	34	Floor tile. 9" x 9" cream-white floor tile. Non-friable.	Floor of 16' x 25' office at northeast end of Warehouse Storage Building.	**6% asbestos.**
		A-180	34	(same as Sample A-179)	(same as Sample A-179)	**6% asbestos.**
		A-181	34	(same as Sample A-179)	(same as Sample A-179)	**6% asbestos.**
		A-182	10	1' x 1' white ceiling tile on ceiling and interior walls at east-center end of Warehouse Storage Bldg. 5/8", Friable.	Ceiling tile located on walls and ceiling of office at east-center end of Warehouse Storage Bldg.	None detected.

Table 1. Suspect Asbestos Containing Material (Suspect ACM) Sample Descriptions, November-December 2006, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Suspect ACM Sample ID	Homogenous Area Number	Suspect ACM Description[a]	Suspect ACM Sample Location	Asbestos Sample Results
		A-183	7	Gray/brown flexible baseboard, 4"-high, 1/8"-thick. Non-friable.	Baseboard located along base of interior walls at east end of building, sample collected NE corner.	None detected.
		A-184	7	(same as Sample A-183)	(same as Sample A-183)	None detected.
		A-185	7	(same as Sample A-183)	(same as Sample A-183)	None detected.
52	—		21	(Note: This building also has a tar & gravel roof. See Sample A-91 and A-93).	Small brick building west of Facility No. 1.	
53	Smokestack	A-186	35	Surfacing material on large concrete/brick smokestack exterior. 1/8"-thick red coating, tar-like with fibers. Non-friable in undamaged areas, friable in damaged areas.	Tall smokestack SW of Facility No. 4. Smokestack has red lights on top. Sample collected at SE end, 3' AGL.	**11% asbestos.**
		A-187	35	(same as Sample A-186)	Sample collected at north end, 2' AGL.	**11% asbestos.**
		A-188	35	(same as Sample A-186)	Sample collected at west end, 3' AGL.	**11% asbestos.**

Suspect ACM — Suspect asbestos-containing material.
AGL — Above ground level.
OD — Outside diameter.

Notes:

1. This air duct appears to be fiberglass (not suspect ACM), but one sample was collected (Sample ID: A-67) to verify the absence of asbestos. Asbestos was not detected in the sample, and the laboratory report showed the pink fibers are fiberglass.
2. Green translucent piping is located outside the west end of the East Cell House and West Cell House near cooling towers. This piping appears to be fiberglass (not suspect ACM), but one sample was collected (Sample ID: A-119) to verify the absence of asbestos. Asbestos was not detected in the sample, and the laboratory report showed the fibers in the pipe are fiberglass.
3. A box of ununsed white pipe wrap is also present on the 1st floor at the north end of the Power House, and this box is labeled "Johns Manville Thermal Pipe Insultation - Asbestos Free." A sample of the unused white pipe wrap (Sample ID: A-120) in carboard boxes in the South Reagent Storage Building (Building 27) was collected, and asbestos was not detected in the sample.
4. A thin layer of white paint is present on the Building 29 interior walls. The paint did not appear to contain fibers, however a sample was collected (Sample ID: A-127) to confirm the absence of asbestos. Asbestos was not detected in the sample, and the laboratory report showed the paint is non-fibrous.
5. Yellow, pink, and/or orange thermal system insulation is present above ceiling tiles in several buildings, including Facility No. 1, Facility No. 2, and Facility No. 3, was labeled "fiberglass" and is therefore not suspect ACM and was not sampled.

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
1	Facility No. 1	Prefabricated metal	50,000	Black galvestos coating on large metal cone-shaped tanks directly north of Facility No. 1. Black galvestos coating on exterior metal walls and roof. Black galvestos coating on some steel I-beams, steel angle beams, and steel pipes inside Facility No. 1. Brown linoleum floor covering in 2nd level offices. White fibrous pipe wrap with outer black tar jacket on 1/2" to 8"-diameter pipes in portions of the 1st and 2nd levels of Facility No. 1.	2 levels inside building. Some metal floor plates on 2nd level unstable/deteriorated.
2	Facility No. 2	Prefabricated metal	54,000	Black galvestos coating on large metal cone-shaped tanks directly west of Facility No. 2. Black galvestos coating on exterior metal walls and roof. Black galvestos coating on some steel I-beams, concrete pillars, and pipes at the south and east interior portions of Facility No. 2. Brown linoleum floor covering in 2nd and 3rd level offices at northwest end of Facility No. 2. White fibrous pipe wrap with outer black tar jacket on 1/2" to 8"-diameter pipes in portions of the 1st, 2nd, and 3rd levels of Facility No. 2. 12" x 12" light brown floor tile in office on 1st level at northeast end of Facility No. 2.	3 levels inside building. Eastern half of building interior unstable/deteriorated.
3	Facility No. 3	Prefabricated metal	15,000	Black galvestos coating on exterior metal walls of Facility No. 3. Brown linoleum floor covering in 5th level office at northeast end of Facility No. 3. White fibrous pipe wrap with outer black tar jacket on 1" to 6"-diameter pipes at the east end of Facility No. 3, levels 1 through 5.	5 levels inside building.
4	Facility No. 4	Prefabricated metal	6,500	White fibrous pipe wrap with outer sheet metal jacket on 2" to 8"-diameter pipes and valve covers on the 1st floor at the east end of Facility No. 4.	5 levels inside building.
5	East Product Storage	Prefabricated metal	2,400	Black galvestos coating on exterior metal walls and roof of East Product Storage building. Black galvestos coating on interior I-beams.	Easternmost site building.
6	Product Storage	Prefabricated metal	11,200	**No ACM present.**	**No ACM present.**

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
7	Old Casting Building	Prefabricated metal	20,000	Black galvestos coating on exterior metal walls and roof of Old Casting Building. Black galvestos coating on 8"-diameter steel pipe 10' AGL on elevated steel pipe rack south of Old Casting Building. White fibrous pipe wrap with outer black tar jacket on 1" to 2"-diameter pipes at the south and west ends of the Old Casting Building, and pipe rack south of building.	North of East Cell House.
8	Hazardous waste Storage Building	Prefabricated metal	3,200	**No ACM present.**	**No ACM present.**
9	Sanitary Wastewater Bldg	Prefabricated metal	1,200	Black galvestos coating on exterior metal walls of Sanitary Wastewater building. Black galvestos coating on 8"-diameter steel pipe at north-center end of the Sanitary Wastewater Building.	NE end of site plant area.
10	Product Storage Bins (Numbered Bins Building)	Concrete and Prefabricated metal	30,000	Black galvestos coating on exterior metal walls and roof of Numbered Bins Building.	Building contains large concrete bins.
11	Wastewater Treatment Bldg	Brick and Prefabricated metal	800	**No ACM present.**	**No ACM present.**
12	—	Brick	300	Tar & gravel roof.	West of reactor/clarifier.
13	Yard offices	Brick	1,800	White fibrous pipe wrap with outer black tar jacket on 3-foot-long segment of steel pipe, 10' east of northwest corner of eastern Yard Office building. Tar & gravel roof.	2 adjacent buildings east of Lettered Bins Building.
14	Lettered Bins Building	Concrete and Prefabricated metal	50,000	Black galvestos coating on exterior metal walls and roof of Lettered Bins Building.	Building contains large concrete bins.
15	Plant Engineering	Brick	3,750	**No ACM present.**	**No ACM present.**

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
16	East Cell House	Concrete and Prefabricated metal	40,000	Black galvestos coating on exterior metal walls and roof of East Cell House. Black galvestos coating on 1st level concrete pillars, 2nd level steel I-beams, and 2nd level concrete curbing. White fibrous pipe wrap with outer black tar jacket on 1" to 2"-diameter pipes on the 2nd level of the East Cell House.	2 levels inside building.
17	—	Brick	1,000	Black galvestos coating on exterior metal walkway on north and east side of Building 17. White fibrous pipe wrap with outer black tar jacket on 4-foot-long segment of pipe outside the north end of Building 17.	East of Facility No. 1. 3 levels inside building.
18	—	Brick	2,000	Tar & gravel roof.	East of Facility No. 1.
19	Substation	Brick	240	Tar & gravel roof.	West of Numbered Bins Bldg. Door labeled "SS 21".
20	—	Brick	120	Black galvestos coating on 1"-diameter pipe west of Building 20. Tar & gravel roof.	30' east of Oil House.
21	Oil House	Brick	900	Tar & gravel roof.	North of Power House.
22	—	Prefabricated metal	225	**No ACM present.**	**No ACM present.** West of Oil House.
23	—	Prefabricated metal	825	**No ACM present.**	**No ACM present.** West of Oil House.
24	—	Brick	525	Black galvestos coating on exterior metal canopy north of Building 24. White fibrous pipe wrap with outer black tar jacket on 8-foot-long segment of pipe outside the north end of Building 24 near wooden tank.	Building 4 levels high.

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
25	Power House	Brick	35,000	Black galvestos coating on I-beams at east end of Power House. 9" x 9" light brown floor tile in offices on 2nd floor, south end of Power House. 18"-diameter white pipe wrap with outer orange jacket on 1st level, center of Power House, running north-south approximately 12' AGL. Thermal system insulation on boilers - white fibers with outer gray jacket. Boilers located on 2nd floor at southeast end of Power House. White fibrous pipe wrap with outer sheet metal jacket on 2" to 8"-diameter pipes and pipe valve covers below boilers on 1st level, southeast end of Power House.	
26	West Cell House	Concrete and Prefabricated metal	40,000	Black galvestos coating on exterior metal walls and roof of West Cell House. Black galvestos coating on 1st and 2nd level concrete pillars and steel I-beams. Black galvestos coating on 1st level concrete ceiling, and some 1st level pipes at the east end of the building. Brown linoleum floor covering in 2nd level office at east end of West Cell House. White fibrous pipe wrap with outer black tar jacket on 1" to 6"-diameter pipes on the 2nd level of the West Cell House.	2 levels inside building. Building interior unstable/ deteriorated.
27	South Reagent Storage Building	Brick	1,800	Tar & gravel roof.	Building located northwest of West Cell House.
28	Reagent Storage Building (NOR 43)	Prefabricated metal	12,000	Black galvestos coating on exterior metal walls and roof. Black galvestos coating on interior walls west end, exterior roof drains, and exterior metal cone-shaped tanks at north and south ends of building. White fibrous pipe wrap with outer black tar jacket on 1" and 2"-diameter pipes on the 2nd level at the east end of the building. Brown linoleum floor covering in office at the south-center end of the Reagent Storage Building.	Referred to as "NOR 43 Building". 2 levels inside building.
29	—	Brick	300	Tar & gravel roof.	SE of Feed Tank #2.
30	—	Brick	200	Tar & gravel roof.	SE of Facility No. 2.
31	Spill Sorbent Storage Building	Brick	60	**No ACM present.**	**No ACM present.** SE of Facility No. 2.

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
32	Zinc Building	Prefabricated metal	3,200	Black galvestos coating on exterior metal walls and roof. Thermal system insulation on boilers and connecting ducts - white fibers with outer gray jacket. Boilers and ducts located at east end of Zinc Building (Building 32).	West of Feed Tank #2.
33	Lunch Room	Brick	600	Tar & gravel roof.	NE of Facility No. 2.
34	MCC L&M	Brick	180	Tar & gravel roof.	East of Facility No. 2.
35	Scale House	Wooden	108	**No ACM present.**	**No ACM present.** 9' x 12' wooden building.
36	Reagent Storage	Brick	2,100	Tar & gravel roof.	NW of Facility No. 2.
37	MCC 29D	Brick	180	**No ACM present.**	**No ACM present.** East of Facility No. 3.
38	—	Brick	1,000	**No ACM present.**	**No ACM present.** SE of Facility No. 3. Red Brick Building.
39	Substation	Brick	600	**No ACM present.**	**No ACM present.** SE of Facility No. 3. White Brick Building.
40	Substation	Brick	600	**No ACM present.**	**No ACM present.** White Brick Building.
41	Lab	Brick	1,350	**No ACM present.**	**No ACM present.** White Brick Building. South of Facility No. 4.
42	—	Prefabricated metal	800	**No ACM present.**	**No ACM present.** Blue Metal Building.

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
43	—	Brick	64	**No ACM present.**	**No ACM present.** Building labeled "Spill Response Equipment".
44	—	Brick	180	Tar & gravel roof.	South of Facility No. 1.
45	—	Brick	150	Tar & gravel roof.	East of water tower.
46	Admin Building and Lab	Brick	3,500	Brown linoleum floor covering on the 2nd floor hallway and offices north of hallway. White fibrous pipe wrap with outer black tar jacket on 1" to 6"-diameter pipes in the basement of the Admin Building and lab. Tan and gray checkered linoleum floor covering on 1st floor, south side of building, and 2nd floor, north side of building. 9" x 9" light brown floor tile in room on 2nd floor, 30' west of building NE corner.	2 levels plus basement. Pipe insulation in basement labeled "asbestos".
47	Change House/ Guard House	Brick	10,000	White fibrous pipe wrap with outer black tar jacket on 2"-diameter steel pipe along outer wall at north-center end of Change House, and room at north-center end of Change House. Tan and gray checkered linoleum floor covering on 1st floor laudry room, east end of Change House. 12" x 12" white floor tile with light gray streaks located in the eastern portion of the Change House.	Building west of main entrance gate on Up River Rd.
48	Visitor Center	Brick	1,500	**No ACM present.**	**No ACM present.** North of Change House.
49	Admin Offices	Brick	6,300	**No ACM present.**	**No ACM present.** North of Change House. West of Visitor Center.
50	Fire Water Bldg.	Brick	150	**No ACM present.**	**No ACM present.** North of Change House. Southwest of Admin Offices.

Table 2. Asbestos Containing Material Summary, Encyle Facility, 5500 Up River Road, Corpus Christi, Texas

Figure 1 Building Number	Encyle Building Name	Building Material of Construction	Approximate Building Size (ft^2)	Asbestos-Containing Materials	Remarks
51	Warehouse Storage Bldg.	Brick	3,200	9" x 9" cream-white floor tile in offices at northeast end of Warehouse Storage Building.	Northwest of Change House.
52	—	Brick	325	Tar & gravel roof.	West of Facility No. 1.
53	Smokestack	Brick	NA	1/8"-thick red coating on exterior of large concrete/brick smokestack located directly southwest of Facility No. 4.	Tall brick smokestack. Located SW of Facility No. 4.

AGL Above ground level.

Note: The roofing materials of several large buildings (Plant Engineering Building, Power House, Admin Building and Lab) were not visible and not accessible.

ATTACHMENT 1

Asbestos Laboratory Reports

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: ARCADIS Geraghty & Miller
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

DATE OF RECEIPT: 29 Nov 2006
DATE OF ANALYSIS: 29 Nov 2006
DATE OF REPORT: 30 Nov 2006

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-11-3218
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	A-1/ Black Tar-Like; Brown/Tan Fib.	55% Chrysotile 55% Total Asbestos	10% Cellulose 35% Non-Fibrous
02	A-2/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
03	A-3/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	94% Non-Fibrous
04	A-4/ Tan Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
05	A-5/ Tan Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
06	A-6/ Tan Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
07A	A-7(a)-Linoleum/ Brown Linoleum; Tan Fib.	15% Chrysotile ★ 15% Total Asbestos ★Present in fibrous backing.	85% Non-Fibrous
07B	A-7(b)-Mastic/ Yellow Adhes.	Trace, <1% Chrysotile ★ <1% Total Asbestos ★Possible contamination from fibrous backing.	100% Non-Fibrous
08	A-8/ Brown Linoleum; Tan Fib.	15% Chrysotile 15% Total Asbestos	85% Non-Fibrous
09	A-9/ Brown Linoleum; Tan Fib.	15% Chrysotile 15% Total Asbestos	85% Non-Fibrous
10	A-10/ White Chalky	NAD	4% Cellulose 96% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-11-3218
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
11	A-11/ White Chalky; Brown Fib.	NAD	25% Cellulose 75% Non-Fibrous
12	A-12/ White Chalky; Brown Fib.	NAD	20% Cellulose 80% Non-Fibrous
13	A-13/ White Powder; Black Tar-Like; Fib.	5% Chrysotile 5% Total Asbestos	5% Cellulose 90% Non-Fibrous
14	A-14/ White Chalky	NAD	4% Cellulose 96% Non-Fibrous
15	A-15/ Black Tar-Like; Fib.; White Powder	NAD	15% Cellulose 85% Non-Fibrous
16	A-16/ Gray Brittle; Fib.	NAD	25% Fibrous Glass 75% Non-Fibrous
17	A-17/ Gray Brittle; Fib.	NAD	25% Fibrous Glass 75% Non-Fibrous
18	A-18/ Gray Brittle; Fib.	NAD	25% Fibrous Glass 75% Non-Fibrous
19	A-19/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
20A	A-20(a)-Flooring/ Gray/Brown Vinyl-Like; Pale Gray Fib.	22% Chrysotile ★ 22% Total Asbestos ★Present in fibrous backing.	8% Cellulose 70% Non-Fibrous
20B	A-20(b)-Mastic/ Dk. Yellow Adhes.	2% Chrysotile ★ 2% Total Asbestos ★Possible contamination from fibrous backing.	6% Cellulose 2% Hair 90% Non-Fibrous
21	A-21/ Pale Gray/Tan Fib.; White Brittle	NAD	40% Cellulose 35% Fibrous Glass 25% Non-Fibrous
22A	A-22(a)-Baseboard/ Gray Vinyl-Like	NAD	100% Non-Fibrous
22B	A-22(b)-Mastic/ Brown Adhes.	NAD	3% Cellulose 97% Non-Fibrous
23A	A-23(a)-Baseboard/ Gray Vinyl-Like	NAD	100% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-11-3218
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
23B	A-23(b)-Mastic/ Brown Adhes.	NAD	3% Cellulose 97% Non-Fibrous
24A	A-24(a)-Baseboard/ Gray Vinyl-Like	NAD	100% Non-Fibrous
24B	A-24(b)-Mastic/ Brown Adhes.	NAD	4% Cellulose 96% Non-Fibrous
25	A-25/ Off-White/Black Fib.	NAD	30% Cellulose 10% Fibrous Glass 15% Synthetic 45% Non-Fibrous
26	A-26/ Off-White/Black Fib.	20% Chrysotile 35% Amosite 55% Total Asbestos ★ ★Chrysotile present throughout sample. Amosite present in the off-white (main) layer.	10% Cellulose 35% Non-Fibrous
27	A-27/ Off-White/Black Fib.	15% Chrysotile 40% Amosite 55% Total Asbestos ★ ★Chrysotile/Amosite present in the off-white(main) layer.	20% Cellulose 25% Non-Fibrous
28	A-28/ Off-White/Black Fib.	12% Chrysotile 12% Total Asbestos ★ ★Present in the dark brown fibrous felt paper layer.	20% Cellulose 18% Fibrous Glass 50% Non-Fibrous
29	A-29/ Off-White/Black Fib.	NAD	40% Cellulose 5% Fibrous Glass 55% Non-Fibrous
30	A-30/ Pale Gray/Black Fib.	3% Chrysotile 22% Amosite 25% Total Asbestos ★ ★Chrysotile/Amosite present in the pale gray (main) layer.	20% Cellulose 55% Non-Fibrous
31	A-31/ Pale Gold/Black Fib.; Black Brittle; Silver Metallic	NAD	15% Cellulose 55% Fibrous Glass 30% Non-Fibrous
32A	A-32(a)-Flooring/ Off-White/White Vinyl-Like; Olive Green Fib.	NAD	15% Cellulose 15% Synthetic 70% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

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EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
32B	A-32(b)-Mastic/ Brown Adhes.	NAD	4% Cellulose 1% Hair 95% Non-Fibrous
33A	A-33(a)-Tile/ Off-White Gran.	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
33B	A-33(b)-Mastic/ Yellow Adhes.	NAD	4% Cellulose 96% Non-Fibrous
34A	A-34(a)-Tile/ Off-White Gran.	2% Chrysotile 2% Total Asbestos	98% Non-Fibrous
34B	A-34(b)-Mastic/ Yellow Adhes.	NAD	4% Cellulose 96% Non-Fibrous
35	A-35/ Tan Fib.; White Brittle	NAD	90% Cellulose 10% Non-Fibrous
36	A-36/ Tan Fib.; White Brittle	NAD	90% Cellulose 10% Non-Fibrous
37	A-37/ Tan Fib.; White Brittle	NAD	90% Cellulose 10% Non-Fibrous
38	A-38/ Gray Cementitious; Dk. Brown Brittle	NAD	3% Cellulose 97% Non-Fibrous
39	A-39/ Gray Cementitious; Dk. Brown Brittle	NAD	3% Cellulose 97% Non-Fibrous
40	A-40/ Gray Gran.	NAD	3% Cellulose 97% Non-Fibrous
41	A-41/ Brown Fib.	40% Chrysotile 40% Total Asbestos	10% Cellulose 50% Non-Fibrous
42	A-42/ Yellow Fib.	NAD	2% Cellulose 93% Fibrous Glass 5% Non-Fibrous
43	A-43/ Yellow Fib.	NAD	95% Fibrous Glass 5% Non-Fibrous
44	A-44/ White Powdery	NAD	30% Cellulose 70% Non-Fibrous

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EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
45	A-45/ White Fib.	NAD	40% Cellulose 40% Fibrous Glass 20% Non-Fibrous
46A	A-46(a)-Tile/ Lt. Tan Solid Tile	NAD	100% Non-Fibrous
46B	A-46(b)-Mastic/ Brown Adhes.	NAD	100% Non-Fibrous
47A	A-47(a)-Tile/ Lt. Tan Solid Tile	NAD	100% Non-Fibrous
47B	A-47(b)-Mastic/ Tan Adhes.	NAD	100% Non-Fibrous
48A	A-48(a)-Tile/ Brown Solid Tile	NAD	100% Non-Fibrous
48B	A-48(b)-Mastic/ Tan Adhes.	NAD	100% Non-Fibrous
49	A-49/ Orange Fib.	NAD	90% Fibrous Glass 10% Non-Fibrous
50	A-50/ Yellow Fib.	NAD	95% Fibrous Glass 5% Non-Fibrous
51	A-51/ Gray Fib.	NAD	2% Cellulose 88% Fibrous Glass 10% Non-Fibrous
52	A-52/ Yellow Fib.	NAD	95% Fibrous Glass 5% Non-Fibrous
53	A-53/ White Gran.	NAD	3% Fibrous Glass 97% Non-Fibrous
54	A-54/ White Gran.	2% Chrysotile 2% Total Asbestos	2% Fibrous Glass 96% Non-Fibrous
55	A-55/ White Gran.; Fib.	15% Chrysotile 15% Total Asbestos	85% Non-Fibrous
56	A-56/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
57	A-57/ Brown Fib.	45% Chrysotile 45% Total Asbestos	5% Cellulose 50% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-11-3218
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
58	A-58/ Tan Fib.	NAD	93% Cellulose 7% Non-Fibrous
59	A-59/ Tan Fib.	NAD	95% Cellulose 5% Non-Fibrous
60	A-60/ Beige Fib.	NAD	92% Cellulose 8% Non-Fibrous
61	A-61/ Pale Tan/Off-White Fib.; Black Brittle	30% Chrysotile ★ 30% Total Asbestos ★Present in the felt paper (main) layer.	25% Cellulose 5% Fibrous Glass 40% Non-Fibrous
62	A-62/ Off-White/Black Fib.; Black Brittle	22% Chrysotile 38% Amosite 60% Total Asbestos ★ ★Chrysotile present throughout sample. Amosite present in the off-white (main) layer.	5% Cellulose 35% Non-Fibrous
63	A-63/ Black/Gray Brittle; Off-White Fib.	20% Chrysotile 3% Amosite 23% Total Asbestos ★ ★Chrysotile present throughout sample. Amosite present in the off-white layer.	7% Cellulose 10% Fibrous Glass 60% Non-Fibrous
64	A-64/ Off-White Brittle; Coarse Powder; Gray Brittle	NAD	100% Non-Fibrous
65	A-65/ Off-White Brittle; Coarse Powder; Gray Brittle	NAD	100% Non-Fibrous
66	A-66/ Off-White/Pale Gray Cementitious; Coarse Powder; Pale Pink Brittle	NAD	1% Cellulose 99% Non-Fibrous
67	A-67/ Pale Pink Fib.	NAD	97% Fibrous Glass 3% Non-Fibrous
68	A-68/ Brown/Off-White Fib.; Black Brittle	35% Chrysotile ★ 35% Total Asbestos ★Present in the fibrous felt paper (main) layer.	25% Cellulose 5% Fibrous Glass 35% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

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PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
69	A-69/ Brown/Off-White Fib.; Black Brittle	35% Chrysotile ★ 35% Total Asbestos ★Present in the fibrous felt paper (main) layer.	25% Cellulose 5% Fibrous Glass 35% Non-Fibrous
70	A-70/ Tan Fib.	NAD	90% Synthetic 10% Non-Fibrous
71	A-71/ Tan Fib.	NAD	85% Synthetic 15% Non-Fibrous
72	A-72/ Tan Fib.	NAD	80% Synthetic 20% Non-Fibrous
73	A-73/ Black Tar-Like	20% Chrysotile 20% Total Asbestos	30% Cellulose 50% Non-Fibrous
74	A-74/ Tan Gran.	NAD	100% Non-Fibrous
75	A-75/ Brown Gran.	NAD	5% Cellulose 95% Non-Fibrous
76	A-76/ Brown Gran.	NAD	7% Cellulose 93% Non-Fibrous
77	A-77/ Orange Fib.	NAD	80% Fibrous Glass 20% Non-Fibrous
78	A-78/ Black Tar-Like	NAD	20% Cellulose 80% Non-Fibrous
79	A-79/ Black Fib.	20% Chrysotile 20% Total Asbestos	30% Cellulose 50% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-11-3218
PROJECT: Encycle

QC SAMPLE: M21995-2
NIST REF
M11995-3

QC BLANK: SRM 1866 Fiberglass

REPORTING LIMIT: 1% Asbestos

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 *

ANALYST: Melissa Boggs Steiniger
Mark Case
Mark DeLeonardis

Reviewed By Authorized Signatory: _____
Michael A. Mueller, MPH, Laboratory Director
Howard Varner, General Manager
Irma Faszewski, Quality Assurance Coordinator

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND NAD = no asbestos detected
SCF = suspected ceramic fibers

ARCADIS

19 PLM

Laboratory Task Order No./P.O. No.____ EHS 2006-11-3218 CUSTODY RECORD Page 1 of 2

Project Number/Name Encycle

Project Location Corpus Christi, TX

Laboratory Environmental Hazards Services

Project Manager Ken Bradner

Sampler(s)/Affiliation ARCADIS/Ken Bradner

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: Asbestos (PLM)	Remarks	Total
A-1	S	11/27/06 12:15		X	Analyze all 79 Samples with this shipment for asbestos using PLM.	1
A-2		12:30		X		1
A-3		12:45		X		1
A-4		12:55		X		1
A-5		13:10		X		1
A-6		13:20		X		1
A-7		13:30		X		1
A-8		13:40		X		1
A-9		13:50		X		1
A-10		14:00		X		1
A-11		14:10		X		1
A-12		14:20		X		1
A-13		14:30		X		1
A-14		14:40		X		1
A-15		14:50		X		1

SAMPLE CONDITION
Acceptable ____
Unacceptable ____

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers: 15

					Seal Intact?
Relinquished by: Ken Bradner	Organization: ARCADIS	Date 11/28/06	Time 5PM		
Received by:	Organization:	Date / /	Time		Yes No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time		Yes No N/A

Special Instructions/Remarks:
Results to Ken Bradner, ARCADIS, Corpus Christi, TX (Fax 361-883-7565)
5-day turnaround needed. (Phone 361-883-1353)

Delivery Method: ☐ In Person ☒ Common Carrier Federal Express ☐ Lab Courier ☐ Other ____ SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name: Encycle

Project Location: Corpus Christi, TX

Laboratory: Environmental Hazards Services

Project Manager: Ken Brandner

Sampler(s)/Affiliation: Ken Brandner / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: Asbestos (PLM)	Remarks	Total
A-16 thru A-28	S	11/27/06 15:00-17:00			13 samples (A-16 thru A-28)	13
A-29 thru A-79	S	11/28/06 8:20-16:45			51 samples (A-29 thru A-79)	51
					* Analyze all 79 samples this shipment for asbestos using PLM.	

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 64

Relinquished by: Ken Brandner	Organization: ARCADIS	Date 11/28/06	Time 5PM	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	(N/A)
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks: Results to Ken Brandner of ARCADIS Corpus Christi, TX
Need 5-day turnaround (Phone: 361-883-1353; Fax 361-887-7565)

Delivery Method: ☐ In Person ☒ Common Carrier _____ ☐ Lab Courier ☐ Other _____

SPECIFY

AG 05-12/01

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907

BULK ASBESTOS SAMPLE ANALYSIS SUMMARY

CLIENT: ARCADIS Geraghty & Miller
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

DATE OF RECEIPT: 04 Dec 2006
DATE OF ANALYSIS: 04 Dec 2006
DATE OF REPORT: 05 Dec 2006

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
01	A-80/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
02A	A-81(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous
02B	A-81(b)-Mastic/ Brown/Black Adhes.	NAD	5% Cellulose 95% Non-Fibrous
03A	A-82(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous
03B	A-82(b)-Mastic/ Brown/Black Adhes.	NAD	4% Cellulose 96% Non-Fibrous
04A	A-83(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous
04B	A-83(b)-Mastic/ Brown/Black Adhes.	NAD	4% Cellulose 96% Non-Fibrous
05	A-84/ Tan Fib.	NAD	96% Fibrous Glass 4% Non-Fibrous
06	A-85/ Black Tar-Like	8% Chrysotile 8% Total Asbestos	2% Cellulose 90% Non-Fibrous
07	A-86/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	2% Cellulose 92% Non-Fibrous
08A	A-87(a)-TSI/ White Powder	NAD	15% Synthetic 85% Non-Fibrous
08B	A-87(b)-Felt/ Black Fib.	NAD	92% Cellulose 8% Non-Fibrous
09	A-88/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	4% Cellulose 91% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
10	A-89/ Brown Powder	NAD	5% Fibrous Glass 95% Non-Fibrous
11	A-90/ Black Tar-Like	NAD	20% Cellulose 80% Non-Fibrous
12	A-91/ Brown/Gray Gran;. Black Tar-Like	2% Chrysotile 2% Total Asbestos	1% Cellulose 97% Non-Fibrous
13	A-92/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	2% Cellulose 92% Non-Fibrous
14	A-93/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	6% Cellulose 88% Non-Fibrous
15	A-94/ Black Fib.; Black Tar-Like	20% Chrysotile 20% Total Asbestos	20% Cellulose 60% Non-Fibrous
16	A-95/ Gray Brittle	NAD	100% Non-Fibrous
17	A-96/ Brown Fib.; Tan Powder	NAD	93% Cellulose 7% Non-Fibrous
18	A-97/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
19A	A-98(a)-Tile/ Tan Vinyl	4% Chrysotile 4% Total Asbestos	96% Non-Fibrous
19B	A-98(b)-Mastic/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	5% Cellulose 90% Non-Fibrous
20A	A-99(a)-Tile/ Tan Vinyl	4% Chrysotile 4% Total Asbestos	96% Non-Fibrous
20B	A-99(b)-Mastic/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	5% Cellulose 90% Non-Fibrous
21A	A-100(a)-Tile/ Tan Vinyl	4% Chrysotile 4% Total Asbestos	96% Non-Fibrous
21B	A-100(b)-Mastic/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	5% Cellulose 90% Non-Fibrous
22A	A-101(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
22B	A-101(b)-Mastic/ Brown Adhes.	NAD	5% Cellulose 95% Non-Fibrous
23A	A-102(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous
23B	A-102(b)-Mastic/ Brown Adhes.; Brown Fib.	NAD	60% Cellulose 40% Non-Fibrous
24A	A-103(a)-Tile/ Brown Vinyl	NAD	6% Cellulose 94% Non-Fibrous
24B	A-103(b)-Mastic/ Brown Adhes.; Brown Fib.	NAD	55% Cellulose 45% Non-Fibrous
25	A-104/ White Powder; Brown/White Fib.	35% Chrysotile 35% Total Asbestos	35% Cellulose 30% Non-Fibrous
26	A-105/ White Powder; White/Brown Fib.	35% Chrysotile 35% Total Asbestos	35% Cellulose 30% Non-Fibrous
27	A-106/ White Powder; White/Brown Fib.	35% Chrysotile 35% Total Asbestos	35% Cellulose 30% Non-Fibrous
28	A-107/ Black Tar-Like; Tan Fib.	6% Chrysotile 2% Amosite 8% Total Asbestos	2% Cellulose 90% Non-Fibrous
29	A-108/ Black Tar-Like; Tan Fib.	6% Chrysotile 2% Amosite 8% Total Asbestos	2% Cellulose 90% Non-Fibrous
30	A-109/ Black Tar-Like; Tan Fib.	6% Chrysotile 2% Amosite 8% Total Asbestos	2% Cellulose 90% Non-Fibrous
31	A-110/ White Powder; White Fib.	NAD	30% Cellulose 70% Non-Fibrous
32	A-111/ White Powder; White Fib.	NAD	30% Cellulose 70% Non-Fibrous
33	A-112/ White Powder; Black Tar-Like	3% Chrysotile 3% Total Asbestos	6% Cellulose 91% Non-Fibrous
34	A-113/ Gray Powder	NAD	100% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
35	A-114/ Gray Powder	NAD	100% Non-Fibrous
36	A-115/ Gray Powder	NAD	100% Non-Fibrous
37	A-116/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	3% Cellulose 91% Non-Fibrous
38	A-117/ Black Tar-Like; Black Fib.	NAD	60% Cellulose 40% Non-Fibrous
39	A-118/ White Powder; White Fib.	30% Chrysotile 25% Amosite 55% Total Asbestos	45% Non-Fibrous
40	A-119/ Tan Fib.; Brown Adhes.	NAD	85% Fibrous Glass 15% Non-Fibrous
41	A-120/ White Powder	NAD	20% Synthetic 80% Non-Fibrous
42	A-121/ Black Tar-Like; Gray Fib.	30% Chrysotile 30% Total Asbestos	30% Cellulose 40% Non-Fibrous
43	A-122/ Gray Gran.	NAD	100% Non-Fibrous
44	A-123/ Gray Gran.	NAD	100% Non-Fibrous
45	A-124/ Gray Gran.	NAD	100% Non-Fibrous
46	A-125/ Gray Gran.	NAD	100% Non-Fibrous
47A	A-126(a)-Linoleum/ Green Vinyl; Gray Fib.	20% Chrysotile 20% Total Asbestos	20% Cellulose 60% Non-Fibrous
47B	A-126(b)-Mastic/ Tan Adhes.	Trace, <1% Chrysotile ★ <1% Total Asbestos ★Possible contamination from fibrous backing.	3% Cellulose 97% Non-Fibrous
48	A-127/ Tan Brittle	NAD	100% Non-Fibrous
49	A-128/ Black Tar-Like; Black Fib.	10% Chrysotile 10% Total Asbestos	15% Cellulose 75% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
50	A-129/ Tan Gran.; Tan Powder	15% Chrysotile 15% Total Asbestos	85% Non-Fibrous
51	A-130/ Brown Powder; Brown Fib.	5% Chrysotile 25% Amosite 30% Total Asbestos	5% Cellulose 65% Non-Fibrous
52	A-131/ Tan Fib.; Tan Powder	35% Chrysotile 35% Total Asbestos	30% Fibrous Glass 35% Non-Fibrous
53	A-132/ Black Tar-Like; Black Fib.	NAD	30% Cellulose 70% Non-Fibrous
54	A-133/ Black Tar-Like	NAD	30% Cellulose 70% Non-Fibrous
55	A-134/ Black Tar-Like	NAD	2% Cellulose 98% Non-Fibrous
56	A-135/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
57	A-136/ Yellow Fib.	NAD	96% Fibrous Glass 4% Non-Fibrous
58	A-137/ White Powder; Brown Fib.	NAD	35% Cellulose 65% Non-Fibrous
59	A-138/ Black Tar-Like; Black Fib.	NAD	45% Cellulose 55% Non-Fibrous
60	A-139/ Brown Fib.; Black Tar-Like	NAD	60% Cellulose 40% Non-Fibrous
61	A-140/ Black Tar-Like; Black Fib.	NAD	45% Cellulose 55% Non-Fibrous
62	A-141/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
63A	A-142(a)-Tile/ Tan Vinyl	NAD	100% Non-Fibrous
63B	A-142(b)-Mastic/ Brown Adhes.	NAD	2% Cellulose 98% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
64A	A-143(a)-Tile/ Tan Vinyl	NAD	100% Non-Fibrous
64B	A-143(b)-Mastic/ Brown Adhes.; Tan Powder	NAD	3% Cellulose 97% Non-Fibrous
65A	A-144(a)-Tile/ Tan Vinyl	NAD	100% Non-Fibrous
65B	A-144(b)-Mastic/ Brown Adhes.	NAD	4% Cellulose 96% Non-Fibrous
66A	A-145(a)-Tile/ Blue Vinyl	NAD	100% Non-Fibrous
66B	A-145(b)-Mastic/ Tan Adhes.	NAD	1% Cellulose 99% Non-Fibrous
67A	A-146(a)-Tile/ Blue Vinyl	NAD	100% Non-Fibrous
67B	A-146(b)-Mastic/ Tan Adhes.	NAD	1% Cellulose 99% Non-Fibrous
68A	A-147(a)-Tile/ Blue Vinyl	NAD	100% Non-Fibrous
68B	A-147(b)-Mastic/ Tan/Brown Adhes.	NAD	2% Cellulose 98% Non-Fibrous
69	A-148/ White Powder; Brown Fib.	NAD	35% Cellulose 65% Non-Fibrous
70	A-149/ Black Tar-Like	NAD	35% Cellulose 65% Non-Fibrous
71	A-150/ Black Tar-Like; Black Fib.	NAD	35% Cellulose 65% Non-Fibrous
72	A-151/ Tan Vinyl; Tan Fib.	NAD	35% Cellulose 5% Synthetic 60% Non-Fibrous
73	A-152/ Tan Vinyl; Tan Fib.	NAD	35% Cellulose 5% Synthetic 60% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
74A	A-153(a)-Linoleum/ Tan Vinyl; Tan Fib.	NAD	35% Cellulose 5% Synthetic 60% Non-Fibrous
74B	A-153(b)-Mastic/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	4% Cellulose 91% Non-Fibrous
75A	A-154(a)-Tile/ Tan Vinyl	NAD	100% Non-Fibrous
75B	A-154(b)-Mastic/ Brown Adhes.	NAD	3% Cellulose 97% Non-Fibrous
76A	A-155(a)-Linoleum/ Brown Vinyl; Tan Fib.	20% Chrysotile 20% Total Asbestos	20% Cellulose 60% Non-Fibrous
76B	A-155(b)-Mastic/ Black Tar-Like	5% Chrysotile 5% Total Asbestos	2% Cellulose 93% Non-Fibrous
77A	A-156(a)-Tile/ Brown Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
77B	A-156(b)-Mastic/ Black Tar-Like	4% Chrysotile 4% Total Asbestos	6% Cellulose 90% Non-Fibrous
78	A-157/ Gray Vinyl; Brown Fib.	NAD	20% Cellulose 80% Non-Fibrous
79	A-158/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
80	A-159/ White Powder; Tan Fib.	NAD	30% Cellulose 70% Non-Fibrous
81	A-160/ Gray Powder; Gray Fib.	55% Chrysotile 55% Total Asbestos	45% Non-Fibrous
82	A-161/ Gray Fib.	65% Chrysotile 65% Total Asbestos	20% Cellulose 15% Non-Fibrous
83A	A-162(a)-Tile I/ Tan Vinyl	NAD	100% Non-Fibrous
83B	A-162(b)-Tile II/ Black Vinyl	3% Chrysotile 3% Total Asbestos	97% Non-Fibrous
83C	A-162(c)-Mastic/ Brown Adhes.	NAD	3% Cellulose 97% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
84A	A-163(a)-Tile/ Gray Vinyl	NAD	100% Non-Fibrous
84B	A-163(b)-Mastic/ Tan Adhes.; White Powder	NAD	2% Cellulose 98% Non-Fibrous
85	A-164/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
86	A-165/ White/Black Fib.; White Powder	NAD	30% Cellulose 10% Synthetic 60% Non-Fibrous
87	A-166/ Brown Fib.	NAD	94% Fibrous Glass 6% Non-Fibrous
88A	A-167(a)-Tile/ Gray Vinyl	NAD	100% Non-Fibrous
88B	A-167(b)-Mastic/ Brown Adhes.	NAD	3% Cellulose 97% Non-Fibrous
89A	A-168(a)-Tile/ Brown Vinyl	NAD	100% Non-Fibrous
89B	A-168(b)-Mastic/ Tan Adhes.	NAD	10% Cellulose 90% Non-Fibrous
90	A-169/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
91	A-170/ Black Tar-Like; Black Fib.	NAD	45% Cellulose 55% Non-Fibrous
92A	A-171(a)-Tile/ Brown Vinyl	NAD	100% Non-Fibrous
92B	A-171(b)-Mastic/ Brown Adhes.	NAD	2% Cellulose 98% Non-Fibrous
93A	A-172(a)-Tile/ Black Vinyl	NAD	100% Non-Fibrous
93B	A-172(b)-Mastic/ Tan Adhes.	NAD	4% Cellulose 96% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
94	A-173/ Brown Fib.	NAD	60% Cellulose 10% Fibrous Glass 30% Non-Fibrous
95	A-174/ Yellow Fib.	NAD	96% Fibrous Glass 4% Non-Fibrous
96	A-175/ Brown Fib.	NAD	93% Cellulose 7% Non-Fibrous
97	A-176/ Brown Fib.	NAD	93% Cellulose 7% Non-Fibrous
98	A-177/ Brown Fib.	NAD	93% Cellulose 7% Non-Fibrous
99	A-178/ Black Tar-Like; Black Fib.	NAD	45% Cellulose 55% Non-Fibrous
100A	A-179(a)-Tile/ Tan Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
100B	A-179(b)-Mastic/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	3% Cellulose 91% Non-Fibrous
101A	A-180(a)-Tile/ Tan Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
101B	A-180(b)-Mastic/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	3% Cellulose 91% Non-Fibrous
102A	A-181(a)-Tile/ Tan Vinyl	5% Chrysotile 5% Total Asbestos	95% Non-Fibrous
102B	A-181(b)-Mastic/ Black Tar-Like	6% Chrysotile 6% Total Asbestos	3% Cellulose 91% Non-Fibrous
103	A-182/ Brown Fib.; Tan Powder	NAD	93% Cellulose 7% Non-Fibrous
104A	A-183(a)-Cove Base/ Tan Vinyl	NAD	100% Non-Fibrous
104B	A-183(b)-Mastic/ Tan Adhes.	NAD	3% Cellulose 97% Non-Fibrous
105A	A-184(a)-Cove Base/ Tan Vinyl	NAD	100% Non-Fibrous

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0281
PROJECT: Encycle

EHS SAMPLE #	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS	OTHER MATERIALS
105B	A-184(b)-Mastic/ Tan Adhes.	NAD	3% Cellulose 97% Non-Fibrous
106A	A-185(a)-Cove Base/ Tan Vinyl	NAD	100% Non-Fibrous
106B	A-185(b)-Mastic/ Tan Adhes.	NAD	4% Cellulose 96% Non-Fibrous
107	A-186/ Red Brittle	11% Chrysotile 11% Total Asbestos	89% Non-Fibrous
108	A-187/ Red Brittle	11% Chrysotile 11% Total Asbestos	89% Non-Fibrous
109	A-188/ Red Brittle	11% Chrysotile 11% Total Asbestos	89% Non-Fibrous

QC SAMPLE: NIST REF

QC BLANK: SRM 1866 Fiberglass

REPORTING LIMIT: 1% Asbestos

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116 *

ANALYST: Christian H. Schaible

Reviewed By Authorized Signatory: _____

Michael A. Mueller, MPH, Laboratory Director
Howard Varner, General Manager
Irma Faszewski, Quality Assurance Coordinator

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714. All information concerning sampling location, date, and time can be found on Chain-of-Custody. Environmental Hazards Services, L.L.C. does not perform any sample collection.

Environmental Hazards Services, L.L.C. recommends reanalysis by point count (for more accurate quantification) or Transmission Electron Microscopy (TEM), for enhanced detection capabilities) for materials regulated by the EPA NESHAP (National Emission Standards for Hazardous Air Pollutants) and found to contain less than ten percent (<10%) asbestos by polarized light microscopy (PLM). Both services are available for an additional fee.

* All California samples analyzed by Polarized Light Microscopy, EPA Method 600/M4-82-020, Dec. 1982.

LEGEND NAD = no asbestos detected
SCF = suspected ceramic fibers

ARCADIS 100 PLM

Laboratory Task Ord EHS 2006-12-0281 _ **CHAIN-OF-CUSTODY RECORD** Page 1 of 2

Project Number/Name Encycle

Project Location Corpus Christi, TX

Laboratory Environmental Hazards Services

Project Manager Ken Brandner

Sampler(s)/Affiliation Ken Brandner / ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE: Asbestos (PLM)						Remarks	Total
A-80	S	11/29/06 8:10		X						Analyze all	1
A-81		8:20		X						samples for	1
A-82		8:25		X						asbestos using PLM.	1
A-83		8:30		X							1
A-84		8:40		X							1
A-85		8:50		X							1
A-86		9:00		X							1
A-87		9:10		X							1
A-88		9:20		X							1
A-89		9:30		X							1
A-90		9:40		X							1
A-91		9:50		X							1
A-92		10:00		X							1
A-93		10:10		X							1
A-94		10:20		X							1

SAMPLE CONDITION
acceptable
unacceptable

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/ Containers 15

					Seal Intact?
Relinquished by: Kenneth Brandner	Organization: ARCADIS	Date 12/04/06	Time PM		
Received by: 12-4-06	Organization:	Date / /	Time	Yes	No N/A
Relinquished by:	Organization:	Date / /	Time		Seal Intact?
Received by:	Organization:	Date / /	Time	Yes	No N/A

Special Instructions/Remarks: Results to Ken Brandner, ARCADIS Corpus Christi, TX (Fax 361-883-7565)
5-day turnaround needed. (Phone: 361-883-1353)

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex ☐ Lab Courier ☐ Other

SPECIFY SPECIFY

AG 05-12/01

ARCADIS

Laboratory Task Order No./P.O. No. _____

CHAIN-OF-CUSTODY RECORD

Page 2 of 2

Project Number/Name: Encycle

Project Location: Corpus Christi, TX

Laboratory: Environmental Hazards Services

Project Manager: Ken Brandner

Sampler(s)/Affiliation: Ken Brandner/ARCADIS

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE (Asbestos-PLM)	Remarks	Total
A-95 thru A-133	S	11/29/06 10:30-16:50		X	*Analyze all 109 samples this shipment for asbestos using PLM	39
A-134 thru A-150	S	11/30/06 14:20-16:55		X		17
A-151 thru A-188	S	12/1/06 8:10-13:30		X		38

Sample Matrix: L = Liquid; S = Solid; A = Air

Total No. of Bottles/Containers: 94

Relinquished by: Ken Brandner	Organization: ARCADIS	Date 12/1/06	Time PM	Seal Intact?		
Received by: (12-4-06)	Organization:	Date / /	Time	Yes	No	N/A
Relinquished by:	Organization:	Date / /	Time	Seal Intact?		
Received by:	Organization:	Date / /	Time	Yes	No	N/A

Special Instructions/Remarks:

Results to Ken Brandner, ARCADIS Corpus Christi, TX (Fax 361-883-7565) (Phone 361-883-1353)

5-day turnaround needed

Delivery Method: ☐ In Person ☒ Common Carrier Fed Ex SPECIFY ☐ Lab Courier ☐ Other SPECIFY

AG 05-1203

ENVIRONMENTAL HAZARDS SERVICES, L.L.C.

7469 WHITE PINE ROAD - RICHMOND, VA 23237
804-275-4788 FAX 804-275-4907

ASBESTOS POINT COUNT ANALYSIS SUMMARY

CLIENT: ARCADIS Geraghty & Miller
711 North Carancahua, Suite 1700
Corpus Christi, TX 78475-1801

DATE OF RECEIPT: 07 Dec 2006
DATE OF ANALYSIS: 08 Dec 2006
DATE OF REPORT: 09 Dec 2006

CLIENT NUMBER: 45-2081 D
EHS PROJECT #: 2006-12-0907
PROJECT: Encycle; EHS #2006-12-0281

EHS SAMPLE#	CLIENT SAMPLE #/ LABORATORY GROSS DESCRIPTION	% ASBESTOS
01	A162B/ Black Vinyl	1.75% Chrysotile

REPORTING LIMIT: 0.25% Asbestos

METHOD: Polarized Light Microscopy, EPA Method 600/R-93/116

ANALYST: Christian H. Schaible

Reviewed By Authorized Signatory:

Michael A. Mueller, MPH, Laboratory Director
Howard Varner, General Manager
Irma Faszewski, Quality Assurance Coordinator

The condition of the samples analyzed was acceptable upon receipt per laboratory protocol unless otherwise noted on this report. Results represent the analysis of samples submitted by the client. Sample location, description, area, volume, etc., was provided by the client. This report cannot be used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full without the written consent of Environmental Hazards Services, L.L.C. California Certification #2319 NY ELAP #11714

LEGEND NAD = no asbestos detected

EHS 2006-12-0907

Environmental Hazards Services, LLC

7469 White Pine Road
Richmond, Virginia 23237
(804) 275-4788 Fax (804) 275-4907

Request For POINT COUNT Analysis

Customer Information:
Company Name: Arcadis
Address: 711 North Carancahua
City, State, Zip Corpus Cristi, TX 78475
Contact: Ken

Date: 12-7-06
Phone: 361-883-1353
Fax: 361-883-7565
Project: Encycle
Count: (400) 1000

Client Sample #	EHS Sample #	Sample Location
A1162-b	83B	

Date/Time Samples Received: 12-4-06 Received By: Tara
EHS # (original report): 2006-12-0281
Date/Time Request Received: 12-7-06 Received By: Tiffany
Original Analyst: Chris Date Analyzed: 12-4-06

ATTACHMENT 3

Texas Department of State Health Services Licenses

TEXAS Department of State Health Services

Control No: 92228

Department of State Health Services certifies that:

KENNETH J BRANDNER

Is Licensed as an:
Individual Asbestos Management Planner

License Number: 205050
From: 03/31/2006
To: 03/30/2008

P.01
NOV 17 2006 8:49
ENVIRONMENTAL HAZARDS FAX:8042759497
PAGE1
11-16-2006 20:37 ARCADIS CORPUS CHRISTI 3618837565

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

Be it known that

ENVIRONMENTAL HAZARDS SERVICES LLC

is certified to perform as a

Asbestos Laboratory
PLM, PCM

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

Eduardo J. Sanchez, M.D., M.P.H.
Commissioner of Health

License Number: 300188
Effective Date: 2/8/2006

Expiration Date: 2/7/2008
(Void After Expiration Date)

VOID IF ALTERED

Control Number: 91453

NON-TRANSFERABLE

ATTACHMENT C

Project Managers

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

Steve Strong
9557

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-0532-1

Date(s) of Training: 5/3/10

Instructor

Expiration Date: 5/4/11

Director of Training

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

Moses Rosas

ID#9044

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-1427-1

Date(s) of Training: 12/20/2010

Expiration Date: 12/19/2011

Instructor

Director of Training

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

Rigo Martinez

ID#5620

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-0977-1

Date(s) of Training: 9/3/2010

Expiration Date: 9/2/2011

Instructor

Director of Training

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

Melanie Fox

ID#5972

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-1427-2

Date(s) of Training: 12/20/2010

Expiration Date: 12/19/2011

Instructor

Director of Training

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

David De Los Santos

9147

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-0977-2

Date(s) of Training: 9/3/2010

Expiration Date: 9/2/2011

Instructor

Director of Training

TURNSTONE EH&S, Inc.

5449 Bear Lane Suite 440
Corpus Christi, TX 78405
(361) 289-2510

This is to certify that

Jerry Armstrong
0588

Has Successfully Completed the

8 Hr Asbestos Contractor Supervisor Refresher Course

Required by 40 CFR 763, Subpart E, Appendix C (EPA MAP), and TSCA Title II

Meets the requirements of the Texas Department of State Health Services
Certificate #10-0773-2

Date(s) of Training: 7/1/2010

Expiration Date: 6/30/2011

Instructor

Director of Training

ATTACHMENT D

TDSHS
Asbestos Consultant Agency License
&
Asbestos Laboratory License

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

TURNSTONE EH&S, INC.

is certified to perform as a

Asbestos Consultant Agency

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

DAVID LAKEY, M.D.
COMMISSIONER OF HEALTH

License Number: 100408

Expiration Date: 4/12/2012

Control Number: 96311

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

TEXAS DEPARTMENT OF STATE HEALTH SERVICES

TURNSTONE EH&S, INC.

is certified to perform as a

Asbestos Laboratory
PCM

in the State of Texas within the purview of Texas Occupations Code, chapter 1954, so long as this license is not suspended or revoked and is renewed according to the rules adopted by the Texas Board of Health.

DAVID LAKEY, M.D.
COMMISSIONER OF HEALTH

License Number: 300372

Expiration Date: 3/8/2011

Control Number: 95554

(Void After Expiration Date)

VOID IF ALTERED NON-TRANSFERABLE

ATTACHMENT E

Project Work Plan with Addendum 1 and 2

Exhibit "A"

Scope of Work – Asbestos Abatement, Waste Removal, and Building Demolition

1.0 GENERAL

The Encycle facility is comprised of approximately 52 above-grade buildings, a 315-foot-high concrete/brick smokestack, a water tower, approximately 11 metal silos, several cooling towers, and numerous above-ground storage tanks and associated piping and ancillary equipment. The locations of these buildings and structures are shown on Figure A-1. The Contactor scope of work for this project shall include asbestos abatement, waste removal, and demolition of all of the following buildings and associated above-ground piping and ancillary equipment:

1. Facility #1 (Building 1 on Figure A-1);
2. Facility #2 (Building 2 on Figure A-1);
3. Facility #3 (Building 3 on Figure A-1);
4. Facility #4 (Building 4 on Figure A-1);
5. East Product Storage Building (Building 5 on Figure A-1);
6. Product Storage Building (Building 6 on Figure A-1);
7. Old Casting Building (Building 7 on Figure A-1);
8. Hazardous Waste Storage Building (Building 8 on Figure A-1);
9. Sanitary Wastewater Building (Building 9 on Figure A-1);
10. Product Storage Building/Numbered Bins Building (Building 10 on Figure A-1);
11. Wastewater Treatment Building (Building 11 on Figure A-1);
12. Brick Building (Building 12 on Figure A-1);
13. Yard Offices (Building 13 on Figure A-1);
14. Lettered Bins Building (Building 14 on Figure A-1);
15. Plant Engineering Building (Building 15 on Figure A-1);
16. East Cell House (Building 16 on Figure A-1);
17. East Bag House (Building 17 on Figure A-1);
18. Brick Building (Building 18 on Figure A-1);
19. Substation Building (Building 19 on Figure A-1);
20. Brick Building (Building 20 on Figure A-1);
21. Oil House (Building 21 on Figure A-1);
22. Metal Building (Building 22 on Figure A-1);
23. Metal Building (Building 23 on Figure A-1);
24. West Bag House (Building 24 on Figure A-1);
25. Power House (Building 25 on Figure A-1);
26. West Cell House (Building 26 on Figure A-1);
27. South Reagent Storage Building (Building 27 on Figure A-1);
28. Reagent Storage Building/NOR (Building 28 on Figure A-1);
29. Brick Building (Building 29 on Figure A-1);

30. Brick Building (Building 30 on Figure A-1);
31. Spill Sorbent Storage Building (Building 31 on Figure A-1);
32. Zinc Building/Nickel Building (Building 32 on Figure A-1);
33. Lunch Room (Building 33 on Figure A-1);
34. MCC L&M Building (Building 34 on Figure A-1);
35. Scale House (Building 35 on Figure A-1);
36. Reagent Storage (Building 36 on Figure A-1);
37. MCC 29D Building (Building 37 on Figure A-1);
38. Brick Building (Building 38 on Figure A-1);
39. Substation Building (Building 39 on Figure A-1);
40. Substation Building (Building 40 on Figure A-1);
41. Lab (Building 41 on Figure A-1);
42. Brick Building (Building 43 on Figure A-1);
43. Brick Building (Building 44 on Figure A-1);
44. Brick Building (Building 45 on Figure A-1);
45. Brick Building (Building 52 on Figure A-1);
46. Smokestack (Building 53 on Figure A-1);
47. Water Tower;
48. Metal Silos, including Silos A through K on Figure A-1;
49. Cooling Towers; and
50. Above-ground Storage Tanks (>100 tanks).

The Contractor scope of work for asbestos abatement activities associated with the above-listed buildings and structures to be demolished are provided below in Section 2. The Contractor scope of work for waste removal activities associated with the above-listed buildings and structures to be demolished are provided below in Section 3. The Contractor scope of work for demolition of the above-listed buildings and structures are provided below in Section 4.

The buildings on the Encycle facility which will <u>not</u> be demolished are as follows:

1. Metal Building (Building 42 on Figure A-1);
2. Administration and Lab Building (Building 46 on Figure A-1);
3. Change House/Guard House (Building 47 on Figure A-1);
4. Visitor Center (Building 48 on Figure A-1);
5. Admin Offices (Building 49 on Figure A-1);
6. Fire Water Building (Building 50 on Figure A-1); and
7. Warehouse Storage Building (Building 51 on Figure A-1).

Also, no buildings or structures on the Meaney Tract, located directly west of the Encycle facility, will be demolished as part of this project. No structures on the low-lying northern

portion of the site (i.e., East and West Lagoon) located north of the Union Pacific Railroad 100-foot right-of-way, will be demolished as part of this project. No ground level concrete pad-mounted transformers located outside of buildings will be drained or demolished as part of this project.

2.0 ASBESTOS ABATEMENT

2.1 GENERAL

Information on asbestos containing material (ACM) in the buildings and structures to be demolished, including the presence of Galbestos siding on the building exteriors, is included in the December 14, 2006 report by ARCADIS entitled "Asbestos Inspection Results, Encycle Facility, 5500 Up River Road, Corpus Christi, Texas". Within 90 calendar days following award of Contract, and prior to ACM removal, Contractor shall prepare an asbestos abatement project design for all of the ACM in all of the interior and exterior portions of all of the buildings and structures to be demolished. The asbestos abatement project design shall be prepared by an EPA-accredited Asbestos Abatement Project Designer. The design shall include, but not be limited to, the evaluation and selection of appropriate friable and non-friable ACM removal methods; personnel protective equipment (PPE) to be utilized by personnel conducting asbestos abatement; and ACM waste transport and disposal procedures. PPE for asbestos abatement workers shall include respirators with high-efficiency particulate (HEPA) filters. A copy of the asbestos abatement project design shall be provided to the Trustee prior to initiation of asbestos abatement activities.

A Texas Department of State Health Services Asbestos Demolition Notification Form shall be prepared by the Contractor prior to initiation of asbestos abatement activities. The Asbestos Demolition Notification Form shall be submitted to the Texas Department of State Health Services postmarked no less than ten working days (not calendar days) prior to the start of any asbestos abatement or demolition. Contractor shall include as part of Contractor's Base Bid the cost of the Texas Department of State Health Services asbestos abatement filing fee and all other Texas Department of State Health Services fees for all of the ACM to be removed from the site. A copy of the notification form shall be provided to the Trustee prior to initiation of asbestos abatement activities.

2.2 DESCRIPTION OF WORK

The Contractor Work Requirements shall involve removal of the all of the ACM in all of the buildings and structures to be demolished by EPA-accredited asbestos abatement workers with a minimum of one on-site EPA-accredited asbestos project manager/supervisor during all abatement activities. All personnel conducting asbestos abatement activities shall have

successfully completed an EPA-accredited asbestos abatement worker training course, and subsequent annual refresher courses. Copies of the licenses and evidence of satisfactory asbestos abatement training shall be maintained by the Contractor at the project site and be available for review by the Trustee and the Trustee's designated representatives.

The ACM shall be removed in accordance with applicable federal, state, and local regulations, including applicable EPA regulations given in the National Emission Standards for Hazardous Air Pollutants (NESHAPS) (40 CFR Part 61); applicable EPA regulations given in the Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763); applicable OSHA Regulations given in 29 CFR Parts 1910 and 1926; and applicable Texas Department of State Health Services regulations given in the Texas Asbestos Health Protection Rules (TAHPR).

The Contractor (or its Subcontractor) shall provide all labor, equipment, materials, services (including water and electric power), training, insurance, regulatory notifications (including permits, work plans, and variance applications) and services necessary for the removal, segregation, handling, containerization, and proper disposal of all friable and non-friable ACM present at the site buildings and structures to be demolished. Work shall be performed in accordance with this Section, Contract Documents and all applicable Laws and Regulations.

The Contractor shall be responsible for verifying all existing field conditions including, but not limited to, type, condition, quantities, and locations of ACMs present. Information presented in the Asbestos Survey Report shall be used by the Contractor only for determining type, condition and general location of ACMs that require abatement. The Contractor shall be responsible for determining actual quantities of ACMs listed in the Asbestos Survey Report via direct visual observation and field measurements.

Several of the buildings at the facility that contain ACM are structurally unsound as described in the attached Structural Assessment Report prepared by URS (Attachment A-2). Contractor can conduct ACM removal in structurally unsound areas at the time of building and structure demolition activities (described below in Section 4) as needed to safely access the ACM for removal. All ACM shall be removed in accordance with applicable Laws and Regulations.

The Contractor shall provide United States Department of Transportation- (USDOT-) approved, leak-tight containers for containerization of friable waste materials generated as a result of the ACM abatement activities. The waste containers shall meet the minimum requirements set forth in 40 CFR 61.50. All containers shall be labeled by the Contractor in accordance with applicable Laws and Regulations.

Personnel shall wear and utilize protective clothing and equipment. The Contractor shall not permit eating, using chewing tobacco, drinking, chewing gum, or applying cosmetics in the regulated area(s). Personnel of other trades shall not be exposed at any time to airborne asbestos

at regulated concentrations. The Contractor shall bear all costs associated with permits, training, licensing, notifications, and all other fees related to the Contractor's ability to perform the work specified in this Section.

During and following the removal activities, the Contractor (or its asbestos abatement Subcontractor) shall containerize and place the removed ACMs into a temporary staging area(s) separate from any other waste material. The staging area(s) shall be constructed such to shelter the asbestos-containing waste from the elements (e.g., wind, precipitation, and surface water runoff).

The Contractor shall be responsible for all demolition work required to properly access and abate all ACMs. This shall also include all means and methods for proper dismantling of equipment, building components and other structures as necessary to complete the abatement. The Contractor shall be responsible for properly moving all non-asbestos demolition debris out of the work area to allow for asbestos abatement to be properly performed.

The Contractor shall be responsible for all personal air monitoring, perimeter air monitoring and post-abatement clearance monitoring as required by applicable Laws and Regulations in place at the time of Contract award. If during removal activities, air quality regulatory levels related to asbestos are exceeded, the Contractor shall immediately notify the Trustee and take all appropriate measures to reduce the concentration of airborne asbestos (e.g., wetting) as part of Contractor's Base Bid. The Contractor shall provide electrical power and water as required to support implementation of the abatement and air monitoring activities. The Contractor shall be responsible for achieving post-abatement clearance criteria. Should the work area fail the clearance monitoring, the Contractor (or its Subcontractor) shall repeatedly clean the work area as part of Contractor's Base Bid. The Contractor shall pay for all additional cleaning, testing, and inspections until the clearance is achieved as part of Contractor's Base Bid.

The Contractor shall be responsible for proper storage, loading, rigging, transportation and disposition of all friable and non-friable asbestos-containing waste generated during implementation of the Work. The ACM shall be transported to landfill(s) authorized to accept asbestos wastes. Costs for all asbestos abatement activities for all buildings and structures to be demolished, including all waste removal, transport and disposal costs shall be included as part of Contractor's Base Bid. All offsite shipments of asbestos waste shall be manifested, and the Encycle Notice of Registration (NOR) waste code number for "Asbestos from Remediation and Demolition of Equipment and Facilities" is 00013111. The generator section of each manifest shall be signed by the Encycle Trustee or the Trustee's designated representative prior to transport to the authorized landfill.

3.0 HAZARDOUS WASTE REMOVAL AND UNIT DECONTAMINATION

3.1 GENERAL

Waste management units at the Encycle facility included numerous tanks, filters, hoppers, dryers, bulk solids storage areas, and container storage areas. As shown on Table A-1, most of these waste management units have been previously emptied, decontaminated and closed by others. Residual fluids that may be present in these previously certified closed waste management units currently consist of storm water. The waste management units that have already been closed, as shown on Table A-1, do not require further decontamination by the Contractor prior to demolition.

Waste management units that have not yet been closed by the Texas Commission on Environmental Quality, which require waste removal, waste disposal, and waste management unit decontamination by the Contractor as part of the Contractor's Base Bid, are summarized on Tables A-2, A-3, and A-4.

As shown on Table A-2, twenty three tanks and one drum filter require waste removal, waste disposal, and waste management unit decontamination by the Contractor as part of the Contractor's Base Bid. The estimated volume of materials in the units listed on Table A-2 to be disposed of by the Contractor as characteristic hazardous waste as part of the Contractor's Base Bid is 215,250 gallons of water and 488 tons of sludge/solids. If the actual volume of hazardous wastes inside these units is different than the Base Bid volumes, Contractor shall provide additive/deductive unit costs for hazardous waste removal, waste transportation, and waste disposal in Section 9, Bid Item No. 2a and 2b. The Contractor scope of work for this task is described below in Section 3.2.

As shown on Table A-3, twelve container storage areas and two miscellaneous storage containers require decontamination by the Contractor as part of the Contractor's Base Bid. No wastes are currently present inside these twelve container storage areas and two miscellaneous storage containers. However, Contractor shall decontaminate and triple-rinse these units. The estimated total volume of rinse water to be disposed of by the Contractor as characteristic hazardous waste as part of the Contractor's Base Bid for the units listed on Table A-3 is 14,000 gallons (average 1,000 gallons per unit). If the actual volume of hazardous waste rinse water for these units is different than the Base Bid volume, Contractor shall provide additive/deductive unit costs for rinse water removal, transportation, and disposal in Section 9, Bid Item No. 2a. The Contractor scope of work for this task is described below in Section 3.3.

As shown on Table A-4, residual hazardous wastes are present inside several of the buildings and structures at the site. Removal and disposal of these residual hazardous wastes shall be conducted by the Contractor as part of the Contractor's Base Bid. Based on visual observations

and previous sampling conducted in 2000, the estimated volume of materials inside the buildings and structures listed on Table A-4 to be disposed of by the Contractor as characteristic hazardous waste as part of the Contractor's Base Bid is 10,000 gallons of water and 1,300 tons of sludge/solids. If the actual volume of hazardous wastes inside these buildings and structures is different than the Base Bid volumes, Contractor shall provide additive/deductive unit costs for hazardous waste removal, waste transportation, and waste disposal in Section 9, Bid Item No. 2a and 2b. The Contractor scope of work for this task is described below in Section 3.4.

Several of the buildings at the facility that contain wastes are structurally unsound as described in the attached Structural Assessment Report prepared by URS (Attachment A-2). Contractor can conduct waste removal in structurally unsound areas at the time of building and structure demolition activities (described below in Section 4) as needed to safely access the wastes for removal.

3.2 TANK AND DRUM FILTER WASTE REMOVAL AND DECONTAMINATION

As shown on Table A-2, a total of twenty three (23) tanks and one drum filter will require waste removal and decontamination by the Contractor selected for this project. Construction details for these units are summarized on Table A-2. As shown on Table A-2, the units are constructed of wood, stainless steel, fiberglass, and/or concrete. The estimated total volume of water and sludge/solids in these units, including unit decontamination rinse water, is 215,250 gallons and 488 tons, respectively.

These tanks previously contained metal-bearing hazardous waste. Representative samples of the wastes in other tanks with similar contents showed that the water and sludge/solids in the tanks contains Toxicity Characteristic Leaching Procedure (TCLP) cadmium concentrations above the Class I hazardous waste limit of 1.0 milligrams per liter (mg/L). The concentrations of other metals in the wastes, including lead, may also exceed their respective TCLP Class I hazardous waste limits. For bidding purposes, the Contractor shall assume the 23 tanks and drum filter listed on Table A-2 contain a combined volume of 215,250 gallons of Class I hazardous water (including unit decontamination rinse water) and a combined volume of 488 tons of Class I hazardous sludge/solids to be removed, transported, and disposed of by the Contractor at authorized hazardous waste disposal facilities. The Contractor shall include waste removal, waste transport, waste disposal, and decontamination of these 23 tanks and drum filter as part of Contractors Base Bid. Liquids (<2% solids) from similar tanks at the Site have been previously accepted for disposal at the Texas Molecular commercial injection well facility in Corpus Christi, Texas. Sludges/solids from similar tanks at the Site have been previously accepted for disposal at the U.S. Ecology Texas landfill in Robstown, Texas. Contractor shall be responsible for waste disposal profiling of all wastes inside these 24 units as part of Contractor's Base Bid. All waste shipments shall be manifested. The Texas Waste Codes for the manifests are available

on the NOR for the Encycle facility. The generator section of each manifest shall be signed by the Encycle Trustee or the Trustee's designated representative prior to transport to the authorized disposal facility.

All Contractor personnel and all of Contractor's subcontract personnel performing work at the Site that may come in contact with the wastes must have completed a 40-hour health and safety training course and subsequent annual refresher training in accordance with OSHA requirements in Title 29 Code of Federal Regulations, Part 1910. Contractor's health & safety plan to be prepared for this project shall include a requirement that PPE to be worn by personnel that may come in contact with the waste contents include hardhats, safety glasses, steel-toed boots, chemical resistant gloves, chemical resistant suits, and particulate respirators. Disposal of Contractor's used PPE shall be included as part of Contractor's Base Bid.

The existing elevated floors and walkways that provide access to these tanks and drum filter are deteriorated. Contractor shall reinforce these floors and walkways using ¾-inch-thick plywood sheeting or equivalent as needed by the Contractor to access the tanks and drum filter. The plywood sheeting shall be securely attached to the existing walkways by the Contractor.

The four wooden tanks on the second floor of the Facility No. 2 building (Tanks 25 - 28 on Table A-2) are not safely accessible. Therefore these four tanks can be removed from the building by the Contractor prior to removal of the residual wastes from the tanks. Contractor can use a crane/hoist to remove these four tanks from the building during demolition, or an alternate method pending approval by the Trustee or the Trustee's designated representative. Contractor shall take all necessary precautions to ensure the residual wastes inside these tanks are not spilled/released into the existing on-site storm sewer system. These four tanks can then be placed into a water-tight lined roll-off box or an existing bermed secondary containment structure for waste removal and tank decontamination.

With the exception of the four tanks on the second floor of the Facility No. 2 building, prior to removal of the wastes from the tanks, Contractor shall cut or remove all water transfer piping into the tanks and drum filter, including roof drain piping. The piping shall be cut or removed outside of the tank and drum filter perimeter. The piping shall be cut or removed to prevent roof drain rainwater from entering the tanks and drum filter during waste removal and decontamination activities.

Contractor shall provide labor and equipment as necessary to ensure all of the wastes are removed from the tanks and drum filter. Any doorways/walkways cut on the tank sidewalls by Contractor to provide access to the wastes shall be cut at least 12 inches above the level of the waste contents to allow sufficient freeboard for precipitation during waste removal activities. All Contractor and subcontractor personnel that enter tanks without ground level doorways/walkways shall have successfully completed a confined space entry training course,

and confined space unit entry procedures shall be included in Contractor's health & safety plan for this project. Additional Contractor health & safety requirements are described below in Section 5.0.

Contractor shall provide vacuum trucks to remove the liquids inside these tanks, and transport the liquids to an authorized disposal facility. Contractor shall provide vacuum trucks to remove pumpable sludges inside these tanks, and transport the pumpable sludges to an authorized disposal facility. Contractor shall provide lined steel roll off boxes or lined end dump trucks to store the solids and debris, and non-pumpable sludges obtained during removal of the tank and drum filter contents. The roll off boxes/end dump trucks that contain waste materials shall be staged on-site within a bermed area and tarped when not actively loading.

Following removal of the wastes from the tanks and drum filter listed on Table A-2, contractor shall remove loose waste residues, scale, and accretions on the tank/drum filter interior surfaces (including wastes on any interior piping, rakes, and baffles) utilizing pressure washers and/or hand-held scraping tools. Sandblasting shall not be permitted. The tanks and drum filter shall be cleaned by Contractor until all interior surfaces are visibly clean and free of wastes, excluding scale (if any) that cannot be removed using pressure washers and hand-held power tools.

After all interior surfaces of the tanks and drum filter are visually clean and free of wastes, the tank interior surfaces shall be triple-rinsed by Contractor using a pressure washer. The rinse water shall be potable municipal water brought on-site by the Contractor (no potable water is available on-site). Each rinse cycle shall consist of at least 50 gallons of potable water per unit, but no more than 500 gallons of potable water per unit without approval from the Trustee or Trustee's designated representative. All of the tank and drum filter cleaning and rinse water shall be removed by Contractor and disposed of by Contractor at an authorized disposal facility as part of Contractors Base Bid.

After each tank and drum filter is triple-rinsed, a rinsate sample will be collected by others to verify the unit has been decontaminated to the decontamination rinsate standards shown on Attachment A-1. The rinsate samples will be analyzed by others on a 3-working-day turnaround. If the rinsate sample does not meet the decontamination rinsate standards listed on Attachment A-1, Contractor shall conduct an additional rinse cycle as described above as part of the Contractor's Base Bid. The NOR Unit closure report for the tanks listed on Table A-2 shall be prepared by others. Costs for the tank and drum filter rinsate sample collection and analyses, and NOR Unit closure report preparation will be paid by others, and is not part of the Contractor's scope of work.

3.3 CONTAINER STORAGE AREA AND MISCELLANEOUS STORAGE AREA DECONTAMINATION

As shown on Table A-3, twelve container storage areas and two miscellaneous storage containers require decontamination by the Contractor as part of the Contractor's Base Bid. All surfaces of the twelve container storage areas and two miscellaneous storage containers shall be triple-rinsed by Contractor using a pressure washer. The rinse water shall be potable municipal water brought on-site by the Contractor (no potable water is available on-site). Each rinse cycle shall consist of at least 50 gallons of potable water per unit, but no more than 350 gallons of potable water per unit without approval from the Trustee or Trustee's designated representative. All of the rinse water shall be removed by Contractor and disposed of by Contractor as part of Contractors Base Bid. Contractor shall provide vacuum trucks to remove the rinse water, and transport the rinse water to an authorized disposal facility. The rinse water shall be disposed of by Contractor as part of Contractors Base Bid. Rinse water (<2% solids) from other similar concrete containment areas at the Site have been previously accepted for disposal at the Texas Molecular commercial injection well facility in Corpus Christi, Texas.

After each unit is triple-rinsed, a rinsate sample will be collected by others from each unit listed on Table A-3 to verify the unit has been decontaminated to the decontamination rinsate standards shown on Attachment A-1. The rinsate samples will be analyzed by others on a 3-working-day turnaround. If the rinsate sample does not meet the decontamination rinsate standards listed on Attachment A-1, Contractor shall conduct additional rinse cycle(s) as part of the Contractor's Base Bid until the decontamination rinsate standards have been met. The NOR Unit closure report for the container storage areas and two miscellaneous storage containers listed on Table A-3 shall be prepared by others. Costs for the rinsate sample collection and analyses, and NOR Unit closure report preparation will be paid by others, and is not part of the Contractor's scope of work.

3.4 RESIDUAL HAZARDOUS WASTE REMOVAL FROM BUILDINGS AND STRUCTURES TO BE DEMOLISHED

As shown on Table A-4, previously collected samples indicated that some of the buildings and structures to be demolished contain residual amounts of characteristically hazardous wastes. These residual amounts of characteristically hazardous wastes are located on the floor and inside piping, tanks, silos, ovens, vessels, and other structures and process equipment inside the buildings to be demolished. The estimated total volume of hazardous waste liquids and sludge/solids in the buildings and structures to be demolished is 10,000 gallons and 1,300 tons, respectively. For bidding purposes, the Contractor shall assume the buildings and structures listed on Table A-4 contain a combined volume of 10,000 gallons of Class I hazardous liquids and a combined volume of 1,300 tons of Class I hazardous sludge/solids to be removed,

transported, and disposed of by the Contractor at authorized hazardous waste disposal facilities prior to demolition of these buildings/structures as part of Contractor's Base Bid. If the actual volume of hazardous wastes inside these buildings and structures is different than the Base Bid volumes, Contractor shall provide additive/deductive unit costs for hazardous waste removal, waste transportation, and waste disposal in Section 9, Bid Item No. 2a and 2b.

Contractor shall be responsible for waste profiling of all residual hazardous wastes inside these buildings and structures as part of Contractor's Base Bid. The Trustee or Trustee's designated representative may also collect waste characterization samples to determine the waste classification of the residual wastes.

Contractor shall not include building construction debris or the equipment/components which held the residual wastes (i.e., piping, tanks, silos, ovens and vessels) with the hazardous waste shipments to the hazardous waste landfill. All hazardous waste shipments shall be manifested. The Texas Waste Codes for the manifests are available on the NOR for the Encycle facility. The generator section of each manifest shall be signed by the Encycle Trustee or the Trustee's designated representative prior to transport to the authorized disposal facility.

All Contractor personnel and all of Contractor's subcontract personnel performing work at the Site that may come in contact with the wastes must have completed a 40-hour health and safety training course and subsequent annual refresher training in accordance with OSHA requirements in Title 29 Code of Federal Regulations, Part 1910. Contractor's health & safety plan to be prepared for this project shall include a requirement that PPE to be worn by personnel that may come in contact with the waste contents include hardhats, safety glasses, steel-toed boots, chemical resistant gloves, chemical resistant suits, and particulate respirators. Disposal of used PPE shall be included as part of Contractor's Base Bid.

The existing elevated floors and walkways that provide access to these residual wastes are deteriorated. Contractor shall reinforce these floors and walkways using ¾-inch-thick plywood sheeting or equivalent. The plywood sheeting shall be securely attached to the existing walkways by the Contractor. Contractor shall take all necessary precautions to ensure the residual wastes inside these buildings and structures are not spilled/released into the existing on-site storm sewer system.

Contractor shall provide vacuum trucks to remove the residual hazardous waste liquids and pumpable sludges in these buildings and structures, and transport the liquids to an authorized disposal facility. Contractor shall provide lined steel roll off boxes or lined end dump trucks to store the residual hazardous waste solids, and transport the solids to an authorized disposal facility. The roll off boxes/end dump trucks that contain hazardous waste materials shall be staged on-site within a bermed area and tarped when not actively loading. The residual hazardous wastes shall be removed by Contractor until the structures and equipment are visibly

clean and free of hazardous wastes. Contractor shall not place piping, tanks, vessels, wood, concrete, steel, or other building structural materials and demolition debris with the hazardous wastes to be disposed of. Contractor shall remove the hazardous wastes from the piping, tanks, vessels, wood, concrete, steel, and other building structural materials and demolition debris prior to placement of the hazardous wastes into the roll off boxes/end dump trucks.

4.0 BUILDING AND STRUCTURE DEMOLITION

4.1 GENERAL

Contractor shall demolish all of the buildings and structures identified above in Exhibit A, Section 1.0 as part of Contractor's Base Bid. All ancillary equipment located within, above, and adjacent to the buildings and structures to be demolished shall also be demolished as part of Contractor's base bid, including conveyor belts, above-ground piping (excluding fire water system piping), hoppers, silos, structural supports, electrical equipment (excluding exterior pad-mounted transformers), cooling towers, and miscellaneous equipment and debris located throughout the site grounds, including debris in the East Boneyard area.

With the exception of recyclable materials, Contractor shall dispose of all construction debris at authorized commercial landfills, unless otherwise approved in writing by the Trustee, as part of Contractor's Base Bid. Some of the building and structures to be demolished contain metals with recycle value, including carbon steel, stainless steel, lead, and copper. Following Contractor removal of ACM and other contaminants which may be present on these metals, Contractor can recycle these metals at an authorized recycling facility. The salvage value of the recycled metals shall be paid to the Contractor by the recycling facility(ies), and Contractor shall not reimburse the Trustee for the salvage value of these recycled metals. The recycle value of these metals shall be factored into Contractor's Base Bid for this project. Contractor understands, by submitting its bid, that Contractor has thoroughly inspected the buildings and structures to be demolished, and has factored the recycle value of contaminant and ACM-free metals as part of Contractor's Base Bid. Contractor shall provide the name(s) of the recycling facilities to receive these materials to the Trustee at least 30 days prior to offsite transport of these materials. Contractor shall not dispose of materials with ACM or residual wastes at the recycling facilities.

4.2 DESCRIPTION OF WORK

The Contractor shall provide all labor, equipment, materials, and services necessary, and as appropriate for, demolition of the buildings and structures that are scheduled for demolition. The demolition shall be to the existing concrete slab-on-grade level or to the surrounding grade elevation level. At-grade demolition applies to at-grade structures only, such as concrete slabs-on-grade, asphalt pads, etc. The existing ground level concrete slabs of the buildings shall not be

demolished, but all structures and equipment on and above the ground level concrete slabs, including any brick overlying the concrete slabs, shall be demolished as part of Contractor's Base Bid.

Subsurface concrete pipe trenches, sumps and basements are present in several buildings, including the Facility No.1 Building, Facility No. 2 Building, Old Casting Building (Building 7), East Cell House (Building 16), Power House (Building 25), West Cell House (Building 26), and Reagent Storage Building (Building 28). All equipment, piping, and debris above the concrete floors of the subsurface pipe trenches, sumps and basements shall be demolished as part of Contractor's Base Bid. The concrete floors and sidewalls of the pipe trenches, sumps, and basements, and any completely buried subgrade piping (completely buried and surrounded by soil), shall not be demolished. Storm sewer system piping shall not be demolished.

The Contractor shall provide all labor, equipment, materials and services necessary, and as appropriate for, segregation, processing, downsizing, handling, containerizing, labeling, and temporary on-site staging of building demolition debris/other waste materials and recyclable metals (i.e., structural steel, reinforcing rebar) generated as a result of the demolition/removal activities.

The Contractor shall acquire all applicable licenses, permits and provide all applicable notifications required for performance and completion of the Work specified in this Section. All costs for such licenses, permits and notifications shall be included in the Contractor's Base Bid.

Within 90 calendar days following award of Contract, and prior to initiation of demolition work, the Contractor shall submit the following to the Trustee for review and approval:

1. Demolition Plan to demolish the buildings and structures, including the Smokestack described below in Section 4.4. The Trustee reserves the right to request corrections and/or clarifications to the Demolition Plan (to ensure the Contractor requirements specified in this Bid Document are met) after award of Contract. The Demolition Plan shall, at a minimum, include the following:

    a) Equipment, materials, and methods to be used to safely demolish the buildings/structures.

    b) Proposed phasing of the demolition activities.

    c) Dust control equipment and methods to be implemented by the Contractor during the demolition activities to control airborne dust.

    d) Proposed erosion/sedimentation measures to control migration of demolition-related liquids beyond the work area limits.

e) A site-specific figure showing the proposed staging area(s) and demolition support area(s).

f) Protection of adjacent structures that are not scheduled for demolition under the Contract Documents.

g) Waste management procedures for wastes to be removed and disposed of during this project.

h) Traffic management procedures for Contractor's vehicles to be used during this project.

i) The names, qualifications, and certifications of personnel involved in the demolition and waste handling activities.

2. A site-specific health & safety plan (HASP), including work practices and procedures to conduct the ACM abatement, waste removal, and demolition activities in accordance with all applicable laws and regulations, including OSHA safety regulations. The name(s) of the Contractors on-site safety supervisors shall be included in the health & safety plan.

3. Storm Water Pollution Prevention Plan (SWP3). The Contractor shall prepare a SWP3 for the demolition activities in accordance with all applicable local, state, and federal regulations. The SWPE shall (1) identify actual and potential sources of pollution during Contractor's demolition activities that may reasonably be expected to affect the quality of storm water discharges from the facility; (2) establish practices and any necessary controls that will prevent or effectively reduce pollution in storm water discharges from the demolition activities; (3) describe how selected practices and controls are appropriate for the demolition activities (silt fences, etc.) and how each will effectively prevent or lessen pollution; and (4) discuss how controls and practices relate to each other such that together they comprise an integrated approach for pollution prevention in storm water discharges.

4. Prepare and submit a Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity under an applicable TPDES General Permit to the TCEQ. The TCEQ General Permit filing fee shall be included as part of Contractor's Base Bid.

5. Material Safety Data Sheets (MSDSs) for all products to be used. MSDSs shall be submitted to Trustee for review and approval prior to bringing products on-site.

4.3 EXECUTION OF WORK

4.3.1 GENERAL

A. The demolition activities shall be conducted in accordance with:

1. OSHA regulations contained in 40 CFR 1926 Subpart T - Demolition, which includes requirements for conducting a pre-demolition engineering survey.
2. All applicable Laws and Regulations, including OSHA safety regulations.

B. Prior to initiating demolition, the Contractor shall:

1. Disconnect/terminate electric utilities to the smokestack as described below in Section 4.4.
2. Contact the local electric utility provider, water provider, and wastewater provider to ensure these utilities have been properly disconnected from the facility and are no longer active.
3. Call the Texas One Call System (811) to have underground utilities located and marked.
4. Abate regulated asbestos-containing materials (RACMs) in accordance with Section 2.0 above.
5. Remove hazardous wastes from the buildings and structures to be demolished in accordance with Section 3.0 above.
6. Perform and complete all pre-demolition work, as necessary and as appropriate to mitigate potential for uncontrolled discharge of regulated materials, and to promote safe implementation of the demolition Work.

C. A wrecking ball or explosives shall not be permitted to demolish any portion of the buildings/structures.

D. Equipment and methods to be used for demolition shall generate a minimum amount of dust. The Contractor shall undertake adequate measures to control dust during the project in accordance with the approved Demolition Plan and all applicable Laws and Regulations.

E. Confined space entry, if required, shall be performed under a confined space entry permit procedure as part of Contractor's site-specific Health and Safety Plan.

F. The Contractor shall be responsible for all costs and liability associated with damaging any existing utility or structure (above-, at- or below-grade) that is not scheduled for demolition under the Contract Documents. The Contractor shall be responsible for replacing any damaged structure or utility or repairing the said structure or utility to pre-demolition activity condition.

4.3.2 BUILDING AND STRUCTURE DEMOLITION

A. The Contractor shall undertake adequate measures to control dust during implementation of the Work so that no visible dust is generated over extended periods of time. If a visible dust is generated, the Contractor shall immediately undertake appropriate measures as necessary to reduce the concentration of airborne dust. If water spraying/misting is used to suppress generation of airborne dust, the Contractor shall implement the spraying/misting activities in such a manner that prevents water puddling and/or generation of runoff into on-site storm drains or offsite properties. Water spraying/misting activities shall be conducted in accordance with hazard mitigation provisions to be included in site-specific HASP, SWP3, and the Demolition Plan to be prepared by the Contractor. Water (including dust suppression water) that comes in contact with building materials shall not be allowed to enter the storm sewer system.

B. Noise reduction and/or hearing protection for workers is to be addressed in the site-specific HASP. For noise at the property line, the Contractor shall maintain noise levels at safe and tolerable limits set forth in the approved demolition plan. Noise shall not be a nuisance to nearby residents or businesses. Contractor shall evaluate whether or not the noise is an issue in advance of the demolition work. Noise level meters shall be kept on-site and periodic noise monitoring performed by the Contractor to confirm that noise levels are below the pre-established limits. All demolition equipment with the potential for noise nuisance shall be equipped with muffling devices.

C. All demolition debris shall be downsized as necessary for off-site transportation and disposal/recycling purposes, placed directly into Contractor-provided roll-off containers or demolition debris staging area(s) (to be constructed by the Contractor), and managed in accordance with the Contract Documents and applicable Laws and Regulations. Demolition debris shall be managed in a manner which prevents migration of water that comes in contact with demolition debris beyond the staging area limits. All roll-off containers and debris staging areas shall be securely covered (using covers/tarps appropriate for each roll-off/container) during the non-working hours, weekends and holidays.

D. If the Contractor elects to stage non-hazardous building demolition debris within the building footprint and/or in temporary staging area(s) prior to off-site transportation and disposal, the Contractor shall comply with the following demolition debris staging requirements:

1. Cover staged debris outside of the active building demolition footprints and live loading areas with a low-permeability cover (e.g., 6 mil low density polyethylene sheeting or equivalent) at the end of each workday, downtime periods, weekends, and during precipitation events.
2. Install berms (e.g., hay bales, booms) along the staging area(s) perimeters as necessary to prevent demolition debris erosion and sedimentation.

E. The Contractor shall undertake adequate measures to control erosion of demolition debris, and to prevent demolition debris from migrating beyond the work area limits. If demolition debris does migrate beyond the work area limits, the Contractor must promptly collect the debris upon discovery and implement procedures to prevent future migration of debris beyond the work area limits.

F. Structures scheduled to remain, per the Contract Documents, shall be protected and shall not be damaged during performance of the Work. The Contractor shall be responsible for protecting the buildings, structures, and storm drains that are scheduled to remain.

4.3.3 BELOW-GRADE PITS/SUMPS

A. Contractor shall remove equipment and materials from below-grade sumps/pits and pipe trenches for disposal or recycling as part of Contractor's Base Bid.

B. Any associated debris (e.g., piping, metal grates, manhole covers) shall be removed from pits and sump structures to the extent possible and managed together with demolition debris. Waste materials, if any, in the below-grade pits/sumps which are hazardous, shall be managed as discussed above in Section 3.4.

C. The lowest concrete slab and the outermost below-grade concrete walls in the below-grade pits/sumps and pipe trenches shall not be demolished.

4.3.4 PROJECTILES

A. The Contractor shall implement all demolition activities in such a sequence and using such methods as necessary to dissipate excessive energy/tension that may be stored/created in structural components, including structural steel, tanks, and other building components prior to cutting or otherwise separating such components; and to ensure that building components do not move outside of work area. This approach should result in minimizing a potential for a "spring action" response and, in turn, minimize the potential for demolition-related projectiles (e.g., pieces of steel, brick, or other material being ejected as a result of releasing excessive energy

from a structural member being cut/ demolished) or otherwise put in motion beyond the work area limits.

B. Any operations where the potential for demolition-related projectiles exists to impact off-site residential, commercial and/or industrial developments, railroads, roads, and parking lots, shall be shielded from such operations with appropriate barriers (e.g., anti-projectile wire nets). The Contractor shall include a description of proposed anti-projectile shields in its Demolition Plan in sufficient level of detail to allow for a meaningful, consistent evaluation of the proposed shields.

4.4 SMOKESTACK DEMOLITION

4.4.1 GENERAL

A concrete and brick smokestack approximately 315 feet in height is located in the western portion of the Site, approximately 500 feet north of Up River Road (Building/Structure ID No. 53 on Figure A-1). As discussed below in Section 7, this smokestack shall be the first building/structure to be demolished by the Contractor during this project.

The smokestack has an outer base diameter of approximately 24 feet and an inner base diameter of approximately 17 feet. An approximate 12-foot by 16-foot by 8-foot-high brick building (Brick Building) is connected to the southern base of the smokestack, and a metal duct is connected to the eastern end of the smokestack approximately 12 feet above ground level. Metal stairs are present on the smokestack. However these stairs are severely rusted and shall not be utilized by any personnel during this project.

The exterior surface of the smokestack from ground level to the top of the smokestack contains 1/8-inch-thick surfacing material. The surfacing material has moderate damage, and is friable in the damaged areas. Bulk samples of the smokestack surfacing material were collected for asbestos analysis during 2006, and all of the samples were reported to contain 11% asbestos.

The interior base of the smokestack contains a red brick liner, and approximately one foot of loose concrete and brick debris is present on the interior smokestack floor and adjacent Brick Building. Samples were collected from the loose debris, and as shown on Table A-4, the loose concrete and brick debris is characteristically hazardous for lead and cadmium.

4.4.2 SMOKESTACK DEMOLITON WORK REQUIREMENTS

A. Disconnect Electricity to Smokestack Aviation Lights: This task shall be conducted prior to smokestack demolition and will involve disconnection of electrical power to the smokestack aviation lights. The power shall be disconnected at the existing electric control panel mounted on the on-site service

pole for the smokestack. This work shall be conducted by an electrician with a current Texas Electric Contractor License (TECL). The local TECL contractor familiar with the service pole is Scott Electric Company, Corpus Christi, Texas (phone: 361-884-6326).

B. Remove Debris from Interior Base of Smokestack and Interior of Adjacent Brick Building: This task shall be conducted prior to smokestack demolition and will involve (1) removal of the loose brick and concrete debris on the interior floor of the smokestack (approximately 15 cubic yards); (2) removal of the interior brick components of the adjacent Brick Building (approximately 5 cubic yards); and (3) removal of the loose debris and accretions adhered to the interior red brick liner of the smokestack from ground level to the top of the adjacent metal air duct approximately 22 feet above ground level (approximately 10 cubic yards).

This debris (approximately 30 cubic yards total) shall be removed, transported, and disposed by the Contractor to an authorized hazardous waste landfill using the procedures described above in Section 3.4.

C. Remove Asbestos-Containing Surfacing Material from Smokestack Exterior: This task shall involve removal of the ACM from the smokestack exterior by an EPA-accredited Asbestos Abatement Contractor. The ACM shall be removed in accordance with applicable federal, state, and local regulations, including EPA regulations given in the National Emission Standards for Hazardous Air Pollutants (NESHAPS) (40 CFR Part 61); EPA regulations given in the Asbestos Hazard Emergency Response Act (AHERA) (40 CFR Part 763); OSHA Regulations given in 29 CFR Parts 1910 and 1926; Texas Department of State Health Services regulations given in the Texas Asbestos Health Protection Rules (TAHPR); and Texas Commission on Environmental Quality (TCEQ) asbestos waste disposal regulations given in 30 TAC Chapter 330. Asbestos abatement procedures are described above in Section 2.

Contractor shall conduct air monitoring before, during, and after asbestos abatement of the smokestack using an EPA-accredited asbestos air monitoring technician. Air samples shall be collected on a daily frequency for three working days prior to the start of asbestos abatement activities, during asbestos abatement activities, and following completion of asbestos abatement activities. At least three samples shall be collected each day by the air monitoring technician, including an on-site sample upwind of the smokestack, a sample in the work zone, and a sample at the Site property boundary downwind of the smokestack. The samples shall be analyzed for asbestos using transmission electron microscopy (TEM). If at any time during asbestos abatement activities the sample at the

downwind property boundary exceeds applicable air quality standards (including but not limited to OSHA permissible exposure limit (PEL)), Contractor shall cease abatement activities and re-design the abatement procedures at Contractor's expense as part of Contractor's base bid such that applicable air quality standards are attained.

D. Demolish Brick Building and Metal Air Duct: The Contractor shall demolish the approximate 12-foot by 16-foot by 8-foot-high Brick Building connected to the southern base of the smokestack, and the metal duct connected to the eastern end of the smokestack approximately 12 feet above ground level. The demolition materials (brick, concrete, metal, etc.) shall be transported by the Contractor to an authorized offsite landfill. Prior to offsite disposal, a representative sample of the demolition debris from the Brick Building and smokestack will be collected by others for TCLP Priority Pollutant Metals analyses. For Bidding purposes, Contractor shall assume that the demolition debris from the Brick Building and smokestack will be Class 2 or Class 3 non-hazardous. Costs for demolition, transport, and disposal of the Brick Building, Metal Air Duct, and Smokestack as non-hazardous waste shall be included in Contractors Base Bid.

E. Demolish Smokestack: Contractor shall provide all labor, equipment, materials and services necessary, and as appropriate for demolition of the 315-foot-tall smokestack to ground surface. The demolition shall be conducted in accordance with all applicable Laws and Regulations, including OSHA safety regulations as described above in Sections 4.1 through 4.3. As described above in Section 4.3.4, any operations where the potential for demolition-related projectiles exists to impact off-site residential, commercial and/or industrial developments, railroads, roads, and parking lots, shall be shielded from such operations with appropriate barriers (e.g., anti-projectile wire nets). The Contractor shall include a description of proposed anti-projectile shields in its Demolition Plan in sufficient level of detail to allow for a meaningful, consistent evaluation of the proposed shields

F. All cranes and heavy equipment to be used on this project shall be maintained in good working condition and inspected daily by Contractor before use. All equipment operators shall be qualified to operate the equipment, and crane critical lift requirements shall be implemented as applicable. Contractor shall provide a full-time, on-site safety supervisor during smokestack demolition activities. Contractor's safety supervisor shall have at least five years experience in construction safety, and shall be familiar with applicable OSHA safety regulations for the project.

5.0 CONTRACTOR HEALTH & SAFETY REQUIREMENTS

In addition to the project health & safety requirements discussed above in Sections 1 through 4, Contractor shall conduct and document health & safety meetings with Contractor's on-site employee's and subcontractor personnel each working day prior beginning work. The Contractor shall prepare Job Safety Analyses (JSA's) prior to beginning each new phase/type of work. PPE shall be as specified in the JSAs and in the site-specific HASP to be prepared by the Contractor. The JSAs shall be posted each day in the work area(s). First aid kits, fire extinguishers, and eye wash stations shall be provided by the Contractor in all work areas. Prior to initiating work, work area(s) need to be isolated and cordoned off by the Contractor to preclude any unauthorized/accidental entrance into the work area(s) during the ACM removal, waste removal, and demolition activities.

The HASP prepared by the contractor will include a list of training required for personnel based on specific scope of work activities, and will include at a minimum the following:

- Hazardous Waste Site Operations and Emergency Response (HazWoper) 40-Hour OSHA Training (29 CFR 1910.120);
- 8-hour annual HazWoper refresher training (29 CFR 1910.120);
- Elevated work/fall protection training (29 CFR 1910.25, 1910.67, and 1926.502);
- Energy control/power lockout (29 CFR 1910.147 and 1926.417);
- Machine guarding (29 CFR 1910.212);
- Confined space training (29 CFR 1910.146);
- Powered Industrial Trucks (forklift) (29 CFR 1910.178);
- Hazardous Materials Communications (29 CFR 1910.1200);
- DOT Safe HazMat Transportation Training, HM-126F; and
- Personal Protective Equipment (29 CFR 1910.132-135).

Contractor will provide a full-time, on-site safety supervisor during smokestack and all other demolition activities. Contractor shall be responsible for compliance with all applicable demolition-related safety regulations and procedures during this project, including but not limited to OSHA regulations. Contractor shall be responsible for compliance of all of Contractor's subcontract personnel with all applicable demolition-related safety regulations and procedures during this project, including but not limited to OSHA regulations.

6.0 SPECIAL CONDITIONS

1. **Contract:** Before commencing any work, the selected Contractor shall sign the Master Services Agreement provided in this Bid Document. The selected Contractor shall provide Trustee with a Certificate of Insurance issued by the Contractor's insurance carrier providing the insurance coverage required pursuant to the attached contract requirements. The Trustee shall be named on the Certificate of Insurance as additional insured. Contractor shall also provide a Performance Bond to the Trustee as described in the Master Services Agreement provided in this Bid Document.

2. **Access to Facility:** The facility is surrounded by a 6-foot-high chain link fence. Trustee shall post a security guard at the designated existing entrance gate to the Facility, which shall be located along Up River Road. The entrance gate will be locked by the security guard when vehicles are not actively entering/departing the facility. The Trustee shall maintain at least one security guard at the facility during the duration of this project at the Trustee's expense. However, Trustee shall not be responsible for the security of the Contractor's personnel, equipment and materials at the facility. The Contractor, as part of Contractor's base bid, shall provide security measures for the protection of Contractor's personnel, equipment and materials at the facility during this project.

3. **Water:** No potable water is available at the facility. Contractor shall provide all water needed for his project as part of the Contractor's Base Bid. Contractor shall supply vehicles and equipment needed to transport this water to the work site.

4. **Electricity:** Electric power is not available at the facility. Contractor shall furnish power for this project at Contractor's expense as part of the Contractor's Base Bid.

7.0 PROJECT SCHEDULE

Upon receipt of written notice of acceptance of the Bid from the Trustee, the successful bidder shall sign the Master Services Agreement and return two signed originals to the Trustee within 10 days which the Trustee will submit to the Bankruptcy Court for approval. After Bankruptcy Court approval, the Trustee will then sign the agreement and return one signed original to the successful bidder. The successful bidder shall then provide the Trustee with the Certificate of Insurance and Performance Bond within 30 days of bidder's receipt of the fully executed Master Services Agreement.

The successful bidder shall also provide the Trustee with the Asbestos Abatement Project Design, Demolition Plan, HASP, SWP3, and NOI as described in this Bid Document within 90 days following execution of the Master Services Agreement. Failure of Contractor to provide

these documents to the Trustee within the time frames specified herein may be grounds for Trustee to terminate the Master Services Agreement with the bidder.

Asbestos abatement, waste removal, and demolition of the approximate 315-foot-high concrete smokestack as described in Section 4.4 shall be initiated by Contractor within 120 days following execution of the Master Services Agreement, and shall be completed by Contractor within nine (9) months following execution of the Master Services Agreement.

Asbestos abatement of the buildings and structures to be demolished (excluding the smokestack) as described in Section 2 of this Bid Document shall be initiated by Contractor within 120 days following execution of the Master Services Agreement, and shall be completed by Contractor within twenty four (24) months following execution of the Master Services Agreement.

Hazardous waste removal and decontamination of the waste management units in the buildings and structures to be demolished (excluding the smokestack) as described in Section 3 of this Bid Document shall be initiated by Contractor within 120 days following execution of the Master Services Agreement, and shall be completed by Contractor within twenty four (24) months following execution of the Master Services Agreement.

Demolition of the buildings and structures to be demolished (excluding the smokestack) as described in Section 4 of this Bid Document shall be initiated by Contractor within 180 days following execution of the Master Services Agreement, and shall be completed by Contractor within thirty (30) months following execution of the Bankruptcy Court approved Master Services Agreement.

Failure of the Contractor to complete by the Completion Date all of the Services required to be performed under this Master Services Agreement shall result in the Contractor to pay liquidated damages as described in this Master Services Agreement.

8.0 INSPECTION OF JOB SITE

All prospective Bidders interested in submitting a bid for this work shall thoroughly inspect the existing site to acquaint themselves with the present condition thereof and the nature of the work. Inspection of the job site by Contractor is required prior to submittal of bid. The job site will be made available for inspection by the Trustee during the two (2) weeks of July 12, 2010 thru July 23, 2010. Contractor shall contact Armando G. Avalos at (361) 857-2220 or by e-mail at agavalos@armandoavalosrealty.com at least five (5) working days in advance to schedule the inspection.

9.0 PREPARATION OF BID

The bidder, having examined the Site and this Bid Document, and being familiar with all the conditions associated with this project including the availability of material and labor, and the recycling value of metals to be removed by Contractor during this project for recycling, hereby proposes to furnish all labor, materials, and supplies, and to perform the project in accordance with this Bid Document and all attachments, within the time frame set forth herein, and at the price stated below. This price is to cover all expenses incurred in performing the work required under the Bid Document, of which this proposal is a part.

1. Bid Item No. 1 – Lump Sum	Est. Quantity and Units	Description
Asbestos Abatement	All Buildings, Structures, and Associated Equipment to be Demolished	See Exhibit A, Section 2

$_____

Total Price (Written Words)

$_____

Total Price (Numbers)

2. Bid Item No. 2 – Lump Sum	Est. Quantity and Units	Description
Hazardous Waste Removal/Disposal	239,250 Gallons Water, 1,788 tons sludge/solids	See Exhibit A, Section 3

$_____

Total Price (Written Words)

$_____

Total Price (Numbers)

2. Bid Item No. 2a, Additive/Deductive	Est. Quantity and Units	Description
Hazardous Waste Water/Liquid	Unit cost per gallon of Water/Liquid	See Exhibit A, Section 3

$_____

Unit Price per Gallon for removal, transport, and disposal of hazardous waste water/liquid above Base Bid volume (Written Words)

$_____

Unit Price per Gallon for removal, transport, and disposal of hazardous waste water/liquid above Base Bid volume (Numbers)

2. Bid Item No. 2b, Additive/Deductive	Est. Quantity and Units	Description
Hazardous Waste Sludge/Solids	Unit cost per Ton of Sludge/Solids	See Exhibit A, Section 3

$_____

Unit Price per ton for removal, transport, and disposal of hazardous waste sludge/solids above Base Bid volume (Written Words)

$_____

Unit Price per ton for removal, transport, and disposal of hazardous waste sludges/solids above Base Bid volume (Numbers)

3. Bid Item No. 3 – Lump Sum	Est. Quantity and Units	Description
Demolition	All Buildings, Structures, and Associated Equipment to be Demolished	See Exhibit A, Section 4

$_____

Total Price (Written Words)

$_____

Total Price (Numbers)

All bids shall be submitted to Mr. Mike Boudloche, United States Chapter 7 Trustee, C/O Armando G. Avalos, 555 N. Carancahua, Suite 1540, Corpus Christi, Texas 78401 via hand delivery or certified mail no later than 5 PM on August 27, 2010.

Bidder understands that the Trustee reserves the right to reject any or all bids.

The Bidder agrees that this bid shall be good for the duration of the project as outlined in the Project Schedule (Section 7).

The Contractor, by submitting its bid, acknowledges that it understands the Scope of Work and the project site conditions, has considered federal, state, and local laws and regulations that may affect cost, progress, and performance of the work, and that it can perform the Scope of Work as described in this Bid Document. Any proposed language changes to the attached Master Services Agreement shall be provided by the Contractor as part of the Contractor's Bid. The Trustee reserves the right to accept or reject any proposed changes to the attached Master Services Agreement.

The undersigned Bidder hereby declares that he agrees to do the work, and that no representations made by the Trustee outside of this Bid Document are in any sense a warranty, but are mere estimates for the guidance of the Bidder.

Upon receipt of the notice of acceptance of the Bid, we will execute the formal Contract attached within 10 days, provide a Certificate of Insurance to the Trustee within 30 days, and provide the Performance Bond to insure payment for all labor and materials for this project to the Trustee within 30 days.

The Bidder agrees to complete all work described in this Bid Document on or before the end of thirty (30) months following the execution of the Bankruptcy Court approved Master Services Agreement.

Respectfully submitted,

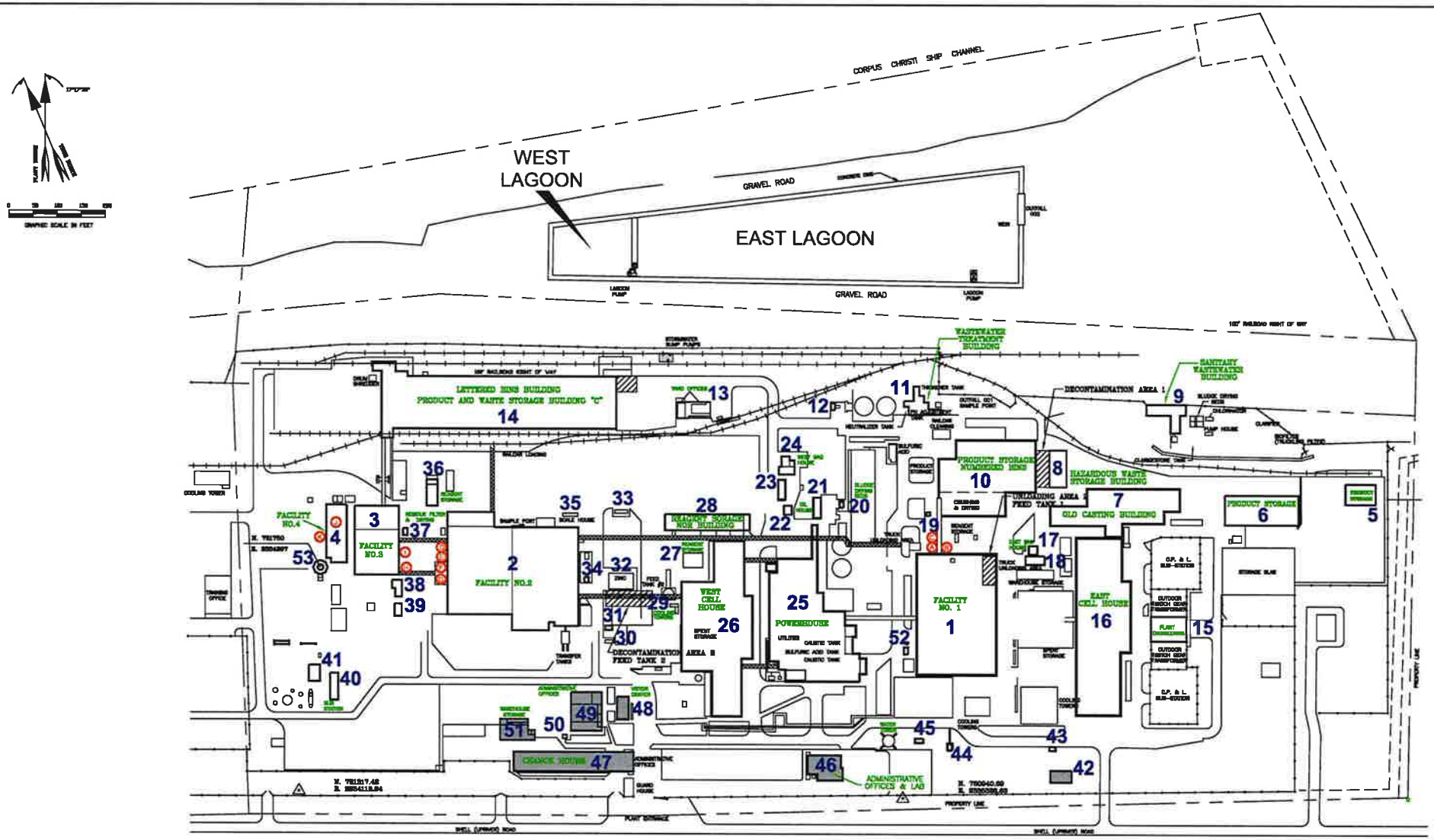
_____

(Company)

By:_____

(Name and Title)

Date:_____



LEGEND

1 BUILDING ID NUMBER

METAL SILOS

DENOTES BUILDING NOT TO BE DEMOLISHED

ARCADIS

SCALE VERIFICATION	REV. NO.	DATE	DESCRIPTION	BY	APPR.
THIS BAR REPRESENTS ONE INCH ON THE ORIGINAL DRAWING. USE TO VERIFY PLEASE REPRODUCTION SCALE					

BUILDING LOCATION MAP

CORPUS CHRISTI, TEXAS
ENCYCLE/TEXAS, INC.

FIGURE
A-1

ADDENDUM NO. 1

TO: Encycle Asbestos Abatement, Waste Removal, and Building Demolition Bidders

FROM: Mike Boudloche, Trustee

DATE: July 9, 2010

SUBJECT: Request for Bid; Asbestos Abatement, Waste Removal, and Building Demolition at the former Encycle/Texas Inc. facility, 5500 Up River Road, Corpus Christi, Texas. Addendum No. 1 to Exhibit A –Scope of Work

Date
July 9, 2010

Contact:
Armando G. Avalos

Extension:
361-857-2220

Email:
agavalos@
armandoavalosrealty.com

The Contractor Scope of Work provided in Exhibit A of the Encycle Asbestos Abatement, Waste Removal, and Building Demolition request for bid shall be amended as detailed herein, and these amendments shall be incorporated as part of Contractor's Base Bid for this project.

1. Exhibit A – Section 1.0 General

The buildings and structures to be demolished will not include the Lettered Bins Building (Building 14 on Figure A-1). The Lettered Bins Building will not be demolished as part of this project. However, the non load-bearing equipment located inside the western end of the Lettered Bins Building, west of concrete Bin A, shall be removed by the Contractor as part of this project. During removal of the non load-bearing equipment west of concrete Bin A, the building exterior walls and roof shall not be disturbed.

2. Exhibit A – Section 2.0 Asbestos Abatement, Section 3.0 Hazardous Waste Removal and Unit Decontamination, and Section 4.0 Building and Structure Demolition

The Contractor shall record wind direction and wind speed during active asbestos abatement, hazardous waste removal, and building and structure demolition activities. An airport aviation wind sock (6" x 24" orange wind sock) shall be installed by the Trustee's designated representative adjacent to Up River Road at the southern end of the Encycle facility. The wind direction shall be measured by the Contractor using the aviation wind sock provided by the

Trustee's designated representative. The wind speed shall be measured, by the Contractor, adjacent to the wind sock using a Red Oaks Model WM-100 WindMate Wind Meter (or approved equal) provided by the Contractor (the phone number for Red Oaks is 1-866-489-0841 or 1-775-657-8944). The wind direction and wind speed shall be recorded by the Contractor prior to start of work each day and on intervals not to exceed 4 hours each day during active asbestos abatement, hazardous waste removal, and building and structure demolition activities. If the wind direction has a northerly component (i.e., if the wind direction is from the Encycle facility toward Up River Road) and if the sustained wind speed (the wind speed obtained by averaging the observed values over a one minute period) exceeds 15 miles per hour, all active asbestos abatement, hazardous waste removal, and building demolition activities shall cease until the sustained wind speed declines to 15 miles per hour or lower; or the wind direction shifts such that the wind direction does not have a northerly component (i.e., the wind direction is from Up River Road toward the Encycle facility). The Contractor can conduct non-dust producing activities (equipment maintenance, etc.) during these periods.

3. Exhibit A – Section 2.0 Asbestos Abatement, Section 3.0 Hazardous Waste Removal and Unit Decontamination, and Section 4.0 Building and Structure Demolition

The Contractor shall provide and install 10-foot-high Tarps Plus Model TP-BMT1030-1 heavy duty black polyethylene mesh tarps (or approved equal) on the southern side of buildings undergoing active asbestos abatement, hazardous waste removal, and building demolition activities (the phone number for Tarps Plus is 1-800-838-3057). The tarps shall be positioned in an east-west direction, parallel to Up River Road, as close to the buildings as possible without impeding the safe movement of Contractor's personnel and equipment. The tarps shall extend a minimum of twenty feet beyond the western and eastern ends of the building (i.e., the tarp length shall be at least 40 feet greater than the east-west length of the building). The tarps can be removed by the Contractor when active asbestos abatement, hazardous waste removal, and demolition activities for that building have ceased.

4. Exhibit A – Section 4.3.2 Building and Structure Demolition

The Contractor shall remove all steel railroad spurs located on the Encycle facility south of the Union Pacific Railroad 100-foot right-of-way. The Union Pacific Railroad right-of-way runs east-west and is located approximately 1,000 feet north of Up River Road. The wooden railroad ties and soils underlying the steel railroad spurs shall not be removed during this project. The Contractor shall not reimburse the Trustee for the salvage value of the steel railroad spurs.

The recycle value of these metals shall be factored into the Contractor's Base Bid for this project.

5. Exhibit A- Section 7.0: Project Schedule

The project Completion Dates shall be extended by one day for each working day that active asbestos abatement, hazardous waste removal, and building demolition activities have ceased due to measured wind direction and wind speeds described above in Item No. 2. The initiation date for liquidated damages shall correspondingly be extended by one day for each working day that active asbestos abatement, hazardous waste removal, and building demolition activities have ceased due to measured wind direction and wind speeds described above in Item No. 2.

END OF ADDENDUM NO. 1

Armando G. Avalos
Real Estate Agent for Trustee

ADDENDUM NO. 2

TO: Encycle Asbestos Abatement, Waste Removal, and Building Demolition Bidders

FROM: Mike Boudloche, Trustee

DATE: August 6, 2010

SUBJECT: Request for Bid; Asbestos Abatement, Waste Removal, and Building Demolition at the former Encycle/Texas Inc. facility, 5500 Up River Road, Corpus Christi, Texas. Addendum No. 2 to Exhibit A –Scope of Work

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Date
August 6, 2010

Contact:
Armando G. Avalos

Extension:
361-857-2220

Email:
agavalos@
armandoavalosrealty.com

The Contractor Scope of Work provided in Exhibit A of the Encycle Asbestos Abatement, Waste Removal, and Building Demolition request for bid shall be amended as detailed herein, and these amendments shall be incorporated as part of Contractor's Base Bid for this project.

1. Exhibit A – Section 1.0 General

The buildings and structures to be demolished will not include the Lettered Bins Building (Building 14 on Figure A-1). The Lettered Bins Building will not be demolished as part of this project. No equipment shall be removed from the Lettered Bins Building. The above-ground conveyor belts running from the Facility No. 2 Building to the Lettered Bins Building shall be cut and removed by the Contractor at the south exterior wall of the Lettered Bins Building.

2. Exhibit A – Section 3.2 Tank and Drum Filter Waste Removal and Decontamination

The locations of the 23 tanks and one drum filter that will require waste removal and decontamination by the Contractor are shown on attached Figure A-2. These 23 tanks and one drum filter are also listed on Table A-2 of the Request for Bid.

3. Exhibit A – Section 3.3 Container Storage Area and Miscellaneous Storage Area Decontamination

The locations of the 12 container storage areas and two miscellaneous storage areas that will require triple-rinsing of the existing concrete floor by the Contractor are shown on attached Figure A-2. These storage areas are also listed on Table A-3 of the Request for Bid.

4. Exhibit A – Section 4.1 Building and Structure Demolition

With the exception of recyclable metals (i.e., asbestos-free steel, stainless steel, lead, copper, etc.), the Contractor shall dispose of the construction debris associated with the buildings and structures to be demolished at authorized commercial landfills, as described in Section 4.1 of the Request for Bid. Previously collected samples of the construction debris (concrete, brick, wood) from the buildings to be demolished showed that low concentrations of metals were present at concentrations below Class I limits, and the waste classification of the construction debris is therefore Class 2 non-hazardous. A local Class 2 non-hazardous landfill (El Centro Landfill) operated by Republic Services, Inc/Allied Waste quoted a Class 2 non-hazardous disposal price for this project of $20.00/ton plus a fuel recovery fee of 5.33% plus an environmental fee of $7.50 per load. The Republic Services, Inc/Allied Waste contact is Todd Muenster (Phone: 361-767-7905 or 361-947-3663).

At this time, the City of Corpus Christi municipal landfill has not approved the acceptance of demolition debris from this project. If additional information is obtained from the City of Corpus Christi by the Trustee, this information will be provided in a separate addendum.

5. Exhibit A – Section 4.3.2 Building and Structure Demolition

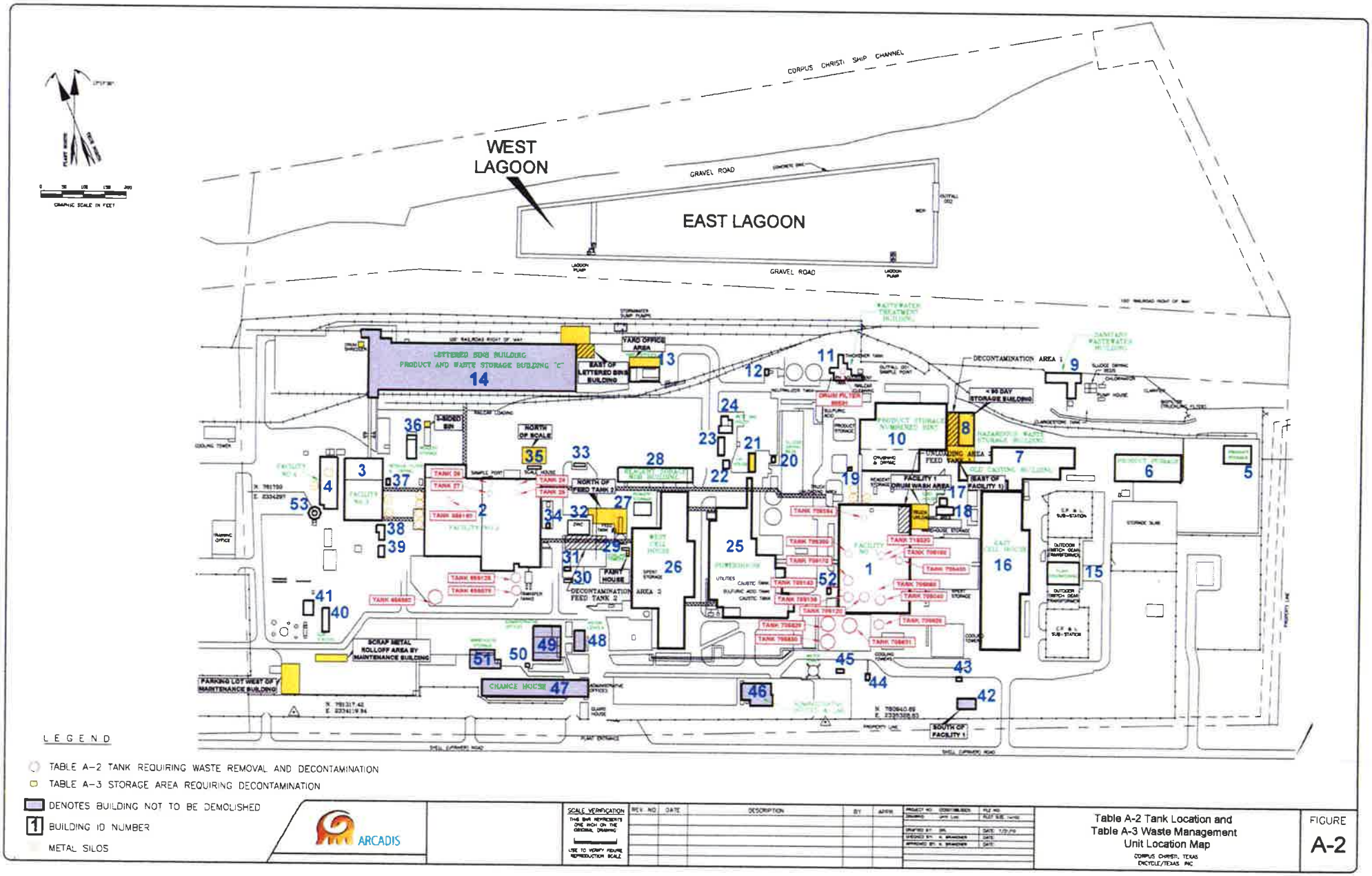
The Contractor shall remove all steel railroad spurs located on the Encycle facility south of the Union Pacific Railroad 100-foot right-of-way, excluding steel railroad spurs set in concrete. Steel railroad spurs set in concrete shall not be removed.

6. Exhibit A – Section 4.3.3 Below-Grade Pits/Sumps

The Contractor shall not remove existing guardrails around the below-grade pits/sumps. If temporary removal of the existing guardrails is required by the Contractor to provide equipment access during demolition, the existing guardrails or equal shall be re-installed by Contractor as part of Contractor's base bid.

END OF ADDENDUM NO. 2

Armando G. Avalos
Real Estate Agent for Trustee



CORPUS CHRISTI SHIP CHANNEL
WEST LAGOON
EAST LAGOON
GRAVEL ROAD
GRAVEL ROAD
LETTERED BINS BUILDING
PRODUCT AND WASTE STORAGE BUILDING "C"
14
EAST OF LETTERED BINS BUILDING
YARD OFFICE AREA
13
12
11
DECONTAMINATION AREA 1
9
< 90 DAY STORAGE BUILDING
8
10
7
6
5
24
23
21
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22
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17
18
36
3
4
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53
38
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46
45
44
43
42
NORTH OF SCALE
NORTH OF FEED TANK 2
PAINT HOUSE
DECONTAMINATION AREA 2
FEED TANK 2
FACILITY 1 DRUM WASH AREA
(EAST OF FACILITY 1)
SCRAP METAL ROLLOFF AREA BY MAINTENANCE BUILDING
PARKING LOT WEST OF MAINTENANCE BUILDING
CHANGE HOUSE
SOUTH OF FACILITY 1
GRAPHIC SCALE IN FEET
LEGEND
TABLE A-2 TANK REQUIRING WASTE REMOVAL AND DECONTAMINATION
TABLE A-3 STORAGE AREA REQUIRING DECONTAMINATION
DENOTES BUILDING NOT TO BE DEMOLISHED
BUILDING ID NUMBER
METAL SILOS
ARCADIS
SCALE VERIFICATION
REV NO
DATE
DESCRIPTION
BY
APPR
Table A-2 Tank Location and
Table A-3 Waste Management
Unit Location Map
CORPUS CHRISTI, TEXAS
ENCYCLE/TEXAS INC
FIGURE
A-2