# **CLOSURE PLAN**

NORLITE, LLC COHOES, NEW YORK NYD080469935

## **PREPARED FOR:**

NORLITE, LLC 628 SOUTH SARATOGA STREET COHOES, NEW YORK 12047

PREPARED BY:

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# **CLOSURE PLAN**

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Figure 5.	Solid Waste Management Units
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**Attachment 1** Closure Cost Estimate Calculation

**Attachment 2 Insurance Certificate** 

#### 1.0 INTRODUCTION

This Closure Plan was developed by Norlite, LLC for the closure of the Norlite, LLC Facility hereafter referred to as the "Facility." This plan provides a blueprint for the closure of the hazardous waste units subject to closure requirements and ensures the proper disposal of hazardous waste, which could be harmful to human health or the environment if not properly disposed of as a result of Facility closure. The procedures presented in this plan will provide the means for implementing proper Facility closure while minimizing the risk of possible release(s) of hazardous waste or hazardous waste constituents to the environment during and after Facility closure. This Closure Plan is applicable to the closure of the entire Facility, closure of one or more hazardous waste management units (partial closure) and any ancillary equipment associated with the Air Pollution Control (APC) system.

This Closure Plan is Attachment C of the Norlite, LLC Part 373 Permit. In the event that changes are made to the Facility that affect the content of this Plan, this Plan will be updated in accordance with the requirements of Condition D of Module I of the Facility's Part 373 Permit.

As described in the Operations Plan, the Facility consists of the two (2) lightweight aggregate kilns (LWAKs) and associated air pollution control equipment, tank farm for the storage of liquid low grade fuel (LLGF) and container storage area.

The final volume of hazardous waste from each of the hazardous waste management unit(s) (HWMU) can be processed and managed in the same manner in which wastes were processed and managed during the active life of the Facility. The wastes in inventory can be blended and disposed or shipped off-site to an alternate approved facility.

The HWMUs will be appropriately decontaminated, and decontamination fluids and wastewater residues, if possible, will be processed and managed on-site. If this is not possible, the material will be treated/disposed off-site at an approved authorized landfill or alternate approved facility.

Closure by third-party contractors would become necessary if the Facility could not process the wastes in inventory on-site and could not perform Facility decontamination measures. Closure cost estimates have been developed to reflect third-party, off-site processing, treatment, and/or disposal of all waste inventories and all waste generated during closure.

Final volumes of waste inventory will be removed from storage/treatment tanks and from container storage areas by qualified personnel. These wastes will be transported to third-party waste management facilities or recyclers. Storage/treatment tanks will be decontaminated by flushing with an appropriate decontamination fluid, which will be collected. This rinsate can be analyzed, sampled, or characterized by using previous knowledge of the waste for purposes of offsite reuse or disposal. HWMUs will be inspected to determine whether any releases have occurred.

The standard operating procedures utilized at the Facility are designed to minimize the possibility of spills resulting from the storage and management of hazardous waste. Personnel involved in the operation of these areas have received appropriate training to familiarize themselves with the dangers inherent in improper handling of the materials being stored and to instruct them in the proper procedures for containment and cleanup in the unlikely event that a spill should occur.

If closure of the hazardous waste energy recovery operations occurs in accordance with the procedures outlined, Norlite may continue to operate the kilns using non-waste fuel. Thus, dismantling or demolition of the aggregate kilns and their ancillary equipment (i.e., APC equipment, etc.) would not be included in the final closure procedures; however, for the Closure Plan, closure costs include a worst-case scenario as described in 5.3.3.2.

#### 2.0 CLOSURE PERFORMANCE STANDARD

The Facility generates and temporarily stores hazardous waste. This Closure Plan, developed for the Facility, includes:

- Cessation of associated hazardous waste flow
- Disposal of remaining hazardous waste
- Decontamination of Facility equipment
- Disposal of Facility equipment if needed (considered for partial closure)

These procedures meet the Closure Performance Standard which requires that closure:

- minimizes the need for further maintenance:
- controls, minimizes or eliminates releases, to the extent necessary to protect human health and the environment, post-closure escape of hazardous wastes, hazardous waste constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the groundwater, surface water, or to the atmosphere; and
- complies with the closure requirements of 6 NYCRR Subpart 372-2, including but not limited to the requirements of 373-2.9(i), 373-2.1 O(h), 373-2.11(t), 373-2.12(h), 373-2.13(h), 373-2.14(g), 373-2.1 S(h), 373-2.24(b), (c) and (d), and 373-2.30(c).

#### 3.0 CONTENT OF PLAN

Currently, there are no definite plans to close the Facility (or any portion thereof) in the near future. Partial closure procedures may need to be followed during any decommissioning of ancillary equipment and will follow procedures outlined in section 3.3 and section 5 of this Closure Plan. Since the Facility is a commercial hazardous waste treatment facility, hazardous wastes are constantly brought to the site for treatment as fuel.

During closure or partial closure, inventories will be stored and/or processed on-site or at an off-site facility by methods discussed in subsequent sections.

Based on future use (i.e. sold, salvaged), the treatment/storage unit(s) can be cleaned/decontaminated. If it is required, the unit(s) may be disconnected and/or dismantled once inventory has been removed from them.

Upon closure, if any changes to the Closure Plan are necessary, the Facility will submit a written request for a permit modification to authorize a change in the approved Closure Plan in accordance with 6 NYCRR Part 373-2.7(c)(3).

### 3.1 Waste Inventory at Closure

The potential maximum inventory of waste contained in Table A is assumed to be the amount in storage at the time of closure. Assumed maximum waste inventory at the time of closure is based strictly on the permitted capacity of the hazardous waste storage units.

TABLE A

STORAGE UNIT NAME	MAXIMUM INVENTORY – Worst Case					
LLGF Processing Building	10,450 gallons in 190 55-gallon drum equivalents (see 5.3.1					
	for sizes)					
Truck Unloading Area #1	4,785 gallons in 87 55-gallon drum equivalents (see 5.3.1 for					
	sizes)					
LLGF Tank Farm	155,579 gallons in 15 Tanks					
Tanker Truck & Onsite Roll-off	104,000 gallons in 13 8,000-gallon tanker trucks					
Staging Area						
Kiln 1 and Kiln 2	none					
APC Units	300 cubic yards (If not able to be used under Hazardous					
	Waste Beneficial Use Determination [BUD])					
Dust Silos	2,000 cubic yards (If not able to be used under Hazardous					
	Waste BUD)					

#### 3.2 Notification of Closure

Norlite, LLC shall notify the Commissioner of the New York State Department of Environmental Conservation (NYSDEC) at least 45 days prior to the date that closure of any permitted hazardous waste storage unit is anticipated to initiate.

#### 3.3 Verification of Decontamination

Upon completion of the decontamination activities as described under 5.3 Decontamination Procedures, the effectiveness of the decontamination procedure will be determined by collecting a final rinse that will provide confirmation that cleanup levels have been met. Samples of the final rinsate from each unit undergoing closure will be analyzed for those hazardous constituents identified in the stored wastes. Rinsate samples to be analyzed for metals will be filtered to remove solid particles prior to preserving the samples. Decontamination procedures will be repeated until the cleanup levels are met. (NYSDEC will be contacted if cleanup levels are not met after decontamination procedures are conducted. Further guidance will be requested at that time). The samples will be placed in the appropriate container, labeled and analyzed for the applicable parameters of all wastes previously stored within the respective unit during the unit's entire operational history, (i.e. VOCs, SVOCs, and total RCRA metals [arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver]) and/or in accordance with the Waste Analysis Plan and Quality Assurance/ Quality Control Plan which are incorporated by reference to the Permit Application as separate, stand-alone documents. Sample handling, storage, and chain-of-custody procedures will also be followed as outlined in the permit.

Additional verification of decontamination may be coordinated with the NYSDEC upon written request. Alternate means of verification may be used when the disposal requirements for the discarded material are not as stringent as those required for HWMUs (e.g., ancillary equipment, ducting and APC equipment). Alternate methods may include visual verification, professional engineer (PE) certification or additional analytical as agreed upon with NYSDEC.

## 3.4 Amendment of Closure Plan

Norlite, LLC will amend this Closure Plan whenever significant changes occur in the operations conducted at the Facility, a modification to the design of the Facility affects the implementation of the Closure Plan, or in conducting partial or final closure activities an unexpected event requires modification(s)of the approved Closure Plan. Also, as required pursuant to 6 NYCRR Part 373-2.7(c)(3), the Closure Plan will be amended when there is a change in the anticipated year of closure.

#### 4.0 TIME ALLOWED FOR CLOSURE

Currently, there are no plans to close the Facility (or any potion thereof) in the near future. However, when the decision to close the Facility is made, the following schedule will be utilized for the closure of the Facility or any individual waste storage unit specified in this Closure Plan:

- Within 90 days of receipt of the final volume of waste, all hazardous waste will be removed from any hazardous waste storage unit designated for closure and transported off-site for proper disposal in accordance with all applicable federal, state and local regulations.
- Within 180 days of receiving the final volume of hazardous waste or following approval of the Closure Plan, if that date is later, all closure activities will be completed.
- Specific to a waste management unit, within 180 days of receiving the final volume
  of hazardous waste or following approval of the Closure Plan, if that date is later,
  all closure activities related to hazardous waste storage units will be completed.
  Waste management units and/or ancillary equipment which has followed the
  Closure Plan and verified as decontaminated may remain in place until such time
  as deemed necessary for disposal.

#### 4.1 Extensions for Closure Time

At the time of closure, if an extension is necessary, all applicable procedures will be followed in requesting such an extension within the specified time frames.

#### 5.0 GENERAL CLOSURE ACTIVITIES

Many tasks that will be performed during closure of the Facility are common to different waste management units on-site. This section of the plan will summarize general activities and requirements.

## 5.1 Inventory

Prior to any closure activities, an inventory of all waste at the Facility will be conducted. The inventory will be performed in order to:

- 1. Verify that the actual inventory is consistent with the records of reported waste identity and quantities;
  - a. Acute Hazardous Waste: Although the Facility is permitted for certain acute hazardous waste, historically, there is little to no acute hazardous waste in inventory at any given time. More commonly, acute hazardous waste codes are present in incoming waste streams by mixture. Norlite, LLC can demonstrate average waste inventory by producing a three-year average inventory report. Therefore, inventory verification will also address any acute hazardous waste present and volumes for disposal consideration.
- 2. Confirm the integrity of all containers in preparation for inventory removal; and
- 3. Identify, by visual observation, any potentially contaminated areas.
  - a. Any identification of possible contaminated soils or surfaces will result in further evaluation as indicated in section 5.4.

Any potentially contaminated areas will be noted so that additional sampling can be performed in those areas, if warranted.

### 5.2 Health and Safety

Appropriate precautions will be taken to ensure that closure activities are performed safely and using good industrial hygiene practices. As a result, personnel performing closure are required to have the appropriate Occupational Safety and Health Administration (OSHA) 1910.120 training.

Task appropriate personal protective equipment (PPE) will be provided. If closure activities are performed by Facility personnel, the level of PPE required will be determined by the Site Safety Manager. Contractors are required to determine activity-specific PPE requirements.

Appropriate personnel decontamination procedures will be followed. PPE cleaning solutions associated with closure activities related to specific waste management units will be disposed of appropriately with the decontamination fluids generated from the decontamination of the same unit.

#### **5.3** Decontamination Procedures

Decontamination procedures for the Facility will consist of the following:

#### <u>General</u>

- All employees are required to wear appropriate PPE while performing the decontamination of the Facility.
- Inspect slab area ancillary process equipment, liquid transfer lines for evidence of leaks, cracks, or other evidence of potential release of contaminants to the environment and document the findings. The exterior and interior surfaces of equipment will be cleaned.
- Before decontamination, all permitted units (i.e., paved areas, concrete pads, containment systems, structures, and sumps) will be visually inspected to identify any cracks, gaps, spills, stains, or damaged areas which may be present. This visual inspection will be documented in the Closure Certification with notations of any identified problems. Any cracks, gaps, or damaged areas will be repaired by grouting or sealing by other means before decontamination is performed.
- As part of the decontamination procedures, the Facility will review the history of reported releases in or around the potentially affected area. Additional decontamination steps may be identified at that time.

Decontamination of paved areas, containment systems, and sumps will include the following steps:

- o removing the waste;
- o mechanical cleaning (scraping or sweeping);
- o visual inspection;
- o repair of damaged or unsealed areas;
- o low volume, high pressure washing (may include steam or detergent for

- more effective cleaning); and
- o sampling and analysis of the final rinse for confirmation.
- Waste cleaning solutions/solvent, and decontamination and rinse water generated during any of the closure activities identified above will be collected and pumped into tank trucks or drums characterized for proper management in accordance with the Facility's Waste Analysis Plan.
- Where it is more economical to dispose of the equipment off-site rather than
  decontaminate on-site, the equipment will be disassembled and shipped for off-site
  disposal. Sample handling, storage, and chain-of-custody procedures will be
  followed as outlined in the Facility's Waste Analysis Plan.

#### 5.3.1 Containers

• All hazardous waste in any size of permitted containers (i.e., 5, 15, 30, 55, 85 or 275 gallon container) will be removed from the Facility for proper disposal by a licensed waste hauler in accordance with all applicable federal, state and local regulations or, if the kilns are still burning LLGF, will be managed onsite through the fuel delivery system.

### Average Breakdown of Container Sizes on-site

Size (gallons)	% of Total
5	<1
15	<1
30	5
55	85
85	5
275	5

- Any container storage equipment (e.g., forklifts or drum trucks) will be thoroughly cleaned utilizing an appropriate cleaning agent to remove residual solvent. Subsequently, the equipment will be thoroughly washed utilizing a steam cleaner or pressure spray equipment.
- Following removal of the containers/units from the LLGF Processing Building and Truck Unloading Area # 1, the concrete floors and sumps will be carefully inspected for any significant damage or deterioration (such as cracks). Cracks which penetrate the entire depth of the concrete will be marked on a diagram of the area. Sample boring locations will be selectively determined to investigate suspected contamination. Any cracks identified will be caulked or sealed prior to commencing with decontamination. These areas will be thoroughly cleaned utilizing an appropriate cleaning agent to remove residual solvent. Temporary berms will be installed to prevent wash water from discharging from

each area. The concrete pad in each area will be thoroughly washed utilizing a steam cleaner or pressure spray equipment.

Visual inspection and, where applicable, rinsate analytical will determine if equipment used for container operations, interior surfaces of the buildings, the concrete floors and sumps have been properly cleaned to ensure removal of hazardous waste residue. Where applicable, concrete chips will also be collected to verify decontamination.

The containment decontamination confirmation and sampling are described under that section 3.3 Verification of Decontamination.

#### 5.3.2 Tanks

- All hazardous waste will be removed from the Facility for proper disposal by a licensed waste hauler in accordance with all applicable federal, state and local regulations or, if the kilns are still burning LLGF, will be managed onsite through the fuel delivery system.
- The integrity of secondary containment areas will be evaluated by inspecting the area for any cracks. Since the Tank Farm is equipped with competent secondary containment, there will be no runoff of hazardous waste or rinse water contaminated with hazardous waste or hazardous waste constituents contaminating the surrounding soils.
- Tank manways will be opened. Non-pumpable residues will be removed mechanically or manually and appropriately containerized. The actual means of residue removal will depend on the physical properties of the residues remaining in the storage/treatment tank. Removal may take place by use of sludge pumps, vacuum equipment, or by scrapes and shovels. To assess the degree the tank units must be decontaminated and cleaned, the future use of the tank units will be taken into consideration.
- Decontamination of the tanks will consist of pressure washing the tank interior and piping system with caustic detergent. Approximately 20,000 gallons of contaminated wash water is expected to be generated during the cleaning of all tanks and ancillary equipment.
- The Facility can request to utilize the alternate treatment standards for hazardous debris specified in Table 1 of 6 NYCRR Part 376.4(g) to obtain a conditioned exclusion for treated hazardous debris if the Facility recycles the metal tanks. If approved, Norlite, LLC will provide photographic evidence and submit a certification by an independent New York State PE that the cleanliness standard for the treated debris (metal tank) is met. When shipping the conditioned excluded waste (metal tank) 6 NYCRR Part 364.2

- may still require the waste to be shipped using a certified hazardous waste transporter.
- The interior surfaces of piping, valves, and pumps associated with the tank system will be decontaminated/cleaned by flushing and rinsing. Rinsate will be drained to storage/treatment tanks or appropriately containerized.
- The tank containment dikes and loading/unloading area will be decontaminated by removing any liquid or solvent with squeegees and vacuum truck equipment. Contaminated areas will be cleaned using a solvent and stiff brushes.
- The tank containment dikes and loading/unloading areas will be thoroughly cleaned by utilizing an appropriate cleaning agent to remove residual hazardous wastes. The tank containment dikes and loading/unloading area will be thoroughly washed utilizing a steam cleaner or pressure spray equipment. Contaminated wash water will be collected with squeegees and vacuum truck equipment and shipped offsite for treatment and disposal.

## 5.3.3 Rotary Kilns & Ancillary Equipment

Norlite, LLC's two lightweight aggregate kilns are cylindrical, horizontally mounted rotary kilns. The kilns are constructed of steel shells, with a six-inch refractory lining. The system involves piping and intermediate pumping station for feeding waste from the LLGF storage tanks to the kilns, the kilns, a mechanical cyclone collector, a Gas Conditioning Tower, a semi-dry scrubber and a baghouse for air emission control from the kilns, and an exhaust stack. (Each Kiln has independent emission control systems.)

Since the LLGF is filtered prior to burning and the kilns have a very high destruction efficiency, there is no remaining hazardous waste residues within the kilns. Therefore, closure procedures associated with closure of the kiln's operations will involve the decontamination and dismantling of waste feed lines to the kilns, disposal of contaminated wash waters generated from decontamination procedures, and excavation and disposal of any contaminated surface soils.

5.3.3.1 If closure of the hazardous waste energy recovery operations at the kilns occur in accordance with the procedures outlined, the operation of the kilns may continue during closure with the use of non-waste fuel. Thus, dismantling or demolition of the aggregate kilns and their ancillary equipment (i.e., APC equipment, etc.) is not included in the final closure procedures; however, closure costs include a worst-case scenario as described in 5.3.3.2.

However if closing of kilns is implemented, to indicate successful decontamination of the kilns upon cessation of the use of LLGF, the kiln will be operated in a "burnout" mode with only auxiliary fuel fired for an appropriate time period, but not less than four hours, maintaining at least the minimum temperature specified in the permit. This will allow for the combustion of any remaining organic constituents within the kiln system. As soon as practical, allowing for the kiln or APC unit to properly cool prior to entry, a set of wipe samples (minimum of ten locations scattered throughout the kiln) will be taken. Wipe sampling will involve sampling kiln surfaces exposed to the LLGF and/or exhaust gases. Each wipe sample collected will be a 100 square centimeter, sample. Alternate to wipe samples, rinsate or dust samples may be substituted based on SW-846 analytical requirements for the required parameters. Decontamination will be deemed successful if the resulting analytical results for the specified parameters, using appropriate methods of analysis in accordance with SW-846, do not exceed regulatory standards in effect at the time of closure.

5.3.3.2 If the outlined closure procedures including the "burnout" mode are not completed prior to partial or full closure of the Facility, verification of decontamination will involve, at minimum, procedures that are described in 5.3.2 following the alternate treatment standards for hazardous debris specified in Table 1 of 6 NYCRR Part 376.4(g). The Facility may request additional consideration for other decontamination verification methods by contacting NYSDEC in writing prior to any closure or partial closure activities. As agreed by both parties, a walk-through inspection may be coordinated to determine the best methods of decontamination verification.

### 5.4 SWMU, AOC and Site Management

As identified in Norlite LLC's Site Management Plan, there are Solid Waste Management Units (SWMUs) and Areas of Concern (AOC) which were identified during a Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) (See Figure 5). At the time of closure of the Facility or any ancillary equipment located in an SWMU or AOC, Norlite, LLC must consider the activities outlined in the SMP. Although each SWMU and AOC was classified as 'No Further Action,' some ongoing monitoring and future evaluation may be required. Closure costs have been updated accordingly.

Any SWMUs or AOCs not fully removed during closure or partial closure, or additionally identified during closure, may need an additional RFI to determine if further management is needed. At the time of post closure, Norlite, LLC will provide a financial assurance mechanism

to cover costs as identified in any additional RFI or corrective actions deemed required post closure.

### 5.5 Soil Sampling and Analysis

If visual inspection indicates possible contamination, the following procedures will be used to sample the soils in and adjacent to the perimeter of the hazardous waste permitted treatment and storage areas of the Facility. Samples obtained from these areas will be analyzed for appropriate indicator parameters to ensure that no hazardous waste or hazardous constituents from the Facility activities remain after closure. Analytical results will be compared to action levels to determine if further sampling and analysis and/or remediation are necessary. This may also identify any SWMU or AOCs as described above.

Sample boring locations will be selectively located in areas of suspected contamination such as:

- cracked areas of the containment structure,
- areas of un-remediated releases,
- suspected down slope, downwind, or runoff areas of a containment structure, and
- where standing liquid or spills were observed.

Samples will be analyzed for the following parameters:

SW-846-95 Analytical Method
9045
6010C / 7471A
8260C
8270C
8080A

Any detections above soil guidance values will trigger an RFI as described in section 5.4.

All sample collection and handling activities will be performed by trained personnel. All analytical work will be performed by a Norlite, LLC Certified Laboratory or alternate New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-

approved laboratory, in accordance with the minimum quality assurance and quality control protocols set forth in this permit.

Norlite, LLC will use appropriate sample preservation procedures and preservatives depending upon the sample matrix, parameters, and requirements of the laboratory performing the analysis. Preservatives can include HCl, Sodium Bisulfate, Methanol or reagent water for volatile organic compounds (VOCs), nitric acid for metals, and ice.

### 5.6 Certification of Closure

Within 60 days of completion of final or partial closure of the Facility or any HWMU, Norlite, LLC will submit to the NYSDEC, via registered mail, a certification of closure stipulating that the unit/Facility was closed in accordance with the approved Closure Plan, as required under 6 NYCRR Part 373-2.7(f). The certification will be signed by Norlite, LLC and an independent PE registered in New York State.

6.0	CLOSURE COST ESTIMATE
	The closure cost estimate calculation for the Facility is included in Attachment 1.

# 7.0 FINANCIAL ASSURANCE FOR CLOSURE

## 7.1 Closure Trust Fund

The Standby Trust Agreement pending approval.

# 7.2 Surety Bond

The Surety Bond for Closure pending approval.

## 8.0 LIABILITY REQUIREMENTS

A current copy of the Facility's insurance certificate demonstrating satisfactory liability limits is provided in Attachment 2.

## 8.1 Variance Procedures and Adjustments by Commissioner

No variance to the liability requirements is requested.

## 8.2 Coverage Levels for Sudden and Non-Sudden Accidental Occurrences

Norlite, LLC carries insurance for sudden and non-sudden accidental occurrences in the amount of \$10,000,000 per occurrence and \$30,000,000 annual aggregate as shown on the Facility's insurance certificate in Attachment 2.

# 9.0 GLOSSARY

Term	Definition
6 NYCRR	Title 6 of the New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment



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ARCADIS

NORLITE CORPORATION COHOES, NEW YORK

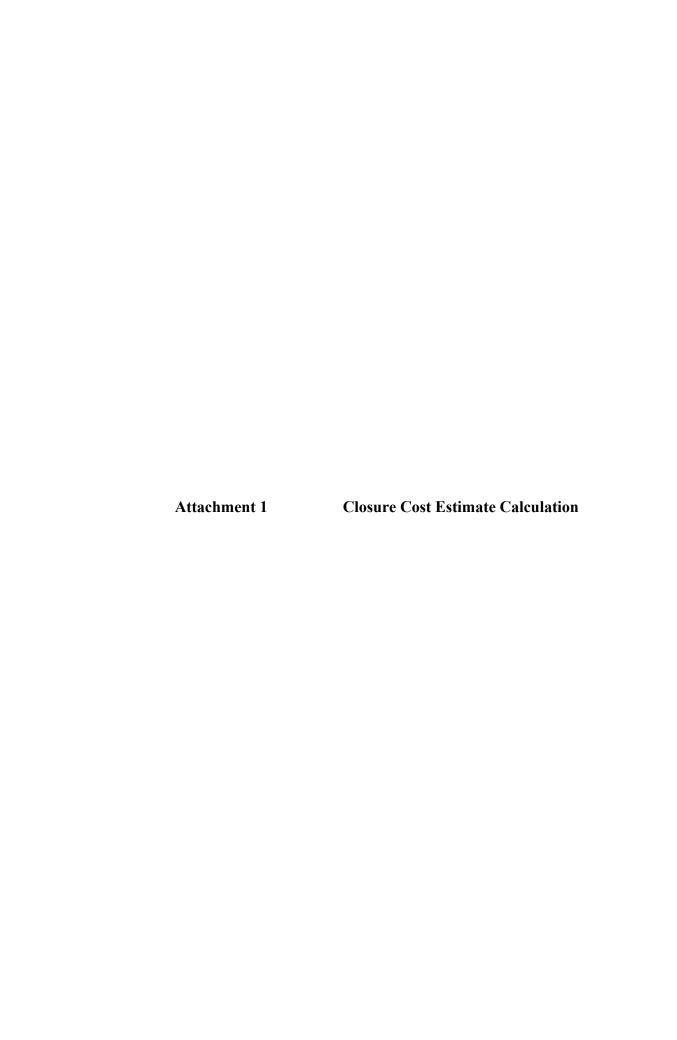
SITE MANAGEMENT PLAN

**SOLID WASTE MANAGEMENT UNITS (SMWUs)** 

AUGUST 2013 FIGURE 5

ARCADIS-US, INC





NORLITE, LLC CLOSURE COST ESTIMATE - 2020					
All Estimates are based on Worst Case Closure Scenario	+				
	\$ c	cost (ea)	units	Total	
CLOSURE OF TANKS, PIPING NETWORK AND KILNS					
Removal and Disposal of Inventory  Volume of Waste - 155,579	+				
Volume of Liquid - 116,687 Volume of Sludge - 38,892 gallons	+				
Pumping \$5.10 per 1000 gallons		5.1	156		
Protective Clothing 11 man-days @ \$27/day  Transportation \$6.13/mile for 300 miles - 20 trucks	<del>                                     </del>	27 6.13	6,000	\$ 297.00 \$ 36,780.00	
Disposal Cost for HW fuels @ \$1.81/gallon	+	1.81	155,579	. ,	
Disposal Baghouse Residues - 355 cu yds @ \$110/cu yd		110	355	\$ 39,050.00	
Disposal of Laboratory Wastes - 100 drums @ \$325/drum		325	100	\$ 32,500.00	
Transportation of Baghouse Residues - 20 trips @ 300 miles @ \$6.13/mile		6.13	6,000		
Supervision - 40 hours @ \$110/hour		100	40	\$ 4,000.00	4.444
Subtotal Removal and Disposal of Tanks	+				\$431,798.45
Tank Cleaning - Tanks 300, 400, 500 and 600	+				
Labor \$1100 x 36 man days		1100	36	\$ 39,600.00	
Equipment \$900/day x 12 days		900	12	\$ 10,800.00	
Wipe/Rinsate sampling 32 samples @ \$600/sample		600	32	\$ 19,200.00	
PPE Level C \$80/man day x 12 man days		80	12	\$ 960.00	
PPE Level B \$170/man day x 12 man days  Monitoring Equipment @ \$145/day x 12 days	+	170 145	12		
Monitoring Equipment @ \$145/day x 12 days Soil Sampling around covered tanks - 8 samples @ \$477/sample	+ +	145 477	12 8		
PPE and Miscellaneous Disposal - 8 drums@ \$80/drum	+ +	80	8		
Assume 100 cu yds contaminated soil removal				7	
Transportation 4 trips @ 300 miles @ \$6.13/mile		6.13	1,200		
Disposal @ \$165/cu yd		165	100	\$ 16,500.00	
Subtotal for covered tanks					\$ 102,652.00
Tank Cleaning - Tanks 100A,B,C and Tanks 200A,B, C					
Labor 1100 v 34 man days	_	1100	24	\$ 26,400.00	
Labor 1100 x 24 man days Equipment \$900/day x 8 days	<del></del>	1100 900	24 8	. ,	
Wipe/Rinsate sampling 48 samples @ \$600/sample	-	600	48	. ,	
PPE Level C \$80/man day x 12 man days		80	12	\$ 960.00	
PPE Level B \$170/man day x 6 man days		170	6	\$ 1,020.00	
Monitoring Equipment @ \$145/day x 8 days		145	8	\$ 1,160.00	
Subtotal	+				\$ 65,540.00
Subtotal					3 03,340.00
Tank Cleaning - Tanks 102A,B					
Labor 1100 x 9 man days	_	1100	9		
Equipment \$900/day x 3 days Sampling 2 samples @ \$600/sample	<del> </del>	900 600	3		
PPE Level C \$80/man day x 6 man days	+	80		\$ 1,200.00 \$ 480.00	
PPE Level B \$170/man day x 3 man days	<del> </del>	170	3		
Monitoring Equipment @ \$145/day x 3 days		145	3		
Subtotal					\$ 15,225.00
Cocondary Containment Decentamination for LLCE Building and EQ Book 5322 agrees feet of account		-			
Secondary Containment Decontamination for LLGF Building and EQ Room 5232 square feet of concrete  Cleaning rate is 105 sq ft/hr for a total of 50 hours	+ +	+			
Labor - 50 hours @ \$110/hour	+ +	110	50	\$ 5,500.00	
Supervision - 50 hours @ \$110/hour	+ +	110	50		
Pressure Washer - \$0.63/sqft		0.8	5,232	\$ 4,185.60	
Concrete chip sampling 10 samples, 5 hours@ \$101.82		101.82	5	,	
Sample analysis, standard turnaround \$1,090/sample  Disposal of Washwater 4.8 gpm x 60 min x 50 hrs x \$0.50/gallon	+	1090	10		
Disposal of Washwater 4.8 gpm x 60 min x 50 nrs x \$0.50/gallon	<del>-</del>	0.5	14,400	\$ 7,200.00	
Subtotal					\$33,794.70
Tank Removal					
Covered Tanks - 4 tanks @967.38/tank	+	967.38		\$ 3,869.52	
LLGF Inside Tank - 6 tanks @ 967.38/tank EQ Tanks - 2 Tanks @ 967.38/tank	+	967.38 967.38	6	\$ 5,804.28 \$ 1,934.76	
Ex issue E turno & 507.50/ turn	+ +	557.36		y 1,334.70	
Subtotal					\$11,608.56
Decontamination and Dismantle Piping and Ancillary Equipment	1				
Labor - 80 man hours @ \$110/hour		110	80	\$ 8,800.00	_
Labor - 80 man hours @ \$110/hour Supervision -80 man hours @ 110/hour Backhoe, 2 days @ \$1140/day		110 110 1140	80	\$ 8,800.00 \$ 8,800.00 \$ 2,280.00	

NORLITE, LLC CLOSURE COST ESTIMATE - 2020				
All Estimates are based on Worst Case Closure Scenario				
All Estimates are based on Worst case closure scenario	\$ cost (ea)	units	Total	
Front End Loader - 2 days @ \$895	895	2		
Steam Cleaning Equipment - 5 days @ \$120/day	120	5	\$ 600.00	
Pumping Equipment - 5 days @ \$75/day	75	5	· ·	
Crane - 10 day @ \$2715/day	2715	10	\$ 27,150.00	
Subtotal				\$49,795.00
Disposal of Wastewater				
Transportation - 5 trips @ 300 miles @ \$6.13/mile	6.13	1,500	\$ 9,195.00	
Disposal - 25000/gallons @ \$1.10/gallon	1.1	25,000	\$ 27,500.00	
Subtotal				\$36,695.00
KILN CLOSURE				
Fossil Fuel Burnout				
Fuel 8 gpm x 60 min x 4 hr x 2 kilns x \$4.34/gal	4.34	3840	· · · · · ·	
Labor 4 hr x 2 kilns x \$110/hr	110		\$ 880.00	
Supervisor 4 hr x 2 kilns x \$110/hr	110	8	\$ 880.00	
Subtotal				\$18,425.60
Cleaning Rotary Kilns & APC (Based on Worst-Case: No Burn Out / No Dust Reuse)				
Labor - 100 hours @ \$110/hr	110	100	\$ 11,000.00	
Supervisor - 100 hours @ \$110/hr	110	100		
Waste Disposal 40 Drums @ \$160/drum	160		\$ 6,400.00	
Waste Transportation 1 trip x 300 miles x \$6.13/mile	6.13	300		
10 samples @ 1100/sample	1100	10		
Dust Handling System (Cyclones, GCT, GSA, Baghouse)				
Labor - 80 hours @ \$110/hr	110	80		
Supervisor - 80 hours @ \$110/hr	110	80		
Waste Disposal (APC Dust) 300 cu yds @ \$163/cu yd	163	300	. ,	
Waste Disposal - Dust Silos Dust 2000 cu yds @ 163/cu yd (1,000 + 500 + 500)	163	2000		
10 samples @ 1100/sample GCT & GSA Scrubbing System	1100	10	\$ 11,000.00	
Labor 100 hours @ 110/hour	110	100	\$ 11,000.00	
Supervisor - 100 hours @ \$110/hr	110	100		
Solids Disposal 10 drums @ \$160/drum	160	10		
Washwater Disposal 550 gallons @ \$0.33/gal	0.33	550	\$ 181.50	
10 samples @ \$1100/sample	1100	10	\$ 11,000.00	
ID Fans and Stacks				
Labor - 40 hours @ \$110/hr	110		\$ 4,400.00	
Supervisor - 40 hours @ \$110/hr	110		\$ 4,400.00	
10 samples @ 1100/sample	1100	10	\$ 11,000.00	
Dioxin Samples 12 dioxin samples @ \$1000/sample	1000	12	\$ 12,000.00	
Subtotal	1000	12	3 12,000.00	\$511,320.50
Subtotal For Section A				\$1,276,854.81
CLOSURE OF CONTAINER AREAS				
Removal and Disposal of Final Inventory				
Disposal of 277 Drums of Liquid Waste and 50 Drums of Solids				
Liquids Disposal 277 x 55 gal x \$1.81/gal	1.81	15235	\$ 27,575.35	
Solids Disposal 50 x \$160/drum	160		\$ 8,000.00	
Container Loading 80 pallets x \$5.06/pallet	5.06		\$ 404.80	
Transportation - 4 trips x 300 miles x \$6.13/mile	6.13	1200	\$ 7,356.00	
Supervision 8 man hours x \$110/hr	110	8	\$ 880.00	
Subtotal				\$44,216.15
Containment Areas Decontamination				
9,200 square feet of concrete				
Cleaning rate is 105 sq ft/hr for a total of 88 hours				
· ·	110	88		
Labor - 88 hours @ \$110/hour	110	88	\$ 9,000.00	
Labor - 88 hours @ \$110/hour Supervision - 88 hours @ \$110/hour	110			
Labor - 88 hours @ \$110/hour Supervision - 88 hours @ \$110/hour Pressure Washer - \$0.63/sqft	0.63	9200		
Labor - 88 hours @ \$110/hour Supervision - 88 hours @ \$110/hour Pressure Washer - \$0.63/sqft Concrete chip sampling 20 samples, 10 hours@ \$101.82	0.63 101.82	9200 10	\$ 937.60	
Labor - 88 hours @ \$110/hour Supervision - 88 hours @ \$110/hour Pressure Washer - \$0.63/sqft	0.63	9200	\$ 937.60 \$ 20,100.00	

NORLITE, LLC CLOSURE COST ESTIMATE - 2020				
All Estimates are based on Worst Case Closure Scenario				
	\$ cost (ea)	units	Total	
Tanker Staging Area Decontamination				
Talikei Staging Area Decontamination				
Assume 444 cu yds removal				
Transportation 20 trips @ 300 miles @ \$6.13/mile	6.13	6000	\$ 36,780.00	
Disposal @ \$160/cu yd	160	444		
Subtotal				\$107,820.00
Subtotal for Section B				\$213,807.75
CONTAMINATED SOIL, SWMU-AOC Discovery				
Sample Collection and Analysis				
Sample Collection			\$ 1,100.00	
Sample Analysis - 70 samples - pH & Metals @ \$175/sample	175	70		
Sample Analysis 70 Samples by GC @ 205/sample	205	70		
Sample Analysis 70 Samples by GC/MS @ \$570	570	70		
Subtotal				\$67,600.00
Stockpile Shale				
Supervision 24 man hours @ \$38/hr	38	24		
Front End Loader, 2 days @ \$895	895	2	\$ 1,790.00	
Backhoe, 2 Days @ \$1140	1140	2	\$ 2,280.00	
Subtotal				\$4,982.00
Excavated Soil and Shale Stockpile				
Excavated Soil and Shale Stockpile				
Supervision 24 man hours @ 38/hr	38	24	\$ 912.00	
Front End Loader, 3 days @ \$895	895	3	\$ 2,685.00	
Backhoe, 3 Days @ \$1140	1140		\$ 3,420.00	
Subtotal			, ,, ,,	\$7,017.00
				. ,
Disposal				
Transportation 35 trips x 300 miles x \$6.13/mile	6.13	10500		
Disposal of 700 cu yds @ \$160/yd	160	700	\$ 112,000.00	
Subtotal				`
Regrade Site				
Supervision, 16 man hours @ \$38/hr	38	16	\$ 608.00	
Front End Loader, 1 day @ \$895	895	10	\$ 895.00	
Backhoe, 1 Day @ \$1140	1140	1	\$ 1,140.00	
Bulldozer, 2 days @ \$1005	1005	2	\$ 2,010.00	
Subtotal		_	7 2,020.00	\$4,653.00
Subtotal for Section C				\$84,252.00
HEALTH AND SAFETY				
Disposal PPE				
150 man hours @ \$10.00/hour	10			
Temporary snow fencing, disposal tarps	N/A	N/A		\$ 1,975.43
Disposal Cost 15 drums @ \$60/drum	60	15	\$ 900.00	
Subtotal for Section D				\$4,219.00
Subtotal for Section D				\$4,219.00
CLOSURE CERTIFICATION				
Professional Engineer 8 systems @ \$4,803 per system	4803	8	\$ 38,424.00	
Marine Chemist 12 days @ \$815/day	815	12	\$ 9,780.00	
Subtotal for Section E				\$48,204.00
OVERHEAD AND CONTINGENCY				
				A. c:
Subtotal for Sections A, B, C, D and E				\$1,627,337.56
Engineering 10% of total				\$162,733.76 \$406,834.39
Contingency 25% of total				\$ <del>4</del> 00,854.39
Total Closure Cost				\$2,196,905.70
TOTAL GIOSALC GOST				72,130,303.70





## **CERTIFICATE OF LIABILITY INSURANCE**

DATE (MM/DD/YYYY) 12/20/2019

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed.

	SUBROGATION IS WAIVED, subject is certificate does not confer rights to				ich end	dorsement(s	.).	-		atement on
PRODUCER					CONTAC NAME:	CT Willis T	owers Wats	on Certificate Center	:	
Willis of Illinois, Inc.					PHONE (A/C, No, Ext): 1-877-945-7378 (A/C, No): 1-888-467-2378					
	26 Century Blvd				F_MAII		cates@willi			
P.O. Box 305191 Nashville, TN 372305191 USA								RDING COVERAGE		NAIC#
								surance Company		36940
INSU	RED							surance Company		16044
Nor	lite, LLC							Insurance Company		10120
	S Saratoga St. Des, NY 12047 USA									20220
COM	ocs, at 12011 obs				INSURE					
					INSURE					
CO	VERAGES CER	TIEI	TATE	NUMBER: W14806331	INSURE	KF:		REVISION NUMBER:		
TI IN CI EX	HIS IS TO CERTIFY THAT THE POLICIES DICATED. NOTWITHSTANDING ANY REERTIFICATE MAY BE ISSUED OR MAY CLUSIONS AND CONDITIONS OF SUCH	OF I	INSUF REMEI AIN, CIES.	RANCE LISTED BELOW HAN NT, TERM OR CONDITION THE INSURANCE AFFORDI LIMITS SHOWN MAY HAVE	OF AN'	Y CONTRACT THE POLICIE REDUCED BY	THE INSURE OR OTHER I S DESCRIBEI PAID CLAIMS.	ED NAMED ABOVE FOR TH DOCUMENT WITH RESPEC D HEREIN IS SUBJECT TO	TO Y	WHICH THIS
INSR LTR	TYPE OF INSURANCE	INSD	SUBR WVD	POLICY NUMBER		POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMIT	S	
	COMMERCIAL GENERAL LIABILITY							EACH OCCURRENCE DAMAGE TO RENTED	\$	2,000,000
	CLAIMS-MADE X OCCUR							PREMISES (Ea occurrence)	\$	300,000
A								MED EXP (Any one person)	\$	10,000
				US00077228LI19A		12/31/2019	12/31/2020	PERSONAL & ADV INJURY	\$	2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE	\$	2,000,000
	× POLICY PRO- JECT LOC							PRODUCTS - COMP/OP AGG	\$	2,000,000
	AUTOMOBILE LIABILITY							COMBINED SINGLE LIMIT	\$	2,000,000
	X ANY AUTO							(Ea accident) BODILY INJURY (Per person)	\$	
В	OWNED SCHEDULED			RM8CA00039-191		12/31/2019	12/31/2020	BODILY INJURY (Per accident)		
	AUTOS ONLY AUTOS NON-OWNED				'			PROPERTY DAMAGE	\$	
	AUTOS ONLY AUTOS ONLY							(Per accident)	\$	
	X UMBRELLA LIAB X OCCUR						12/31/2020	EAGU GGGURRENGE	s	14,000,000
A	- CCCOR			US00077229LI19A		12/31/2019		EACH OCCURRENCE	•	14,000,000
	OLAIMO-MADE				12/31/2013		,,,	AGGREGATE	\$	14,000,000
	DED X RETENTION \$ 10,000 WORKERS COMPENSATION							X PER STATUTE ER	\$	
_	AND EMPLOYERS' LIABILITY Y/N		RM8WC000							1,000,000
С	ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	N/A		RM8WC00049-191		12/31/2019	12/31/2020	E.L. EACH ACCIDENT	\$	1,000,000
	(Mandatory in NH) If yes, describe under							E.L. DISEASE - EA EMPLOYEE		1,000,000
C	DESCRIPTION OF OPERATIONS below  Workers Compensation - Retro			DMOWGOODEL 101		12/31/2019	12/21/2020		\$ \$1,000	
ن	& Employers Liability			RM8WC00051-191		12/31/2019		E.L. Disease-Each Emp		·
								-1		
DEGG	Work Comp: Per Statute RIPTION OF OPERATIONS / LOCATIONS / VEHICL	<u></u>	0000	404 4430 ( D				E.L. Disease-Pol Lmt	\$1,000	,,000
	ATTACHED	.LO (A	CORD	·	e, may be	account in more	e apace is require	ia,		7 7
CEF	RTIFICATE HOLDER				CANC	ELLATION				
					SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.					
ļ						AUTHORIZED REPRESENTATIVE				

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Evidence of Insurance

AGENCY CUSTOMER ID:	
1.00 #.	



### ADDITIONAL REMARKS SCHEDULE

Page 2 of 3

	628 S Saratoga St.
POLICY NUMBER See Page 1	628 S Saratoga St. Cohoes, NY 12047 USA
CARRIER NAIC CODE See Page 1 See Page	1 EFFECTIVE DATE: See Page 1

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM.

25 FORM TITLE: Certificate of Liability Insurance FORM NUMBER: \_\_\_

INSURER AFFORDING COVERAGE: Everest National Insurance Company NAIC#: 10120

LIMIT DESCRIPTION: LIMIT AMOUNT: TYPE OF INSURANCE: Workers Compensation - FL/NJ Each Accident \$1,000,000

Disease-policy limit \$1,000,000

Disease-each employee \$1,000,000 Work Comp - Per Statute

INSURER AFFORDING COVERAGE: Indian Harbor Insurance Company NAIC#: 36940

TYPE OF INSURANCE: LIMIT DESCRIPTION: LIMIT AMOUNT:

Contractor's Poll. & Prof. Liability See Below

ADDITIONAL REMARKS:

Professional Liability and Contractors Pollution Liability, claims-made

Insurer affording coverage: Indian Harbor Insurance Company

Policy Number: PEC004703903, Effective date: 12/31/2019, Expiration Date 12/31/2020

Limit of Liability: \$15,000,000 each occurrence / \$15,000,000 aggregate

NAIC#: 36940 INSURER AFFORDING COVERAGE: Indian Harbor Insurance Company

LIMIT AMOUNT: TYPE OF INSURANCE: LIMIT DESCRIPTION:

Site Pollution Liability See Below

ADDITIONAL REMARKS:

Site Pollution Liability - New York, Connecticut and Massachusetts financial responsibility, claims-made

Insurer affording coverage: Indian Harbor Insurance Company

Policy Number: PEC 004563901, Effective date: 12/21/2019, Expiration Date 12/31/2020

Limit of liability:

MA: \$8,000,000 / \$16,000,000 MA: \$3,000,000 / \$6,000,000

NY: \$5,500,000 / \$11,000,000 CT: \$1,000,000 / \$2,000,000 CT: \$1,000,000 / \$2,000,000

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AGENCY CUSTOMER ID:	
1.00 #:	



#### ADDITIONAL REMARKS SCHEDULE

Page 3 of 3

NAIC#: 36940

AGENCY Willis of Illinois, Inc.		NAMED INSURED Norlite, LLC 628 S Saratoga St.
POLICY NUMBER		Cohoes, NY 12047 USA
See Page 1		
CARRIER	NAIC CODE	
See Page 1	See Page 1	EFFECTIVE DATE: See Page 1
ADDITIONAL REMARKS		
THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACO	ORD FORM,	

\_ FORM TITLE: Certificate of Liability Insurance FORM NUMBER: 25

INSURER AFFORDING COVERAGE: Indian Harbor Insurance Company

TYPE OF INSURANCE:

LIMIT DESCRIPTION:

LIMIT AMOUNT:

Site Pollution Liability

See Below

ADDITIONAL REMARKS:

Site Pollution Liability - Wisconsin, Indiana and Tennessee financial responsibility, claims-made

Insurer affording coverage: Indian Harbor Insurance Company

Policy Number: PEC 004563701, Effective date: 12/31/2019, Expiration Date 12/31/2020

Limit of liability:

WI: \$1,000,000 / \$2,000,000 TN: \$4,000,000 / \$8,000,000 IN: \$4,000,000 / \$8,000,000

INSURER AFFORDING COVERAGE: Indian Harbor Insurance Company

NAIC#: 36940

TYPE OF INSURANCE:

LIMIT DESCRIPTION:

T.TMTT AMOUNT. See Below

Site Pollution Liability

ADDITIONAL REMARKS:

Site Pollution Liability - All Tradebe Environmental Services locations and excess of financial responsibility

policies, non-owned disposal sites and third party transportation

Insurer affording coverage: Indian Harbor Insurance Company

Policy Number: PEC 000096407, Effective date 12/31/2019, Expiration Date 12/31/2020

Limit of liability:

All Tradebe Environmental Services locations and excess of financial responsibility policies: \$2,000,000 / \$2,000,000

Non-owned disposal sites and third party transportation: \$5,000,000 / \$10,000,000

ACORD 101 (2008/01)

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## **Additional Named Insureds:**

Tradebe Environmental Services, LLC

Tradebe Treatment and Recycling, LLC

Tradebe Treatment and Recycling Nashville, LLC

Tradebe Treatment and Recycling Wisconsin, LLC

Tradebe Treatment and Recycling Northeast, LLC

Norlite, LLC

Tradebe Transportation, LLC

Thunderbird Trucking, LLC

Aaron Oil Company, Inc.

Aaron Oil Company, LLC

Tradebe Industrial Services, LLC