WASTE ANALYSIS PLAN

NORLITE LLC
COHOES, NEW YORK
NYD080469935

PREPARED FOR:

NORLITE LLC
628 SOUTH SARATOGA STREET
COHOES, NEW YORK 12047

PREPARED BY:

NORLITE LLC
628 SOUTH SARATOGA STREET
COHOES, NEW YORK 12047

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WASTE ANALYSIS PLAN

The purpose of this Waste Analysis Plan it to provide descriptions of the waste analysis procedures utilized by Norlite LLC (Norlite) to ensure compliance with 6 NYCRR Part 373-2.2(e). Included in this document are descriptions of each hazardous waste stream generated at the facility including detailed waste characterizations, descriptions of the processes that generate the waste and the waste analysis plan for each waste stream. Elements of the Waste Analysis Plan include the parameters to be analyzed for, the method for analyzing each parameter, the preservation method and the holding time.

Unless otherwise noted, the methods for analyzing each parameter are derived from the document entitled, "Test Methods for Evaluating Solid Waste, United States Environmental Protection Agency (SW-846), Third Edition, First Update 1990" or latest approved revisions. The rationale for choosing the parameters to be analyzed is based on past laboratory analyses of the waste stream, knowledge of the constituents of the waste stream and the processes that generate the waste stream. It should be noted that in the absence of USEPA or NYSDEC-approved methods listed in this Waste Analysis Plan, alternate analytical methods may be utilized as approved by NYSDEC.

This Personnel Training Plan is incorporated by reference into the Part 373 Permit for the Norlite facility. 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 1.

1.0 FACILITY DESCRIPTION

1.1 Description of Facility Processes and Activities

Norlite's hazardous waste activity consists of the tank and container storage of hazardous waste and low grade fuel (LLGF) from various industrial sources, as well as non-hazardous

wastes. This low grade fuel is beneficially reused for energy recovery and/or incinerated for destruction by combustion in Norlite's aggregate kilns. Norlite also transships hazardous waste for proper management at other permitted TSDFs. Tank sludge, filter sludge and ancillary waste materials that are generated in this process are accumulated in drums or containers for proper disposal both onsite and offsite.

The transportation, storage and burning of hazardous waste in industrial furnaces is regulated under 40 CFR Part §266 of the federal RCRA regulations. These processes are also fully regulated by New York State under the Hazardous Waste Regulations 6 NYCRR Part §370, et sequential, and the Air Pollution Regulations 6 NYCRR Part §200, et sequential.

Norlite receives liquid Low Grade Fuel ("LLGF") from generators and blenders. Blenders of LLGF for energy recovery at Norlite are regulated as specified in 40 CFR Subpart §261.6(c) as owners and operators of facilities that store recyclable materials under all applicable provisions of 40 CFR Parts §264 and §265. Therefore, the characteristics and identification of the source of the recycled material will be made and documented by the Blender. Norlite will verify that the Blender is properly permitted under RCRA for the management of LLGF (hazardous waste fuel) and that they are identifying and characterizing the material they collect from other generators.

1.2 Identification/EPA Classification and Quantities of Hazardous Wastes Generated

Norlite has developed a program to ensure the proper identification of waste with a proper chemical and physical analysis. A Waste Profile Sheet is submitted by each generator or blender. Appendix 1 shows a copy of the Waste Profile Sheet. This form requires the Generator or Blender to identify itself and provide waste shipping information, waste description, waste source(s), waste analysis, and a list of any hazardous constituents as defined in 40 CFR §261 - Appendix VIII and/or 6NYCRR Part §371 - Appendix 23. The Waste Profile Sheet also requires a verification by the Generator that the information is accurate, that if any changes

occur, the Generator will notify Norlite promptly, and that the LLGF is not regulated as a PCB waste under 40 CFR Part §761.

Norlite reviews the Waste Profile Sheet to assure that the material to be received can meet the permit limits and the compatibility requirements.

1.2.1 Characteristic Ignitable Waste – D001

Typical constituents in ignitable waste may include the following categories that are not otherwise included as a listed waste: Saturated Aliphatic Hydrocarbons, Amides, Unsaturated Aliphatic Hydrocarbons, Amines, Aromatic Hydrocarbons, Carbamates, Organic Nitro Compounds in organic solutions, Phenols or Cresols in organic solutions, Aldehydes, Ethers, Esters, Alcohols and Ketones. With this array of chemicals, there is only limited potential for reactivity. The absence of incompatibility is verified with a compatibility test as part of the incoming inspection.

1.2.2 Corrosive and Reactive Waste – D002 and D003

In addition, certain corrosive D002 wastes may be contained in the LLGF received at Norlite. Examples may include such materials as amines like triethanolamine, acetic or propionic acid, formaldehyde and certain amides. Norlite also receives D003 waste in LLGF blends, however, the waste, as received must not exhibit the characteristic. Such wastes are not accepted. However, certain generator waste streams may still require the D003 waste number designation to ensure compliance with Land Disposal Restriction (LDR) and waste characterization requirements.

1.2.3 Toxicity Characteristic Waste

In addition, combustible waste that may have heavy metals content, which makes it characteristically hazardous is acceptable if the metal content is controlled to not exceed the

permitted maximum feed rate levels of the metal in the total hazardous waste fed to the kiln. These Waste Codes include the following:

D004	D005	D006	D007	D008	D009	D010	D011

Waste codes D004 through D011 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the Waste Profile Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

The following toxicity characteristic organic wastes are accepted if they are within the specifications listed for LLGF in Schedule 1 of Module 1.

D018	D019	D021	D022	D023	D024	D025	D026
D027	D028	D029	D030	D032	D033	D034	D035
D036	D037	D038	D039	D040	D041	D042	D043

1.2.4 Listed Non-Specific Source Waste (F-Listed Waste)

Norlite will accept waste designated as listed non-specific source waste with the following codes. The definitions of these wastes are found at 40 CFR 261.31 and 6 NYCRR 371.4. These wastes include mixtures and wastes that are derived from the treatment of these wastes so long as they are amenable for treatment at Norlite as discussed in the waste analysis plan.

F001	F002	F003	F004	F005	F032	F034	F035
F037	F038	F039					

1.2.5 Listed Specific Source Waste (K-Listed Waste)

Norlite will accept waste from a variety of specific sources including the petroleum refining industry. These waste codes include the following:

K001	K002	K003	K004	K005	K006	K007	K008
K009	K010	K011	K013	K014	K015	K016	K017
K018	K019	K020	K022	K023	K024	K025	K026
K027	K028	K029	K030	K046	K048	K049	K050
K051	K052	K060	K061	K062	K083	K084	K085
K086	K087	K093	K094	K095	K100	K101	K102
K103	K104	K105	K111	K112	K113	K114	K115
K116	K117	K118	K136	K141	K142	K143	K144
K145	K147	K148	K149	K150	K151	K152	K156
K157	K158	K159	K161				

Metal feed rates from LGF blends containing K codes with metals will not exceed permitted levels, due to the feed planning procedures followed by Norlite to comply with metal limits in the permit.

Waste codes K002 through K008, K061 & K100 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the Waste Profile Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

1.2.6 Listed Hazardous Chemical Waste (P-Listed and U-Listed Waste)

Specified listed hazardous chemical product wastes are accepted on a case-by-case basis if the waste is hazardous because of Ignitability or Toxicity, and is otherwise within the specification listed herein.

The following P-listed waste codes are accepted by Norlite provided that the waste received contains less than 5% of the listed chemical. Organo-metallic constituents are restricted based on the metal limits in the 6NYCRR Part §373 permit for LLGF.

P002	P003	P005	P007	P010	P011	P012	P013
P014	P016	P017	P018	P021	P022	P023	P026
P027	P028	P029	P030	P034	P036	P038	P041
P042	P046	P048	P049	P054	P060	P062	P064
P067	P068	P069	P074	P077	P082	P084	P093
P099	P101	P103	P104	P105	P110	P113	P114
P116	P118	P119	P120	P121	P188	P190	P191
P204							

Waste codes P010, P011, P012, P013, P029, P074, P099, P104, P113, P114, P119 and P120 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waste, at the point of generation, meets one or more of the six (6) criteria listed in 6 NYCRR 376.1(c)(3). Norlite will ensure and document on the Waste Profile Sheet that waste streams with any of these codes are acceptable for combustion pursuant to the LDR regulation prior to accepting such waste for combustion.

These listed non-acute categories (U designated wastes), are listed in 6NYCRR Subpart §371.4(d)(6). The following hazardous wastes, as listed in 6NYCRR Subpart §371.4(d)(6), will be accepted.

U001	U002	U003	U004	U005	U006	U007	U008
U009	U010	U012	U015	U016	U017	U018	U019
U020	U021	U022	U024	U025	U027	U028	U030
U031	U034	U035	U037	U039	U041	U042	U043
U044	U045	U046	U047	U048	U049	U050	U051
U052	U053	U055	U056	U057	U059	U063	U064
U068	U069	U070	U071	U072	U073	U074	U075
U076	U077	U078	U079	U080	U081	U082	U083
U085	U086	U087	U088	U089	U090	U091	U092
U093	U094	U095	U096	U097	U098	U099	U101
U102	U103	U105	U106	U107	U108	U109	U110
U111	U112	U113	U114	U115	U116	U117	U118
U119	U120	U121	U122	U123	U124	U125	U126
U127	U128	U131	U133	U134	U135	U137	U138
U140	U141	U143	U144	U146	U147	U149	U150
U152	U153	U154	U155	U156	U157	U158	U159
U160	U161	U162	U163	U164	U165	U166	U167
U168	U169	U170	U171	U172	U173	U174	U176
U177	U178	U179	U180	U181	U182	U183	U186
U187	U188	U190	U191	U193	U194	U196	U197
U201	U202	U203	U206	U207	U208	U209	U210
U211	U213	U214	U218	U219	U220	U221	U222
U223	U225	U226	U227	U228	U235	U236	U238
U239	U243	U244	U246	U328	U353	U359	U375
U376	U377	U378	U379	U381	U382	U383	U384
U385	U386	U387	U390	U391	U392	U393	U394
U395	U396	U400	U401	U402	U403	U404	U407
U410							

1.2.7 Specification of the Low Grade Fuel

LLGF usually has a flash point of 200°F or lower. The LLGF is not reactive. However, LLGF may be a Toxic waste as defined in 6NYCRR Subpart §371.3(e) because the heavy metal and organic compound concentration may exceed the limits set forth in that section. Also, LLGF may contain a characteristic corrosive waste.

Norlite stores the LLGF in its storage tanks or in a container storage area. The tanks and containers are located in a diked area. The design and operation for the tanks and containers are described in the Operations Plan. The LLGF, having been pre-screened, is non-corrosive to the glass-lined (Tanks 300-600) or carbon steel (Tanks 100 A,B,C and 200 A,B,C) storage tanks designed with suitable corrosion allowance. The necessary specification for the fuel has been provided to the suppliers, and has been confirmed with their Waste Profile Sheet, and with the Norlite analysis provided prior to burning and unloading.

1.2.8 Waste Generated Onsite

Hazardous wastes are generated from the cleaning of the LGF storage tanks, they also include filter sludge generated during the off-loading of the LLGF into the storage tank, and ancillary waste material such as absorbent pads, contaminated personnel protective equipment, glass sample jars, laboratory pipets from sampling and analysis. The waste is generally contaminated with waste solvent and alcohol. The sludge is hazardous because of Ignitability and Toxicity. The sludge is manifested, at a minimum, with the following waste classifications: D001, F001, F002, F003 and F005 due to its ignitable characteristic and the presence of solvent as well as being a "derived from" waste. Between tank cleanings, Norlite records all listed waste codes that are stored in each tank so that all applicable "derived from" waste codes are properly applied to the residuals.

The tank cleaning operation is conducted periodically based on estimates of sludge quantity in the storage tank. The sludge generated by the tank cleaning operation is removed from the tanks and placed in drums for disposal. Norlite has contracted with an experienced environmental contractor for the tank cleaning operation. The cleaning of one storage tank generates from approximately 20 to 80 drums. These drums are temporarily stored in the truck containment area while the contents are being analyzed and arrangements are being made for disposal. Generally, the drums are disposed of within three to six weeks from the date of generation. Tanks are usually cleaned and the sludge removed on an annual basis.

If the tank bottom sludge contains free liquids, it can be characterized as LLGF by this waste analysis plan and tested per the LLGF testing parameters and criteria and transferred to onsite tanks for burning in the kilns. If the tank bottom sludge does not contain free liquids, it will be shipped offsite for proper disposal.

The LLGF filters are the bell strainers that the trucks discharge through first. They contain coarse metal baskets to remove debris that is large enough to damage the pumps or plug the piping. These filters are cleaned daily during delivery operations, generally after each load. The filters are opened and the collected solids are scraped and shoveled out. The filter sludge is stored in the drum container storage area. If the filter sludge contains free liquids, it can be characterized as LLGF by this waste analysis plan and tested per the LLGF testing parameters and criteria and transferred to onsite tanks for burning in the kilns. If the filter sludge does not contain free liquids, it will be shipped offsite for proper disposal. The drums will then be loaded and disposed of at a licensed TSD Facility.

The sludge and filter sludge (primarily waste solvent and alcohol) have proven to be compatible with the storage containers, which are constructed of low carbon steel that meets U.S. Department of Transportation specifications No. 17C. The drums are labeled and dated and are kept closed except during the loading/disposing of the waste material. The drums are spaced according to the plan set forth in the Operations Plan. The filter sludge and tank sludge are Ignitable with a flash point less than 140 degrees Fahrenheit. Norlite has found the filter sludge and tank sludge not to be corrosive or reactive. They are typically toxic because of heavy metal and organic compound concentrations that exceed the Toxicity Characteristic limits set forth in 6NYCRR §371.3(c).

Norlite generates a wastewater onsite that is separate from the scrubber wastewater. Wastewater from the secondary containment systems is collected and pumped to the LLGF tanks to be managed as LLGF. This includes stormwater from the outside tanker staging area.

Scrubber waste water is treated in the waste water treatment plant and is not pumped to the LLGF tanks.

1.2.9 Used Oil Fuel and Waste Fuel A

Norlite is a generator, marketer and burner of used oil as defined under 6 NYCRR 374-2 and is subject to § 374-2.2, § 374-2.4 and § 374-2.5.

Norlite uses nonhazardous waste fuels that can be defined as used oil under 40 CFR 279 and 6 NYCRR 374-2, or Waste Fuel A as defined in 6 NYCRR 225-2 except PCB limits in this permit must be lower, as per Schedule 1 of Module. This fuel is used to supplement the hazardous waste LLGF in operating the lightweight aggregate kilns. Used oil is classified as either specification used oil fuel or off-specification used oil fuel. Specification used oil fuel is defined as used oil meeting the following criteria:

Used Oil Fuel Specification

Parameter	Limitation
Arsenic	< 5 ppm
Cadmium	< 2 ppm
Chromium	< 10 ppm
Lead	< 100 ppm
Flash Point	> 100°F
Total Halogens	< 4,000 ppm*
PCBs	< 2 ppm.

*any used oil containing greater than or equal to 1,000 ppm total halogens is considered a hazardous waste because it is presumed to be mixed with listed hazardous waste. This presumption may be rebutted by demonstrating that the used oil does not contain listed hazardous waste constituents pursuant to 40 CFR 279.10(b)(ii) and 6 NYCRR 374-2.2(a)(2)(i).

Used oil that does not meet this specification is considered off-specification used oil fuel. Norlite uses specification used oil fuel for start up and shutdown of the kilns and any time the units are not operating under the Part 373 permit parameters (e.g. after an automatic waste feed cut off (AWFCO)). This fuel is considered equivalent to virgin fuel oils and may be used in place of virgin fuels as they are described in the permit.

Waste Fuel A is defined under § 225-2 as any waste oil, fuel oil or mixture of these to be burned which contains between 25 and 250 parts per million (by weight) lead and which meets the limitations of Table 2-1 of section 225-2.4 [reproduced below] and does not contain chemical waste.

Waste Fuel A Specification

Parameter	Limitation
Polychlorinated Biphenyls (PCB)	Less than 50 ppm[(1)(2)]
Total Halogens	1,000 ppm[(1)] maximum
Sulfur	See Subpart 225-1 for fuel sulfur limitations
Lead	250 ppm[(1)] maximum
Gross Heat Content	125,000 (Btu/gal) minimum

[(1)] Parts per million (ppm) by weight (water free basis) of fuel

Off-specification used oil fuel and/or Waste Fuel A are not used during start up or shutdown of the kilns. They are used as the primary supplement to the hazardous waste LLGF when required by the operators. While being co-fired with the LLGF, Norlite ensures that the total metals and chlorine feed rates are not exceeded by the off-specification used oil fuel and/or Waste Fuel A. These fuels may also be used after an AWFCO provided the carbon monoxide hourly rolling average (HRA) is below 500 ppm.

These fuels are characterized upon receipt at the facility. In order for Norlite to accept specification used oil fuel, it must be demonstrated, prior to receipt, that it meets the specification listed above. This is primarily done by Norlite onsite analysis but may also be done by submission of analysis from marketer of the used oil fuel. Similarly, Waste Fuel A loads must also be scrutinized to ensure that it meets the definition at 6 NYCRR 225-2 and this is performed by Norlite onsite analysis only. Off-specification used oil fuel is also sampled and analyzed prior to receipt.

Oil meeting the definition of specification used oil fuel may be used for start up or shut down of the kiln, after AWFCOs, and after AWFCOs of Off-Specification Used Oil Fuel/Waste Fuel A due to carbon monoxide levels over 500 ppm.

1.2.10 Comparable Fuels

Pursuant to 6 NYCRR 371-4(i), a generator may choose to classify a hazardous waste as a comparable fuel provided the waste stream meets the benchmark established in the regulation. The regulation is based on #2 fuel oil and the waste stream may not have any significant concentrations of organic compounds or metals as defined in the regulation. Should a generator classify a waste stream as a comparable fuel and satisfy the regulatory requirements in 6 NYCRR 371-4(i), Norlite will accept the stream as a fuel and use it in lieu of or in addition to virgin fuels and specification used oil. Although Norlite will rely on the sampling and analysis plan required of the generator under 6 NYCRR 371-4(i), verification sampling and analysis of comparable fuels at the facility will occur as described in Table WAP-1.

Norlite will manage comparable fuels in used oil tanks as described in the Operations Plan of this application. Should Norlite manage a comparable fuel in the LLGF tanks, the comparable fuel will be managed only as LLGF and subject to this waste analysis plan as such. Norlite will comply with all applicable requirements of 6 NYCRR 371-4(i).

1.2.11 Remedial Waste

Norlite Corporation shall not accept hazardous waste from remedial activities unless it is in pumpable liquid form and has a heat content of at least 5,000 BTUs per pound. This means that the only candidate waste streams from a remedial action are those streams that essentially meet the description of LLGF and have a minimum heat value. Any remedial waste accepted will be considered LLGF and handled as such. If the pumpability of the candidate waste stream is in question, its viscosity will be tested as indicated on Table WAP-1 for LLGF.

1.2.12 Waste Fuel B

Norlite routinely accepts Waste Fuel B waste streams with the exception of Waste Fuel B-2, PCB wastes, which is specifically prohibited from receipt and burning. Waste Fuel B is characterized in Air Guide 17 as used motor oil with concentrations of lead over 250 ppm, "burnable chemical waste" contaminated with PCBs, and "burnable chemical waste" with low or high concentrations of chlorine. All the LLGF accepted and characterized by Norlite can also be considered Waste Fuel B. In addition to the hazardous waste, nonhazardous waste can also meet the definition of Waste Fuel B. Any nonhazardous waste streams, with the exception of used oil streams discussed elsewhere in this plan, will be managed in the same manner as the hazardous waste fuels routinely accepted. According to 6 NYCRR Part 200, compliance with 40 CFR Part 264 Subpart O and the Hazardous Waste Combustors MACT requirements ensures compliance with 6 NYCRR 225-2.4. All Waste Fuel B is handled in the exact same manner as LLGF from acceptance to burning.

1.3 Description of Hazardous Waste Management Units

Hazardous wastes are stored at Norlite's facility in four (4) covered tanks with a capacity of 98,020 gallons, five (5) 8,613-gallon tanks, four (4) 1,174-gallon tanks, one (1) 9,271-gallon tank, 55-gallon or smaller drum containers, and rolloffs.

The hazardous wastes received are blended and used as fuel in two lightweight aggregate kilns.

Full detail on the hazardous waste management units is found in the Operations Plan.

1.3.1 – Containers

Rolloff containers that contain hazardous waste in solid form are stored in the Tanker Staging Area. Such waste must not contain free liquids. The waste is tested for free liquids as described on Table WAP-1.

1.3.2 – Miscellaneous Units

RESERVED

1.3.3 – Air Emissions from Process Vents

RESERVED

1.3.4 – Air Emissions from Equipment

The facility is designed and operated to manage hazardous waste with high organic content. Norlite performs no analysis to demonstrate that any hazardous waste received at the plant is of low organic content so as to exempt the equipment from the requirements of RCRA Subpart BB.

1.3.5 – Air Emissions Standards for Tanks, Surface Impoundments and Containers

The facility is designed and operated to manage hazardous waste with high organic content. Norlite performs no analysis to demonstrate that any hazardous waste received at the plant is of low organic content so as to exempt the equipment from the requirements of RCRA Subpart CC. Tanks and containers are managed at the facility with Level 2 controls.

1.3.6 – Containment Buildings

RESERVED

2.0 WASTE ANALYSIS PARAMETERS

The waste analysis parameters considered by Norlite are presented in Table WAP-1 as they relate to each hazardous waste, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, off-specification used oil fuel and Waste Fuel A managed at the facility. Table WAP-1 also addresses the parameters that are considered for the shale feed, comparable fuels, specification used oil fuel, natural gas and fuel oils.

2.1 Criteria and Rationale for Parameter Selection

An accurate representation of a waste's physical and chemical properties is critical in determining its acceptability at Norlite. Accordingly, the waste analysis parameters must provide sufficient information to ensure:

- Compliance with applicable regulatory requirements (e.g., LDR regulations, newly identified or listed hazardous wastes)

- Conformance with permit conditions (i.e., ensure that wastes accepted for management fall within the scope of the facility permit, and process performance and air emission standards can be met)

- Safe and effective waste management operations (i.e., ensure that no wastes are accepted that are incompatible or inappropriate given the type of management practices used by the facility).

2.2 Special Parameter Selection Requirements

Norlite is subject to regulations promulgated at 40 CFR 266 Subpart H and 6 NYCRR 374-1.8 for boilers and industrial furnaces that burn hazardous wastes. These regulations establish control standards for emissions of toxic organic compounds, toxic metals, hydrogen chloride, chlorine gas, and particulate matter from the burning of hazardous wastes in boilers and industrial furnaces (BIFs). Therefore, analyses of these parameters are considered in this plan. Norlite has performed a comprehensive performance test (CPT) in which the facility's destruction removal efficiency (DRE) for organic wastes was demonstrated and its system removal efficiency (SRE) was derived for metals. The data from the CPT is used to determine the allowable feed rate of metals and chlorine to the kilns. The DRE was demonstrated using principal organic hazardous constituents (POHCs) that are considered difficult to incinerate and are rated on the Thermal Stability Index.

As a result of the special nature of a combustion facility, the contributions of all feed streams, hazardous waste or otherwise, are considered. Therefore, the off-specification used oil fuel/Waste Fuel A that is co-fired with hazardous waste is characterized to account for its contribution of the key parameters as is the specification used oil fuel, comparable fuels, natural gas and virgin fuel oils. The shale raw material that becomes the lightweight aggregate is also characterized to account for its contribution of metals to the process.

3.0 SAMPLING PROCEDURES

Sampling is performed using the procedures described in EPA SW-846, 3rd Edition, September 1986, Chapter 9. See Table WAP-4 for the list of sampling SOPs.

3.1 Sampling Strategies and Equipment

3.1.1 Incoming Loads, Bulk

Sampling of the LLGF, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, off-specification used oil/Waste Fuel A, specification used oil fuel, comparable fuels, and virgin fuels from each tanker is accomplished using SOP #4-004.

After analysis, the remainder of the sample is stored in its glass jar with a teflon lined cap. The jar is marked to indicate the following:

Date Received
Norlite Sample Number
Generator

Each sample will be stored in the flammable storage refrigerator at a temperature of 4°C for at least three months or until the material has been burned or until all questions are resolved regarding the received material, whichever is longer.

At the time of sampling, Norlite will compare the sample to the Waste Profile Sheet provided by the Generator. With the Waste Profile Sheet as a reference, each waste stream can be checked for proper name and identification and to ensure that the wastestream has not changed significantly.

3.1.2 Incoming Loads, Drums

The coliwasa sampler, hollow tube, or thief is employed to sample the drums of waste received from generators off-site. At least 100 ml is taken as a representative sample of each drum. Norlite performs 100% sampling of drums and each drum sample goes through the compatibility procedures as well as visual inspection.

A composite sample is also prepared for each unique waste stream by randomly selecting the samples from 10% of the drums for each unique waste stream. The composite samples will be made up of no more than five (5) individual drum samples. For example, if a waste stream is contained in eighty (80) drums, eight (8) samples will be selected to make two (2) composite samples to represent the waste stream. The composite samples are managed in the same manner as the incoming bulk samples with respect to labeling and storage. Further details on container management are provided in SOP #4-011, found in Appendix 1 of the Operations Plan.

3.1.3 Storage Tanks

Storage tanks are sampled for confirmatory analysis or to obtain waste material for compatibility determinations. This is performed on a grab basis for the agitated storage tanks by using the sampling port on the side of the tanks. For the covered tanks, the sample is drawn from the pump while the tank is being recirculated.

3.1.4 Shale

Norlite operates an active shale quarry onsite. Once or twice per month, shale is blasted and conveyed to the primary crushing plant for sizing prior to introduction to the kiln. Norlite must consider the contribution of metals and chlorine to the kiln from the shale. Raw shale samples will be collected from the blasted shale after every blast. There will be four (4) grab samples taken and composited for analysis. The samples are taken from four (4) different areas

of the blast in order to obtain a representative sample. Grab samples will be composited in a clean "ZIPLOCK" style plastic bag for delivery to the onsite laboratory.

This composite sample for the blast will be prepared by randomly selecting a portion of the sample and crushing it so that it passes through a 100 mesh filter. The prepared sample is then analyzed for metals and total halogens.

3.1.5 Wastes Generated Onsite

The tank sludge is accumulated in the containers on the storage pad. Each container is labeled indicating when accumulation in the containers has occurred. The containers are sampled when 80 or more containers have been accumulated. A single sample from a single drum will be taken for every twenty (20) drums of tank sludge generated per tank cleaning. Taking one sample from any of the twenty drums should be representative of the waste in all twenty drums. The samples are not composited and each sample is analyzed for the parameters required by the disposal vendor or for Norlite's 6NYCRR Part §373 incinerator parameters, if the sludge is incinerated on-site. If the waste is not uniform, more samples will be taken and composited to assure representativeness.

Filter cleaning wastes are sampled in the same manner as the tank sludge wastes although they may be composited.

A clean metal or glass coliwasa, hollow tube, or sample thief is used to sample since it is known that the waste is not corrosive to these materials. All samples are stored in glass quart containers with lined caps. Cleaning of the sampler and containers is accomplished by the method used to rinse the coliwasa sampler used for tank truck. Alternatively, the sampler equipment can be disposed as a waste.

3.2 Sample Preservation and Storage

Samples are stored at 4°C if they cannot be analyzed within one hour of collection. Retained samples are stored at 4°C after analysis.

3.3 Sampling QA/QC Procedures

Sampling conducted for the purpose of characterizing or verifying wastes at Norlite will use appropriate QA/QC procedures as described in the SOPs, including chain-of-custody logs at the laboratory, and compatible storage containers. The sample containers and equipment will be cleaned before sampling. Additionally, Norlite personnel will perform sampling rather than outside transporters. For trucks with multiple compartments, the sample personnel will use multiple coliwasas or will decontaminate the coliwasa after each use before collecting another sample.

3.4 Health and Safety Protocols

Safety and health concerns are taken into consideration when conducting sampling at the facility. Employees who perform sampling activities are properly trained with respect to the hazards associated with waste materials.

Employees are trained in the use and selection of proper protective clothing, respiratory protection, eye protection, splash control and equipment that must be used when performing sampling activities. Hazard identification involving hazardous materials is central to the facility's health and safety training. Employees are trained in routes of exposure. Protection is provided by requiring the use of air purifying respirators using organic vapor/acid gas cartridges, safety glasses and chemical resistant gloves and clothing. Spent personal protective equipment is collected and properly disposed offsite.

4.0 LABORATORY TESTING AND ANALYTICAL METHODS

4.1 Selected Laboratory

With the exceptions listed below, analyses required under this Waste Analysis Plan are performed by the onsite analytical laboratory. The Norlite Laboratory is certified under New York State ELAP and the national ELAP programs. A quality assurance/quality control ("QA/QC") program has been set up for the Norlite laboratory for the parameters analyzed onsite. Please refer to the QA manual for specific information on the QA/QC program.

The Norlite Laboratory does not perform the following analytical methods: 8141, 8151, 8290, 8260, 8270 and 9056. These are performed at an offsite ELAP certified laboratory. Additionally, a QA/QC program has been established by a primary outside contract laboratory. This independent laboratory provides for the analysis of pesticides when required. The outside laboratory will also perform organic analysis listed in Table WAP-1 for organic constituents as may be required on an annual basis for Generators and Blenders as well as perform duplicate analysis of those parameters performed onsite as a quality control check. Other SW-846 organic analysis methods that are not listed in Table WAP-1 may be substituted if they are more clearly applicable. When a method is substituted for one of the Table WAP-1 listed methods, the Department will be notified of the substitution together with an explanation of the reason and with a description of the waste stream in the next monthly report. Additionally, for analysis submitted by a Generator or Blender, Norlite requires that the analysis be performed using the methods contained in this plan and that the analysis is performed by a laboratory that is certified under NYS ELAP. The results of all analyses will be kept on file at Norlite for each waste stream and will be included in the facility operating record.

4.2 Laboratory Quality Assurance/Quality Control Plan

Norlite has developed a quality assurance/quality control (QA manual) that provides for the attainment of desired quality levels in its onsite laboratory. The QA manual has been designed to meet or exceed the guidance criteria of the United States Environmental Protection Agency and the New York State Department of Environmental Conservation. This QA manual plan document has been designed to assure that the analytical results provided by the laboratory are reliable and valid (including the qualities of accuracy, precision, completeness, representativeness, and comparability.) Norlite's QA manual and the list of methods for which the laboratory is certified has been submitted separately. As required by NELAP, this document will be reviewed and modified on a periodic basis. Any revisions will be forwarded to NYSDEC for review.

Norlite obtained state and national certification (NYS ELAP 11526 & NELAP NYS11526) to conduct many analyses onsite. On a monthly basis, a random LLGF sample will be split and submitted to an independent, NYS ELAP certified laboratory for metals, total halogens and heat content. A relative difference in the results between the laboratories that is >25% for any analytes will trigger investigation, corrective action, and repeat of the split sampling event for those analytes and matrices for that month. The results from each laboratory will be included in the next monthly report to NYSDEC for comparison. Norlite may use an independent lab for analysis if the facility's on-site laboratory is not able to analyze samples within the constraints of the QA/QC plan.

Modification or deviations of procedures, if necessary, will be documented with the data and reported in the monthly report to the Department.

4.3 Selecting Testing and Analytical Methods

In the event that the facility becomes subject to new regulatory requirements, additional testing methodologies shall be incorporated into the section above. The references to analytical methods reflect the most current version USEPA SW-846 Methods.

4.3.1 Specific Gravity

The specific gravity is measured as detailed in the SOP. See Table WAP -4 for the SOP number. If the result does not agree within 10% with the original preshipment waste, the generator will be contacted and the shipment waste samples further evaluated. If it is determined that the shipment can be handled within compliance with Norlite's permit, based on further analysis and discussions with the generator, then the waste will be accepted.

4.3.2 Quantity Verification

Each tanker truck load of LLGF will be weighed before and after unloading, and the net weight determined. The quantity verifications are recorded on the scale ticket which is filed with the hazardous waste manifest as part of the record of delivery. Quantity verification for shipments of containers will be by piece count.

4.3.3 Compatibility

Compatibility determinations are performed as described in the SOP. See Table WAP -4 for the SOP number. A temperature rise of 10^0C indicates a reaction has occurred. Wastes that fail the compatibility test will be rejected or denied approval. If the temperature rise is between 5^0C and 10^0C, special handling consideration concerning the rate of blending will be made.

4.3.4 Heat of Combustion

Heat of combustion is measured pursuant to the methods listed in Table WAP-1.

4.3.5 Halogen Determination

The total halogen content in LLGF and shale are measured using methodology as described in Table WAP-1. At this time, using these methods for chlorine analysis will constitute the "total halogen" analysis since fluorine, bromine, and iodine contribute positive interference to the methods and chlorine is the predominant halogen in the waste received at Norlite. Should better speciation be necessary based upon information received from the generator, SW-846 Method 9056 will be used. The concentrations of the individual halogens would then be summed to yield a value for "total halogens".

4.3.6 Viscosity

Pumpability of the material is required. The waste is fed through the inner stainless steel pipe and the atomization air or steam is provided through the outer pipe. Atomization pressure is maintained as specified in Schedule 1 of Module I of the permit.

The viscosity of the material will be determined in accordance with methods listed in Table WAP-1 at ambient temperature as needed. The viscosity is measured using a Brookfield Test to verify the pumpability of the waste. If the sample of the waste appears to be too viscous to be effectively pumped at the fuel farm, the laboratory will perform this procedure.

4.3.7 Metals

Metals (including mercury) are analyzed to verify concentrations are below permit levels. See Table WAP-1 for applicable methods for metals and mercury analysis. Modification or

deviations of procedures, if necessary, to achieve the reported detection limits will be documented with the data and reported in the monthly report to the Department.

4.3.8 PCBs

See table WAP-1 for PCB analysis methods. Method detection limits will not exceed two (2) parts per million for each Aroclor. All positive PCB results will be analyzed with a matrix spike or matrix spike duplicates.

LLGF samples, representative of no more than five (5) deliveries may be composited in equal proportions by volume for PCB analysis. LLGF samples and used oil/Waste Fuel A samples shall not be combined in composite samples for PCB analysis.

Should initial analysis indicate PCB concentrations in composite samples greater than the quotient of 25 ppm divided by the number of samples in the composite, samples representative of each delivery comprising the composite will be analyzed for PCBs. Only those deliveries indicating PCB concentrations of less than 25 ppm of total PCBs will be unloaded into the storage tanks and burned. For the purposes of this waste analysis plan, "25 ppm of total PCBs" is defined as the sum of Aroclors A1016, A1221, A1232, A1242, A1248, A1254, and A1260. Norlite will provide the Department notice of any LLGF, off-specification used oil fuel, or Waste Fuel A shipment received with a PCB concentration greater than 10 ppm of total PCBs within 24 hours of receipt of the analytical results. Norlite will not accept or incinerate wastes containing over 25 ppm of total PCBs.

4.3.9 Bottom Sediment

Norlite performs a centrifuge test described in Table WAP-1 to determine the sediment in a sample. This test separates mixtures into their immiscible layers.

5.0 WASTE EVALUATION FREQUENCIES

Due to Norlite's status as a "commercial TSDF", it is important that the facility be particularly thorough in evaluating and re-evaluating wastes. In order to ensure compliance with the operating permit and ensure the safety of the personnel, the community and the environment, Norlite frequently evaluates all wastes to (1) confirm that the information provided by the Generator and/or Blender is correct, and (2) detect any changes in the waste properties while managing the waste.

5.1 Initial Characterization and Re-evaluation

Prior to any shipments of hazardous waste to Norlite, a waste stream is characterized and approved as specified in Section 6.1. On an annual basis and/or when evidence exists that it has changed, the approved waste stream will be re-evaluated under the characterization procedures described in Section 6.1. For the re-evaluation, the Generator or Blender may certify that the waste stream has not changed provided there has been no evidence that the waste stream has changed. Support documentation for the certification decision will be filed and will be available onsite for review by the Department.

5.2 Hazardous Waste and Used Oil/Waste Fuel A Receipts

As described in Section 6.2, all shipments of hazardous waste and used oil/Waste Fuel A are sampled and analyzed. Specification used oil fuel is sampled and analyzed for PCBs and total halogens, at a minimum. This occurs only after the supplier has provided analysis proving the used oil meets the used oil specification.

A random shipment from a Blender will be sampled and analyzed for pesticide and herbicide constituents. See Table WAP-1 for sampling frequency. The sample will be taken from a shipment that has been characterized as being absent of pesticide and herbicide constituents.

A random shipment from a Blender will be sampled and analyzed for PCDD/PCDF even though the characterization indicates these constituents to be absent. See Table WAP-1 for sampling frequency.

5.3 Onsite Generated Wastes

Wastes generated onsite are characterized at least annually. They will be characterized more frequently when generated if they are to be reintroduced to Norlite's LLGF process so as to account for their contribution. They may also be characterized more often when they are shipped offsite to an authorized treatment facility should the receiving facility require more information.

5.4 Storage Tanks Prior To Burning

On a weekly basis, at least one (1) tank of LLGF will be sampled and analyzed prior to burning. The purpose of this sampling will be to confirm the accuracy of the calculations used to certify tanks for burning since every shipment of hazardous waste is sampled and analyzed for the key permit parameters. The confirmation criteria and corrective action developed with the Department will be applied.

6.0 SPECIAL PROCEDURAL REQUIREMENTS

This section of the waste analysis plan describes the procedures used to apply the sampling and analytical procedures to the hazardous wastes and raw materials managed at the facility.

6.1 Procedures for Receiving Wastes from Off-Site Generators

A Waste Profile Sheet, Appendix 1 or its equivalent, will be completed and signed by each Generator and Blender. This document will be reviewed and approved by Norlite prior to

any shipment of hazardous waste to the facility. The Waste Profile Sheet will be reviewed and updated on an annual basis and if and when the described waste stream changes. The waste stream will be reviewed by having the Generator or Blender certify that the waste stream has not changed or having them fill out a new Waste Profile Sheet. Support documentation for the certification decision will be filed and will be available onsite for review by the Department. Each re-evaluation for waste streams from Blenders will include a new waste stream analysis as will waste streams from generators that are found to be variable or less consistent.

Norlite does not accept polychlorodibenzo-p-dioxin (PCDD) or polychlorodibenzo-p-furan (PCDF) containing wastes and hazardous wastes listed as F020, F021, F022, F023, F026, F027 and F028. Any waste stream presented for approval that contains PCDD or PCDF will be denied approval. Wastes containing PCBs are restricted to those containing less than 25 ppm total PCBs, as defined as the sum of the Aroclors A1016, A1221, A1232, A1242, A1248, A1254, and A1260. Additionally, Norlite will not accept waste containing PCBs that are regulated under 40 CFR Part 761 or are defined as PCB waste under 6 NYCRR 371, regardless of the PCB concentration. Norlite will notify the Department within 24 hours of receipt of the analytical results, if waste containing greater than 10 ppm of total PCBs is received.

6.1.1 Generator

In addition to the Waste Profile Sheet and as documentation for the information contained therein, a Generator, for the first time and at least annually, must provide the following information:

(a) Analysis for BTU, Total Halogen, Ash, Norlite's 14 regulated metals and PCB content. Norlite's on-site lab may perform this analysis for the generator.

(b) The identity of any hazardous constituents identified in Appendix 23 to 6NYCRR Part §371 known or suspected to be present in the wastestream must be disclosed.

Any analysis performed to identify such hazardous constituents must be performed in accordance with SW-846 methods for the target compounds. The analysis must achieve the method's detection limit, corrected for any dilution required for the extract of the sample's matrix. A generator need only conduct the test necessary to identify the hazardous constituents that are suspected of being present.

(c) For those wastes produced by a known process, all chemicals present in concentrations in excess of 5% must be identified accounting for 100% of the composition. The components listed should include volatile aromatic organics, volatile chlorinated organics, other volatile organics, semi-volatile organics and nonvolatile organics. This information must be substantiated by analytical data or other documentation (such as material safety data sheets).

(d) For those wastes produced by a process which is less well characterized, the Generator must produce an analysis identifying all chemicals present in concentrations in excess of 5 percent and Appendix 23 to 6NYCRR Part §371 constituents that have a substantial concentration (in excess of 100 ppm) accounting for approximately 100 percent of the composition. The analysis should include one or more of the analyses identified in Table WAP-.

(e) Waste produced by known processes are those where the hazardous constituents can be identified and documented without need for analysis and the concentration limits can be estimated with sufficient accuracy to assure Norlite that the PERMIT LIMITS and Acceptance Limits in Schedule 1 of Module 1 will be met and the EPA criteria for acceptable process knowledge (as defined in the EPA Document "Waste Analysis At Facilities That Generate, Treat, Store, And Dispose Of Hazardous Wastes, A Guidance Manual", OSWER 9938.4-03, April

1994, Sections 1.5 and 1.5.2) are met. Waste produced by processes that are less well characterized are wastestreams not meeting the foregoing definition.

6.1.2 Blenders

Blenders are subject to the similar requirements as Generators. Prior to receiving a load for the first time from a Blender, the Blender must complete a Waste Profile Sheet and submit a copy of its waste analysis plan. Norlite will work with the Blender to assure that the Blender's fuel meets Norlite's PERMIT LIMITS and Acceptance Limits inSchedule 1 of Module 1. This objective can be achieved by the Blender providing information and analyses on the component waste streams or producing information and analyses on a representative sample of the blended fuel. The same criteria applicable to Generators apply to Blenders.

A Blender must provide the following information:

(a) Analysis for BTU, Total Halogen, Ash, Norlite's 14 regulated metals and PCB content. Norlite's on-site lab may perform this analysis for the blender.

(b) The identity of any hazardous constituents identified in Appendix 23 to 6NYCRR Part §371 known or suspected to be present in the waste stream must be disclosed. Any analysis performed to identify such hazardous constituents must be performed in accordance with SW-846 methods for the target compounds. The analysis must achieve the method's detection limit, corrected for any dilution required for the extract of the sample's matrix. A blender need only conduct the test necessary to identify the hazardous constituents that are suspected of being present. If testing is required, the test could either be done on a representative sample of the blended fuel or by doing the requisite analysis on the component waste stream that cannot be adequately identified by other means.

(c) For those wastes produced by a known process, all chemicals present in concentrations in excess of 5% must be identified accounting for 100% of the composition. The components listed should include volatile aromatic organics, volatile chlorinated organics, other volatile organics, semi-volatile organics and nonvolatile organics. This information must be substantiated by analytical data or other documentation (such as material safety data sheets).

(d) For those wastes produced by a process which is less well characterized, the Blender must produce an analysis identifying all chemicals present in concentrations in excess of 5 percent and Appendix 23 to 6NYCRR Part §371 constituents that have a substantial concentration (in excess of 100 ppm) accounting for approximately 100 percent of the composition. The analysis should include one or more of the analyses identified in Table WAP-1.

(e) Waste produced by known processes are those where the hazardous constituents can be identified and documented without need for analysis and the concentration limits can be estimated with sufficient accuracy to assure Norlite that the PERMIT LIMITS and Acceptance Limits in Schedule 1 of Module will be met and the EPA criteria for acceptable process knowledge (as defined in the EPA Document "Waste Analysis At Facilities That Generate, Treat, Store, And Dispose Of Hazardous Wastes, A Guidance Manual", OSWER 9938.4-03, April 1994, Sections 1.5 and 1.5.2) are met. Waste produced by processes that are less well characterized are waste streams not meeting the foregoing definition.

Blenders will not be required to identify the name and location of their Generators. Blenders will be required to identify the Standard Industrial Code(s) or the industrial group of their Generators. Norlite is attempting to maintain flexibility with its handling of Blenders, while, at the same time, ensuring that it will not accept any LLGF that would prevent it from meeting its Permit LImits

and Acceptance Limits in Schedule 1 of Module 1, adversely impairing plant operations, or is ineligible for thermal treatment by regulation.

Blenders are required under 6 NYCRR Part §373 and 40 C.F.R. Part §264 or 265 to have their own approved waste analysis plan. The flexible approach identified herein will avoid duplication of sampling effort and, at the same time, provide adequate safeguard that only acceptable LLGF will be received by Norlite. Norlite will inspect and ensure that each Blender's waste analysis plan adequately addresses waste characterization and critical LDR requirements with respect to combustion. If a Blender is permitted to manage hazardous wastes for which Norlite is not permitted, then Norlite will notify the Blender in writing of the discrepancy and subsequent prohibition.

6.1.3 Onsite Generated Wastes

Occasionally the storage tanks need to be cleaned out, generating a tank bottom material. The tank sludge will have an EPA waste designation number depending on the material collected for burning (e.g., F001, F002, F003, F005 and/or D001). The sludge from the tank bottom will be a semi-solid. This material may contain paint or ink solids or other solid or semi-solid polymeric materials.

The identification of the sludge is made by completing a waste profile sheet as required by the disposal vendor. Since the waste is a "derived from" hazardous waste, analysis is not required to perform a hazardous waste determination. The analyses that are performed are those required by the disposal vendor in order to assure the safe storage, transport and management by reuse for energy recovery or incineration of this material. Typical requirements for each shipment may include analysis for the toxic metals.

The characteristics of this waste typically contain 30%-50% organic constituents, including solvents and oil. The remaining is polymer and solids. The flashpoint is less than 140°F.

The filtered solids from the offloading pad are a similar waste stream to the tank bottom sludge and are managed in the same way.

The personal protective equipment that is contaminated with the waste is characterized using generator knowledge so no sampling and analysis take place. The waste is characterized as "derived from" waste based upon the waste stream with which it is contaminated.

Wastewater from the secondary containment units is pumped to the LLGF tanks. Before the water is pumped to the tanks, a sample is taken and analyzed for the LLGF parameters listed in Table WAP-1.

Stormwater that collects in the Tanker Truck & Onsite Rolloff Staging Area is shipped offsite for treatment. On an annual basis, a sample is taken and analyzed for Toxicity Characteristic metals and organic compounds to ensure that the water does not meet the definition of hazardous waste. Toxicity Characteristic pesticides and herbicides are not analyzed because the facility does not accept such wastes.

6.2 Hazardous Waste and Used Oil/Waste Fuel A Receipts

After a waste stream (which includes LLGF, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, remedial waste; as defined above, and nonhazardous waste; including waste water) has been characterized as described above, the material may be scheduled for delivery to the facility. When the waste arrives, the manifest (or other shipping paper as for the used oil deliveries) is inspected and the load is sampled as described in Section 3. Each bulk or containerized delivery is analyzed for the parameters listed in Table WAP-1. A composite of not more than 5 LLGF or

used oil samples is analyzed for PCBs. The LLGF samples are not combined with the used oil/Waste Fuel A samples for PCB compositing.

If a load is within the permit limits, it is accepted for unloading to the tanks. However, if a load exceeds the permit limits, the load is reviewed to see whether it can be blended to or within the permit limits. "permit limits" refers to the actual "as-fired" limits for the fuel in the kilns. If the material cannot be blended, the load is not to be unloaded and the truck is to be removed from the site as soon as possible. The reason for the rejection is noted in item 19 of the manifest and a copy of the manifest returned to the Generator. Norlite will provide the Department written notification of the rejection in accordance with 6NYCRR Subpart §373-2.

Typically, Norlite will accept LLGF that is up to 25 times the permitted feed rate of a constituent. Any LLGF that is over this threshold warrants careful consideration regarding its acceptability. Norlite will accept up to 100 times the permitted feed rate of a constituent depending on the volume of the LLGF with the very high concentrations of metals or total halogens and the volume and characteristics of the LLGF on hand as well as the LLGF that is expected to be received in the near future. For example, an LLGF load with 100 times the concentration of copper may be acceptable if the volume is only 100 gallons and the remainder of the LLGF in the plant is very low in copper.

Norlite will not accept any LLGF or other waste streams that exceed the acceptance limits described above or specified in Schedule 1 of Module 1.

Off-specification used oil fuel/Waste Fuel A loads are sampled in the same way that hazardous waste LLGF loads are sampled, which is described in Section 3. They are analyzed for the same parameters as the hazardous waste LLGF since the fuel will be co-fired with the LLGF and Norlite must consider all feed streams to the kiln while burning hazardous waste. The analysis will be reviewed to ensure that the fuel meets the definition of Waste Fuel A found at 6 NYCRR 225-2. For used oil that is shipped to Norlite as specification used oil fuel and will be

used at Norlite as specification used oil fuel, the load will be sampled and analyzed for the parameters necessary to demonstrate that it does indeed meet the specification. Norlite may use analysis provided by the marketer of the used oil fuel to make this demonstration but will analyze the load for PCBs and Total Halogens. If Norlite accepts specification used oil fuel and intends to co-fire it with the LLGF, as is done with the Waste Fuel A, then the specification used oil fuel shall be analyzed for the same parameters as the LLGF since Norlite must consider all feed streams to the kiln while burning hazardous waste. Specification used oil that is accepted for burning at the pilot nozzle is also sampled and analyzed. The results for the pilot fuel specification used oil are averaged as discussed in Section 6.12.5.

Norlite will not accept any off-specification used oil fuel/Waste Fuel A that exceeds the acceptance limits described above or specified in Schedule 1 of Module 1.

When Norlite accepts comparable fuels, a sample is taken and analyzed for heat content and total halogens. One load in each ten (10) loads of each comparable fuel waste stream will be analyzed for all parameters for LLGF deliveries. No comparable fuels will be accepted that fail to meet the requirements of 6 NYCRR Part 371.4(i).

Virgin fuels oils and natural gas are not sampled and analyzed.

6.3 Receipt of Hazardous Wastes Containing Pesticides and Herbicides

Norlite does not accept listed hazardous waste that is listed for containing pesticides and/or herbicides or characteristic hazardous waste for EPA Waste Numbers D012-D017, D020 and D031.

6.4 Receipt of Drums

The samples taken from drums received at the facility are composited and analyzed as described below:

- Compatibility: 100% of the drums are sampled and analyzed individually for compatibility as described in SOP#4-063. Tests for oxidizer, peroxide and water are performed as necessary if there is any reason to suspect their presence.
- Heat Value, Halogens, Specific Gravity, PCBs and Ash: Samples from 10% of the drums of each waste stream are composited and tested for these parameters**.** Each composite is made up of no more than five (5) individual samples. If a waste stream is contained in more than fifty (50) drums, more than one composite sample is made for the waste stream.
- Metals: Drums are emptied into Tank 200A and then the tank's contents are sampled and analyzed to determine the metals concentrations for blending purposes. Norlite reserves Tank 200A for the consolidation of drummed material, however, if Tank 200A is unavailable to receive drummed material due to a lack of capacity or if the material in the tank is still being analyzed, drums can be emptied into another inside tank such as 100A, 100B or 200B assuming those tanks have capacity. Even if the drummed material is consolidated into another tank, the tank's contents are sampled and analyzed to determine the metals concentrations for blending purposes.

6.5 Receipt of Specification Used Oil Fuel

When Norlite receives a load of specification used oil fuel, the facility ensures that the marketer has performed the requisite analysis to certify the used oil as specification. No oil will be accepted from a marketer as specification used oil if the marketer has not analyzed it. Process knowledge is not acceptable to certify or claim that used oil is specification. Norlite will sample the specification used oil and analyze it for heat content, PCBs and total halogens. Since the metal content of this product is fairly consistent and since the flowrate of this product to the kiln

is comparatively low, Norlite establishes an average concentration of each metal of concern through analysis performed on samples taken by the facility. The analysis will be performed by the onsite laboratory using the same procedures used to analyze the LLGF for metals content. These concentrations will be used to calculate the feedrate of the metals to the kiln. A monthly average of metals contribution is maintained by averaging the metals concentrations measured over the previous month. The feedrates obtained in this calculation will be used as the feedrate for the current month. For the calculation of metals contribution to the kilns from specification used oil used as pilot fuel, a flow rate of one and one half gallons per minute will be used. A higher flowrate will be used if the kilns' usage exceeds this flowrate. These contributions are documented on the WAP-2 sheet.

NYSDEC has agreed that contributions of metals and total halogens from the specification used oil fuel as pilot fuel that do not exceed one percent of the maximum permitted total feedrate of each metal or total halogens need not be considered.

6.6 Receipt of Comparable Fuels

Comparable fuels will only be accepted at the facility after the generator has complied with 6 NYCRR 371-4(i) and Norlite has notified of its intent to accept the comparable fuel stream. Each load will be sampled and analyzed for heat content, bottom sediment and water, and PCBs. Viscosity will be tested only as necessary. The metal feedrates will be calculated based on the concentrations established by the generator's feed stream analysis plan. Norlite will analyze one load of every ten loads of each comparable fuels stream for the full LLGF analysis described on Table WAP-1 to ensure the full quality and consistency of the comparable fuel. When necessary, these contributions will be documented on the WAP-2 sheet.

NYSDEC has agreed that contributions of metals and total halogens from the comparable fuels used as pilot fuel that do not exceed one percent of the maximum permitted total feedrate of each metal or total halogens need not be considered.

6.7 Blended LLGF for Burning

When preparing a tank of LLGF (which includes LLGF, Waste Fuel B-1, Waste Fuel B-3, Waste Fuel B-4, remedial waste; as defined above, and nonhazardous waste; including waste water) for burning, Norlite determines the heat value of the fuel and the concentration of metals and total halogens in the fuel. This is accomplished by 1) calculation based upon the original analysis of the fuel that makes up the tank, or 2) sampling and analysis of the tank. Each load of LLGF is sampled and analyzed upon receipt as described in Section 5.2. A control procedure will prevent the burning of any waste until the BTU, Total Halogens, PCB, and metal parameters have been verified. An analysis form (WAP-2) will be completed for each tank burned indicating the analyzed or calculated values for each permit parameter, the dates of analysis and/or calculation, and the date of authorization to burn the waste from the designated tank. The tank will be locked while being filled and will not be unlocked until the PCBs, Metal, Specific gravity, and Halogen content is completed, verified and shown to be below permit limits. The tanks are locked with physical pad locks on the bottom and top valves and the recirculation valve. The volume of the tanks is measured using either ultrasonic or radar level gauges. These units do not require routine maintenance and are set based upon the vertical distance from the top of the tank to the bottom. They measure the distance from the top of the tank to the liquid level and calculate the percentage of the vessel that is filled with liquid. They are accurate while the agitators are in operation because the top of the liquid remains fairly level.

6.7.1 LLGF Kiln Feed by Calculation

The calculation for BTU, Halogen content, and PCB will be accomplished by using a weighted average of the results analyzed for the tank or for the received loads of LLGF that were placed in the tank:

$$\frac{(Vol_1)(X_1)+(Vol_2)(X_X)^{+\cdots}}{(Vol_{total})} = X_{total}$$

After a tank of LLGF has been burned, a reading of the level of the tank is taken and reported to the laboratory. The laboratory personnel will consider this residual volume the next time the tank is used to make a fuel blend. All transfers of LLGF within the tank farm are reported to the laboratory by telephone or two-way radio so that an accurate accounting of fuel analysis and transfer is kept and logged.

The results of the heat value, metals and total halogens calculations of the LLGF tank are used to prepare a WAP-2 form documenting the heat value, metals and total halogens feed to the kiln. These feed rates must be in compliance with the LLGF limits in the Part §373 Permit.

Norlite uses the same procedure for separately determining the contribution of heat value, metals and total halogens from the Off-Specification Used Oil/Waste Fuel A feed, which is called "Kiln Oil" on the WAP-2 sheets. This is the feed that comes from Tank 9 and is co-fired through the main burner assembly with the LLGF.

6.7.2 LLGF Kiln Feed by Analysis

Due to the propagation of error that can potentially occur in the calculation method described above, Norlite randomly confirms the calculated values through sampling and analysis. On a weekly basis, a storage tank is sampled as described in Section 3.1.3 and analyzed. The subject tank will be one that has multiple waste transfers and has not been thoroughly emptied over the previous week.

When a storage tank is tested for confirmation of the calculated results it is tested for total halogens, ash, and the ten regulated BIF metals (i.e., antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, silver, and thallium) and for four additional metals (copper, nickel, selenium and zinc) which are monitored as part of the permit. PCBs are not reanalyzed.

The results of the metals and total halogens analyses of the LLGF (Liquid Low Grade Fuel) tank sample are used to prepare a WAP-2 form documenting the metals and total halogens feed to the kiln. The metals and total halogens feed rates from LLGF must be in compliance with the LLGF metals limits in the Part §373 Permit. When an analysis is performed to confirm the calculation, the analysis will be used to complete the WAP-2 form for the tank.

Norlite uses the same procedure for separately determining the contribution of heat value, metals and total halogens from the Off-Specification Used Oil/Waste Fuel A feed, which is called "Kiln Oil" on the WAP-2 sheets. This is the feed that comes from Tank 9 and is co-fired through the main burner assembly with the LLGF.

Norlite LGF laboratory personnel will sign and date the WAP-2 form. An authorized Norlite supervisor will also review and sign the form prior to release of the tank.

The following Norlite personnel will be trained and are authorized to execute form WAP-2:

LGF LABORATORY PERSONNEL

Laboratory Director

Q.C. Technicians

SUPERVISORY PERSONNEL

Plant Manager

Laboratory Director

Q.C. Technicians

Kiln Supervisors

One copy of all written laboratory analysis reports and signed WAP-2 forms will be maintained in the operating record until closure of the facility in accordance with 6 NYCRR 373-2.5 (c)(2)(iii).

Compliance with metals and total halogens limits is determined on a lbs/hr basis, consistent with standards in the BIF regulations under 40 CFR 266.102(e)(6), and the manner in which the Comprehensive Performance Test, Air Dispersion Modeling and Risk Assessment evaluations were performed by ENSR/AECOM. Since the ultimate goal is to control emission rates to allowable levels, the important compliance objective is to control metals and total halogens feed rates on a lbs/hr basis. Concentration limits are not necessary since LLGF is fed from agitated tanks but are provided in the application for convenience.

Compliance with allowable halogen and thermal input feed rates is planned in accordance with the SOP attached to this Waste Analysis Plan. The SOP 4-009 is titled "Process Control Procedure - Preparation for and Incineration of Waste Blends Containing High Concentrations of Organic Halogens or High BTU Materials".

6.7.3 Combustion prohibition for inorganic waste

As part of the waste characterization process described in this plan, Norlite will ensure compliance with the dilution prohibition as a substitute for treatment requirements. Listed in Appendix 54 of 6 NYCRR 376 are hazardous wastes for which combustion is inappropriate and, therefore, prohibited. Norlite will not accept for combustion any wastes listed in this appendix unless, the waste, at the point of generation or after bona fide treatment (such as cyanide destruction prior to combustion), specifically meets one of the exceptions found in 6 NYCRR 376.1(c)(3)(i) through (vi).

6.8 Shale Analysis

The results for each blasted shale composite analysis are used in calculating and confirming allowable metal feed rates and total halogens feed rate for all raw shale to the kilns, as well as the total metal feed rate and total halogens feed rate to the kilns. The composite analysis is considered valid for the entire batch of blasted shales. The term of feed represented by this composite sample shall be from the point of blast to the next blast.

The metal and total halogen feed rate limits for shale are calculated based upon the total feed rate limits shown in Schedule 1 of Module 1 minus the total feed rate limit for LLGF and off-specification used oil fuel/Waste Fuel A or the actual feed rate for LLGF and off-specification used oil fuel/Waste Fuel A. For example, the total feed rate for Lead is 6.3597 lb/hr. If the contribution of Lead from fuel is at the fuel limit of 4.0349 lb/hr, then the maximum contribution from shale can be no more than 2.3248 lb/hr. If the contribution from Lead is not at its maximum in the fuel, say 3.0349 lb/hr, then the maximum contribution from shale can be no more than 3.3248 lb/hr.

If the metals and total halogens in the shale are within these feed limits or concentration limits, then no reduced allowable shale feed rate is needed for the batch blast. If the

concentration of any metal and total halogens feed rate results in an exceedance of the limits above, then the allowable shale feed rate must be reduced in proportion to the measured metal concentration until the batch of shale is processed or the concentration in the fuel is reduced. Form WAP-3 is used by the laboratory to calculate the allowable shale feed rate, up to the permitted maximum feed rate. The form is posted in each kiln control room until the next quarry blast analysis is completed.

6.9 Procedures for Ignitable, Reactive, and Incompatible Wastes

The LLGF blends are ignitable or combustible. Norlite has taken special precautions to meet all the requirements for the storage of ignitable wastes. The precautions are described in the Operations Plan of this permit. As described above, hazardous waste streams are tested for compatibility with the other wastes and materials (i.e. waste water, comparable fuels, remedial waste, nonhazardous waste, used oils, Waste Fuels B) with which they are being stored. Any waste stream which fails this compatibility test during the characterization and approval process will be denied approval. Any approved waste streams that fail the compatibility test when a shipment arrives onsite will be rejected. When generating waste onsite, Norlite does not combine the wastes generated from different storage tank cleanings unless the compatibility test is performed and the materials are deemed compatible.

6.10 Procedures to Ensure Compliance with LDR Requirements

Hazardous waste LLGF is received and burned as fuel for energy recovery at Norlite. However, pursuant to 6 NYCRR 374-1.3(a)(2), the clinker must meet the following criteria in order to be used as a unrestricted product if Norlite is incinerating hazardous waste for the purposes of destruction:

- The product must not exhibit a characteristic of a hazardous waste; and
- The product must meet the nonwastewater Universal Treatment Standards (UTS) found in 40 CFR 268.48.

Based on the thermal process, the clinker will not exhibit the characteristics of ignitability, corrosivity or reactivity. The material should also not be expected to contain any organic compounds or leachable metals. However, due to varied feed and the possibility that some organic compounds might survive the temperature in the kiln, Norlite shall perform sampling and analysis of the clinker to ensure that it meets the UTS. Since the clinker does contain metals, sampling and analysis shall also be performed for metals using the TCLP to show that the clinker does not exhibit the toxicity characteristic for metals and also meets the UTS.

This sampling will be performed on a grab basis as required by the LDR. Norlite shall sample and analyze the clinker for metals on a monthly basis and the organics on an annual basis.

6.11 Bevill Exclusion Determinations for APC Wastes

Pursuant to NYCRR 374-1.8(m), a residue from a boiler or industrial furnace that burns hazardous waste may be excluded from the definition of a hazardous waste if it meets the requirements of the section. This section of the regulation allows the owner/operator the opportunity to compare the waste-derived residues from the unit with normal residues or compare the concentrations of constituents of concern from the waste-derived residues with published health-based limits.

Norlite demonstrates that the concentrations of toxic constituents of concern (COCs) are below the health-based limits in 40 CFR 266 Appendix VII as referenced in 6 NYCRR 374 Appendix 47. This method is consistent with 6 NYCRR 374-1.8(m)(2)(ii).

6.11.1 Nonmetal Constituents

Through the sampling and analysis plans described below, the residues from the baghouse and the multiclone APC devices and the filtercake produced from the treatment of the scrubber blowdown shall be analyzed for constituents of concern that are derived from 6 NYCRR Part 371 Appendix 23. The list of constituents contains most of the compounds listed

in Appendix VII of 40 CFR Part 266 and all of the compounds listed in Appendix VIII of 40 CFR Part 266. In order for the residues to be excluded from the definition of hazardous waste under this part of the regulation, the concentrations shall be less than those listed in Appendix VII. For the nonmetallic constituents that are not listed in Appendix VII, the concentrations must be less than the level of detection of the analytical method (using analytical procedures prescribed in SW846) or less than 0.002 µg/kg, whichever is higher. Should any of these constituents be found at concentrations that exceed the health risk-based standards listed in Appendix VII, the results will be compared to the standards for F039 nonwastewaters found in 6 NYCRR Part 376. Should the results exceed these F039 standards for these constituents, the residues will be considered hazardous waste and ineligible for the Bevill Exclusion.

Analysis for the nonmetal constituents will be performed at the frequency listed in Table WAP-1. The list of analytes for the Bevill Exclusion is found in Appendix 2.

6.11.2 Metal Constituents

As described in the sample and analysis plans for this protocol, the residues from the baghouse and multiclone APC devices and the filtercake produced from the treatment of the scrubber blowdown shall be compared to the Toxicity Characteristic Leaching Procedure (TCLP) extract concentration limits found in Appendix VII of 40 CFR Part 266. In order for the residues to be excluded from the definition of hazardous waste under this part of the regulation, the concentrations shall be less than those listed in Appendix VII. Based on the long history of compliance with the standards, the metals analysis will be performed at the frequency listed in Table WAP-1. The list of analytes for the Bevill Exclusion is found in Appendix 2.

6.11.3 Bevill Exclusion Sampling and Analysis Plan

The regulation requires that the waste-derived residue be sampled and analyzed as necessary to determine whether the residue generated during each 24-hour period has concentrations of toxic constituents that are higher than the health-based levels. Based upon the

consistency of the operation and the inherent unlikelihood of organic constituents being found in the residues, Norlite will sample and analyze for organics on an annual basis and the metals on a monthly basis. Norlite shall sample the residue from the baghouse and the multiclone on the same kiln (i.e. Kiln #1 or Kiln #2). Over a 24-hour period, grab samples will be taken on a two-hour interval resulting in twelve (12) grab samples taken. These samples shall be composited to yield a 24-hour composite sample. Norlite will also draw and analyze a sample of the wastewater treatment plant filter cake that is generated during the sampling event. As a contingency, the remainder of grab sample material shall be retained for control purposes. A sampling log shall be kept indicating the sampling time, location and sampler. Sample jars shall be labeled with the sample date, time and location. The resulting composite samples shall be clearly labeled with the sample date, sample ID (material), time span and sample location.

The samples shall be submitted to a NYS ELAP-certified laboratory for analysis. Analysis shall include the TCLP extraction of the sample and analysis of the extract for the metals listed in Appendix VII of 40 CFR Part 266. For nonmetal constituents, samples shall be extracted and analyzed by the prescribed methods found in SW-846.

6.12 Determining Input Contributions From The Pilot Fuels & Cooling Water

In addition to the main burner assembly which feed LLGF and Off-Specification used oil fuel/Waste Fuel A (Natural gas is fed from the main burner assembly in the absence of the two liquid fuels), the kilns maintain a pilot flame from one or two pilot nozzles at one time. One pilot runs on natural gas and the other pilot runs on virgin fuel oil, specification used oil fuel and comparable fuels. Norlite also feeds plant water, drawn from the quarry and treated, through the main nozzle to cool and shape the flame. Norlite considers the contributions of metals, total halogens and heat content to the kiln from the pilot and cooling water as described below.

6.12.1 Natural Gas as Pilot Fuel

Contributions of metals and total halogens from natural gas do not approach 1.0% of the feedrate limits for the fuel found in Schedule 1 of Module 1. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet.

There is a significant contribution of heat from the natural gas pilot. Under normal operation, the natural gas pilot contributes about 10 to 12 million BTU/hr to the process. The exact heat contribution from this feed is accounted for on each WAP-2 sheet based on usage.

Norlite repeats the input calculations if the feedrate changes for the pilot.

6.12.2 Virgin Fuel Oil as Pilot Fuel

Contributions of metals and total halogens from virgin fuel oil do not approach 1.0% of the feedrate limits for the fuel found in Schedule 1 of Module 1. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet. For this determination, Norlite used the published emission rates found in AP-42 Table 1.3-11 and assumed no credit for system removal efficiency. The emission factors are based on No.6 fuel oil and are considered to be the worst case of all the virgin fuel oils (Diesel, Kerosene, No.2, No.4 and No.6) that can be employed at Norlite. These are found in Appendix 3.

There is a significant contribution of heat from the virgin fuel oil pilot. Under normal operation, the virgin fuel oil pilot contributes about 12 million BTU/hr to the process. The exact heat contribution from this feed is accounted for on each WAP-2 sheet when it is used.

Norlite repeats the input calculations if the feedrate changes for the pilot.

6.12.3 Comparable Fuels as Pilot Fuel

Pursuant to 6 NYCRR 371-4(i), comparable fuels must meet the specification for No. 2 fuel oil as listed in the regulation. The generator of a comparable fuel must comply with the extensive analytical requirements and notification requirements for a hazardous waste to be excluded under this provision. Additionally, this waste analysis plan requires Norlite to perform periodic analysis for metal and total halogens content and each load is analyzed for heat content. Any comparable fuel not meeting the specification in 6 NYCRR 371-4(i) will be rejected or managed as LLGF.

Based on the specification in 6 NYCRR 371-4(i), comparable fuels can contribute a significant amount of metals or total halogens through the pilot nozzle. Since the contributions of these constituents are possible, they will be considered and entered on the WAP-2 sheet if their contributions exceed 1.0% of the maximum allowable liquid feed rate.

There is a significant contribution of heat from the comparable fuel. The total heat input will be calculated based on the flowrate and heat content of the fuel. The heat contribution from this feed is accounted for on each WAP-2 sheet based on usage.

Norlite repeats the input calculations if the feedrate or heat value of the comparable fuel changes for the pilot.

6.12.4 Cooling Water in Main Nozzle

Plant water is fed through the main nozzle to cool and shape the flame in order to optimize conditions for aggregate formation. The plant water is drawn from the pond in the quarry and treated by softening and filtration. The water has no heat value and does not contain significant concentrations of halogens or regulated metals. Since the contributions of these constituents are negligible, they are not considered or entered on the WAP-2 sheet. An analysis of the cooling water is presented in Appendix 4.

6.12.5 Specification Used Oil Fuel as Pilot Fuel

Specification used oil fuel is the pilot fuel of choice. The oil meets the specification found in 6 NYCRR 374-2.2(b). An expanded analysis of it shows that the oil can contribute slightly more significant contributions of total halogens and certain metals. Typically, copper and zinc are present at concentrations that can contribute over 1.0% of the total mass feedrate to the kiln. The heat and total halogens can be significant as well. As a result, the contributions of these constituents are included on the WAP-2 sheet and are set at a maximum feedrate.

The contributions from the specification used oil fuel as used as pilot fuel are calculated on an average basis. The values are entered into the WAP-2 sheet and count towards the total mass feedrate of the constituent. A sample calculation is found in Appendix 5.

7.0 Recordkeeping and Reporting

Norlite maintains records of waste characterization forms, characterization analysis data received from the customer, shipping papers (manifests), land disposal restriction forms, receiving analyses, documentation of all waste stream sampling and analysis performed onsite on specific waste streams, and burn analyses at the facility. The laboratory also maintains their own QA/QC records pursuant to their QA manual. The laboratory also maintains copies of the analytical reports received from outside laboratories.

Waste Profile Sheets are filed separately. They include MSDSs if provided by the generator. The file may also contain the land disposal restriction form if the generator doesn't submit one with every load of the waste stream.

The manifests are filed with the land disposal restriction form (if provided), a copy of the weight ticket and a copy of the laboratory analysis.

There is also a file for completed, signed copies of the WAP-2 and WAP-3 sheets.

8.0 Glossary

Term	Definition
6 NYCRR	Title 6 of the New York Codes, Rules and Regulations
APC	Air Pollution Control
ASTM	American Society for Testing and Materials
AWFCO	Automatic Waste Feed Cutoff
BIF	Boiler/Industrial Furnace
BTU	British Thermal Unit
COC	Constituent of Concern
CPT	Comprehensive Performance Test
DRE	Destruction Removal Efficiency
ECL	(New York State) Environmental Conservation Law
ELAP	(NYSDOH) Environmental Laboratory Approval Program
HRA	Hourly Rolling Average
LDR	Land Disposal Restriction
LLGF	Liquid Low Grade Fuel
MACT	Maximum Achievable Control Technology
MSDS	Material Safety Data Sheet
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health

Term	Definition
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyl
PCDD	Polychlorinated Dibenzo-p-dioxin
PCDF	Polychlorinated Dibenzo-p-furan
POHC	Principal Organic Hazardous Constituent
PPE	Personal Protective Equipment
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
SOP	Standard Operating Procedure
TCLP	Toxicity Characteristic Leaching Procedure
TSDF	Treatment, Storage or Disposal Facility
USEPA	United States Environmental Protection Agency
UTS	Universal Treatment Standard
WAP	Waste Analysis Plan

TABLE WAP-1 WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	NORLITE SOP FOR ANALYTICAL METHOD	RATIONAL FOR PARAMETER	SAMPLING AND ANALYSIS FREQUENCY
LLGF, OSUOF, WFA	Specific Gravity	ASTM-1298-85	Norlite SOP#04-012	Waste Verification	each load
LLGF, OSUOF, WFA, CF	Viscosity	ASTM-D2983	n/a	pumpability 3000 SUS @80F	when material appears unpumpable
LLGF, OSUOF, WFA, CF, SUOF	Heat of Combustion BTU	ASTM-D240	Norlite SOP#04-064	Assess Burning Efficiency Requirements	each load[6]
LLGF, OSUOF, WFA, SUOF, CF	Total Halogens	EPA 5050 & 9253	Norlite SOP#04-014	Halogen Content	each load[6] and one blended tank weekly
LLGF, CF	Bottom Sediment	Norlite SOP#4-049	Norlite SOP#04-049	Solids Determination	for blended tanks when necessary
Solid Haz Wastes	Free Liquids	EPA 9095B	n/a	Free Liquids for Solids Storage	as necessary
LLGF	Compatibility	Norlite SOP#4-063	Norlite SOP#04-063	Ensure Materials are compatible	each load
	Oxidzer	Norlite SOP#4-063	Norlite SOP#04-063	Verify compliance with permit limits	each load
	Peroxide	Norlite SOP#4-063	Norlite SOP#04-063	Verify Absence of a Peroxide	each load
LLGF, OSUOF, WFA, CF, SUOF	PCB	D6160	Norlite SOP#04-073 & 04-074	Compliance with permit limits	each load[6]
LLGF, OSUOF, WFA, SUOF, CF, SCW	Arsenic	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Beryllium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Cadmium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Chromium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Copper	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Lead	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Barium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Mercury	EPA 7471B	Norlite SOP#04-065 & 066	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Nickel	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Antimony	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Selenium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Silver	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Thallium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
	Zinc	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each load[6], one blended tank weekly
LLGF	Pesticides	EPA 8081B/8141B/ 8151A	Analyzed by off site ELAP certified lab	Verify Absence	one load monthly
	Organic Hazardous Constituents	EPA 8260C/8270D	Analyzed by off site ELAP certified lab	Verify Absence or Presence	initially and whenever the stream changes significantly
	PCDD/PCDF	EPA 8290	Analyzed by off site ELAP certified lab	Verify Absence at EPA 8290 detection limits	one load quarterly

TABLE WAP-1 WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	NORLITE SOP FOR ANALYTICAL METHOD	RATIONAL FOR PARAMETER	SAMPLING AND ANALYSIS FREQUENCY
Raw Shale	Arsenic	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Beryllium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Cadmium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Chromium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Copper	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Lead	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Barium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Mercury	EPA 7471B	Norlite SOP#04-065 & 066	Verify Metals Below Permit Levels	each blast
	Nickel	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Antimony	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Selenium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Silver	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Thallium	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Zinc	EPA 3052/6010C	Norlite SOP#04-058 & 070	Verify Metals Below Permit Levels	each blast
	Total Halogen	EPA 5050/9056	Norlite SOP#04-032	Verify Total Halogens Below Permit Levels	each blast
Clinker	Metals[5]	EPA 1311 6010C/7471B	Norlite SOP#04-027	Verify that Clinker meets LDR	monthly, when applicable[4]
	Volatile Organics[5]	EPA 5035A/8015B/ 8260C	Analyzed by off site ELAP certified lab	Verify that Clinker meets LDR	annually, when applicable[4]
	Semivolatile Organics[5]	EPA 3540C/8270D/8081A 8290/8082A	Analyzed by off site ELAP certified lab	Verify that Clinker meets LDR	annually, when applicable[4]
Multiclone Dust, Baghouse Dust, FilterCake	Metals[5]	EPA 1311/6010C/7471B		Ensure Eligibility for Bevill Exclusion	monthly
	Volatile Organics[5]	EPA 5035A/8015B/8260C	Analyzed by off site ELAP certified lab	Ensure Eligibility for Bevill Exclusion	annually
	Semivolatile Organics[5]	EPA 3540C/8270D/8081A 8290/8082A	Analyzed by off site ELAP certified lab	Ensure Eligibility for Bevill Exclusion	annually

(1)EPA in this table = EPA SW-846 Method

(2) LLGF = Liquid Low Grade Fuel; OSUOF = off-specification used oil fuel; SUOF = specification used oil fuel; WFA = Waste Fuel A; CF = Comparable Fuels; SCW = Secondary Containment Water

(3) The most updated official version of each method is used. Norlite Laboratory detection limits found in document 49B.

(4) Applicable when the process is burning for disposal per 6 NYCRR Part 374.3

(5) Please see WAP Appendix 2 for list of analytes

(6) 1 in 10 loads of Comparable Fuels are analyzed for metals and total halogens

Kiln: 1 & 2

Tank #: 300
Total Gallons: 25675
Released: Wednesday, January 11, 2012
LGF DCS: 1816.28
Used Oil DCS: 621.27
Pilot Oil DCS: 140.38

WAP-2
Norlite Corporation
Metals and Halogens
LGF Tank Certification

PREVIEW

LGF File: -
Used Oil File: 20807
Pilot Oil File: 20798

Kiln Operator Inputs
Metals & Halogens Feed Rates

MAX LGF (G/Min)	10.3
MAX Used Oil (G/Min)	10.0
MAX Pilot Oil (G/Min)	10.0
LGF (BTU/Gal)	**60565**
Used Oil (BTU/Gal)	**104681**
Pilot Oil (BTU/Gal)	**128528**
Operator DCS	**293774**

Date entry number must match DCS value shown on PLC

While Burning LGF
Maximum BTU/HR = 62,000,000

Lime Feed (Lbs/Hr) x3.2	207
Natural Gas BTU/Ft^3	1,010

Tank Contributions

Date	Source	CTRL#	Manifest	Gallons
1/11/2012	Norlite Corporation	-	-	25675

Analytical Information
All Values are Pounds per Hour (Lbs/Hr)

Parameter	LGF	Used Oil	Pilot Oil	Pilot Oil Limit @ 1% of Max Feed	Liquid Total	Max Feed Limits	Max Liquid Feed
Total Halogens	38.8827	18.79352	6.91303	0.82300	64.5893	82.3	-
Ash	71.9330	108.42417	72.81721	-	253.1744	-	-
Arsenic	0.0035	0.00337	0.00355	0.01080	0.0069	1.08	0.21
Beryllium	0.0002	0.00029	0.00088	0.00099	0.0005	0.099	0.012
Cadmium	0.0336	0.05860	0.00092	0.00360	0.0922	0.36	0.32
Chromium	0.0917	0.07151	0.02097	0.07780	0.1632	7.78	5.98
Copper	7.2210	1.49139	0.11116	0.13120	8.7124	13.12	9.48
Lead	0.1351	0.22172	0.03217	0.06360	0.3568	6.36	4.03
Barium	0.1423	0.12351	0.08134	0.12170	0.2658	12.17	0.97
Mercury	0.0002	0.00010	0.00009	0.00008	0.0004	0.0081	0.0064
Nickel	0.1122	0.17555	0.06074	0.07060	0.2878	7.06	6.16
Antimony	0.0209	0.04212	0.02046	0.00310	0.0835	0.31	0.22
Selenium	0.0047	0.00732	0.00401	0.00170	0.0160	0.17	0.12
Silver	0.0148	0.00805	0.00207	0.00180	0.0249	0.18	0.13
Thallium	0.0049	0.00482	0.00489	0.00350	0.0146	0.35	0.26
Zinc	1.0316	0.77275	0.29574	0.25610	2.1001	25.61	10.32

Date: 1/11/2012 @ 3:41:29 PM

LGF Laboratory Authorization: Prince M Knight III

Supervisor Authorization: David Maguffin

Tank Usage Details

Date	Time	Action (Start / On / Off / Finish / Continue)	Notes	Burner

Batch: 2011-11
Date of Blast: 12/15/2011
Initial Release Date: 12/29/2011
Sample Id: S121611009

WAP-3
Norlite Corporation
Shale Feed Tank Certification

LGF File:
Used Oil File: 20807
Pilot Oil File: 20798

Max Feed Rate (Ton/Hr)	22.0
Alarm Set Point (Ton/Hr)	21.0
WFCO Set Point (Ton/Hr)	21.5
Lime Feed Rate x3.2 (Lbs/Hr)	0.0

Analytical Information

Parameter	Conc. (mg/g)	Feed Rate (Lbs/Hr)	Max Shale (Lbs/Hr)
Arsenic	6.402	0.2817	1.0696
Beryllium	0.5438	0.0239	0.0976
Cadmium	0.07	0.0031	0.2669
Chromium	15.54	0.6838	7.5958
Copper	34.79	1.5308	4.2964
Lead	15.00	0.66	5.971
Barium	121.3	5.3372	11.8229
Mercury	0.0303	0.0013	0.0077
Nickel	26.43	1.1629	6.7115
Antimony	1.455	0.064	0.2265
Selenium	0.85	0.0374	0.154
Silver	0.1643	0.0072	0.1551
Thallium	1.421	0.0625	0.3354
Zinc	97.96	4.3102	23.5099
Total Halogens	0.23	0.0101	-
DCS	322.1864	-	-

- Maximum Shale (lbs/hr) is equal to Maximum Total feed minus the Liquid Feed.
- Metals Digestion Completed By SW-846 3050B
- Total Halogen analysis completed by SW-846 9056 with preparation by SW-846 5050
- Mercury Digestion & Analysis completed by SW-846 7471A

Date: 1/11/2012 Laboratory Approval: Prince M Knight III

Date: 1/11/2012 Operations Approval: David Maguffin

Burner Approval

Date	Time	Notes	Burner

TABLE WAP-4
LABORATORY SOPs

SOP#	Title	Rev #
04-004	Sample Collection of LGF Loads Received	1
04-007	Sample Collection of LGF From Storage Tanks	1
04-012	Determination of Density and Specific Gravity	6
04-014	Determination of Total Halogens in LGF by Titration	11
04-015	MDS 2000 Microwave Digestion for ICP Analysis	13
04-027	Toxicity Characteristic Leaching Proceudre	10
04-032	Preparation of Shale for Chlorine Analysis by Ion Chromatography	4
04-043	Determination of Ash Content in Fuel	5
04-047	MARS Microwave Digestion for ICP Analysis (Method 3050B)	7
04-048	Automatic Flash Point Analysis	6
04-049	Determination of Bottom Sediment and Water	4
04-053	Sample Receipt and Handling	3
04-058	Mars Microwave 3052 Digestion for ICP Analysis	3
04-063	Compatibility	1
04-064	Determination of Heat of Combustion of LGF	1
04-065	Mercury Digestion of Liquid and Solid Waste by Method 7471B	1
04-066	Mercury Analysis of Liquid and Solid Waste by Method 7471B	1
	(reserve for 6160 SOP)	
04-068	Analysis to Determine Content of PCBs by Method 8082A	1
04-069	Extraction of Solid Waste to Determine Levels of PCBs by Method 8082A	1
04-070	Determination of Metals Content in Solid and Liquid Waste by Method 6010C	1

WAP Appendix 1

Profile Sheet

Tradebe

GENERATORS WASTE PROFILE SHEET Profile

Please indicate which Tradebe Facility(s) are being utilized for this Profile

___ TTR East Chicago, IN ___ TTR Millington, TN ___ United Oil Recovery, INC Meriden, CT ___ Zecco Northboro, MA

___ Bridgeport United Recycling Bridgeport, CT ___ ECC Stoughton, MA ___ United Oil Recovery, INC Newington, NH ___ Norlite Corp Cohoes, NY

PLEASE FAX COMPLETED FORM TO YOUR CUSTOMER SERVICE REPRESENTATIVE (203) 238-6744

A. GENERATOR INFORMATION:

Generator Name: _____
Facility Address: _____
City: _____ State: _____ Zip: _____
Customer Name: _____
Customer Phone: _____
Customer Fax: _____
Generator USEPA/Federal ID # : _____
If no ID number is the Generator a "Conditionally Exempt Small Quantity Generator?" ___ Yes ___ No
Generator's S.I.C. Code(4 Digit): _____ Generator State ID # (If applicable): _____
Please check if generator has "No Canada Disposal" policy ___ Yes ___ No
Please check if generator has "No Landfill" policy ___ Yes ___ No

BILLING INFORMATION:

Billing Name: _____
Billing Address: _____
City: _____ State: _____ Zip: _____
Billing Contact Name: _____
Billing Phone: _____
Billing Fax: _____
Sales Rep: _____

B. WASTE STREAM INFORMATION:

Name of the Waste: _____
Original Process Generating Waste: _____
Is this waste exempt from RCRA regulation? ___ Yes ___ No
If "yes" explain (example HHW, CESQG): _____
Is waste a combination package (examples: Drum with inner containers or skid with cases of consumer products ___ Yes ___ No
Current method of disposal: _____
Is this waste from a CERCLA cleanup site? ___ Yes ___ No
Is a representative sample provided? ___ Yes ___ No
Is an MSDS attached? ___ Yes ___ No
Is there any Analytical attached? ___ Yes ___ No
Other information? ___ Yes ___ No
Does the Waste have any of the following characteristics? ___ Yes *(if yes check all that apply)* ___ No

___ Oxidizer ___ Dioxin or Suspect ___ Water Reactive ___ Air Reactive ___ Inhalation Hazard: Zone ___
___ Hexachrome ___ Infectious Waste ___ Radioactive ___ Chelating Agent ___ Organic Peroxide
___ Explosive ___ Shock Sensitive ___ Polymerizer ___ Pyrophoric ___ Lachrymator

C. GENERAL CHARACTERISTICS:

Color: _____	Physical state @ 70 F		Phases	Btu/lb	pH	
Odor:	___ % liquid	___ aerosol	___ single layer	___ <3000	___ <2	___ 10.0-12.5
___ None	___ % solid	___ powder	___ double layer	___ 3,000-5,000	___ 2.0-4.0	___ >12.5
___ Mild	___ % sludge	___ other	___ >2 layers	___ 5,000-10,000	___ 4.0-10.0	
___ Strong	___ % debris		___ how many?	___ >10,000		

Liquid Flashpoint: ___ <73 F ___ 73 to 99 F ___ 100 to 139 F ___ 140 to 200 F ___ >200 F ___ None

Specific Gravity: _____ Total Halogens _____ **%** Total Organic Carbon (TOC) _____ %

D. CHEMICAL COMPOSITION: Total of Maximum concentration must be > or = to 100%.

Constituents	Min%	Max%	ppm	Constituents	Min%	Max%	ppm

Does the Waste contain any of the following?

Nitrocellulose ___ *Yes* ___ *No* *Metal Powder or Flake* ___ *Yes* ___ *No* *Sharps* ___ *Yes* ___ *No*

D. CHEMICAL COMPOSITION continued:

Phases: Oil _____ % Water _____ % Interface _____ % Sediments _____ % DNAPL _____ **%**

Petroleum Phase	Suspected Level	Actual Level	Aqueous Phase	Suspected Level	Actual Level	Aqueous Phase	Suspected Level	Actual Level
PCB			Copper			Cobalt		
Halogens			Cadmium			Mercury		
Solvents			Chromium			Arsenic		
Arsenic			Lead			Barium		
Cadmium			Nickel			Sulfides		
Chromium			Silver			Cyanides		
Lead			Zinc			Phenols		

List Specific Solvents: _____

Does the waste contain Benzene? ___Yes___No

Do any of the following SIC codes cover the operations at your facility? If, "yes," check all that apply.

__2812__2813__2816__2819__2821__2822__2823__2824__2833__2834__2835__2836__2841__2842__2843__2844__2851__2861

__2865__2869__2873__2874__2875__2876__2879__2891__2892__2893__2896__2899__2911__2999__3312__4953__4959__9511

E. OTHER WASTE STREAM INFORMATION:

Is this waste a "USED OIL" per 40CFR PART 279? ___Yes___No

If "Yes", does the total halogen content exceed 1,000 ppm? ___Yes___No

If "Yes", can you identify the "Chlorinated Constituent" present in the oil? ___Yes___No

If "Yes", can you rebut the presumption that this material is a "Hazardous Waste"? ___Yes___No

Is the Waste subject to RCRA Subpart CC controls? (40 CFR 265 SUBPART CC) ___Yes___No

Does the waste contain organic UHCs above treatment standards levels? (40 CFR 368.48, 268.7) ___Yes___No

If 'yes' identify those chemicals in Appendix I - Underlying Hazardous Constituents

Does the Waste contain more than 500ppmw volatile organics(VO)? (40 CFR 265 SUBPART CC) ___Yes___No

Does the Waste contain any Class I or Class II ozone-depleting substances? ___Yes___No

Does waste contain EPCRA 313 chemicals identified in 40 CFR 372.65? ___Yes___No

If 'yes' identify those chemicals in *Appendix II of this form.*

Does this waste contain any 'Chemicals of interest' listed in *6 CFR Part 27 Appendix A* (Department of Homeland Security)? *If 'yes' please list in Appendix II of this form.* ___Yes___No

F. R.C.R.A. CHARACTERIZATION:

Is this a USEPA "Hazardous Waste" as defined in 40 CFR §261.3? ___Yes___No

Is this a "Universal Waste" per 40CFR part 273? ___Yes___No

Please list any characteristic codes (D001-D043): _____

If waste carries characteristic code, please check all applicable Underlying Hazardous Constituents in Appendix I

Please list any applicable "F" or "K" codes: _____

Please list any applicable "U" or "P" codes: _____

Please list any state regulated codes: _____

G. SHIPPING INFORMATION:

___Bulk Liquid(> 500 Gallons) _____Bulk Solids(roll-off box, vacuum box, etc)

___Cubic Yard Boxes _____Totes (Please specify size) _____

___Drums (Specify size) __85 __55 __30 __15 __5 ___Metal __Plastic ___Fiberboard _____

Shipping Frequency: Number of Units _____ Per ___Month ___Quarter ___Year ___Other _____

H. DOT SHIPPING INFORMATION

Is this a U.S. Department of Transportation (USDOT) Hazardous Material? ___Yes___No

Proper Shipping Name per 49 CFR 172.101 Hazardous Materials Table: _____

Hazard Class or Division: _____ UN/NA # _____ Packing Group ___I ___II ___III

Technical descriptors if required: _____ RQ if required: _____

I. GENERATOR CERTIFICATION:

I agree by assignment of my personal signature that I hereby certify that the above and attached description is complete and accurate and that no omissions of characteristics, composition or properties exist and that all known or suspected hazards have been disclosed. I also certify that each sample provided to PCI is representative of the waste material described above and give Tradebe permission and consent to make amendments and corrections and that I am an authorized agent of the Generator.

Name(print): _____ Title: _____

Signature: _____ Date: _____

Tradebe

Treatment and Recycling LLC

Waste Stream Profile _____

GENERATORS WASTE PROFILE CONTINUATION SHEET

PLEASE PRINT IN INK OR TYPE

Site Address (if different from generator address):

Site Name (if different from generator): _____

Pick-up Address: _____

Additional Location Identification: _____

City: _____ State: _____ Zip: _____

Contact Name: _____

Contact Phone: _____

Contact Fax: _____

Generator USEPA/Federal ID # (if different than generators) : _____

Facility Restrictions (if any): _____

D. CHEMICAL COMPOSITION CONTINUATION: Total of Maximum concentration must be > or = to 100%.

Constituents	Min%	Max%	ppm	Constituents	Min%	Max%	ppm

G. R.C.R.A. CHARACTERIZATION CONTINUATION:

Additional characteristic codes (D001-D043): _____

If waste carries characteristic code, please check all applicable Underlying Hazardous Constituents in Appendix I

List additional F or K codes: _____

List additional "U" or "P" codes: _____

Additional State codes if required: _____

WAP Appendix 2

Bevill/LDR Analytes

Bevill Determination for Norlite APC Wastes

Table 1

		METHOD
NONMETALLIC ANALYTE	CAS No.	SW-846
1,1,1,2-TETRACHLOROETHANE	630-20-6	8260
1,1,1-TRICHLOROETHANE	71-55-6	8260
1,1,2,2-TETRACHLOROETHANE	79-34-5	8260
1,1,2-TRICHLOROETHANE	79-00-5	8260
1,1-DICHLOROETHANE	75-34-3	8260
1,1-DICHLOROETHENE	75-35-4	8260
1,2,3-TRICHLOROPROPANE	96-18-4	8260
1,2,4,5-TETRACHLOROBENZENE	95-94-3	8270
1,2,4-TRICHLOROBENZENE	120-82-1	8260/8270
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	8260/8270
1,2-DIBROMOETHANE	106-93-4	8260
1,2-DICHLOROBENZENE	95-50-1	8270
1,2-DICHLOROETHANE	107-06-2	8260
1,2-DICHLOROPROPANE	78-87-5	8260
1,2-DINITROBENZENE	528-29-0	8270
1,2-DIPHENYLHYDRAZINE	122-66-7	8270
1,3,5-TRINITROBENZENE	99-35-4	8270
1,3-DICHLOROBENZENE	541-73-1	8270
1,3-DINITROBENZENE	99-65-0	8270
1,4-DICHLOROBENZENE	106-46-7	8270
1,4-DINITROBENZENE	100-25-4	8270
1,4-DIOXANE	123-91-1	8260
1,4-NAPHTHOQUINONE	130-15-4	8270
1,4-PHENYLENEDIAMINE	106-50-3	8270
1-ACETYL-2-THIOUREA	591-08-2	8270
1-BUTANOL	71-36-3	8015
1-CHLORONAPHTHALE	90-13-1	8270
1-NAPHTHYLAMINE	134-32-7	8270
1-PROPANOL	71-23-8	8015
2 CHLOROETHYL VINYL ETHER	110-75-8	8260
2,3,4,6-TETRACHLOROPHENOL	58-90-2	8270
2,4,5-TRICHLOROPHENOL	95-95-4	8270
2,4,6-TRICHLOROPHENOL	88-06-2	8270
2,4-DICHLOROPHENOL	120-83-2	8270

2,4-DIMETHYL PHENOL	105-67-9	8270
2,4-DINITROPHENOL	51-28-5	8270
2,4-DINITROTOLUENE	121-14-2	8270
2,6-DICHLOROPHENOL	87-65-0	8270
2,6-DINITROTOLUENE	606-20-2	8270
2-ACETYLAMINOFLUORENE	53-96-3	8270
2-BUTANONE (MEK)	78-93-3	8260
2-CHLOROANILINE	101-14-4	8270
2-CHLOROETHANOL	107-07-3	8260
2-CHLORONAPHTHALE	91-58-7	8270
2-CHLOROPHENOL	95-57-8	8270
2-CYCLOHEXYL-4,6-DINITROPHENOL	131-89-5	8270
2-HEXANONE	591-78-6	8260
2-METHYLNAPHTHALE	91-57-6	8270
2-METHYLPHENOL	95-48-7	8270
2-NAPHTHYLAMINE	91-59-8	8270
2-NITROANILINE	88-74-4	8270
2-NITROPHENOL	88-75-5	8270
2-NITROPROPANE	79-46-9	8260
2-PENTANONE	107-87-9	8260
2-PICOLINE	109-06-8	8260/8270
3,3'-DICHLOROBENZIDINE	91-94-1	8270
3,3'-DIMETHOXYBENZIDINE	119-90-4	8270
3,3'-DIMETHYL BENZIDINE	119-93-7	8270
3-CHLOROPROPIONITRILE	542-76-7	8260
3-METHYLCHOLANTHRENE	56-49-5	8270
3-METHYLPHENOL	108-39-4	8270
3-NITROANILINE	99-09-2	8270
4,4'-DDD	72-54-8	8081
4,4'-DDE	72-55-9	8081
4,4'-DDT	50-29-3	8081
4,6-DINITRO-2-METHYLPHENOL	534-52-1	8270
4-AMINOBIPHENYL	92-67-1	8270
4-BROMOPHENYL PHENYL ETHER	101-55-3	8270
4-CHLORO-3-METHYLPHENOL	59-50-7	8270
4-CHLOROANILINE	106-47-8	8270
4-METHYL-2-PENTANONE (MIBK)	108-10-1	8260
4-METHYLPHENOL	106-44-5	8270
4-NITROANILINE	100-01-6	8270

4-NITROPHENOL	100-02-7	8270
5-NITRO-o-TOLUIDINE	99-55-8	8270
7,12-DIMETHYLBENZ(a)-ANTHRACENE	57-97-6	8270
a-BHC	319-84-6	8081
ACENAPHTHYLENE	208-96-8	8270
ACENAPTHENE	83-32-9	8270
ACETONE	67-64-1	8260
ACETONITRILE	75-05-8	8260
ACETOPHENONE	98-86-2	8270
ACROLEIN	107-02-8	8260
ACRYLONITRILE	107-13-1	8260
ALDRIN	309-00-2	8081
ALLYL ALCOHOL	107-18-6	8015
ALLYL CHLORIDE	107-05-1	8260
ANILINE	62-53-3	8270
ANTHRACENE	120-12-7	8270
ARAMITE	140-57-8	8270
b-BHC	319-85-7	8081
b-PROPIOLACTONE	57-57-8	8260
BENZ(a)ANTHRACENE	56-55-3	8270
BENZENE	71-43-2	8260
BENZIDINE	92-87-5	8270
BENZO(a)PYRENE	50-32-8	8270
BENZO(b)FLUORANTHENE	205-99-2	8270
BENZO(g,h,i)PERYLENE	191-24-2	8270
BENZO(k)FLUORANTHENE	207-08-9	8270
BENZYL CHLORIDE	100-44-7	8260
BIS(2-CHLOROETHOXY)METHANE	111-91-1	8270
BIS(2-CHLOROETHYL)ETHER	111-44-4	8270
BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	8270
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	8270
BROMOACETONE	598-31-2	8260
BROMOCHLOROMETHANE	74-97-5	8260
BROMODICHLOROMETHANE	75-27-4	8260
BROMOFORM	75-25-2	8260
BROMOMETHANE	74-83-9	8260
BUTYL BENZYL PHTHALATE	85-68-7	8270
CARBON DISULFIDE	75-15-0	8260
CARBON TETRACHLORIDE	56-23-5	8260

CHLORAL HYDRATE	302-17-0	8260
CHLORDANE	57-74-9	8081
CHLOROBENZENE	108-90-7	8260
CHLOROBENZILATE	510-15-6	8270/8081
CHLORODIBROMOMETHANE	124-48-1	8260
CHLOROETHANE	75-00-3	8260
CHLOROFORM	67-66-3	8260
CHLOROMETHANE	74-87-3	8260
CHLOROPRENE	126-99-8	8260
CHRYSENE	218-01-9	8270
CIS-1,3-DICHLOROPROPENE	10061-01-5	8260
CIS-1,4-DICHLORO-2-BUTENE	1476-11-5	8260
CROTON ALDEHYDE	4170-30-3	8260/8015
DI-N-BUTYL PHTHALATE	84-74-2	8270
DI-N-OCTYL PHTHALATE	117-84-0	8270
DIALLATE	2303-16-4	8270/8081
DIBENZ(a,h)ANTHRACENE	53-70-3	8270
DIBENZ(a,j)ACRIDINE	224-42-0	8270
DIBENZO(a,e)PYRENE	192-65-4	8270
DIBENZOFURAN	132-64-9	8270
DIBROMOMETHANE	74-95-3	8260
DICHLORODIFLUOROMETHANE	75-71-8	8260
DIELDRIN	60-57-1	8081
DIETHYL PHTHALATE	84-66-2	8270
DIETHYLSTILBESTROL	56-53-1	8270
DIHYDROSAFFROLE	56312-13-1	8270
DIMETHOATE	60-51-5	8270
DIMETHYL PHTHALATE	131-11-3	8270
DIMETHYLAMINOAZOBENZENE	60-11-7	8270
DIPHENYLAMINE	122-39-7	8270
DISULFOTON	298-04-4	8270
ENDOSULFAN I	959-98-8	8081
ENDOSULFAN II	33213-65-9	8081
ENDOSULFAN SULFATE	1031-07-8	8081
ENDRIN	72-20-8	8081
ENDRIN ALDEHYDE	7421-93-4	8081
EPICHLOROHYDRIN	106-89-8	8260
ETHANOL	64-17-5	8015
ETHYL ACETATE	141-78-6	8015

ETHYL METHACRYLATE	97-63-2	8260
ETHYLBENZENE	100-41-4	8260
ETHYLENE OXIDE	75-21-8	8260/8015
FLUORANTHENE	206-44-0	8270
FLUORENE	86-73-7	8270
HEPTACHLOR	76-44-8	8081
HEPTACHLOR EPOXIDE	1024-57-3	8081
HEPTACHLORODIBENZO-p-DIOXINS	NA	8290
HEPTACHLORODIBENZOFURANS	NA	8290
HEXACHLOROBENZENE	118-74-1	8270
HEXACHLOROBUTADIENE	87-68-3	8270
HEXACHLOROCYCLOPENTADIENE	77-47-4	8270
HEXACHLORODIBENZO-p-DIOXINS	NA	8290
HEXACHLORODIBENZOFURANS	NA	8290
HEXACHLOROETHANE	67-72-1	8260/8270
HEXACHLOROPHENE	70-30-4	8270
HEXACHLOROPROPENE	1888-71-7	8270
HYDROQUINONE	123-31-9	8270
INDENO(1,2,3-cd)PYRENE	193-39-5	8270
IODOMETHANE	74-88-4	8260
ISOBUTYL ALCOHOL	78-83-1	8015
ISODRIN	465-73-6	8270/8081
ISOPHORONE	78-59-1	8270
ISOPROPYL ALCOHOL	67-63-0	8015
ISOPROPYLBENZENE	98-82-8	8260
ISOSAFROLE	120-58-1	8270
KEPONE	143-50-0	8270
LINDANE	58-89-9	8081
m-XYLENE	108-38-3	8260
MALEIC ANHYDRIDE	108-31-6	8270
MALONONITRILE	109-77-3	8260
METHACRYLONITRILE	126-98-7	8260
METHANOL	67-56-1	8015
METHAPYRILENE	91-80-5	8270
METHOXYCHLOR	72-43-5	8081
METHYL METHACRYLATE	80-62-6	8260
METHYL METHANESULFONATE	66-27-3	8270
METHYL PARATHION	298-00-0	8270
METHYLENE CHLORIDE	75-09-2	8260

N,N-DIMETHYLANILINE	101-61-1	8270
N-NITROSODI-N-BUTYLAMINE	924-16-3	8270
N-NITROSODI-N-PROPYLAMINE	621-64-7	8270
N-NITROSODIETHYLAMINE	55-18-5	8270
N-NITROSODIMETHYLAMINE	62-75-9	8270
N-NITROSODIPHENYLAMINE	86-30-6	8270
N-NITROSOMETHYLETHYLAMINE	10595-95-6	8270
N-NITROSOMORPHOLINE	59-89-2	8270
N-NITROSOPIPERIDINE	100-75-4	8270
N-NITROSOPYRROLIDINE	930-55-2	8270
n-PROPYLAMINE	107-10-8	8260
NAPHTHALENE	91-20-3	8270
NICOTINE	54-11-5	8270
NITROBENZENE	98-95-3	8260/8270
NITROQUINOLINE-1-OXIDE	56-57-5	8270
O,O,O-TRIETHYL PHOSPHOROTHIOATE	126-68-1	8270
o-TOLUIDINE	95-53-4	8270
o-TOLUIDINE	95-53-4	8260
o-XYLENE	95-47-6	8260
OCTAMETHYL PYROPHOSPHORAMIDE	152-16-9	8270
p-BENZOQUINONE	106-51-4	8270
p-XYLENE	106-42-3	8260
PARALDEHYDE	123-63-7	8260/8015
PCB'S (1016-1260)	VARIOUS	8082
PCNB	82-68-8	8081
PENTACHLOROBENZENE	608-93-5	8270
PENTACHLORODIBENZO-p-DIOXINS	NA	8290
PENTACHLORODIBENZOFURANS	NA	8290
PENTACHLOROETHANE	76-01-7	8260
PENTACHLORONITROBENZENE	82-68-8	8270
PENTACHLOROPHENOL	87-86-5	8270
PHENACETIN	62-44-2	8270
PHENANTHRENE	85-01-8	8270
PHENOL	108-95-2	8270
PHORATE	298-02-2	8270
PHTHALIC ANHYDRIDE	85-44-9	8270
PRONAMIDE	23950-58-5	8270
PROPYLTHIOURACIL	51-52-5	8270

PYRENE	129-00-0	8270
PYRIDINE	110-86-1	8260/8270
RESORCINOL	108-46-3	8270
SAFROLE	94-59-7	8270
STRYCHNINE	57-24-9	8270
t-BUTYL ALCOHOL	75-65-0	8015
TETRACHLORODIBENZO-p-DIOXINS	NA	8290
TETRACHLORODIBENZOFURANS	NA	8290
TETRACHLOROETHENE	127-18-4	8260
TETRAETHYL DITHIOPYROPHOSPHATE	3689-24-5	8270
TOLUENE	108-88-3	8260
TOLUENE DIISOCYANATE	584-84-9	8270
TOXAPHENE	8001-35-2	8081
TRANS-1,2-DICHLOROETHENE	156-60-5	8260
TRANS-1,3-DICHLOROPROPENE	10061-02-6	8260
TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	8260
TRICHLOROETHENE	79-01-6	8260
TRICHLOROFLUOROMETHANE	75-69-4	8260
TRIS(2,3-DIBROMOPROPYL) PHOSPHATE	126-72-7	8270
VINYL ACETATE	108-05-4	8260
VINYL CHLORIDE	75-01-4	8260

Bevill Determination for Norlite APC Wastes

Table 2

by TCLP - EPA Method 1311

METALLIC ANALYTE	Cas No.
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium	7440-47-3
Lead	7439-92-1
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Thallium	7440-28-0

Norlite Corporation Clinker Analysis

List of Organic Universal Treatment Standard Constituents

Table 1

Organic Constituent	CAS No.	METHOD SW-846
1,1,1,2-TETRACHLOROETHANE	630-20-6	8260
1,1,1-TRICHLOROETHANE	71-55-6	8260
1,1,2,2-TETRACHLOROETHANE	79-34-5	8260
1,1,2-TRICHLOROETHANE	79-00-5	8260
1,1-DICHLOROETHANE	75-34-3	8260
1,1-DICHLOROETHENE	75-35-4	8260
1,2,3-TRICHLOROPROPANE	96-18-4	8260
1,2,4,5-TETRACHLOROBENZENE	95-94-3	8270
1,2,4-TRICHLOROBENZENE	120-82-1	8260/8270
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	8260/8270
1,2-DIBROMOETHANE	106-93-4	8260
1,2-DICHLOROBENZENE	95-50-1	8270
1,2-DICHLOROETHANE	107-06-2	8260
1,2-DICHLOROPROPANE	78-87-5	8260
1,2-DIPHENYLHYDRAZINE	122-66-7	8270
1,4-DICHLOROBENZENE	106-46-7	8270
1,4-DINITROBENZENE	100-25-4	8270
1,4-DIOXANE	123-91-1	8260
1-BUTANOL	71-36-3	8015
2 CHLOROETHYL VINYL ETHER	110-75-8	8260
2,3,4,6-TETRACHLOROPHENOL	58-90-2	8270
2,4,5-TRICHLOROPHENOL	95-95-4	8270
2,4,6-TRICHLOROPHENOL	88-06-2	8270
2,4-DICHLOROPHENOL	120-83-2	8270
2,4-DIMETHYL PHENOL	105-67-9	8270
2,4-DINITROPHENOL	51-28-5	8270
2,4-DINITROTOLUENE	121-14-2	8270
2,6-DICHLOROPHENOL	87-65-0	8270
2,6-DINITROTOLUENE	606-20-2	8270
2-ACETYLAMINOFLUORENE	53-96-3	8270
2-BUTANONE (MEK)	78-93-3	8260

2-CHLOROANILINE	101-14-4	8270
2-CHLORONAPHTHALE	91-58-7	8270
2-CHLOROPHENOL	95-57-8	8270
2-METHYLPHENOL	95-48-7	8270
2-NAPHTHYLAMINE	91-59-8	8270
2-NITROANILINE	88-74-4	8270
2-NITROPHENOL	88-75-5	8270
3-METHYLCHOLANTHRENE	56-49-5	8270
3-METHYLPHENOL	108-39-4	8270
4,4'-DDD	72-54-8	8081
4,4'-DDE	72-55-9	8081
4,4'-DDT	50-29-3	8081
4,6-DINITRO-2-METHYLPHENOL	534-52-1	8270
4-AMINOBIPHENYL	92-67-1	8270
4-BROMOPHENYL PHENYL ETHER	101-55-3	8270
4-CHLORO-3-METHYLPHENOL	59-50-7	8270
4-CHLOROANILINE	106-47-8	8270
4-METHYL-2-PENTANONE (MIBK)	108-10-1	8260
4-METHYLPHENOL	106-44-5	8270
4-NITROANILINE	100-01-6	8270
4-NITROPHENOL	100-02-7	8270
5-NITRO-o-TOLUIDINE	99-55-8	8270
a-BHC	319-84-6	8081
ACENAPHTHYLENE	208-96-8	8270
ACENAPTHENE	83-32-9	8270
ACETONE	67-64-1	8260
ACETONITRILE	75-05-8	8260
ACETOPHENONE	98-86-2	8270
ACROLEIN	107-02-8	8260
ACRYLONITRILE	107-13-1	8260
ALDRIN	309-00-2	8081
ANILINE	62-53-3	8270
ANTHRACENE	120-12-7	8270
ARAMITE	140-57-8	8270
b-BHC	319-85-7	8081
BENZ(a)ANTHRACENE	56-55-3	8270
BENZENE	71-43-2	8260
BENZO(a)PYRENE	50-32-8	8270
BENZO(b)FLUORANTHENE	205-99-2	8270

BENZO(g,h,i)PERYLENE	191-24-2	8270
BENZO(k)FLUORANTHENE	207-08-9	8270
BIS(2-CHLOROETHOXY)METHANE	111-91-1	8270
BIS(2-CHLOROETHYL)ETHER	111-44-4	8270
BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	8270
BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	8270
BROMOCHLOROMETHANE	74-97-5	8260
BROMOFORM	75-25-2	8260
BROMOMETHANE	74-83-9	8260
BUTYL BENZYL PHTHALATE	85-68-7	8270
CARBON DISULFIDE	75-15-0	8260
CARBON TETRACHLORIDE	56-23-5	8260
CHLORDANE	57-74-9	8081
CHLOROBENZENE	108-90-7	8260
CHLOROBENZILATE	510-15-6	8270/8081
CHLORODIBROMOMETHANE	124-48-1	8260
CHLOROETHANE	75-00-3	8260
CHLOROFORM	67-66-3	8260
CHLOROMETHANE	74-87-3	8260
CHRYSENE	218-01-9	8270
CIS-1,3-DICHLOROPROPENE	10061-01-5	8260
DI-N-BUTYL PHTHALATE	84-74-2	8270
DI-N-OCTYL PHTHALATE	117-84-0	8270
DIBENZ(a,h)ANTHRACENE	53-70-3	8270
DIBENZO(a,e)PYRENE	192-65-4	8270
DIBROMOMETHANE	74-95-3	8260
DICHLORODIFLUOROMETHANE	75-71-8	8260
DIELDRIN	60-57-1	8081
DIETHYL PHTHALATE	84-66-2	8270
DIMETHYL PHTHALATE	131-11-3	8270
DIMETHYLAMINOAZOBENZENE	60-11-7	8270
DIPHENYLAMINE	122-39-7	8270
DISULFOTON	298-04-4	8270
ENDOSULFAN I	959-98-8	8081
ENDOSULFAN II	33213-65-9	8081
ENDOSULFAN SULFATE	1031-07-8	8081
ENDRIN	72-20-8	8081
ENDRIN ALDEHYDE	7421-93-4	8081
ETHYL ACETATE	141-78-6	8015

ETHYL METHACRYLATE	97-63-2	8260
ETHYLBENZENE	100-41-4	8260
ETHYLENE OXIDE	75-21-8	8260/8015
FLUORANTHENE	206-44-0	8270
FLUORENE	86-73-7	8270
HEPTACHLOR	76-44-8	8081
HEPTACHLOR EPOXIDE	1024-57-3	8081
HEXACHLOROBENZENE	118-74-1	8270
HEXACHLOROBUTADIENE	87-68-3	8270
HEXACHLOROCYCLOPENTADIENE	77-47-4	8270
HEXACHLORODIBENZO-p-DIOXINS	NA	8290
HEXACHLORODIBENZOFURANS	NA	8290
HEXACHLOROETHANE	67-72-1	8260/8270
HEXACHLOROPROPENE	1888-71-7	8270
INDENO(1,2,3-cd)PYRENE	193-39-5	8270
IODOMETHANE	74-88-4	8260
ISOBUTYL ALCOHOL	78-83-1	8015
ISODRIN	465-73-6	8270/8081
ISOSAFROLE	120-58-1	8270
KEPONE	143-50-0	8270
m-XYLENE	108-38-3	8260
METHACRYLONITRILE	126-98-7	8260
METHANOL	67-56-1	8015
METHAPYRILENE	91-80-5	8270
METHOXYCHLOR	72-43-5	8081
METHYL METHACRYLATE	80-62-6	8260
METHYL METHANESULFONATE	66-27-3	8270
METHYL PARATHION	298-00-0	8270
METHYLENE CHLORIDE	75-09-2	8260
N-NITROSODI-N-BUTYLAMINE	924-16-3	8270
N-NITROSODI-N-PROPYLAMINE	621-64-7	8270
N-NITROSODIETHYLAMINE	55-18-5	8270
N-NITROSODIMETHYLAMINE	62-75-9	8270
N-NITROSODIPHENYLAMINE	86-30-6	8270
N-NITROSOMETHYLETHYLAMINE	10595-95-6	8270
N-NITROSOMORPHOLINE	59-89-2	8270
N-NITROSOPIPERIDINE	100-75-4	8270
N-NITROSOPYRROLIDINE	930-55-2	8270
NAPHTHALENE	91-20-3	8270

NITROBENZENE	98-95-3	8260/8270
o-XYLENE	95-47-6	8260
p-XYLENE	106-42-3	8260
PCB'S (1016-1260)	VARIOUS	8082
PENTACHLOROBENZENE	608-93-5	8270
PENTACHLORODIBENZO-p-DIOXINS	NA	8290
PENTACHLORODIBENZOFURANS	NA	8290
PENTACHLOROETHANE	76-01-7	8260
PENTACHLORONITROBENZENE	82-68-8	8270
PENTACHLOROPHENOL	87-86-5	8270
PHENACETIN	62-44-2	8270
PHENANTHRENE	85-01-8	8270
PHENOL	108-95-2	8270
PHORATE	298-02-2	8270
PHTHALIC ANHYDRIDE	85-44-9	8270
PRONAMIDE	23950-58-5	8270
PYRENE	129-00-0	8270
PYRIDINE	110-86-1	8260/8270
SAFROLE	94-59-7	8270
TETRACHLORODIBENZO-p-DIOXINS	NA	8290
TETRACHLORODIBENZOFURANS	NA	8290
TETRACHLOROETHENE	127-18-4	8260
TOLUENE	108-88-3	8260
TOXAPHENE	8001-35-2	8081
TRANS-1,2-DICHLOROETHENE	156-60-5	8260
TRANS-1,3-DICHLOROPROPENE	10061-02-6	8260
TRICHLOROETHENE	79-01-6	8260
TRICHLOROFLUOROMETHANE	75-69-4	8260
TRIS(2,3-DIBROMOPROPYL) PHOSPHATE	126-72-7	8270
VINYL CHLORIDE	75-01-4	8260

Norlite Corporation Clinker Analysis

List of Metals to be Analyzed for Hazardous Waste Characteristic and LDR Compliance

Table 2

METALLIC ANALYTE	Cas No.
Antimony	7440-36-0
Arsenic	7440-38-2
Barium	7440-39-3
Beryllium	7440-41-7
Cadmium	7440-43-9
Chromium	7440-47-3
Lead	7439-92-1
Mercury	7439-97-6
Nickel	7440-02-0
Selenium	7782-49-2
Silver	7440-22-4
Thallium	7440-28-0
Vanadium	7440-62-2
Zinc	7440-66-6

WAP Appendix 3

Emission Factors for #6 Fuel Oil

Table 1.3-10. EMISSION FACTORS FOR TRACE ELEMENTS FROM DISTILLATE FUEL OIL COMBUSTION SOURCES[a]

EMISSION FACTOR RATING: E

Firing Configuration (SCC)	Emission Factor ($lb/10^{12}$ Btu)										
	As	Be	Cd	Cr	Cu	Pb	Hg	Mn	Ni	Se	Zn
Distillate oil fired (1-01-005-01, 1-02-005-01, 1-03-005-01)	4	3	3	3	6	9	3	6	3	15	4

[a] Data are for distillate oil fired boilers, SCC codes 1-01-005-01, 1-02-005-01, and 1-03-005-01. References 29-32, 40-44 and 83. To convert from $lb/10^{12}$ Btu to pg/J, multiply by 0.43.

Table 1.3-11. EMISSION FACTORS FOR METALS FROM UNCONTROLLED NO. 6 FUEL OIL COMBUSTION[a]

Metal	Average Emission Factor[b, d] ($lb/10^3$ Gal)	EMISSION FACTOR RATING
Antimony	5.25E-03[c]	E
Arsenic	1.32E-03	C
Barium	2.57E-03	D
Beryllium	2.78E-05	C
Cadmium	3.98E-04	C
Chloride	3.47E-01	D
Chromium	8.45E-04	C
Chromium VI	2.48E-04	C
Cobalt	6.02E-03	D
Copper	1.76E-03	C
Fluoride	3.73E-02	D
Lead	1.51E-03	C
Manganese	3.00E-03	C
Mercury	1.13E-04	C
Molybdenum	7.87E-04	D
Nickel	8.45E-02	C
Phosphorous	9.46E-03	D
Selenium	6.83E-04	C
Vanadium	3.18E-02	D
Zinc	2.91E-02	D

[a] Data are for residual oil fired boilers, Source Classification Codes (SCCs) 1-01-004-01/04.

[b] References 64-72. 18 of 19 sources were uncontrolled and 1 source was controlled with low efficiency ESP. To convert from $lb/10^3$ gal to $kg/10^3$ L, multiply by 0.12.

[c] References 29-32,40-44.

[d] For oil/water mixture, reduce factors in proportion to water content of the fuel (due to dilution). To adjust the listed values for water content, multiply the listed value by 1-decimal fraction of water (ex: For fuel with 9 percent water by volume, multiply by 1-0.9=.91).

WAP Appendix 4

Sample Cooling Water Analysis

Norlite, LLC

628 SOUTH SARATOGA STREET
COHOES, NY 12047
(518) 235-0401

Client/Generator ID-Name: UNITED - COHOES (NORLITE)
Sample Identification: 003 METALS
Date Collected: 4/14/2014
Time Collected: 9:30 AM
Matrix: Water
Composite/Grab: GRAB
Number of Containers: 1
Manifest #:
Job ID:
Special Handling:
Receiving Plant: 628 SOUTH SARATOGA STREET
COHOES,NY 12047

Sample # : **S041514002**
Sample Type: Customer Sample
Target: INTERNAL
Profile#:
Sampled By: TL
Condition: Intact
Condition Comment: pH<2 VERIFIED UPON RECIPT
Temperature: 16.7 C
Rcvd within Holding time: Yes
Visual Inspection Memo: CLEAR LIQUID

Analytical Information

Parameter	Analytical Method	Flags	Result	Unit	Date Reference
Sulfur	EPA 200.7 *NON-NELAP		51.3	mg/L	4/15/2014
Arsenic	EPA 200.7		ND< 0.040	mg/L	4/15/2014
Beryllium	EPA 200.7		ND< 0.005	mg/L	4/15/2014
Cadmium	EPA 200.7		ND< 0.002	mg/L	4/15/2014
Chromium	EPA 200.7		ND< 0.005	mg/L	4/15/2014
Copper	EPA 200.7		ND< 0.010	mg/L	4/15/2014
Lead	EPA 200.7		ND< 0.020	mg/L	4/15/2014
Barium	EPA 200.7		0.061	mg/L	4/15/2014
Nickel	EPA 200.7		ND< 0.015	mg/L	4/15/2014
Antimony	EPA 200.7		ND< 0.050	mg/L	4/15/2014
Selenium	EPA 200.7		ND< 0.050	mg/L	4/15/2014
Silver	EPA 200.7		ND< 0.005	mg/L	4/15/2014
Thallium	EPA 200.7		ND< 0.050	mg/L	4/15/2014
Zinc	EPA 200.7		ND< 0.025	mg/L	4/15/2014
Metals Digestion	EPA 200.7		Complete		4/15/2014 7:49AM
Mercury	EPA 245.1		ND< 0.200	ug/L	4/16/2014
Mercury Digestion	EPA 245.1		Complete		4/16/2014 8:43AM

WAP Appendix 5

Sample Calculation for Used Oil Fuel Contribution

NORLITE CORPORATION
PILOT FUEL CONTRIBUTION CALCULATIONS

	Liquid Feed Limits	Fuel Oil[1]	Spec Used Oil Fuel[2]	Quarry Plant Water[3]
Arsenic	0.2095	1.32E-04	3.34E-05	None Detected
Beryllium	0.0119	3.60E-05	1.34E-05	None Detected
Cadmium	0.3192	3.98E-04	9.36E-06	None Detected
Chromium	5.9849	8.45E-05	3.14E-04	None Detected
Copper	9.4838	1.76E-04	1.68E-02	None Detected
Lead	4.0349	1.51E-04	3.85E-03	None Detected
Barium	0.9731	2.57E-04	7.48E-03	3.08E-04
Mercury	0.0064	3.60E-05	6.69E-05	None Detected
Nickel	6.164	8.45E-03	3.34E-05	None Detected
Antimony	0.2222	5.25E-04	2.61E-04	None Detected
Selenium	0.12	6.83E-04	2.68E-05	None Detected
Silver	0.1345	no data	4.88E-04	None Detected
Thallium	0.2626	no data	2.68E-05	None Detected
Zinc	10.3243	2.91E-03	4.85E-01	None Detected
Halogens	82.3	3.47E-02	3.34E-01	Not Tested

All units are pounds/hour

[1]Norlite burns less than 100 gallons per hour; the AP-42 data is presented at 1000 gallons per hour. This table presents Norlite's calculated emissions with no credit taken for the APC system. Also note that the data for Beryllium and Mercury are derived from the distillate fuel emission factors since they are higher than for No 6 oil.

[2]Typical analysis used for demonstration purposes only; detection limits are used instead of zero

[3] Quarry water is typically fed at a maximum rate of five (5) gallons/minute. The metal mass feed rate is calculated at this rate.