New York State Department of Environmental Conservation
Division of Environmental Remediation
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Joe Martens
Commissioner

October 31, 2014

Mr. Thomas Van Vranken
Environmental Manager
Norlite LLC
628 So. Saratoga Street
Cohoes, New York 12047

RE: Minor Permit Modification of Hazardous Waste Management Permit
Norlite LLC, NYSDEC Permit No. 4-0103-16/16
EPA ID No. NYD080469935

Dear Mr. Van Vranken:

The New York State Department of Environmental Conservation (NYSDEC) has completed review and hereby approves of the minor permit modification request to update the methods for analyzing PCBs in liquid waste and analyzing metals in liquid fuels and shale. This permit modification goes into effect on November 4, 2014. This permit modification is based on your minor permit modification request dated October 29, 2014. This permit modification is a minor modification pursuant to 6 NYCRR 373-1.7(c)(2)(i)('a').

Permit pages reflecting the changes from your requested modification include Module V pages 2 and 4, and Section C pages 1 – 87 of 115 and Table WAP-1. Please replace these pages in your copy of the permit with the enclosed modified pages. Under 6 NYCRR Part 373-1.7(e), Norlite is required to notify all persons on the facility mailing list of the modification. Please provide this office a copy of your notification for our records.

If you have any questions, please contact me at (518) 402-9814.

Sincerely,

Thomas J. Killeen, P.E.
Chief, RCRA Permitting Section

Enclosure

ec: D. Gardell
D. Lates
D. Maikels
N. Baker, Region 4
J. Quinn, Region 4
J. Hadersbeck, Region 4
A. Everett, USEPA
W. Palomino, USEPA

exceed 100 ppmv on an hourly rolling average basis (i.e., over any 60 minute period) continuously corrected to 7% oxygen, dry gas basis as explained in Condition D(3) of this module. CO and oxygen shall be continuously monitored and recorded by continuous emission monitors (CEMs) in conformance with "Performance Specifications for Continuous Emission Monitoring of Carbon Monoxide and Oxygen for Incinerators, Boilers, and Industrial Furnaces Burning Hazardous Waste" in Appendix 49 of 6 NYCRR Subpart 374-1.

(5) The permittee must control emissions of toxic metals from the LWAKs by limiting the total feed rate of each metal into the unit, as specified in Condition C(6) of this module

(6) $S0_2$ stack emissions shall not exceed 30 lbs/hr/kiln.

(7) Stack emissions of nitrogen oxides measured as NO_2 shall not exceed 61 lbs/hr/kiln.

(8) Compliance with the operating conditions specified in this permit will be regarded as compliance with the above performance standards. However, evidence that compliance with such permit conditions is insufficient to ensure compliance with the above performance standards may be "information" justifying modification, revocation, or suspension of the permit pursuant to 6NYCRR 621.14.

C. LIMITATION ON KILN FEEDS TO BE BURNED AND/OR ACCEPTED:

(1) The permittee may feed raw shale to the LWAKs to produce light weight aggregate (LWA). The Permittee may feed natural gas, no. 2, 4, 6 fuel oil, diesel & kerosene (virgin or re-refined), On-specification used oil (as defined in 6 NYCRR Part 374-2), off-specification used oil (as defined in 6 NYCRR Part 374-2), Waste Fuel A (as defined in 6 NYCRR Part 225-2.2(b)(9)), Waste Fuel B (except B-2) (as defined in 6 NYCRR Part 225-2.2(b)(10)), comparable fuels (as defined & meeting the requirements of 6 NYCRR Part 371.4(i)) and LLGF (i.e. liquid hazardous waste as described in Attachment C of this permit) from the front end of the kiln. The Permittee may burn LLGF in conjunction with one or more of the streams listed above.

(2) No LLGF or combination of LLGF & other feeds (except raw shale) listed in condition C(1) above, as fed to the LWAKs, shall exceed the design thermal capacity of 62M BTU/hr per kiln on an hourly rolling average basis.

(3) The total chlorine (both organic & inorganic) fed to the LWAKs through LLGF or combination of LLGF & other feeds listed in condition C(1) above shall not exceed 82.3 lb/hr per kiln on a 12 hour rolling average basis.

(4) The permittee shall not incinerate feeds listed in condition C(1) above containing over 25 ppm total PCBs (defined as the sum of the quantified Arochlors from ASTM 6160).

(8) The Permittee shall not accept and/or burn the following:

(a) Listed hazardous waste containing pesticides and/or herbicides or characteristics hazardous waste codes D012 to D017, D020 and D031.

(b) Hazardous Wastes, Off-specification used oil, Waste Fuel A, B and non-hazardous wastes with total PCBs (defined as the sum of the quantified Arochlors from ASTM 6160) greater than 25 ppm or any regulated PCBs wastes as defined in 6NYCRR 371 and 40 CFR Part 761. The Permittee shall provide written notice to the Department of any LLGF, off-Specification used oil fuel or Waste Fuel A shipment received with a total PCBs greater than 10 ppm within 24 hours of receipt of the analytical results.

(c) Hazardous Wastes, On-specification used oil, Off-specification used oil, Waste Fuel A, B and non-hazardous wastes containing polychlorodibenzo-p-dioxins (PCDD), polychlorodibenzo-p-furans (PCDF) or hazardous wastes with the following waste codes: F020, F021, F022, F023, F026, F027 and F028.

(d) Hazardous waste prohibited from thermal treatment pursuant to 6 NYCRR 376.1(c)(3), this permit and its attachments.

(e) Waste Fuel B-2 as defined in 6NYCRR Part 225-2.2(b)(10).

(f) Radioactive mixed waste.

(9) The permittee shall feed mined raw shale only from the back-end of the kilns to manufacture light weight aggregate. The permittee shall not feed contaminated shale or soil to the kilns to manufacture light weight aggregate.

(10)

[A] No used oil (on or off-specification) or mixture of used oil (on or off-specification) with Waste Fuel A and/or virgin oils can be accepted unless analyzed prior to acceptance and off-loading in accordance with 6 NYCRR 374-2 and the permittee's waste analysis plan (Attachment C). For the used oil (on or off-specification) or mixture of used oil (on or off-specification) with Waste Fuel A and/or virgin oils to be stored, burned and/or sold, the permittee shall meet the requirements of 6 NYCRR 374-2 and must ensure that the following additional criteria are met:

(a) Such oil

(i) is not a hazardous waste as defined by 6NYCRR 371 and the criteria found in this permit and attachments.
(ii) has a PCB concentration of 25 ppm or less.
(iii) is not an admixture of listed hazardous waste as defined in 6 NYCRR 371.4.
(iv) is not an admixture of comparable fuels as defined in 6 NYCRR 371.4(i)

SECTION C

WASTE CHARACTERISTICS AND WASTE ANALYSIS PLAN

This section describes the chemical and physical nature of hazardous wastes stored at Norlite Corporation and the Norlite Waste Analysis Plan for sampling/ testing/ and evaluating the wastes to assure that sufficient information is available for their safe handling. This information is submitted in accordance with the requirements of 6NYCRR Subpart §373-1.5(a)(2)(ii) and (iii) and 6NYCRR Subpart §373-2.2(e)(1), (2) and (3) and 6NYCRR Subpart §373-2.2(I). The Waste Analysis Plan was developed using Waste Analysis At Facilities That Generate, Treat/ Store And Dispose Of Hazardous Wastes/ A Guidance Manual, PB94-9636031 OSWER 9938.4-03, April 1994. The entire Section C constitutes the waste analysis plan.

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 site materials that are generated in this process are accumulated in drums or containers for proper disposal.

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.

In this application, Norlite has stressed the waste characterization necessary for the safe tank and

container storage of its hazardous waste as well as combustion of hazardous waste so that no pretreatment of the waste is necessary. In that regard Norlite has implemented practices to assure no difficulties with the waste/tank compatibility. Norlite's Waste Analysis Plan has been designed to meet the requirements of the state and federal hazardous waste regulations/ the state air pollution regulations and Norlite's own safety needs.

C-1 Facility Description

C-l(a) Description of Facility Processes and Activities

Hazardous wastes are stored at Norlite's facility in four (4) covered tanks with a capacity of *96,000* gallons, six (6) 7300-gallon tanks, four (4) 1,000-gallon tanks, 85-gallon or smaller drum containers/ and rolloffs. The design specifications for the container storage area and for the storage tanks are described in Section D. The hazardous wastes received are blended and used as fuel in two lightweight aggregate kilns.

C-l(b) Identification of Hazardous Wastes Managed

Norlite has developed a program to ensure the proper identification of waste with a proper chemical and physical analysis. A LLGF Specification Sheet is

submitted by each generator or blender. Exhibit C-1 shows a copy of the LLGF Specification 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 LLGF Specification 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 LLGF Specification Sheet to assure that the material to be received can meet the permit limits and the compatibility requirements.

C-l(b) Characteristic Flammable Waste

Typical constituents in D001 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
Ethers	Esters

Halogenated Organics Alcohols

Aldehydes Ketones

Organic Nitro Compounds in an organic solution

Phenols or Cresols in an organic solution

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.

C-l(b)(2) Corrosive and Reactive Waste

In addition, certain corrosive D002 wastes may be contained in the LGF 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. Norlite will not accept waste(s), which exhibit the reactivity characteristic pursuant to SOP#4-10. However, certain generator waste streams may still re ire the D003 waste number designation to ensure compliance with Land Disposal Restriction (LDR) and waste characterization requirements.

C-l(b)(3) Toxicity Characteristic Wastes

In addition, combustible waste that may have heavy metals content, which makes it characteristically hazardous lS acceptable if the metal content is controlled to not exceed the permittffi maximum feed rate levels of the metal in the total hazardous waste fed to the kiln. These Waste Codes include the following:

Metal	EPA Waste Code
Arsenic	D004
Barium	DOOS
Cadmium	D006
Chromium	D007
Lead	D008
Mercury	D009
Selenium	DOlO
Silver	DOll

Waste codes D004 through DOll 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 ln 6 NYCRR 376.l(c)(3). Norlite will ensure and document on the LLGF Specification 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 organlc wastes are accepted if they are within the specifications listed herein (e.g., BTU Value, total chlorine content, etc.).

EPA Waste Code	Organic Constituent
D018	Benzene
D019	Carbon tetrachloride
D021	Chlorobenzene
D022	Chloroform
D023	a-Cresol
D024	m-Cresol
D025	p-Cresol
D026	Cresol
D027	1,4-Dichlorobenzene
D028	1,2-Dichloroethane
D029	1,1-Dichloroethylene
D030	2,4-Dinitrotoluene
D032	Hexachlorobenzene
D033	Hexachlorobutadiene
D034	Hexachloroethane
D035	Methyl ethyl ketone
D036	Nitrobenzene
D037	Pentachlorophenol
D038	Pyridine
D039	Tetrachloroethylene
D040	Trichloroethylene

D041	2,4,5-Trichlorophenol
D042	2,4,6-Trichlorophenol
D043	Vinyl chloride

C-l(b)(4) Listed Non-Specific Source Waste (F Specified 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.

FOOl	F002	F003	F004	F'005	F032
F034	F035	F037	F038	F'039	

C-l(b)(5) Listed Specific Source Waste (K **Specified Waste)**

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

KOOl	K023	K083	K116
K002	K024	K084	K117
K003	K025	K085	K118
K004	K026	K086	K136
KOOS	K027	K087	K141
K006	K028	K093	Kl42
K007	K029	K094	K143
KOOB	K030	K095	Kl44
K009	K046	K096	K145
KOlO	K048	KlOO	K147
KOll	K049	KlOl	K148
K013	KOSO	K102	Kl49
K014	K051	K103	K150
K015	K052	K104	K151
K016	K060	K105	Kl52
K017	K061	Klll	K156
K018	K062	K112	Kl57
K019		Kll3	K158
K020		K114	Kl59
K022		Kll5	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 KOOB, 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 LLGF Specification 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.

C-l(b)(6) Listed Hazardous Chemical Wastes (U and P Specified Wastes)

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 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	P026	P068	Pll8
P003	P027	P069	P119
POOS	P029	P074	P120
P007	P030	P077	Pl21
POlO	P034	P082	P188

P0ll	P036	P084	Pl90
P012	P038	P093	P191
P013	P041	P099	P204
P014	P042	Pl0l	
P016	P046	Pl03	
P017	P048	Pl04	
P0l8	P049	Pl05	
P021	P054	Pll0	
P022	P060	Pll3	
P023	P062	P114	
P028	P064	P116	
	P067		

Waste codes P010, P011, P012, P013, P029, P074, P099, P104, Pll3, Pll4, P119 and Pl20 are prohibited from combustion under the Land Disposal Restrictions (LDR) unless the waster at the point of generation/ meets one or more of the six (6) criteria listed in 6 NYCRR 376.l(c)(3). Norlite will ensure and document on the LLGF Specification 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.

U00lAcetaldehyde (Ethanol)
U002Acetone (2-Propanone)
U003Acetonitrile (Ethane nitrate)
U004Acetophenone
U0052-Acetylaminofluorene
U006Acetyl chloride
U007Acrylamide
U00BAcrylic acid (2-Propenoic acid)
U009Acrylonitrile
U010Azirino(2' ,3':3,4)pyrrolo(1,2-a)indole-4,7 diane
U012Aniline U015Azaserine
U016Benz[c]acridine
U017Benzene, dichloromethyl
U018Benz (a) anthracene
U019Benzene
U020Benzenesulfonic acid chloride
U021Benzidine U022Benzo (a)
pyrene U024Dichloromethoxy
ethane U025Dichloroethyl
ether U027Dichloroisopropyl
ether
U028 1,2 Benzenedicarboxylic acid, bis (2-ethylhexyl)ester U029Methyl bromide
U0304-Bromophenyl phenyl ether
U031Butanol (Butyl alcohol)
U034Chloral
U035Chlorambucil
U037Chlorobenzene
U039P-chloro-m-cresol, Phenol, 4-chloro-3-methyl-
U041Epichlorohydrin
U0422-chloroethylvinyl ether, Ethene, (2-chloroethoxy)-
U043Ethene, chloro

U044Chloroform (Methane, trichloro)
U045Methane, chloro (Methyl chloride)
U046Chloromethyl methyl ether, methane, chloromethoxy-
U047Beta-Chloronaphthalene
U0480-Chlorophenol, Phenol, 2 chloro
U049Benzenamine 4-chloro-2-methyl-hydrochloride, 4-chloro-o-toluidine, hydrochloride
UOSOChrysene
U051Creosote
U052Cresols, cresylic acid
U053Crotonaldehyde
U055Cumene
U056Cyclohexane
U057Cyclohexanone
U059Daunomycin
U063Dibenz [a,h] anthracene
U064Dibenzo [a,i] pyrene
U068Methane, dibromo-
U069Dibutyl phthalate
U0701,2-Dichlorobenzene (a-Dichlorobenzene)
U0711,3-Dichlorobenzene (m-Dichlorobenzene)
U0721,4-Dichlorobenzene (p-Dichlorobenzene)
U0733,3'-Dichlorobenzidine
U0742-Butene, 1,4-dichloro
U075Dichlorodifluoromethane
U076Ethane, 1,1-dichloro
U077Ethane, 1,2-dichloro
U078Ethene, 1,1-dichloro (1,1-dichloroethylene)
U079Ethene, trans 1,2-dichloro (1,2-dichloroethylene)
U080Methylene, dichloro (Methylene chloride)
U0812,4-Dichlorophenol
U0822,6-Dichlorophenol
U083Dichloropropane

U0851,2:3,4-Diepoxybutane
U086N,N'-Diethylhydrazine
U0870,0-Diethyl 8-methyl dithiophosphate
U088Diethyl phthalate
U089Diethylstilbesterol
U090Dihydrosafrole
U0913,3'-Dimethoxybenzidine
U092Dimethylamine
U093P-Dimethylaminoazobenzene
U0947,12 Dimethylbenz [a] anthracene
U0953,3'-Dimethylbenzidine
U096alpha,alpha-Dimethylbenzylhydroperoxide
U097Dimethylcarbamoyl chloride
U098Hydrazine, l,l-dimethyl-
U099Hydrazine, 1,2-dimethyl-
Ul012,4-Dimethylphenol
Ul02Dimethyl phthalate
Ul03Dimethyl sulfate
Ul052,4-Dinitrotoluene
Ul062,6-Dinitrotoluene
Ul07Di-n-octyl phthalate
Ul081,4-Dioxane
Ul091,2-Diphenylhydrazine
U110Dipropylamine
U111Di-n-propylnitrosamine
Ull2Ethylacetate
Ull3Ethylacrylate
Ull4Ethylenebisdithiocarbamic acid, salts & esters
Ull5Ethylene oxide
Ull6Ethylenethiourea
Ull7Ethyl ether
UllBEthylmethacrylate
Ull9Ethyl methanesulfonate
Ul20Fluoranthene
Ul21Methane, trichlorofluoro-

U122Formaldehyde
U123Formic acid
U124Furan (Furfuran)
U1252-Furancarboxaldehyde (Furfural)
U126Glycidylaldehyde
U127Hexachlorobenzene
U128Hexachlorobutadiene
U131Ethane, 1,1,1,2,2,2-hexachloro
U133Hydrazine
U134Hydrofluoric acid
U135Hydrogen sulfide
U137Indeno [1,2,3-cd] pyrene
Ul38Methane, iodo-
U140Isobutyl alcohol
U141Isosafrole
U143Lasiocarpine
U144Lead acetate U146Lead
subacetate U147Maleic
anhydride
U149Malononitrile
U150Melphalan
U152Methacrylonitrile
U153Methanethiol
Ul54Methanol
U155Methapyrilene
U156Methylchlorocarbonate
U1573-Methylcholanthrene
U1584,4'-Methylenebis (2-chloroaniline)
U159Methyl ethyl ketone (Butanone)
U160Methyl ethyl ketone peroxide
U161Methyl isobutyl ketone (4-Methyl-2-pentanone)
U162Methyl methacrylate
U163N-methyl N'-nitro N-nitroguanidine
U164Methylthiouracil

U165Naphthalene
U1661,4-Naphthalenedione
U167Alpha-Naphthylamine
U168Beta-Naphthylamine
U169Nitrobenzene
U170P-Nitrophenol
U1712-Nitropropane
U172N-Nitrosodi-n-butylamine
U173N-Nitrosodiethanolamine
U174N-Nitrosodiethylamine
U176N-Nitroso-N-ethylurea
U177N-Nitroso-N-methylurea
U178N-Nitroso-N-methylurethane
U179N-Nitrosopiperidine
U180N-Nitrosopyrrolidine
U1815-Nitro-o-toluidine
U182Paraldehyde
U183Pentachlorobenzene
U1861,3-Pentadiene (1-Methylbutadiene)
U187Phenacetin
U188Benzene, hydroxy (Phenol)
U190Phthalic anhydride
U1912-Picoline
U1931,3-Propane sultone
U1941-Propanaimine (n-Propylamine)
U196Pyridine
U1972,5-Cyclohexadiene-1,4-dione
U201Resorcinol
U202Saccharin, & salts
U203Safrole
U206Streptozotocin
U207Benzene,1,2,4,5-tetrachloro
(1,2,4,5-Tetrachlorobenzene)

U208Ethane,1,1,1,2-tetrachloro(1,1,1,2-Tetrachloroethane)
U209Ethane,1,1,2,2-tetrachloro(1,1,2,2-Tetrachloroethane)
U210Ethene, tetrachloro (Tetrachloroethylene)
U211Methane, tetrachloro (Carbon tetrachloride)
U213Tetrahydrofuran
U214Thallium acetate
U218Thioacetamide
U219Thiourea
U220Toluene (Benzene, methyl)
U221Benzenediamine, ar-methyl-, Toluenediamine
U222o-Toluidine hydrochloride
U223Toluene diisocyanate
U225Methane, tribromo-
U226Methylchloroform (1,1,1-trichloroethane)
U277Carbamodithioic acid, diethyl-,2-chloro-2,propenyl ester
U375Carbamic acid, butyl-, 3-iodo-2-propynyl ester
U376Carbamodithioic acid,dimethyl-tetraanhydrosulfide with orthothioselenious acid
U377Potassium n-methyldithiocarbamate
U378Potassium n-hydroxymethyl-n-methyldi-thiocarbamate
U379Sodium dibutyldithiocarbamate
U381Sodium diethyldithiocarbamate
U382Sodium dimethyldithiocarbamate
U383Potassium dimethyldithiocarbamate
U384Metam Sodium
U385Carbamothioic acid, dipropyl-, S-propyl ester
U386Carbamothioic acid, cyclohexylethyl-, s-ethyl ester
U387Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester

U390Carbamothioic acid, dipropyl-, 8-ethyl ester
U391Carbamothioic acid, butylethyl-, S-propyl ester
U400Bis(pentamethylene)thiuram tetrasulfide
U401Bis(dimethylthiocarbamoyl) sulfide
U402Thioperoxydicarbonic diamide, tetrabutyl
U403Thioperoxydicarbonic diamide, tetraethyl
U404Triethylamine
U407Ethyl Ziram
U410Tiodicarb
U227Ethane, 1,1,2-trichloro (1,1,2-trichloroethane)
U228Trichloroethene (trichloroethylene)
U235Tris(2,3-dibromopropyl) phosphate
U236Trypan blue
U238Ethyl carbamate (urethane)
U239Xylene (Benzene, dimethyl)
U2431-Propene, 1,1,2,3,3,3-hexachloro-
U244Thiram
U246Cyanogen bromide
U328o-Toluidine U353p-
Toluidine U359Ethanol,
2-ethoxy- U392Butylate
U393Copper dimethyldithiocarbamate
U394A2213
U395Diethylene glycol, dicarbamate
U396Ferbam

C-l(c) 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 Section D, Section F (under Inspection), and Section G -- the Emergency and Contingency Plan. The LLGF, having been pre-screened, is non-corrosive to the glass-lined (Tanks 300-600) or carbon steel (Tanks 100 AB,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 LLGF Specification Sheet, and with the Norlite analysis provided prior to burning and unloading.

C-l(d) 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 ln 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 as shown by EPA Method 9095A, or the most current version, 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 as shown by EPA Method 9095A$_1$ 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 Section D. 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).See Sections D-2 and D-4 for further information on tank and filter cleaning.

Norlite also 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 storm water 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.

C-l(e) 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 Table WAP-1. 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:

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 startup 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] of this Subpart and does not contain chemical waste.

FUEL CONSTITUENTS/PROPERTY

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

{ll Parts per million (ppm) by weight (water free basis) of fuel

{[21] PCB limits in this permit are <25 ppm, with notification if waste fuel PCB is >10 ppm.

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

C-l(e) 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 benchmark 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 fuel. Although Norlite will rely on the sampling and analysis plan required of the generator under 6 NYCRR 371-4(i), sampling and analysis of each load will be performed to confirm heat content, bottom sediment and PCBs. Norlite will analyze one load of every ten loads of each comparable fuel stream for the full LLGF analysis described on Table WAP-1 to ensure the full quality and consistency of the comparable fuel.

Norlite will manage comparable fuels in used oil tanks as described in Section D 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).

C-1(f) Remedial Waste

Norlite Corporation shall not accept hazardous waste from remedial activities unless it is in pumpable liquid form and has 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.

C-l(g) 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. Essentially, 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. Reviewing 6 NYCRR Part 200, it appears that compliance with RCRA Subpart o and the Hazardous Waste Combustors MACT requirement 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.

C-2 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.

C-2(a) Rationale for Parameter Selection

An accurate representation of a waste's physical and chemical properties ıs 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 tmt are incompatible or inappropriate given the type of management practices used by the facility).

C-2(b) 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, analysis of these parameters are considered in this plan. Norlite has performed a trial burn 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 trial burn 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 special nature of a combustion facility, the contribution 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 and Waste Fuel B streams is characterized to account for its contribution of the key parameters as is the specification used oil fuel, comparable fuels, natural gas and vi in fuel oils. The shale raw material that becomes the lightweight aggregate is also characterized to account for its contribution of metals to the process.

C-3 Sampling Procedures

Sampling is performed using the procedures described in EPA SW-846, 3rd Edition, September 1986, Chapter 9.

C-3(a) 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, comparable fuels and virgin fuels from each tanker is accomplished with an aluminum coliwasa sampler with a teflon stopper. The sampling tool

is similar to that described in EPA SW-846, Third Edition, 9/86, Chapter 9. Section 9.2.2.4 and reference in Part 371 - Appendix 19. Aluminum is used because of its non-sparking characteristics. Previous testing experience shows the aluminum not to be corroded, and it also minimizes the risk of breakage.

Sampling is accomplished through the top hatch of the tank truck. Since the coliwasa is 96", it ensures that a full cross-section of the tank truck can be sampled. Sufficient sample is taken to fill a 500 ml glass jar. If there is more than one compartment, a proportional representation is taken from each compartment. In this case, composite samples will be taken from the top, middle, and bottom third of the truck.

Between each use of a sampler, it lS washed and rinsed to assure the removal of any contamination from previous samples. Likewise, the pitchers are rinsed between each use.

Approximately, a 500 ml. aliquot is taken to perform the waste analysis and waste evaluation. The aliquot lS labeled and carried to the laboratory analysis.

After analysis, the remainder of the sample is stored ln 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 LLGF Specification Sheet provided by the Generator. With the LLGF Specification 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.

C-3(b) 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 SOPs in the attachments to the Waste Analysis Plan.

Samples of drums are taken in order to complete the analysis required in the waste analysis plan as described in Section C-5(j)

C-3(c) Storage Tanks

As necessary, 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 non-agitated tanks, a composite of sample is taken from the top third, middle third, and bottom third of the tank.

C-3 (d) 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. Tre 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.

C-3(e) 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 following Norlite procedures.

C-3 (f) Retained Samples

For future reference, approximately a 300 ml. sample representative of each LLGF delivery will be placed in a clean glass jar with a teflon lined cover. The jar top marked to indicate the following:

A. Date received
B. Norlite sample number
C. Generator

Each such 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 a material, whichever is longer.

C-4 Laboratory Testing and Analytical Methods

With the exception of select organic constituent analysis (i.e. pesticide and dioxin/furan analysis), analyses, including PCBs and other analyses under this waste analysis plan, as listed below in this paragraph, 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") p:-ogram has been set

up for the Norlite laboratory for the parameters analyzed:

specific gravity
quantity verification
heat of combustion (BTU)
total halogens
compatibility
viscosity
PCBS
metals.

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.

C-4(a) Specific Gravity

The specific gravity is measured by the hydrometer method because of the ease and reliability, or by measuring the weight per unit volume of material. Small quantities of sludge or sampling discoloration do not affect the method. Neither does evaporation affect the results significantly. The hydrometer reading is taken in a 100 ml. graduated cylinder in accordance with Norlite SOP#4-003. The specific gravity result is used as an indicator of conformity of the waste to the original pre-shipment waste stream characterized. 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.

C-4(b) Quantity Verification

Each tanker truck load of LLGF will be weighed before and after unloading, and the net weight determined. The quantity verifications is 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.

C-4(c) Compatibility

A 100 ml. Portion of the representative sample from each LLGF delivery is mixed in a container with a 600 ml. Portion of a LLGF sample representative of the storage tank into which the LLGF is to be unloaded (for Tanks 300-600). For the smaller LLGF storage tanks, lOOA,B&C and 200A,B&C, a 100 ml aliquot is used for the tank sample, since these tanks are of similar capacity to a tanker load. A thermometer will be used to measure any temperature rise. Observations of the mixed samples are made at least every five minutes for up to 30 minutes to determine if any adverse reactions have taken place particularly heat generation and polymerization. A temperature rise of 10°C is used since that will be large enough to indicate a reaction has occurred. If the temperature rise is between 5°C and 10°C, special handling

consideration concerning the rate of blending will be made.

In addition, ASTM D-34 Proposal P. 168 provides a compatibility chart for hazardous waste. The relevant part on the chart is included in Norlite SOP#4-063 to assist the laboratory in recognizing possible incompatibilities.

C-4 (d) Heat of Combustion

A portion of the sample from each LLGF delivery shall be used to determine heat of combustion by Parr oxygen bomb calorimeter in accordance with Table WAP-1. Heat of combustion calculations will be recorded on the Norlite Corporation Low Grade Fuel Analysis Report. The following Parr Instrument Company manuals are also referred to as part of the heat of combustion analytical method:

(1) Parr Instrument Company Manual No. 147, "Instructions for the 1341 Plain Jacket Oxygen Bomb Calorimeter."

(2) Parr Instrument Company Manual No. 148, "Instructions and Methods for Parr Oxygen Bombs."

Calibration procedures are as described in the Parr Instrument Company Manual using Benzoic Acid. Each bomb is recalibrated every six months or before being put into service. Experience shows the Bomb Calibration factor does not change over the period of use. A complete combustion results in a decomposition of organics and the residue is triply rinsed with water for use in the chlorine analysis, therefore the decontamination is part of the procedure. If oxidation has not fully occurred, then a cleaning with soap, water and a solvent, and then rinsing with water is performed on the bomb. Sample analysis is conducted in duplicate for at least every 20th sample. Procedures are described in the "Instructions and Methods for Parr Oxygen Bombs."

C-4(e) Halogen Determination

The total halogen content is determined in accordance with 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, the combustate will be analyzed by the ion chromatography method pursuant to Table WAP-1. The concentrations of the individual halogens would then be summed to yield a value for "total halogens".

The total halogen determination is made using the test washings from the heat of combustion, employing a silver nitrate titration with dichloroflouresce in indicator. Total halogen calculations are recorded on the Norlite Corporation, Low Grade Fuel Analysis Report Form.

The total halogen determination for shale includes the Parr Bomb preparation followed by ion chromatography as described in Table WAP-1.

C-4(f) 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 the permit. See Section D-5(b).

The viscosity of the material will be determined in accordance with 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. Viscosity above 3000 SUS @80 deg F will be considered unpumpable.

C-4 (g) **Metals**

The laboratory will perform analysis for the 14 metals described in the permit. The methods employed are as described in Table WAP-1. 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.

C-4(h) PCBS

PCB analysis will be performed according to Table WAP-1 with a detection limit of not greater than 2 ppm for each Aroclor. Norlite will normally achieve a detection limit of 1 ppm 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 the quantified Aroclors from ASTM 6160. 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.

C-4(i) Bottom Sediment

Norlite determines bottom sediment as referenced on Table WAP-1. This test is a standard centrifuge test that separates mixtures into their immiscible layers. Norlite will not feed LLGF to the kilns that has bottom sediment in excess of 8.3%.

C-5 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.

C-5(a) Hazardous Waste Characterization

An LLGF Specification Sheet, found in Appendix C-5, 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 LLGF Specification 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

LLGF Specification 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 quantified by ASTM 6160. 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 anillytical results, if waste containing greater than 10 ppm of total PCBs is received.

C-5 (a) (1) Generator

In addition to the LLGF Specification 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 on Table WAP-1 LLGF Verification.

(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 WAP-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.

C-5 (a) (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 LLGF Specification 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 in WAP-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 applies 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 WAP-1 LLGF Verification.

(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 WAP-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 waste streams not meeting the foregoing definition.

(f) 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 WAP-1, adversely impairing plant operations, or is ineligible for thermal treatment by regulation.

(g) 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.

C-5(a) (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 depending on the material collected for burning (e.g., FOOl, F002, F003, FOOS and/or DOOl). 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^{o}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 lS characterized uslng 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 lS contaminated.

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

C-5(b) Hazardous Waste and Used Oil/Waste Fuel 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 C-3. The following PARAMETERS are analyzed from each bulk or containerized delivery of Low Grade Fuel - specific gravity, heat of combustion, total halogen content, 14 metals, compatibility and solid content (visual determination). 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 stream as defined above that exceed the acceptance limits described above or specified in Table WAP-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 C-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 C-5(d).

Norlite will not accept any off-specification used oil fuel/Waste Fuel A that exceeds the acceptance

limits described above or specified in Table WAP-1.

When Norlite accepts comparable fuels, a sample is taken and analyzed for heat content and total halogens. One load in each ten 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 fuel oils and natural gas are not sampled and analyzed.

C-5(c) Receipt of Hazardous Wastes Containing Pesticides and Herbicides

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

C-5(d) Blended LLGF for Burning

When preparing a tank of LLGF (which includes 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 C-5(b). 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 relatively accurate while the agitators are in operation because the top of the liquid remains fairly level.

C-5(d) (i) LLGF & Off-Specification Used Oil/Waste Fuel A 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. Appendix C-4 provides an example of the transfer log used to track the LLGF movements.

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-Specific ion 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.

C-5(d)(ii) LLGF & Off-Specification Used Oil/Waste Fuel A 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 C-3(c) 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 metals, 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) 0nk sample are used to prepare a WAP-2 form documenting fuel 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. Confirmation criteria and corrective action developed with the Department will be applied.

Norlite uses the same procedure for separately determining the contribution of heat value, metals and total halogens from the Off-Specific ion 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 Trial Burn, Air Dispersion Modeling and Risk Assessment evaluations were performed by ENSR. 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 4-009 which is titled "Process Control Procedure - Preparation for and Incineration of Waste Blends Containing High Concentrations of Organic Halogens or High BTU Materials".

C-5(e) Special Precautions for Ignitable 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 Sections D and F of this Application. 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 or other material 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.

C-5 (f) Combustion prohibition for inorganic wastes

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.l(c)8)(i) through (vi).

C-5(g) Shale Analysis

Shale is sampled as described in Section C-3(d). 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 shale. 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 Table WAP-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 a permitted maximum of 22 tons/hour. The form is posted in each kiln control room until the next quarry blast analysis is completed.

C-5(h) Bevill Exclusion Determination for APC Wastes

Pursuant to NYCRR 374-l.B(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)

C-5(h)(i) Nonmetal Constituents

Through the sampling and analysis plans described below/ the residues from the baghouse and the multiclone APC devicesand the filtercake produced from the treatment of the scrubber blowdown and will be analyzed for constituents of concern that are derived from 6 NYCRR Part 371 Appendix 23 (See Table 1). 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 g/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 non-wastewaters 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 on an annual basis. The list of analytes for the Bevill Exclusion is found in Appendix C-1.

C-5(h)(ii) 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 will be compared to the Toxicity Characteristic Leaching Procedure TCLP)extract concentration limits found in Appendix VII of 40CFR 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. The metals analysis will be performed on a monthly basis.

C-5(h)(iii) 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 ln SW-846.

C-5(i) LDR Determination for Clinker

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 non-wastewater Universal Treatment Standards (UTS) found in 40 CFR 268.48.

Norlite has proposed to incinerate solid hazardous wastes, termed "SLGF", and hazardous waste wastewater, separate from the LLGF feed. These two activities will not occur unless successfully demonstrated during an additional Trial Burn or "Miniburn". If Norlite engages in either or both of these activities, then the clinker becomes subject to 6 NYCRR 374-1.3(a)(2) and will follow the procedures indicated here.

Based on the thermal process, the clinker will not exhibit the characteristics of ignitablity, corrosivity or reactivity. Indeed, the material is quite inert. The material should also not be expected to contain any organic compounds or leachable metals. However, due to

varied feed and the remote 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 tre TCLP to show that the clinker does not exhibit the toxicity characteristic for metals and also meets the UTS. Norlite will sample and analyze clinker for metals and organics on monthly & annual basis, respectively, to ensure that it meets the non-wastewater standards of 6 NYCRR Part 376.4(j). Additionally, at the Department's request, Norlite shall sample and analyze clinker for metals & organics six & two times per year, respectively. Norlite may cease to perform the Department requested organic analysis after two years of the effective date of this permit, provided that, no organic is detected in the clinker samples analyzed during those two years.

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. Norlite does not expect a monthly analysis for organic compounds to be necessary due to the nature of the operation.

The samples shall be submitted to an ELAP-certified lab for analysis. Analysis shall include the TCLP extraction of the sample and analysis of the extract for the metals. For organic constituents, samples shall be extracted and analyzed by the prescribed methods found in SW-846 (See Table WAP-1). The list of analytes for the clinker LDR demonstration is found in Appendix C-2.

C-5(j) Incoming Drums

The samples taken as described in Section C-3(b) are composited and analyzed as described below:

Compatibility: 100% of the drums are sampled and analyzed individually for compatibility as described in Section C-4(c). 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. The analyses are performed as described in Section C-4.

Metals: Drums are usually emptied into Tank 200A and then the tank's contents are sampled and analyzed to determine the metals concentrations for blending purposes. The composite samples described above are not analyzed for metals. Should drums be emptied into a tank other than 200A, the tank's contents are sampled and analyzed to determine the metals concentrations.

C-5 (k) 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 verify 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 halogens. Since, the metal content of this product is fairly consistent and, since the flow rate of this product to the kiln is comparatively low, Norlite will establish 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 feed rate of the metals to the kilns. A monthly average of metals contribution will be maintained by averaging the metal 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 fuel used for 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 will be 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.

C-5(1) 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 & water, and PCBs. Viscosity will be tested only as necessary. The metal feed rates 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 fuel 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.

C-5(m) Determining Input Contributions From The Pilot Fuels & Cooling Water

In addition to the main burner assembly which feeds 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 contribution of metals, total halogens and heat content to the kiln from the pilot and cooling water as described below.

C-5(m)(i) 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 Table WAP-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.

C-5(m)(ii) Virgin Fuel Oil as Pilot Fuel

Norlite repeats the input calculations if the feed

rate changes for the pilot. Contributions of metals and total halogens from virgin fuel oil do not approach 1.0% of the federate limits for the fuel found in Table WAP-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 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 C-3.

There is a significant contribution of heat from the virgin fuel oil. For example, under normal operation, the virgin oil pilot contributes about 12 million BTU/hr to the process. This is at a feed rate of 1.5 gallons/minute. The exact heat from this feed is accounted for on each WAP-2 sheet when it is used.

Norlite repeats the input calculations if the feed rate changes for the pilot.

C-5 (m) **(iii) Comparable Fuels as Pilot Fuel**

Pursuant to 6 NYCRR 371-4(i), comparable fuels must

meet the specification of No.2 Fuel oil as listed in the regulation. The generator of a comparable fuel must 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 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.

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

C-5 (m) (iv) 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 C-3.

C-5 (m) (v) 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 halogens and certain metals. Typically, copper and zinc are present at concentrations that can contribute over 1.0% of the total mass feed rate to the kiln. The heat and 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 feed rate.

The contributions from the specification used oil fuel as used as pilot fuel are calculated on an average basis as discussed in Section C-5(k). The values are entered into the WAP-2 sheet and carried towards the total mass feed rate of the constituent. A sample calculation is found in Appendix C-3.

C-6 Waste Evaluation Frequency

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.

C-6(a) 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 C-5(a). 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 C-5(a). 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.

C-6(b) Hazardous Waste and Used Oil/Waste Fuel A Receipts

As described in Section C-5(b), all shipments of hazardous waste and used oil/Waste Fuel A are sampled and analyzed. All containers of wastes are sampled and composites are prepared as discussed in Section C-3. 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.

On a monthly basis, a random shipment from a Blender will be sampled and analyzed for pesticide and herbicide constituents. The sample will be taken from a shipment that has been characterized as being absent of pesticide and herbicide constituents.

On a quarterly basis, a random shipment from a Blender will be sampled and analyzed for PCDD/PCDF even though the characterization indicates these constituents to be absent.

The SW-846 Methods and acceptance criteria listed in Table WAP-1 shall be used for the analyses.

C-6(c) Onsite Generated Wastes

Wastes generated onsite are characterized at least annually. They are typically characterized when generated if they are to be reintroduced to Norlite's process or when they are shipped offsite to an authorized treatment facility.

C-6(d) Storage Tanks Prior To Burning

On a weekly basis, at least one (1) tank of LLGF will be sampled and analyzed prior to burning as per Sections C-3(c) and C-S(d)(ii). 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.

C-7 Laboratory Quality Assurance/Quality Control

Norlite has developed a quality assurance/quality control (QA/QC) plan that provides frr the attainment of desired quality levels in its onsite laboratory. The QA/QC plan 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/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/QC program and the list of methods for which the laboratory is certified has been submitted separately. As required by NELAP, tills 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 some analyses onsite as listed in Section C-4. 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 ln 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 monthly report to NYSDEC for comparison. On occasion, an independent, NYS ELAP certified laboratory may be utilized to confirm a result if an instrument in Norlite's laboratory is down for repairs or other reasons unknown.

C-8 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 theirown QA/QC records pursuant to their QA/QC plan. The laboratory also maintains copies of the analytical reports received from outside laboratories.

Waste characterization 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.

C-9 Tables

Tables WAP-1, WAP-2 and WAP-3 follow below.

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TABLE WAP-1
WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	TECHNIQUE	DETECTION LIMIT	RATIONAL FOR PARAMETER	PERMIT LIMITS	ACCEPTANCE LIMITS	SAMPLING AND ANALYSIS FREQUENCY
LLGF, OSUOF, WFA	Specific Gravity	ASTM-1298-85 Norlite SOP#4-012	Mass/Vol Measurement	(+/-) 0.002	Waste Verification			each load
LLGF, OSUOF, WFA	Viscosity	ASTM-D2983	Brookfield	Pumpability	3000 SUS @ 80^{0}F			when necessary
LLGF, OSUOF, WFA, CF, SUOF	Heat of Combustion BTU	ASTM-D240 Norlite SOP#4-064	Oxygen Bomb	100 BTU/lb	Assess Burning Efficiency Requirements			each load
LLGF, OSUOF, WFA, SUOF	Total Halogens	ASTM D808 (D2361) Norlite SOP#4-014	EPA 5050 and Modified EPA 9253 or EPA 9056	1,000 ppm	Halogen Content Required	82.3 lb/hr	<100,000 mg/kg	each load and one blended tank weekly
LLGF, CF	Bottom Sediment	Norlite SOP#4-049 ASTM-D1796-97	Centrifuge	0.50%	Solids Determination	<8.3%		for blended tanks when necessary
LLGF	Compatibility	Norlite SOP#4-063	Thermal Mixing	2 Degree C Temp Rise	Ensure Materials are compatible		5 Degree C Temp Rise	each load
		Oxidzer	Spot Test	Neg / Pos	Verify compliance with permit limits			each load
		Peroxide	Spot Test	Neg / Pos	Verify Absence of a Peroxide			each load
LLGF, OSUOF, WFA, CF, SUOF	PCB	ASTMD 6160 Norlite SOP#4-073 and SOP#4-074	GC	2 ppm per Aroclor	Compliance with permit limits	25 ppm total as sum of Aroclors	25 ppm total as sum of Aroclors	each load
LLGF, OSUOF, WFA, SUOF	Arsenic	EPA 3051/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.2095 lb/hr	<4300 mg/kg	each load, one blended tank weekly
	Beryllium	EPA 3051/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	0.0119 lb/hr	<243 mg/kg	each load, one blended tank weekly
	Cadmium	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.3192 lb/hr	<6500 mg/kg	each load, one blended tank weekly
	Chromium	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	5.9849 lb/hr	<12,200 mg/kg	each load, one blended tank weekly
	Copper	EPA 3051/6010	ICP	0.10 mg/kg	Verify Metals Below Permit Levels	9.4838 lb/hr	<100,000 mg/kg	each load, one blended tank weekly
	Lead	EPA 3051/6010	ICP	0.14 mg/kg	Verify Metals Below Permit Levels	4.0349 lb/hr	<82,000 mg/kg	each load, one blended tank weekly
	Barium	EPA 3051/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.9731 lb/hr	<20,000 mg/kg	each load, one blended tank weekly
	Mercury	EPA 7471A	Cold Vapor	95 ug/kg	Verify Metals Below Permit Levels	0.0064 lb/hr	<130 mg/kg	each load, one blended tank weekly
	Nickel	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	6.1640 lb/hr	<100,000 mg/kg	each load, one blended tank weekly
	Antimony	EPA 3051/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.2222 lb/hr	<4500 mg/kg	each load, one blended tank weekly
	Selenium	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.1200 lb/hr	<2400 mg/kg	each load, one blended tank weekly
	Silver	EPA 3051/6010	ICP	0.11 mg/kg	Verify Metals Below Permit Levels	0.1345 lb/hr	<2700 mg/kg	each load, one blended tank weekly
	Thallium	EPA 3051/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.2626 lb/hr	<5300 mg/kg	each load, one blended tank weekly
	Zinc	EPA 3051/6010	ICP	0.12 mg/kg	Verify Metals Below Permit Levels	10.3243 lb/hr	<150,000 mg/kg	each load, one blended tank weekly
LLGF	Pesticides	EPA 8081A/8141A/ 8151A	GC and GC/MS		Verify Absence	must be absent	must be absent	one load monthly
	Organic Hazardous Constituents	EPA 8260B/8270B	GC/MS		Verify Absence or Presence			initially and whenever the stream changes significantly
	PCDD/PCDF	EPA 8290	GC/MS		Verify Absence at EPA 8290 detection limits	Verify Absence at EPA 8290 detection limits	Verify Absence at EPA 8290 detection limits	one load quarterly

TABLE WAP-1
WASTE ANALYSIS PLAN

STREAM[2]	PARAMETER	ANALYTICAL METHOD[1][3]	TECHNIQUE	DETECTION LIMIT	RATIONAL FOR PARAMETER	PERMIT LIMITS	ACCEPTANCE LIMITS	SAMPLING AND ANALYSIS FREQUENCY
Raw Shale	Arsenic	EPA 3051/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	1.0752 lb/hr *		each blast
	Beryllium	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.0990 lb/hr *		each blast
	Cadmium	EPA 3051/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	0.3628 lb/hr *		each blast
	Chromium	EPA 3051/6010	ICP	0.02 mg/kg	Verify Metals Below Permit Levels	7.7800 lb/hr *		each blast
	Copper	EPA 3051/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	13.1200 lb/hr *		each blast
	Lead	EPA 3051/6010	ICP	0.06 mg/kg	Verify Metals Below Permit Levels	6.3597 lb/hr *		each blast
	Barium	EPA 3051/6010	ICP	0.07 mg/kg	Verify Metals Below Permit Levels	12.1700 lb/hr *		each blast
	Mercury	EPA 7471A	Cold Vapor	50 ug/kg	Verify Metals Below Permit Levels	0.0081 lb/hr *		each blast
	Nickel	EPA 3051/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	7.0600 lb/hr *		each blast
	Antimony	EPA 3051/6010	ICP	0.04 mg/kg	Verify Metals Below Permit Levels	0.3093 lb/hr *		each blast
	Selenium	EPA 3051/6010	ICP	0.05 mg/kg	Verify Metals Below Permit Levels	0.1728 lb/hr *		each blast
	Silver	EPA 3051/6010	ICP	0.03 mg/kg	Verify Metals Below Permit Levels	0.1781 lb/hr *		each blast
	Thallium	EPA 3051/6010	ICP	0.07 mg/kg	Verify Metals Below Permit Levels	0.3497 lb/hr *		each blast
	Zinc	EPA 3051/6010	ICP	0.08 mg/kg	Verify Metals Below Permit Levels	25.6093 lb/hr *		each blast
	Total Halogen	EPA 5050/9056	Bomb/Ion Chromatog		Verify Total Halogens Below Permit Levels	82.3 lb/hr *		each blast
Clinker	Metals	EPA 1311	ICP (Cold Vapor for Hg)	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		monthly, when applicable[4]
	Volatile Organics	EPA 5035/8015B/8021B/ 8260B	GC and GC/MS	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		annually, when applicable[4]
	Semivolatile Organics	EPA 3540C/8270B/8081A 8290/8082	GC and GC/MS	varied	Verify that Clinker meets LDR	6 NYCRR 376.4		annually, when applicable[4]
Multiclone Dust,	Metals	EPA 1311	ICP (Cold Vapor for Hg)	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		monthly
Baghouse Dust, FilterCake	Volatile Organics	EPA 5035/8015B/8021B/ 8260B	GC and GC/MS	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		annually
	Semivolatile Organics	EPA 3540C/8270B/8081A 8290/8082	GC and GC/MS	varied	Ensure Eligibility for Bevill Exclusion	6 NYCRR 374-1.8(m)		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

(3) The most updated official version of each method is used

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

* minus LLGF, OSUOF, Waste Fuel A contribution