



Working for a Greener Tomorrow

LL&S Recycling
A ReEnergy Company
59 Stiles Road, Suite 106
Salem, NH 03079

P: (603) 894-9800
F: (603) 894-9822
www.llsrecycling.com

October 24, 2014

Mr. Wayne Wheeler, PE
NHDES
Waste Management Division
Permitting & Design Review Section
29 Hazen Dr., P.O. Box 95
Concord, NH 03302-0095

Re: **LL&S, Inc., dba Lowell Road Wood Processing, Salem, NH**
Permit No. DES-SW-SP-94-002
Type I-B Permit Modification Application

Dear Mr. Wheeler:

Enclosed please find three (3) original, signed copies of a Type I-B Permit Modification Application for a revised O&M Manual and condition and 12,000 tons/yr (235 tons/wk) of additional high value recyclable asphalt shingles and source separated wood. Also enclosed please find a check for \$100 for the processing fee and copies of notifications sent to the Salem Board of Selectmen and Town Clerk and the Salem Regional Solid Waste District and copies of Certified Mail to abutters. Return receipts will be provided upon our receipt of these from all abutters.

This tonnage will be transferred without processing to our "sister" facility, Environmental Resource Return Corp. (ERRCO) in Epping, NH. ERRCO has the ability to process the asphalt shingles into an additive for hot mix asphalt pavement and the source separated construction and demolition debris wood into boiler fuel for use in power and steam generation. Because the materials are being transferred, not processed at LL&S, the increase in tonnage does not affect our processing facility's thru-put capacity. The facility O&M manual was last updated in 2002 and our operations have changed somewhat since then.

If you have any questions, please feel free to contact me. I am available by phone at 603-496-5175 or by e-mail at CNelson@reenergygateway.com.

Very truly yours,

LL&S, Inc.

Charles V. Nelson, PE
Environmental Compliance Officer

Enclosures

cc. Richard Geisser
David DeVito



Waste Management Division

For Office Use Only:	
WMD Log #:	_____
Date Rec'd.:	_____
No. of Copies:	_____
Fee: \$	_____ / Check # _____

APPLICATION FORM FOR TYPE I MODIFICATION TO SOLID WASTE MANAGEMENT FACILITY PERMIT

pursuant to
RSA 149-M and New Hampshire Administrative Solid Waste Rule Env-Sw 315

SECTION I. FACILITY IDENTIFICATION

(1)	Facility name: LL&S, Inc., dba Lowell Road Wood Processing Facility
(2)	Functional classification: <input type="checkbox"/> collection/storage/transfer <input checked="" type="checkbox"/> processing/treatment <input type="checkbox"/> landfill
(3)	Mailing address: 59 Stiles Road, Suite 106, Salem, NH 03079
(4)	Permit number: DES-SW-94-002
(5)	Location, by street address and municipality: 87 Lowell Road, Salem, NH

SECTION II. PERMITTEE IDENTIFICATION

(1)	Permittee/applicant name: LL&S, Inc.		
(2)	Mailing address: 59 Stiles Road, Suite 106, Salem, NH 03079		
(3)	Telephone number: 603-894-9800		
(4)	If different than above, identify the individual associated with and designated by the permittee/applicant to be the contact individual for matters concerning this application:		
	(a) Name: David DeVito	(b) Title: General Manager	
	(c) Mailing address: 59 Stiles Road, Suite 106, Salem, NH 03079		
	(d) Telephone number: 603-894-9800	(e) E-Mail: DDevito@reenergyholdings.com	

SECTION III. DESCRIPTION OF PROPOSED MODIFICATION

Describe the proposed modification by answering each of the following questions. Use additional paper as necessary.

(1)	Provide a BRIEF description of the proposed modification. [Check box if response is provided on separate paper <input checked="" type="checkbox"/>		
(2)	Identify whether the proposed modification is a "type I-A" or "type I-B" modification. (If uncertain, use the worksheet provided with the instructions for this form): <input type="checkbox"/> Type I-A <input checked="" type="checkbox"/> Type I-B		
(3)	Identify, either below or on separate paper, each written permit condition that will require amendment to effect the proposed modification and provide draft language for the same. [Check box if response is provided on separate paper <input checked="" type="checkbox"/>		
(4)	Identify, below, each "last approved plan of record" identified in the permit which will be affected by the proposed modification and will therefore require amendment/revision:		
	Check here if affected	TYPE OF PLAN	DES APPROVAL DATE
	<input type="checkbox"/>	Facility design plans/specifications	
	<input checked="" type="checkbox"/>	Facility operating plan	July 3, 2002
	<input type="checkbox"/>	Facility closure plan	
	<input type="checkbox"/>	Facility financial assurance plan	
	<input type="checkbox"/>	Other plan (specify):	
			WMD LOG # (Find this number on your copy of the approval)
			200200035, 200200085, 200200129

(5)	Submit, on separate paper, the proposed amendments/revisions for each document identified pursuant to (4) above, based on the below listed instructions. (Note: The revisions may be presented in the form of replacement pages ready for substitution into the last approved plan of record, each page being clearly marked to show the date of revision. In the event there is no last approved plan of record for any of the following, you must prepare and submit a full plan, including the proposed modification(s), in accordance with the applicable cited Rules.)
	<input type="checkbox"/> Facility design plans must be prepared in accordance with Env-Sw 1103.05.
	<input checked="" type="checkbox"/> Facility operating plans must be prepared in accordance with Env-Sw 1105.11.
	<input type="checkbox"/> Facility closure plans must be prepared in accordance with Env-Sw 1106.04.
	<input type="checkbox"/> Financial assurance plans must be prepared as specified in Env-Sw 1400 and must include all related draft financial assurance documents required to effect the proposed modification.
(6)	In order for DES to approve the proposed modification, the agency must be able to conclude from the information provided in this application that the proposed modification meets all applicable requirements of the Rules. Therefore, for any aspect of the proposed modification where it may not be self-evident that the proposed change meets all applicable requirements of the Rules, you should explicitly provide such information. Provide your response below and/or use separate paper as necessary. (Check box if response is attached on separate paper <input type="checkbox"/>)

SECTION IV. SCHEDULE

Provide a proposed schedule for implementing the modification. Use separate paper if necessary. (Check box if response is attached on separate paper)

Upon receipt of approval

SECTION V. STATEMENT OF NEED

Provide a statement of need describing why the proposed change is necessary or desirable. Use separate paper if necessary. (Check box if response is attached on separate paper)

--

SECTION VI. IMPACT EVALUATION

On separate paper, identify all impacts, both positive and adverse, which the proposed modification will have, including each of the below listed considerations.

- (1) The effect the modification will have on facility function, capacity, life expectancy, service type and service area.
- (2) The effect the modification will have on the environment, public health and safety.
- (3) The effect the modification will have on the state's ability to achieve the goals and objectives specified in RSA 149-M:2, namely achieving a 40% minimum weight reduction in the solid waste stream on a per capita basis by the year 2000 and avoiding the disposal of recyclable materials in a lined landfill with a leachate collection system.
- (4) The effect the modification will have on establishing and maintaining integrated waste management systems consistent with the hierarchy of waste management methods in RSA 149-M:3 [the methods, in descending order of preference as specified in RSA 149-M:3, are: source reduction; recycling and reusing; composting; waste-to-energy technologies (including incineration), incineration without resource recovery; and landfilling].
- (5) Consistency with the state solid waste management plan and the applicable district plan, pursuant to RSA 149-M:12, l(b). If necessary, contact the P&DRS at (603) 271-2925 for plan information.

SECTION VII. PUBLIC BENEFIT DEMONSTRATION

Provide a "demonstration of public benefit" based on the below listed instructions. Check which one of the listed instructions applies to your particular application.

<input type="checkbox"/>	For a type I-A modification of a standard permit, provide a "demonstration of public benefit" in accordance with RSA 149-M:11 and in conformance with the provisions of Env-Sw 1005.05. Prepare and submit the demonstration on separate paper.
<input type="checkbox"/>	For a type I-A modification of an emergency permit or a research and development permit, or a permit-by-notification, there is a presumption of public benefit, provided that the proposed modification meets all requirements of the Rules. Therefore, you may skip this section and go to Section VIII.
<input checked="" type="checkbox"/>	For a type I-B modification, there is a presumption of public benefit, provided that the proposed modification meets all requirements of the Rules. Therefore, you may skip this section and go to Section VIII.

SECTION VIII. OTHER PERMITS

Complete the following table to identify and provide the status of all other permits or approvals necessary to effect the proposed modification.

Type of Permit/Approval Required	Date the Application was/will be Submitted	Status/Comments
None		

SECTION IX. LEGAL NOTICES

Submit proof of having provided certain legal notifications and filings, as follows:

- (1) You must send by certified mail, or deliver in hand, a complete copy of this application to the host municipality, host solid waste management district and other affected entities, with a "notice of filing," as specified by Env-Sw 303.
- (2) For a type I-A modification, you must send by certified mail, or deliver in hand, a "notice of filing" to each owner of property abutting the facility site, as specified by Env-Sw 303. If the applicant/permittee or the owner of the facility site owns any abutting parcel of land, the "notice of filing" must be sent to the owner(s) of the next parcel(s) not owned by the permittee/applicant or facility site owner.
- (3) You must also provide a "notice of filing" to the New Hampshire Department of Justice/Office of the Attorney General (NH DoJ/AGO) if, pursuant to Section X(2) of this form, you are required to submit business and personal disclosure information.
- (4) You must attach to this application "proof" that notification has been provided as required by (1) through (3) above. Therefore, attach a copy of the notice(s) of filing and the signature(s) of all required recipients, acknowledging receipt.

SECTION X. CERTIFICATION OF COMPLIANCE/COMPLIANCE REPORT

All applications for permit modification must be submitted with either certification of compliance or a compliance report, as follows:

- (1) If you are ABLE to certify that each of the statements numbered (1) - (8) below are true, do so by your signature.
- (2) If you are UNABLE to certify that each of the statements numbered (1) - (8) below are true, you must:
 - Prepare and submit a separate Compliance Report as specified by Env-Sw 303.15; and
 - If the proposed modification involves a change in organizational structure, or a change in individuals/entities holding 10% or more of the permittee's debt or equity, or a change in officers, directors, partners or key employees, none of which constitutes a change in operational control of the facility or a change in ownership per Env-Sw 315.02(f), also submit completed "business and personal disclosure forms" for each non-compliant individual and entity involved in the change. Obtain the required forms from the P&DRS at (603) 271-2925. Submit the completed forms, with the notice of filing referenced by Section IX(3) of this form and a copy of the Compliance Report, direct to the New Hampshire Department of Justice/Office of Attorney General, Environmental Protection Bureau, 33 Capitol Street, Concord, NH 03301-6397. [Note: Copies of the completed disclosure forms should NOT be attached to this application when it is submitted to DES or to the host municipality, host solid waste management district and other effected entities, pursuant to Section IX(1) above. Only the NH DoJ/AGO should receive copies of the disclosure forms].

COMPLIANCE STATEMENT

The applicant shall certify that each of the statements listed in (1)-(8) below are true for each of the following individuals and entities:

- The applicant, and
- The facility owner, and
- The facility operator, and
- All individuals and entities holding 10% or more of the applicant's debt or equity, and
- All of the applicant's officers, directors, and partners, and
- All individuals and entities having managerial, supervisory or substantial decision making authority and responsibility for the management of the facility operations or the activity(s) for which approval is being sought.

- (1) No individual or entity listed above has been convicted of or plead guilty or no contest to a felony in any state or federal court during the 5 years before the date of the application.
- (2) No individual or entity listed above has been convicted of or plead guilty or no contest to a misdemeanor for a violation of environmental statutes or rules in any state or federal court during the 5 years before the date of the application.
- (3) No individual or entity listed above has owned or operated any hazardous or solid waste facility which has been the subject of an administrative or judicial enforcement action for a violation of environmental statutes or rules during the 5 years before the date of the application.

(4)	No individual or entity listed above has been the subject of any administrative or judicial enforcement action for a violation of environmental statutes and rules during the 5 years before the date of the application;
(5)	All hazardous and solid waste facilities owned or operated in New Hampshire by any individual or entity listed above are in compliance with either. (a) All applicable environmental statutes, rules, and DES permit requirements; or (b) A DES approved schedule for achieving compliance therewith.
(6)	All individuals and entities listed above are in compliance with all civil and criminal penalty provisions of any outstanding consent agreement, settlement, or court order to which DES is a party.
(7)	All individuals and entities listed above have paid, or are in compliance with the payment schedule for any administrative fine assessed by DES.
(8)	All individuals and entities listed above are in compliance with all terms and conditions under every administrative order, court order or settlement agreement relating to programs implemented by DES.

Signature of the permittee/applicant certifying the above statements are true:

Permittee/Applicant Name (Print Clearly or Type) David DeVito, General Manager

Permittee/Applicant Signature 

Date 10/14/14

SECTION XI. PERMITTEE/APPLICANT SIGNATURE REQUIREMENTS

The permittee/applicant must sign the following statement prior to submitting this application. All copies of the application filed with DES must bear the permittee's/applicant's ORIGINAL signature. If the permittee/applicant is not an individual, an individual duly authorized by the permittee/applicant shall sign the application.

To the best of my knowledge and belief, the information and material submitted herewith is correct and complete. I understand that any approval granted by DES based on false and/or incomplete information shall be subject to revocation or suspension, and that administrative, civil or criminal penalties may also apply. I certify that this application is submitted on a complete and accurate form, as provided by DES, without alteration of the text.

Permittee/Applicant Name (Print Clearly or Type) David DeVito, General Manager

Permittee/Applicant Signature 

Date 10/14/14

SECTION XII. PROPERTY OWNER SIGNATURE

If the permittee and property owner are not the same, the property owner must also sign this form as follows. All copies of the application filed with DES must bear the property owner's ORIGINAL signature. If the property owner is not an individual, an individual duly authorized by the property owner shall sign the application.

- (1) I hereby affirm that the permittee/applicant has the legal right to occupy and use the property on which the subject facility is or will be located for the purposes specified in this application.
- (2) I hereby affirm that I shall grant access to the property for closure and post-closure monitoring of the subject facility and site as required by RSA 149-M and the New Hampshire Solid Waste Rules (Env-Sw 100 - 300 and Env-Sw 400 - 2000), as amended.

Property Owner Name (Print Clearly or Type) _____

Property Owner Signature _____

Date _____

WORKSHEET FOR DETERMINING MODIFICATION TYPE

STEP 1: In order to correctly use and complete the attached application form, you must first confirm that your proposed facility modification is a "type I" modification (as opposed to being either a "type II" through "type V" modification). If your response to each of the following questions is "FALSE," your proposed facility modification most likely falls within the scope of a "type I" modification:

True False The proposed change is required by a condition of my permit which requires me to submit final plans for DES approval based on preliminary plans provided to DES on an earlier date. (Note: If this statement is "TRUE," your proposed modification is most likely a "type II" modification and you need to file your application by completing a "Type II Permit Modification Application Form.")

True False The proposed change is one of the following **AND** I am able to certify compliance with each of the statements provided in Section X of this application form:

— A change in facility operating hours between the hours of 6 AM and 6 PM or within alternative limits specified in my permit, or for a private facility managing only on-site generated waste, within limits allowed by local ordinance.

— A change in a key above-ground site feature, for instance a facility structure or appurtenance, which will not alter the permitted function(s) of the facility, change the basis of the approved facility design or violate any applicable siting criteria specified in the Rules, and which is merely a change to improve facility operations within the limits specified in my permit.

— For a facility permitted to collect recyclable materials, a change in the type of select recyclable materials (paper, cardboard, glass, plastic, metal or textiles) to be collected which does not increase the facility's approved storage capacity or require a change in the approved financial assurance plan of record for the facility.

— For landfills, a change in the type of cover material to be used at the facility, pursuant to Env-Sw 806.03.

— A name change for the permittee or facility that does not constitute a change in ownership or operational control of the facility.

— A change in organizational structure, including a change in the individuals/entities holding 10% or more of the permittee's equity or debt and/or a change in officers, directors, partners or key employees, that does not constitute a change in ownership or operational control of the facility.

(Note: If you respond "TRUE" to the above statement, your proposed modification is most likely a "type III" modification and you need to file your application by completing a "Type III Permit Modification Application Form.")

True False The proposed change is to transfer my permit or otherwise authorize a change in the ownership or operational control of the facility. (Note: If you respond "TRUE" to this statement, your proposed modification is most likely a "type IV" modification and you need to file your application by completing a "Type IV Permit Modification Application Form.")

True False The proposed change is to authorize the destruction or relocation of facility records. (Note: If you respond "TRUE" to this statement, your proposed modification is most likely a "type V" modification and you need to file your application by completing a "Type V Permit Modification Application Form.")

STEP 2: If your response to each of the above is "FALSE," you may assume that the proposed modification is a type I modification. You must now determine whether the proposed change is a "type I-A" or "type I-B" modification, as defined by Env-Sw 315.02(b) or (c).

A "type I-A" modification is one that will change facility operations in a manner having the potential to adversely affect the state's ability to establish and maintain an integrated system of facilities which: (1) will assist in achieving the waste reduction/recycling goals in RSA 149-M:2; (2) is consistent with the hierarchy in RSA 149-M:3; and (3) will provide a substantial public benefit pursuant to RSA 149-M:11. Therefore, if any of the following statements are TRUE relative to the change you are proposing at your facility, the change falls within the definition of a "type I-A" modification.

True False The proposed modification will increase the approved design capacity of the facility.

True False The proposed modification will extend the expiration date of the permit.

True False The proposed modification will reduce the operating life expectancy of a NH landfill without a comparable reduction in the permitted capacity of the landfill, as by directly or indirectly increasing the quantity of waste which will be received daily at a New Hampshire landfill.

True False The proposed modification will expand the permitted service area of the subject facility.

True False The proposed modification will change the subject facility service type from a "limited service" area facility (one which can accept waste from only certain sources specified in the permit) to an "unlimited service" area facility (one which can accept waste from any source).

True False The proposed modification will change facility operations to include a waste management method less preferred in the RSA 149-M:3 hierarchy. The methods, in order of descending preference as specified in RSA 149-M:3 are: source reduction; recycling and reuse; composting; waste-to-energy technologies (including incineration); incineration without resource recovery; and landfilling.

If you answer "FALSE" to each of the above statements, your proposed modification is most likely a "type I-B" modification, i.e., a modification which is unlikely to have an adverse effect on the state's ability to establish and maintain an integrated system of facilities which (1) will assist in achieving the waste reduction/recycling goals in RSA 149-M:2; (2) is consistent with the hierarchy in RSA 149-M:3; and (3) provides a substantial public benefit pursuant to RSA 149-M:11.

SECTION III. DESCRIPTION OF PROPOSED MODIFICATION

- (1) Provide a **BRIEF** description of the proposed modification. To allow LL&S to accept, for transfer, up to 12,200 tons per year of shingle for recycle into Hot Mix Asphalt Pavement and source separated wood for processing into boiler fuel without applying these tons against the facilities approved design capacity.

- (3) Identify each written permit condition that will require amendment ...

Section II/Condition (3)(a) of the permit are hereby modified to read:

- (a) Maximum Throughput: - This facility's approved design capacity, as defined by Env-Wm 102.09(a), shall be that quantity of authorized wastes which can be handled within the terms of this permit, in a safe and environmentally protective manner, which shall not exceed 3,390 tons per week of mixed demolition debris. The facility will also be allowed to accept up to 235 tons per week of source separated wood and select recyclable shingles for transfer for further recycling.

SECTION V. STATEMENT OF NEED

Metals, source separated wood and tear off shingle from residential roofing projects are highly recyclable waste streams which require different, unique processing equipment. LL&S takes in process separated metals from Environmental Resource Return Corp (ERRCO) as well as from other "sister" processing facilities and upgrades them for market. In addition, LL&S accepts and stockpiles source separated wood and roofing shingles and transfers them to ERRCO for processing into boiler fuel for energy and a shingle fines for re-use in hot mix asphalt paving, respectively. Transferring these will not impact LL&S's actual processing capacity, will not increase any stockpile sizes and will not require any change in the financial assurance mechanism. This will change allow our facilities to get recyclable materials to the facility that can process them to their highest value without negatively impacting the available thru-put capacity of the facility where they are initially received.

SECTION VI. IMPACT EVALUATION

- (1) There is no anticipated effect that the modification will have on the facility function, capacity, life expectancy, service type and service area.
- (2) A positive impact from the proposed modification is the maximization of recycling and re-use of these materials resulting in diversion of these materials from landfill and/or incineration.
- (3) The modification will help increase the overall recycling rate for the State of New Hampshire.

- (4) The proposed modification will help increase the recycling of metals and the reuse shingle materials into roadway construction materials, including hot mix asphalt pavement.
- (5) The proposed modification is consistent with the state solid waste management plan and the Salem District plan.



LL&S, INC

FACILITY OPERATIONS MANUAL

September 2014

[This document provides information necessary for the day to day operations of LL&S, Inc.'s Lowell Road Wood Processing Facility.]

Table of Contents

I. FACILITY IDENTIFICATION	1
II. AUTHORIZED AND PROHIBITED WASTES	2
A. Permit No. DES-SW-SP-94-002 Authorized Wastes	2
B. Permit No. DES-SW-SP-94-002 Prohibited Wastes	3
III. ROUTINE OPERATIONS PLAN	3
A. Hours of Operation.....	4
B. Facility Access, Security and On-Site Traffic Patterns	4
C. Signs and Postings.....	5
D. Operational Structure	5
E. Weighing and Inspection of Incoming Materials	6
F. Processing – Wood Biomass Fuel	7
G. Processing – Mixed Demolition Debris	8
H. Sheetrock Pile	9
I. Shingle Pile.....	9
J. Product Stockpiles.....	9
IV. RESIDUAL WASTE MANAGEMENT.....	13
V. FACILITY MAINTENANCE, INSPECTION AND MONITORING PLAN	13
A. Equipment List.....	13
B. Daily Maintenance	14
C. Periodic Maintenance.....	14
D. Other Procedures.....	15
VI. CONTINGENCY PLAN.....	17
A. Process Line/Mill Accident.....	17
B. Fall Protection	18
C. Excavator/Forklift Accident.....	18
D. Cutting Torch Accident.....	18
E. Petroleum Product Releases	18

F. Asbestos and Hazardous Waste	18
G. Fire and Explosion	18
H. Baler Accident.....	19
VII. EMERGENCY RESPONSE PROCEDURES	19
A. Dangerous Conditions.....	19
B. Personal Injury	20
C. Fire or Explosion.....	20
D. Severe Weather/Natural Disasters.....	21
E. Petroleum Release	21
F. Asbestos or Hazardous Waste	21
G. Medical (Red Bag) Waste	22
VIII. EMPLOYEE TRAINING PROGRAM.....	22
IX. RECORD KEEPING AND REPORTING	23
A. Facility Operating Records	23
B. General Reporting Requirements	24
C. Incident Reporting.....	25
D. Complaints	26

LL&S, INC.
FACILITY OPERATIONS MANUAL

I. FACILITY IDENTIFICATION

Facility Name: LL&S, Inc.
87 Lowell Road
Salem, NH 03079

Mailing Address: 59 Stiles Road, Suite 106
Salem, NH 03079

Permit Number: DES-SW-SP-94-002

Facility Type: Construction & Demolition Debris Processing Facility

Facility Capacity: The facility's permitted capacity is 3,390 tons per week (175,000 tons per year). This tonnage may be received entirely as construction and demolition debris (C&D) or as a combination of C&D, recyclable paper and fiber waste (up to 1800 tons per week) and commingled waste (up to 15 tons per week). Commingled waste is considered to be glass, plastic and aluminum cans.

The overall design capacity of the C&D processing facility is 4,800 tons per week (249,000 tons per year). The annual maximum processing capacity for C&D is based on 260 operating days. This overall design capacity is based on a process feed rate of 80 tons per hour with the process line operating twelve (12) hours per day, five (5) days per week. Since authorized to process 24 hours/day, seven days per week, there is ample time for 60 processing hours per week, regular maintenance and emergency maintenance shut downs.

Service Type: Unlimited Service

Service Area: Primarily Southern New Hampshire and Northeastern Massachusetts

Permittee: LL&S, Inc.
59 Stiles Road, Suite 106
Salem, NH 03079

Tel. (603) 894-9800

Owner: LL&S, Inc.
59 Stiles Road, Suite 106
Salem, NH 03079
Tel. (603) 894-9800

Operator: Same as Permittee

II. AUTHORIZED AND PROHIBITED WASTES

A. Pursuant to Permit No. DES-SW-SP-94-002, LL&S is authorized to accept mixed construction and demolition debris and recyclable materials. These include, but not limited to:

- Treated and untreated wood
- Asphalt shingles
- Concrete and Brick
- Metal
- Insulation
- Wire
- Glass
- Carpet
- Sheetrock
- Cardboard
- Corrugated Container Board
- Similar wastes to those listed above in quantities generally incidental to the quantity of wood waste received
- Aluminum beverage can/containers
- Steel cans
- Paper
- Plastics
- Tires
- Televisions and CRTs
- Lead Acid Batteries
- Washers, dryers, refrigerators and other appliances/white goods
- Air conditioners

B. Pursuant to Permit No. DES-SW-SP-94-002, Prohibited Wastes include, but not limited to:

- Hazardous waste, as identified in the New Hampshire Hazardous Waste Rules Env-Wm 400 (as updated) or spent containers for the same, including intact or crushed drums
- Household Hazardous Waste
- Asbestos and asbestos containing wastes
- Petroleum or other contaminated soils
- Sludge or sewage
- Contained gaseous waste, unless collected for recycle
- Liquid waste
- Motor vehicles or motor vehicle wastes, as defined by RSA 149-M:1, X-b, and other automobile parts
- Laboratory wastes
- Hospital or medical waste, including infectious waste
- Batteries, except lead acid batteries
- Electrical components
- Radioactive waste
- Bottom ash or fly ash
- Source, special nuclear or by product material as defined by the Atomic Energy Act of 1954, as amended
- Residue from air pollution control facilities
- Mixed municipal solid waste
- Animal wastes, including carcasses and manure
- PCB wastes
- Any waste which, based on its quantity, consistency, size, shape, leaching characteristics, or other physical or analytical characteristics is determined by the operator or the Department to be unsuitable for management at this facility within the terms of this permit
- Any waste, which by its condition at time of delivery, is not readily recognizable or identifiable as to general type, including wastes that may be delivered in sealed containers, or in a chipped, shredded, pulverized, burned or densely compacted state and
- Any waste which can not or will not be processed into waste-derived products which meet the standard set forth in Section VII/condition (8) of the solid waste permit.

III. ROUTINE OPERATIONS PLAN

This document has been developed to provide the framework for operation of the LL&S, Inc. construction and demolitions debris (C&D) processing facility at 87 Lowell Road,

Salem, NH. The facility is designed to handle in excess of 3,390 tons per week of incoming C&D.

The customer base includes individuals, demolition contractors and roll-off companies. Outgoing materials are delivered to a variety of markets primarily via 100 yard transfer trailers or 60 yard dump trailers.

In addition to C&D, LL&S is permitted to receive, process, and store source separated cardboard, paper and commingled plastics, glass, and aluminum cans. Only C&D is currently received and processed. Therefore this plan does not include operational information on processing of these materials. Should LL&S resume acceptance of these materials; this O&M Manual will be updated accordingly.

A. Hours of Operation

Normal incoming material delivery hours shall be 7:30 AM to 4:30 PM Monday thru Friday and 7:30 AM to 12:00 noon on Saturdays. The Processing Facility is permitted to operate 24 hours a day, 7 days a week.

B. Facility Access, Security and On-site Traffic Patterns

The access driveway includes fencing and a gate. The gate is closed and locked whenever there is no one at the site. Further, the gate is normally closed when operations are occurring and the facility is not receiving incoming materials and is not shipping outgoing materials. The facility and adjoining properties are fenced along the northern and eastern sides of the property. The remainder of the site is bounded by substantial wetlands that inhibit access. A lock box, which contains a key to the facility gate, is located at the entrance gate. The key to the lock box is held by the Salem Fire Department.

LL&S has also installed several strategically located cameras to monitor the operations 24 hours per day. Cameras are motion sensitive and only record if there is activity (motion) within their line of sight.

All incoming and outgoing transport vehicles are directed to the scales to be weighed. Facility users are provided with LL&S's Tipping Floor Procedures (See Appendix I) and are required to wear the personal protective equipment (PPE) specified therein.

Visitors (non-employees) must check in at the scale or the office and are not allowed beyond the scale area without appropriate PPE. Except for pre-approved consultants, contractors and town employees (fire and public works), non-employees are accompanied by LL&S personnel.

LL&S has two scales. Under normal operations, one scale is used for incoming vehicle and the other scale is used for outbound vehicles. Should one scale be down for maintenance and repairs, the other scale allows for continued receipt and shipment of materials. Both scales are licensed annually with the New Hampshire Department of Agriculture. They are operated by licensed weigh masters.

Currently the traffic flows in a circular, counterclockwise pattern. A traffic flow diagram is found in Appendix II. Signs are strategically located to help those unfamiliar with the facility. A separate bunker is set up for pickups and small tag -along trailers. This provides a safer environment for these vehicles which typically unload by hand.

C. Signs and Postings

LL&S maintains a sign that is placed at the intersection of the access drive and Lowell Road. The sign includes the following:

- Facility name and Permit Number;
- Name, address and telephone number of permittee;
- The days and hours that the facility will be open to receive waste;
- Types of waste accepted; and
- A statement that unlawful dumping will be subject to fine and prosecution.

In addition to the above facility sign, a copy of the authorization page of the permit bearing the permit number and authorization signature is prominently displayed at the facility. Current operator certification certificates are also prominently displayed.

There are also numerous safety and traffic related signs strategically located around the site.

LL&S employees have on-site access to a complete copy of the permit, a complete copy of the most recently updated operating plan and a complete copy of the closure plan of record.

D. Operational Structure

From the management perspective, LL&S is structured as two functional groups with many personnel having responsibilities in both areas. They are the Administrative Group and the Operations Group. The Administrative Group has the following responsibilities:

- Sales, setting up commercial accounts and establishing fee schedules for incoming materials;

- Interacting with end markets to establish product specifications, rates and contracts for materials to be shipped (LL&S is continually seeking and evaluating new markets for all its materials);
- Coordinating with the processing branch and the end use markets to assure timely shipping;
- Coordinating material pick-ups from commercial accounts and interacting with clients on quality and acceptability of materials delivered;
- Coordinating with the scale to assure a complete and accurate record of materials entering and leaving the property and maintaining paper copies of same;
- Processing payments from customers and tracking and following up on accounts receivable;
- Payments to vendors;
- Human Resources;
- OSHA, Stormwater and Solid Waste Operator Training (ie., Lock-out/Tag-out, confined space, etc.)

The Operations Group is responsible for the following:

- Weighing and classifying all incoming materials and relaying that information to the scale operator for incorporation on the scale ticket;
- Rejecting materials that are not permitted or not acceptable;
- Overseeing users/customers as materials are discharged. This includes directing them to the proper location for discharge and, when appropriate, determining that all liquids have been removed and that there are no hazardous wastes concealed in the loads. (See more detailed description under ***Weighing and Inspection of Incoming Materials***)
- Processing incoming materials to the specification of the end use markets.
- Coordinating with the administrative branch when sufficient quantities of materials are ready to ship to market.
- Loading outbound materials
- Equipment maintenance
- Implementation of storm water management practices and on-going inspection of related measures that have been implemented.
- Immediate response to any accidental releases of petroleum related products
- Implementing OSHA related plans (i.e. Lock-out/Tag-out, confined space, etc.)

E. Weighing and Inspection of Incoming Materials

All materials delivered to the LL&S facility are weighed on State of New Hampshire certified scales by licensed weigh masters. As a customer enters the site, LL&S has two Emery 10' X 70' 120000-LB Vehicle Scales, one for in-bound vehicles and one for out-bound vehicles. All weighing is done by a scale operator licensed by the State of New

Hampshire. As part of the annual scale licensing, the scales are certified by an independent third party.

From the scales, all incoming vehicles must stop at the viewing/inspection station and wait to be directed further by a yard inspector. Based on the visual appearance of the load, vehicles will be directed to the shingle pile, the clean wood pile, the sheetrock pile, the aggregate pile, or the mixed demolition debris pile. Once the material is off-loaded, it is inspected by yard personnel to determine if there is any unacceptable material. Inspection is for all prohibited wastes with particular attention focused on asbestos, waste liquids, medical wastes, putrescible materials, lead or asbestos abatement materials, and potentially hazardous waste. Depending on the material found, the entire load can be rejected or the offending materials are rejected. If the material is friable asbestos, our asbestos response plan is implemented (see Appendix III)

The yard inspectors are provided radios that report back to the scale. They will notify the scale attendant of out of the ordinary materials delivered or other special information that can be placed on the scale ticket. Once unloaded, the delivery vehicle is re-weighed to determine the weight of material delivered. When the vehicle is re-weighed, the driver is asked for the location where the load originated so that it can be enter into the scale records. The scale tickets are then signed by the individual delivering the materials.

F. Processing – Wood Biomass Fuel

Incoming loads that are primarily non-pressure treated wood are directed to the “clean wood” pile. This pile is managed by use of a skid steer, an excavator and one or more laborers/operators (the number of personnel assigned is based on incoming quantities). Once the materials have been dumped and inspected, the personnel assigned to the pile remove larger contaminants, recyclables and reusables including CCA wood, pentachlorophenol and creosote treated wood, plastics, shingles, ABC (asphalt, brick and concrete) wallboard and metals, as appropriate. The primarily clean wood material is then pre-sized for the processing equipment by the claw of the excavator and placed into the pile for processing. The materials that were separated are directed to the appropriate piles for further processing or shipment to recycling markets. When a sufficient pile is accumulated, the wood is processed as follows:

1. The processing line is cleared of all materials and cleaned. All woodchip and fines conveyor outlets are cleaned of the previously processed materials.
2. The wood is then fed into the feed hopper with an excavator. The hopper feeds a trommel which is fitted with screen punch plates that allow the fines to be separated out.
3. The finer material is directed over/under magnets, to remove ferrous materials, and on to a shaker which further separates the finer materials. The larger fraction

is passed through an eddy current to remove non-ferrous metals. This completes the processing of this portion of the material.

4. The larger fraction from the trommel is directed to a conveyor belt that passes through a picking station that is normally manned by at least 4 pickers and up to 6 (depending on the material being processed). The pickers remove contaminants, recyclables and reusables that were not easily removed by the yard personnel.
5. The wood is then passed through a hammermill to create a woodchip product. As it exits the mill, it passes under a magnet that removes ferrous metals that were “freed up” in the mill and on to a shaker table and destoner, which separates the material into two fractions.
6. The smaller fraction is directed to another shaker table that separates it again. The larger fraction is further processed by transferring it on to a conveyor with a magnetic head pulley and then passing it through an eddy current system to remove non-ferrous metals.
7. The larger fraction from the shaker table/destoner is passed under another overband magnet, on to a vibratory feeder and then through an eddy current system to remove metals.
8. As the woodchip falls from the final conveyor belt, laborers may be used to pick out metals, plastics and treated wood that have not been previously removed.
9. The various post mill streams are recombined and as appropriate become the woodchip that is sent to energy end markets. It is tested in accordance with the requirements of the end users.
10. The remaining post process streams of material are marketed separately and testing is performed in accordance with the end use markets.

G. Processing – Mixed Demolition Debris

C&D loads that appear to have a mix of demolition debris are directed to the mixed demolition debris pile. Once they are discharged and inspected, they are pushed to an excavator for kick sorting. Larger metal items are sorted for recycle. Wood that meets the criteria for “clean wood” and is easily separated is placed in a pile and ultimately moved to the “clean wood” pile. Contaminated dry wall, plastic tarps and other large, non-recyclables that can be readily identified are removed and placed in a pile that is ultimately shipped to landfills for disposal. LL&S has a formal drywall removal program (see Appendix IV) which is designed to minimize the gypsum in both the wood-based and soil-based products that will be produced when the materials are processed.

After kick sorting, the materials are incorporated into the mixed demolition debris pile. The material is then sent through the same process as described above for the “clean

wood” pile. It is run at a different time than the clean wood because the end use products are different.

H. Sheetrock Pile

As indicated above, LL&S has a sheetrock removal program. Loads that contain high quantities of sheetrock are directed to the sheetrock processing location. Wood and metal products are removed by excavator and the remainder of the material is incorporated into the pile for landfill disposal or a second pile for recycling. LL&S currently removes new sheetrock “cuttings” that have not been painted or partially covered with joint compound. These are placed in a covered container and shipped for recycling into new gypsum.

I. Shingle Pile

Most of the shingles delivered to LL&S are from roofing jobs. They contain some paper, plastic, wood and metal flashing, but are primarily shingles. These are directed to a separate pile. When end markets require it, laborers and a skid steer separate the contaminants/recyclables from the shingles. After the hand picking, the shingles are ready to ship to the recycling markets. For end markets that will incorporate the shingles in to a hot mix asphalt pavement, asbestos samples are taken. For every 25 tons of shingles, a composite sample, consisting of a portion of eight (8) randomly selected shingles, is created. The composite sample is then ground and sent to an accredited laboratory for analysis. If the sample comes back negative for asbestos, the shingles are shipped to the recycle market. If the sample tests positive for asbestos, those shingles will be shipped to a landfill that is permitted to accept asbestos.

J. Product Stockpiles

LL&S has fluid end use markets that require manufacture of end products to their specifications. Additionally, source separation at construction and demolition sites is becoming more common as LEED and other similar programs encourage recycling and reuse. This means that LL&S is increasingly receiving segregated materials that were formerly mixed with other materials. As a result of changing and developing markets, these materials need further processing to create higher value recycled products, and in other cases they can be consolidated and shipped to market with minimal effort. The following components of C&D are stockpiled.

1. Light iron – There are several metal products that are created as a result of construction and demolition projects. Light iron is the major metal product generated during the front end kick sorting. It is also increasingly received as source separated material. This is either loaded directly into 100 yard trailers for shipping to market or stockpiled and processed further before shipping to market.

The value of light iron can be enhanced by processing it into smaller, relatively uniform size pieces or by re-processing metal that is generated during the processing of C&D in order to make it cleaner. LL&S performs processing and reprocessing on both ferrous and non-ferrous materials. Large pieces of light iron and non-ferrous materials are pre-sized separately using a portable shredder. Once pre-sized, they are placed on the LL&S processing line after the trommel, but before the picking station. Larger pieces that are inappropriate for the mill are removed at the picking station. The rest of the material is then processed through the mill with the subsequent magnets and eddy currents separating the metals. When processing metal from pre-sized light iron, a picker is placed at the discharge of the radial stacker to hand recover stainless steel and lead, both of which are not captured by mechanical means. A picker is also placed at the end of the ferrous discharge belt to remove plastic and other contaminants that get caught up with the metal. Light iron that has been so processed is typically loaded and shipped directly to market on the day it is produced.

2. Miscellaneous metals – Certain metals, such as #1 prepared iron, are more valuable if held and shipped separately. LL&S uses 30 yard roll-off containers to store these miscellaneous metals pending shipment to markets. These include #1 prepared iron, copper and brass and electric motors. Shipment to markets is accomplished as soon as sufficient quantities are stockpiled to create a load (typically a 100 yard trailer for iron and smaller containers for motors and non-ferrous metals).
3. Ferrous shred, cast iron and nails from the processing line are stored on concrete pads. In order to maximize the value of this material, it may require further processing. This processing may include the use of the excavator mounted magnet for the nails or the re-milling of the process “frag”. Within a few days of final processing, these metals are shipped to market.
4. Non-ferrous shred – The process eddy currents recover aluminum, brass, copper and other non-ferrous metals (Lead and stainless steel are consolidated until sufficient quantities are shipped to market.). These are collected in 30 yard roll-off containers, weighed and transferred to a concrete bin for storage until sufficient quantity is generated to ship to market.
5. Woodchip for energy – The fuel wood is processed into a woodchip which meets the end user’s specifications for construction and demolition debris woodchip to be used as boiler fuel in conjunction with whole tree chip. This material consists of all the woodchip overs. It is stockpiled on a gravel pad. To prevent contamination by windblown plastics, portable litter fences are placed between the processing operations and the pile. These portable litter fences are constructed with hooks that are easily hooked over a front end loader bucket. When an outgoing truck is being loaded, the litter fence(s) necessary to access the pile are quickly moved, the truck is loaded and the litter fences reset to protect the pile. Shipment of woodchip to energy markets is normally done on a daily basis. Occasionally, when the end user is down for maintenance, the daily production has to be stockpiled until the maintenance is completed and shipping can resume.

6. Woodchip for daily cover – LL&S produces a construction and demolition debris woodchip that is low in sulfates (gypsum) and meets the requirements for use in New Hampshire Certified Waste Derived Product No. 6 and the requirements for use in Massachusetts under a Beneficial Use Determination. This woodchip material contains some plastic, paper, shingles, textile, insulation, concrete, brick and rocks. This material includes overs processed materials generated after the hammermill. This material is stockpiled on a gravel base and is normally shipped daily. LL&S has multiple markets for this material.
7. Wood Fines – Low sulfate wood fines are generated when processing both clean wood and mixed demolition. This material is an excellent bulking agent for sludge. It is stockpiled on concrete and/or gravel and is normally shipped daily in 100 yard transfer trailers.
8. Soil Fines Unders – This material that is generated from the trommel fines and is primarily soil mixed with very small pieces of demolition debris, including gypsum that cannot be otherwise readily removed. There is an on-going effort to find beneficial re-uses for these materials. They are currently beneficially re-used in shaping and grading projects at lined landfills. As other permitted uses are established, LL&S will pursue these markets. The materials are stockpiled on concrete and gravel and normally shipped daily in 100 yard trailers.
9. Soil Fines Overs – This material is a mix of demolition materials that is rich in wood, shingles, chunks of brick and concrete and insulation. The current market is beneficial re-use as shaping and grading materials at landfills. The materials are stockpiled on concrete and gravel and are normally shipped daily in 100 yard trailers.
10. Processed Shingles – Incoming shingles are processed continuously as they are delivered. As soon as they are processed they are placed in the outgoing stockpile. Shingles are normally shipped daily to a recycler in either 40 yard roll-offs or 100 yard trailers.
11. Lead Acid Batteries – Lead acid batteries are received incidental to loads. These are collected and placed in a steel box which is placed on a concrete slab. At the end of each day, the batteries are removed for recycling
12. Air Conditioners/Refrigerators – Air conditioners, refrigerators and refrigerant recharge containers that are incidental to the loads are separated immediately upon discharge from the transporter and placed on a concrete slab. When there are enough units, a licensed subcontractor comes to the site and recovers the CFCs and places a sticker on the units that allow them to be sent on to recycle markets with our other metals.
13. CRTs/TVs – CRTs and TVs that are incidental to the loads are separated immediately upon discharge from the transporter and placed on a concrete slab. As time allows, they are palletized and wrapped for shipping. When there are 10 to 15 pallets ready, they are shipped to a recycler.

14. Tires – Tires that are incidental to the loads are separated and stockpiled in a 100 yard trailer. When the trailer is full, the tires are shipped to one of several recycling markets.
15. Sheetrock – Clean, unpainted sheetrock cut-offs are separated, placed in 30 or 40 yard roll-offs to be shipped to gypsum manufacturers and recyclers.
16. Cardboard – Cardboard that is mixed with C&D when it is delivered is removed, stored in 30 or 40 yard roll-offs. Depending on the markets, the cardboard is baled or shipped loose.
17. Rigid Plastics – Rigid plastics, such as trash barrels, are separated, stored temporarily in a 100 yard trailer and baled for shipment to market.
18. PVC and Vinyl Siding – These materials are separated and shipped to market either loose or baled.
19. Computer CPUs – These are segregated and shipped to recyclers.
20. Mercury Containing Devices – Incoming materials are inspected for incidental mercury containing devices. LL&S separates these devices and ships them to recyclers. The most common devices are fluorescent light bulbs.

Table I below provides the maximum stockpile limitations per the permit. In order to stay current with higher-end use markets, we found the need to re-designate the table to achieve the highest recycling rates possible. Clearly these stockpile limitations were established prior to the development of multiple markets for the materials. As such, the individual product/stockpiles listed above have to be assigned to the storage category that they are most closely aligned with, i.e. both the woodchip for energy and the cover woodchip would fall under the Processed Waste – Recycled Wood Chips category.

TABLE I MAXIMUM PERMITTED STORAGE LIMITS		
<i>WASTE TYPE</i>	<i>WEIGHT (TONS)</i>	<i>EST. VOLUME (cu. yds.)</i>
Unprocessed Waste		
C&D Waste	1,250	5,000
Paper Waste (*)	1,500	3,750
Processed Waste		
Recycled Wood Chips	4,480	22,400
Fines	350	280
Aggregates	158	126
Metals	350	1,400
Recyclable Paper (*)	2,230	5,710
Lead-Acid Batteries	0.5	
Air Conditioners/Refrigerators	7	125
CRT's/TVs & Computer CPUs	5	
Tires		125

Sheetrock	20	90
Rigid Plastics	30	
Commingled Material	0	
Residual/By-pass Waste	90	250

(*) – The combined total of both unprocessed and processed recyclable paper waste shall not exceed the physical capacity of the building and therefore is limited to 8,240 cubic yards or 3,300 tons.

IV. RESIDUAL WASTE MANAGEMENT

Residual waste consists of non-recyclables including contaminated sheetrock, plastic tarps, Styrofoam insulation, carpet, and other bulky items. LL&S stockpiles this material and normally ships it to landfills in 100 yard trailers on a daily basis. Contracts are maintained with landfill operators to assure that the materials can be shipped on a timely basis.

V. FACILITY MAINTENANCE, INSPECTION AND MONITORING PLAN

LL&S has both plant processing equipment and mobile equipment that needs regular maintenance. A Lock-Out, Tag-Out (Appendix V) program has been established for the facility and is a stand alone document. In addition, LL&S has a Haz-Com (Appendix VI) program that provides employees with information on the hazards of chemical and petroleum products that are used in maintenance activities. The mill is normally maintained by the staff assigned to the mill. They are supported by the LL&S mechanics (who have primary responsibility for servicing the heavy equipment fleet) and outside contractors, as needed.

A. Equipment List

Mill equipment that needs regular maintenance includes the following:

- Trommel
- Grundler Mill and motor
- 3 Screen decks
- 4 Eddy Currents
- Vibratory Feeder
- 2 Overband magnets
- Several head pulley magnets
- Motor control starter
- Numerous conveyor belts

B. Daily Maintenance

Daily maintenance includes:

- Greasing bearings
- Blowing dust and grit from pinch points
- Cut tapes off shafts and motors
- Clean areas inside machine guards
- Clean processing areas under all equipment (on-going throughout the day)
- Carefully scrape and brush ceramic shells of eddy currents
- At shutdown during cold weather, place wood or pipe between belts and shaker tables to prevent freezing
- Remove nails, etc. from belts
- Cut all rebar or pipe out of the trommel drum prior to operating each day
- Use pipe wrench to check that all rollers and belts are free prior to starting each day
- Cut tapes off and remove nails from cross feed magnet and grease fittings
- Scrape shaker screens by hand as needed
- Use air compressors to clean screen on shaker table at the end of each day
- Remove any rags, plastics or wires that have “hung up” on the shaker screens
- Electrical controller must be shut down and maintained every six months.

C. Periodic Maintenance

Periodic maintenance includes:

- Tightening the mill base bolts twice weekly
- Painting equipment on an annual basis,

LL&S also has a two-ram baler manufactured by International Baler Corporation (Model No. IB-1170-100) that is not used at this time, but may be used from time to time to process materials depending on the markets for recovered materials.

LL&S maintains a fleet of heavy equipment to process and move materials. Equipment needs vary over time depending on the products that are being produced. LL&S regularly replaces equipment. Currently the equipment includes:

- 5 excavators
- 6 skid steers
- 3 front end loaders
- 2 bulldozers
- 2 vacuum sweepers
- 1 water truck

- 1 plow truck with sander
- 1 mobile crane
- 1 portable shredder

Regular preventative maintenance and emergency repairs of rolling stock are performed by on-site mechanics. Major maintenance is typically completed by Caterpillar Tractor, either on-site or at their shop. Regular preventative maintenance includes:

- Circle check of equipment by the operator prior to each day's operation,
- Operators required to grease equipment daily,
- Track engine hours and perform oil changes at regularly scheduled intervals,
- Check hoses for leaks and maintain hose O-rings as needed,
- Repair and replace windows, back-up alarms, tires and lights,
- Maintain heating and cooling systems,
- Monitor and repair cutting blades, buckets and grapples, and
- Weld minor cracks in equipment structures.

D. Other Procedures

Other maintenance, inspection and monitoring procedures are utilized to address the following nuisance, safety, and environmental factors:

1. Spontaneous combustion – Most of the metals and the soil fines that are stored on site are not combustible. However, the woodchip piles and the incoming demolition debris pile are subject to spontaneous combustion. The woodchip piles can be ignited by metal objects that are heated in the mill. Additionally, if the woodchip markets are slow and the woodchips become tightly packed, sufficient heat can be generated to allow combustion. However, the probability of this occurring has been greatly reduced by regular shipments. When stockpiles become larger, it is important to ship older chip first and to monitor the pile closely. LL&S has compost probes to monitor the temperature of the woodchip piles. If pile temperatures approach 180° F, LL&S must “roll” the pile to release heat and prevent spontaneous combustion. The incoming pile is also subject to spontaneous combustions. This can occur if a hot load is delivered and not detected or if non-permitted liquid waste (typically muriatic acid) is delivered and not found by the yard inspectors. In both cases, the yard inspector's must remain alert and aware of the materials being delivered. They must also enforce a non-smoking requirement for employees and the general public who uses the facility.
2. Other fire hazards – There are other potential sources of fire on the site. Gasoline and other highly flammable materials are stored in a specially designed cabinet. This minimizes the potential for oils and fluids necessary for equipment to ignite. Electrical fires are minimized by keeping covers on electrical fixtures and deactivating the energy when work on electrical components is required.

Personnel using cutting torches are trained prior to use. Use of these torches around flammable materials is prohibited. Smoking is not allowed on the site except in designated areas.

3. On-site fire suppression equipment – LL&S has fire extinguishers strategically located throughout the facility. A program is in place to have a third party provider annually check the fire extinguishers and replace them as needed. There are three bedrock production wells on-site that are used primarily for dust suppression. As such, there are fire hoses attached to these sources which can be used to douse a small fire or a “hot load”. A 5,000 gallon water truck is also used for dust suppression. This has pumps and can be used as a source of fire suppression water. LL&S has also brought municipal water to the site and has 4 hydrants located on-site in the event a significant fire occurs. As part of the fire contingency, foam is also kept on site for the use by the fire department.
4. Vector production – By virtue of the materials permitted at the site, there is minimal food attraction for vectors. Despite the restriction, contractors do tend to place all their waste in roll-off containers, resulting in a small amount of waste that will attract vectors. LL&S ships residual wastes on a daily basis. By actively managing stockpiles, vectors (such as skunks) are discouraged from taking up residence within the stockpiles. During the winter months, seagulls migrate up the Merrimack River. By keeping the mixed demolition debris and residuals piles to a minimum, LL&S minimizes the potential food source.
5. Generation of hazardous or explosive gases – An awareness of reactivity of various metals prevents the generation of hazardous or explosive gases. Proper storage of batteries (in accordance with NHDES BMPs) prevents their breakage and the resultant potential for hazardous and explosive conditions.
6. Odors – The primary source of odors at LL&S are related to sheetrock in the fines. If the fines are stockpiled for several weeks prior to shipping, hydrogen sulfide can be generated. Typically, the odor will be released when the fines are loaded for off-site delivery. LL&S keeps odor control liquids on-site. As soon as odors are noted, odor control is initiated by assigning a laborer with a backpack sprayer to apply odor control agents prior to loading of the materials. The most effective odor control in this case is to continuously ship the soil fines so that they do not have the opportunity to generate odor. Occasionally, a load of incoming material will have a strong odor. In these cases, the loads are rejected before they are discharged.
7. Dust – On dry days, a watering truck is used regularly to wet down driveway surfaces. LL&S also has a well which is used for spraying concrete pads if dust is an issue. A vacuum sweeper is used on the driveway on a regular basis to minimize dust. In addition, the sweeper is used to clean the concrete areas in the yard at the end of each day. When needed, water is also applied to the waste being fed into the processing system to minimize the creation of dust during the processing. Wind direction and speed are continually monitored during operations by following weather reports and site observations. Materials that are

- being processed through the mill are scheduled based on wind conditions (ie., clean wood, mixed demolition pile and cleanup of metal frag).
8. Windblown litter – Sheet plastic and paper can create a windblown litter concern. Portable wind screens are the first line of defense. A high mesh fence has also been constructed along the easterly side of the operation and around the southeast corner of the property. This minimizes windblown materials from migrating in that direction. LL&S has also constructed a wind break wall on the north and west sides of the residual pile. This helps to prevent materials from becoming windborne. Laborers are also assigned daily to pick up windblown litter.
 9. Leachate –By actively managing the piles and minimizing their size, LL&S prevents the generation of leachate.
 10. Volatile organic compounds – LL&S has a Multi-Rae Plus on-site to screen loads that appear to or smell like they may contain hazardous volatile compounds. This is a multiple function detector that can also be used to check oxygen, lower explosive levels, carbon monoxide and hydrogen sulfide in confined spaces.
 11. Spills – LL&S has the potential for spills of petroleum products used in equipment and improperly delivered materials. LL&S has prepared a SPCC plan which specifies actions to be taken in the event of a release including immediate actions, clean-up and reporting. There are catch basins located off the concrete pad between the processing building and the easterly property line. Each catch basin is set up as an oil/water separator with oil absorbent padding floating on top. Padding is checked at a minimum weekly and after each rainfall event.
 12. Groundwater Permit – LL&S has a groundwater permit from NHDES for the closed construction and demolition debris landfill. This permit requires the sampling of on-site monitoring wells and surface water samples from the seasonal run-off that borders the southerly side of the landfill. Samples are to be obtained two (2) times a year.

VI. CONTINGENCY PLAN

LL&S is an active construction and demolition debris processor and recycler. As such, there are health and safety issues related to both the employees and those delivering materials. An emergency contact list is included in Appendix VIII. This list is also posted beside facility telephones. Key operators in the yard have Nextel's or cell phones that can be used to call emergency services or contact the scale house to call emergency services. This section defines the most likely, significant events that could occur and the course of action that will be pursued.

A. Process Line/Mill Accident

Lock-out, Tag-out is critical to minimize the potential for accidents during maintenance of the processing line. All personnel involved in maintenance of equipment are trained in lock-out, tag-out and issued their own lock. A chart is posted in the electrical room that

delineates which pieces of equipment must be de-energized and locked out in order to work on a given piece of equipment. Guarding is critical to prevent injuries during operation of the line. All guards are in place prior to energizing any piece of equipment.

B. Fall Protection

Maintenance activities require personnel to work off the ground. LL&S has a crane with a work basket, a lift with a work basket and OSHA approved staging. Harnesses are worn when working from a basket. All staging is set up with full planking and guard rails. LL&S has added lanyards in critical locations so that workers can connect their harnesses for fall protection.

C. Excavator/Forklift Accident

Only trained and qualified personnel are assigned to operate excavator and forklifts. Operation of this equipment is in areas where the general public can be present either in vehicles or off-loading materials. Safety training is completed and updated on a continuing basis.

D. Cutting torch accident

Cutting torches are used to size larger metal items for market. Training on safety and operation of the torch is required prior to being assigned this task.

E. Petroleum Product Releases

Several petroleum products are used on-site or may arrive at the site in loads of demolition. LL&S has signage that specifically states that petroleum products are not to be present in loads, but that does not prevent certain members of the public from trying to drop off inappropriate materials. LL&S has a Spill Prevention Control and Countermeasures Plan and personnel are trained in accordance with this plan. All tipping is done on a concrete pad that prevents any liquid waste from entering the ground, thereby preventing contamination of soil and/or the groundwater. Clean-up is back charged to hauler/owner to discourage future delivery of un-permitted wastes.

F. Asbestos and Hazardous Waste

All incoming material is checked for Asbestos containing materials and hazardous waste. These materials are rejected when found. LL&S has a Multi-Rae Plus gas meter for use in detecting hazardous volatile organic compounds. If there is any question as to whether a waste is hazardous, the load is not to be accepted until documentation of non-hazardous materials is provided. Any sealed drum or pail is rejected because it is not known what it contains. The assumption is that it is liquid (which is not acceptable) and possibly hazardous.

G. Fire and Explosion

Petroleum related products and pressurized tanks of various gases have the potential to create fire or explosion. When encountered, pressurized gas cylinders are segregated and Best Management Practices for the particular gas are used (i.e. CCF's are evacuated by a

certified subcontractor). The cylinders are then recycled. There is also the potential of fire and explosion from the fuel and cutting torch gases used at the site. Proper storage and use of these gases are followed. Ammunition and ordnance are occasionally encountered in demolition debris materials. If any ordnance or bomb resembling item is found, the facility will be evacuated and no one is allowed to re-enter until the area has been cleared by the appropriate expert.

H. Baler Accident

Balers are significant safety risks. Training in baler safety and lock-out, tag-out are important steps to prevent accidents. All personnel working on or around the baler are trained prior to being assigned duties related to the baler. All guards are in place prior to operation of the baler. All maintenance is to be completed under lock-out, tag-out procedures.

If an employee is unsure whether a material is acceptable or hazardous, the supervisor is immediately notified and will make that determination in conjunction with other knowledgeable employees. If for some reason, the supervisor and/or the facility engineer are not available, questionable materials are to be rejected.

VII. EMERGENCY RESPONSE PROCEDURES

The purpose of this section is to provide the framework for responding to a variety of emergencies that could occur on the site. The information in this section will be part of the initial training provided to new employees.

A list of emergency telephone numbers (copy in Appendix VIII) is posted in the office, adjacent to the scale computer and in the baler building. The Emergency Coordinator and Alternate Emergency Coordinator for LL&S are designated by the General Manager. The designee's telephone numbers are on the emergency telephone numbers list.

It is the responsibility of each employee to immediately assess the risk and determine his course of action in accordance with the following:

A. Dangerous Conditions

- Stop current activity,
- verbally warn other employees in the vicinity,
- if feasible, rectify the condition,
- immediately notify your supervisor,
- as soon as feasible, directly notify the Emergency Coordinator, and
- meet with your supervisor, the Emergency Coordinator and other key employees to determine how to prevent this condition from occurring again in the future.

B. Personal Injury

- If you have been trained to do so, deactivate any equipment that is involved. Otherwise, immediately notify your supervisor so he can deactivate or have deactivated the equipment.
- If no equipment is involved, immediately notify your supervisor and then follow his instructions. All employees not directed to become involved must clear the immediate area of the injury and emergency access routes and await further instructions.
- The supervisor will assess the situation and do (or direct) the following:
 - Call 911, if required
 - Notify the Emergency Coordinator of the following:
 - Nature of problem
 - Exact location of incident
 - Severity of problem
 - If trained, apply emergency first aid to reduce or stop bleeding
 - Not attempt to move the injured employee unless under the supervision/direction of a qualified medical professional
 - Assign an employee(s) to clear the access for emergency vehicles and direct them to the location of the injured party.
- The Emergency Coordinator will join the supervisor to assess the situation and assume the following duties:
 - Become the primary point of contact with emergency responders,
 - Interact with the public until the General Manager is available, and
 - Determine if the facility should be temporarily closed.
- Immediately upon resolution of the injury, all involved employees shall meet at the Emergency Coordinator's office to fill out incident reports.
- Within one week of the incident, all involved employees will meet with the Emergency Coordinator to discuss the incident, how to minimize the chance of it occurring again, how the incident was handled and whether there needs to be any changes in procedures or on-site equipment.

C. Fire or Explosion

- In the event of a fire or explosion at the facility, the Emergency Coordinator will immediately be notified. Based on the information available from that call, the Emergency Coordinator will call 911. (Small fires that can be put out with the available extinguisher will be put out.) **No fire fighting will be done at the risk of personal injury.** If personal injury is also involved, the Emergency Coordinator must be notified so that emergency responders can be notified.
- If necessary, the Emergency Coordinator will close the facility and notify the scale operator to clear the access ways for emergency equipment.
- Depending on the location of the fire, the public using the facility will be directed out of the facility via the LL&S access or through the adjacent Gateway recycling

site (or both). Supervisors in the yard are responsible for confirming their areas are clear of the public before exiting. If possible, all non-employees will be asked to wait at the LL&S training center until it can be verified that all non-employees have been evacuated. (Scale operator is expected to know who is in the yard. He will clear members of the general public to leave.)

- All non-supervisory employees are to leave the site immediately and meet at the training center beside the LL&S scale. Supervisory personnel are to join them immediately after the public has vacated their area.
- The Emergency Coordinator or designee will meet the emergency vehicle at the facility entrance to direct them to the incident location.
- Incident report forms are available at the LL&S training center and involved employees will fill them out before leaving.
- Within seven (7) calendar days of the incident, all involved parties will meet with the Emergency Coordinator to discuss the incident and determine if any changes in the response mechanisms are required.
- Additional information on emergency response to fires is found in Appendix VII, Fire Protection & Control.

D. Severe Weather/Natural Disasters

- Thunder storms are the most common severe weather condition that is encountered at LL&S.
- Immediately take shelter. The scale building and/or baler building are the best locations for shelter.

E. Petroleum Release

- LL&S maintains a Spill Prevention, Control and Countermeasures Plan (SPCC). Instructions for handling a petroleum release are found in that document.

F. Asbestos or Hazardous Waste

If there is any question that the material delivered has friable asbestos or hazardous waste, immediately clear the area and notify the Emergency Coordinator. LL&S has an asbestos management plan. It is found in Appendix III. Suspect hazardous materials include but are not limited to drummed liquid waste, ordinance, and materials specifically labeled as hazardous.

G. Medical (Red Bag) Waste

If medical waste (typically in red bags labeled Bio Hazard) is found in a load, the load is to be rejected. If it is already discharged on the tipping floor, isolate the area and immediately notify the Emergency Coordinator. Do not allow the delivery vehicle to leave the site. Determine from the driver where the load originated from. Contact the hauling company's office to have them contact the source of the material. Depending on the condition of the Red Bags, a determination will need to be made as to whether the site must be shut down until appropriate personnel have removed the material and issued a clearance.

VIII. EMPLOYEE TRAINING PROGRAM

LL&S maintains an employee training program for all personnel. This training is geared toward health and safety requirements, NHDES Operator Certification requirements, and performance of the duties required of specific positions.

For NHDES Operator Certification requirements, all employees must submit applications to become certified within their first six months of employment. LL&S is required to have at least one Level IV Certified Operator. Other operators are certified in accordance with their experience and the requirements of the position they hold. LL&S is required to have at least one Level III or Level IV Certified Operators for every 5 employees. Employees are paid for the time and expenses of attending Certification training and becoming certified. The requirements for annual certification refresher training may be fulfilled by attending NHDES Operator Training sessions or other related training that is approved by the NHDES.

All new employees receive the following training which consists of both classroom and hands-on training:

- Company rules & regulations
- Human resources matters - employee handbook and policies
- Conveyor safety
- Lock-out, Tag-out
- Fall prevention
- Machine guarding
- HAZCOM
- Confined space entry
- Hearing protection
- Blood borne pathogens
- Spill prevention and storm water management
- Emergency Action Plan

Attendance at monthly training sessions is required of all processing branch employees. They include such topics as:

- Baler maintenance and safety
- Conveyor maintenance and safety
- Personal Protective Equipment
- Slips, Trips and Falls
- Personal Safety
- Operating Safety
- Fire Prevention/Extinguisher Training

LL&S also trains key individuals as First Aid Responders

Records on all training are kept on file.

IX. RECORDKEEPING AND REPORTING

A. Facility Operating Records

LL&S shall compile and maintain records at the facility which document all aspects of the operation. At a minimum, this information shall include the following:

- Identification of the facility by name, street address, municipality and permit number.
- Identification of the permittee by name, address and telephone number.
- Identification of all facility operators by name, address, certificate number and dates of employment. All facility operators who do not hold certification as a Solid Waste Operator issued by the State of New Hampshire shall apply for such certification within 6 months of date of hire.
- Quantity, type, source and destination of all waste received by the facility.
- Quantity, type and destination of all waste generated by the facility, if any, including by-pass and residual waste.
- Quantity, type and destination of all certified waste-derived products produced at the facility (none at this time).
- Record of inspections, maintenance and repairs.
- Record of accidents, violations, remedial and emergency event response actions.
- Data from all environmental monitoring performed at or for the facility, whether required by the solid waste rules or the permit or undertaken voluntarily.
- Documentation of contact with the waste management district(s) served by the facility as required by Env-Sw 1105.12.

- If required by 40 CFR 258, such information and documentation as LL&S is required therein to place in the facility operating records.
- Other record keeping information and documentation required by Env-Sw 400 thru 800, as applicable.
- Other information and documentation as required by the terms and conditions of the Solid Waste Permit.

Operating records shall be kept on-site during the active life of the facility unless approval is granted pursuant to the provisions for a Type V permit modification or a waiver to relocate or destroy the records.

Records shall be available to NHDES department inspectors and copies provided to the department upon request.

Operating records shall be maintained in an NHDES approved location subsequent to closure of the facility until approval is received to destroy them.

B. General Reporting Requirements

LL&S shall notify the NHDES, Waste Management Bureau in writing within 30 calendar days of any change in the facility address, telephone number, key certified operator and contact person(s).

LL&S shall file an annual facility report by March 31 for the prior calendar year for each year that the facility operates and for each year the facility's post-closure monitoring and maintenance period, as follows:

- If waste was received within the reporting year, the report shall contain the information required by Env-Sw 1105.13, unless as provided by Env-Sw 1105.13(b)(3).
- If no waste was received within the reporting year, the report shall contain the information required by Env-Sw 1105.14, unless as provided by Env-Sw 1105.13(b)(3).

LL&S shall report all changes in operational and ownership control in accordance with the provisions for a type III or type IV permit modification, as applicable.

LL&S shall notify the department in writing prior to conducting the following activities at the facility not specifically authorized in the permit;

- Any activity not regulated by the solid waste rules but involving a waste listed in Env-Sw 101.03, and
- Any activity that is permit-exempt in Env-Sw 302.03.

For activities commencing at the facility site after permit issuance, written notice pursuant to the above shall include the following, compiled in the order shown:

- a. Facility name, location by street and municipality, and permit number;
- b. A description of the subject activity;
- c. A site plan showing the location of the subject activity in relation to the permitted facility activities;
- d. The date the subject activity will commence and the anticipated duration of the activity;
- e. Identification and status of other local, state and federal permits and approvals required to implement the subject activity; and
- f. Certification, signed by the permittee, that the activity shall not adversely affect the permitted construction, operation and closure of the facility as required by Env-Sw 1102.02.

C. Incident Reporting

Situations that involve an imminent or substantial risk to human health, safety or the environment or which constitute a violation of the solid waste rules or facility permit shall be report verbally to the NHDES as soon as practicable. A follow-up report shall be prepared within five (5) working days of the time that LL&S becomes aware of the incident or situation. The written follow-up shall include:

- The facility name, location by street and municipality and permit number;
- Permittee name (LL&S, Inc.), mailing address and telephone number;
- Identification of all persons involved in the incident or situation, including name, title and affiliation;
- A description of the incident including:
 - The date and time of the incident or situation;
 - The quantity and types of wastes and material(s) involved in the incident or situation and in the clean-up activities;
 - The measures employed to contain releases caused by the incident or situation; and
 - An assessment of actual or potential hazards to the environment, safety and human health related incident; and
- Measures LL&S has or intends to apply to reduce, eliminate and prevent a recurrence of the incident or situation.

D. Complaints

LL&S shall report to the department, in writing, all credible complaints made by abutters or other third parties that involve the operating conditions or practices which have the potential to adversely affect human health, safety or the environment. This reporting includes any recurring or nuisance situation such as noise, litter, odor, dust or vectors. The report shall include the following:

- Facility name, location by street and municipality, and permit number;
- Permittee name, mailing address and telephone number;
- Name, mailing address and, if available, telephone number of the complainant;
- Nature of the complaint, date(s) of receipt by LL&S complete description of the circumstances or situation giving rise to the complaint;
- A description of the LL&S's response actions; and
- Other information required on Incident Reporting (found in Contingency Plan) if part of an incident.

APPENDIX I

LL&S TIPPING FLOOR PROCEDURES

LL&S TIPPING FLOOR & UNLOADING POLICY

It is the policy of LL&S to provide a safe and healthy working environment for our employees, customers, drivers and visitors entering our facility.

Please review and become familiar with the following requirements. They have been implemented specifically to assure that your visit to our site will not subject you, our employees and the facility to any type of physical hazard or regulatory non-compliance. It is essential that you comply fully with these requirements.

- Personal Protective Equipment (PPE): A driver must provide his own personal protective equipment. Any driver who fails to wear the proper PPE while on site may be subject to a ban from the site. At a minimum, this equipment shall include:
 1. Hard Hat
 2. Work boots with sufficient gripping sole and toe protection
 3. High Visibility Vest or clothing (ANSI standard)
 4. Gloves
- Site communications is via CB channel #1
- All drivers/visitors are required to respond to emergency situations as directed by any site supervisory staff.
- Drivers/visitors shall report all accidents or occurrences to site supervisory staff.
- Smoking or open flames ARE NOT permitted in any area other than specifically designated areas.
- Drivers are expected to remain in or near their vehicles except to scale in and out, untarp or perform activities necessary to unload their vehicles.
- All vehicles must come to a complete stop prior to proceeding on to the scale.
- All vehicles must STOP at the load inspection platform for load inspection and specific off loading directions.
- Drivers/visitors must observe and obey all posted safety and traffic signs along with following the instructions given by site personnel.
- Drivers are not to untarp or unsecure their load prior to entering the site. All vehicles are to be untarped in the designated area. No loads are to be hoisted/raised for draining purposes.
- Drivers must notify site personnel if they believe their load contains potentially dangerous/awkward pieces that could present a hazard while off-loading, and then follow site supervision.
- Maintain appropriate spacing distance between vehicles while off loading.
- Drivers must open their tailgate and safely secure it prior to unloading.
- All tailgates or similar closures must be secured prior to exiting the unloading area.
- Drivers must stay within 6 feet of their vehicles at all times. No other people are allowed out of the vehicle while in the unloading area. Never walk behind a vehicle while it's backing up.
- Use 3 points of contact while exiting and entering your vehicle. Watch for trip hazards.
- If you have a Frozen load: Always stay within 6 feet of your vehicle, get the attention of the heavy equipment operator. Explain the situation and follow their instructions.

Authorized and Prohibited Wastes

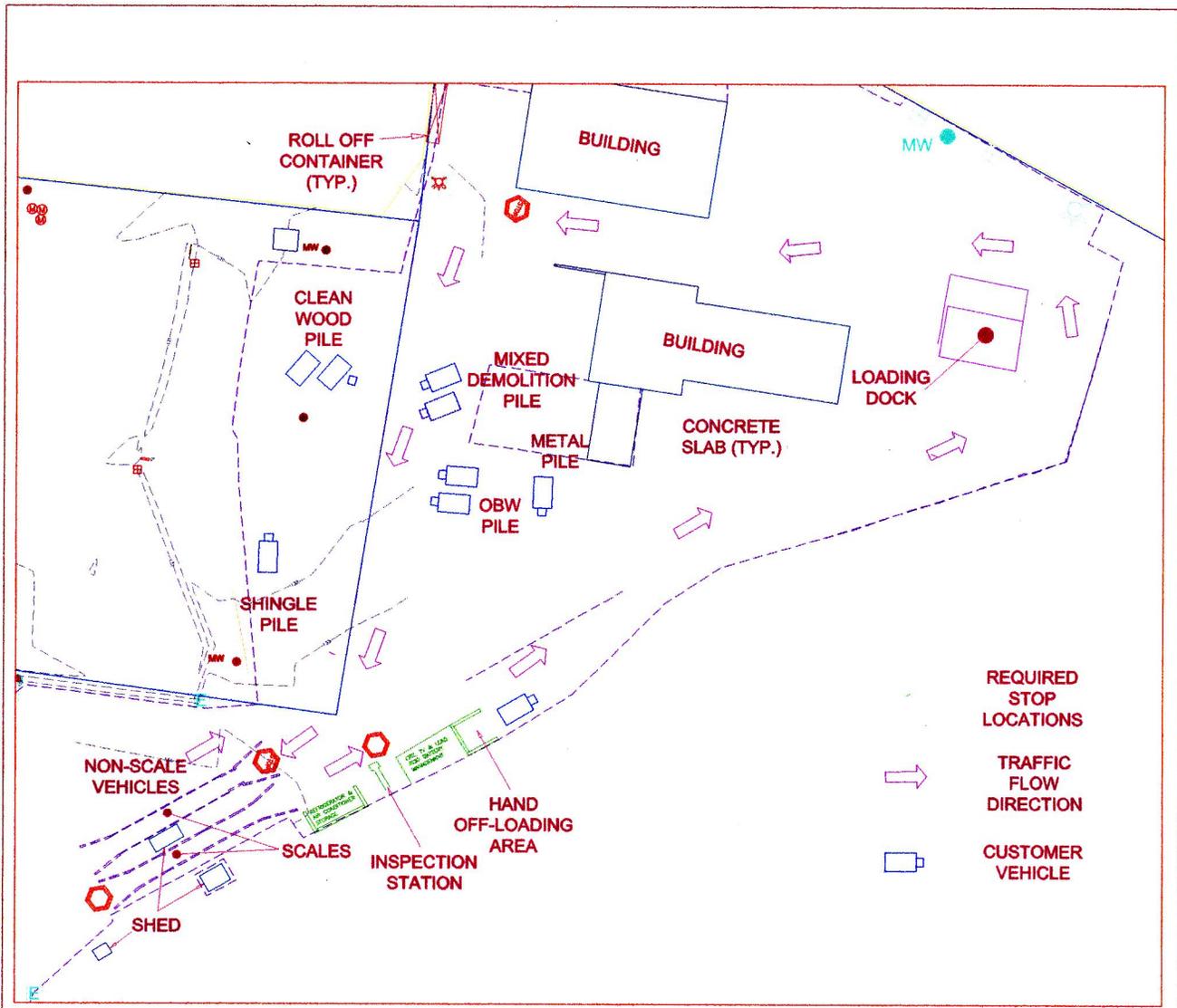
LL&S is authorized to accept mixed demolition debris and recyclable materials. These include:

- Treated and untreated wood
- Asphalt shingles
- Concrete and Brick
- Metal
- Insulation
- Wire
- Glass
- Carpet
- Cardboard
- Corrugated Container Board
- Similar wastes to those listed above in quantities generally incidental to the quantity of wood waste received
- Aluminum beverage can/containers
- Steel cans
- Paper
- Plastics
- Tires
- Televisions and CRTs
- Lead Acid Batteries
- Washers, dryers, refrigerators and other appliances/white goods
- Air conditioners

Prohibited Wastes include:

- Hazardous waste, as identified in the New Hampshire Hazardous Waste Rules Env-Wm 400 (as updated) or spent containers for the same, including intact or crushed drums
- Household Hazardous Waste
- Asbestos and asbestos containing wastes
- Petroleum or other contaminated soils
- Sludge or sewage
- Contained gaseous waste, unless collected for recycle
- Liquid waste
- Motor vehicles or motor vehicle wastes, as defined by RSA 149-M:1, X-b, and other automobile parts
- Laboratory wastes
- Hospital or medical waste, including infectious waste
- Batteries, except lead acid batteries
- Electrical components
- Radioactive waste
- Bottom ash or fly ash
- Source, special nuclear or by product material as defined by the Atomic Energy Act of 1954, as amended
- Residue from air pollution control facilities
- Mixed municipal solid waste
- Animal wastes, including carcasses and manure
- PCB wastes
- Mercury added products
- Any waste which, based on its quantity, consistency, size, shape, leaching characteristics, or other physical or analytical characteristics is determined by the operator or the Department to be unsuitable for management at this facility within the terms of the permit

APPENDIX II
TRAFFIC FLOW PATTERN



NOTE: THE MAXIMUM NUMBER OF TRUCKS IN THE YARD OFF-LOADING IS LIMITED TO 8.
 MAXIMUM VEHICLES OFF-LOADING AT EACH PILE SHALL BE: NO MORE THAN 2 TRUCKS AT CLEAN WOOD PILE, 2 TRUCKS AT SHINGLE PILE, 5 TRUCKS COMBINED AT DEMO AND OBW PILES, 2 TRUCK AT HAND OFF-LOADING AREA, AND 1 TRUCK AT METAL PILE.

LL&S, INC.
 87 Lowell Road
 SALEM, NEW HAMPSHIRE 03079
 (603) 884-8800

LOWELL ROAD WOOD PROCESSING FACILITY
 87 Lowell Road, Salem, NH

**LOWELL ROAD WOOD WASTE PROCESSING FACILITY
 TRAFFIC FLOW PLAN**

JANUARY 2008 SCALE: NTS FIGURE 1

APPENDIX III
ASBESTOS RESPONSE PLAN

LL&S Asbestos Inspection Protocols

Purpose The purpose of this document is to briefly outline LL&S's procedures and protocols of inspecting/rejecting incoming materials for highly suspect asbestos containing materials (ACM).

Why at LL&S Visual inspection of all incoming loads by certified asbestos inspectors is required in section V - Facility Conditions of the Beneficial Use Determination (BUD) issued by the Massachusetts Department of Environmental Protection (MA DEP) on January 4, 2000 to LL&S, Inc. for their Salem, New Hampshire construction and demolition (C&D) debris processing facility.

What are inspections? A qualified and certified asbestos inspector is to visually inspect the incoming materials and determine if any of the materials delivered are considered a highly likely asbestos containing material (ACM).

Conducting proper inspections The earliest detection of suspect ACM materials is the best way to prevent exposure to such materials. At LL&S load inspections start as soon as the trucks come off the inbound scale. The following table outlines the inspection steps and locations.

Step	Location	Action	Rejection criteria
1.	The inspection tower	An inspector looks at loads from the top of a platform, which allows the inspector to look down into a container without having to climb onto the truck	Should any suspect material be identified, the driver is notified and the load is rejected from the facility

Continued on next page

LL&S Asbestos Inspection Protocols, Continued

Conducting proper inspections (continued)

Step	Location	Action	Rejection criteria
2.	Tipping floor	The driver backs into the tipping area and opens the tailgate. At this time the inspector can make a cursory inspection of the material within the vehicle.	Should any suspect material be identified, the driver is notified and the load is rejected from the facility
3.	Tipping oversight	The inspector watches as the vehicle unloads.	Should any suspect material be identified the unloading process will be stopped. If any suspect ACM material is on the tipping floor, the facility will follow reloading protocols listed below.
4.	Final inspection	The inspector visually inspects the load after it is clear from the vehicle.	Should any suspect material be identified suspect ACM material is on the tipping floor, the facility will follow reloading protocols listed below.

Suspect materials

LL&S employees know that asbestos was used widely in the production of building materials. Some of the materials most commonly associated with asbestos are listed below.

- Plaster
- Floor tiles (9"x9")
- Thermal insulations (TSI)
- Cementacious pipes
- Ceiling tiles
- Cement shingles
- Linoleum
- Cement sheets
- Spray on fire proofing
- Mastic on wood or cement
- Cloth vibration dampeners on duct work

Continued on next page

LL&S Asbestos Inspection Protocols, Continued

Rejecting suspect materials

The following table is a summary of rejection procedures. It should be noted that, asbestos containing materials (ACM) are classified as two types; friable and non-friable. Friable materials are those materials that may be crumbled, pulverized or reduced to powder when dry by applying hand pressure. Non-friable materials are materials that cannot be crumbled, pulverized or reduced to powder when dry by hand pressure.

Step	Action
1	If a highly suspect material is identified on the tipping floor, it is classified by the inspector as friable or non-friable
2	The suspect ACM is then wet thoroughly
3	Non-friable suspect ACM is reloaded into the truck
4	Friable suspect ACM is loaded into airtight "bladder bags" or other appropriate asbestos containers and then reloaded into the truck.

APPENDIX IV

LL&S DRYWALL REMOVAL PROGRAM

Gypsum Removal Action Plan

Introduction The following document was prepared to provide the Massachusetts Department of Environmental Protection (MA DEP) and LL&S, Inc (LL&S) with an overview on how and why gypsum removal activities will occur at the LL&S facility.

Background As landfills fill with processed and unprocessed mixed construction and demolition debris (C&D) materials the potential for the generation of hydrogen sulfide gas increases. LL&S is implementing this plan in an effort to reduce potential odors at landfills accepting their materials.

About gypsum Gypsum is a material that can produce hydrogen sulfide gas (H₂S). H₂S is slightly heavier than air and has a rotten egg odor. H₂S is produced in a landfill when sulfur compounds decompose in the absence of oxygen (anaerobic condition) and the presence of moisture. The principle source of H₂S in C&D debris at landfills is gypsum in the form of wallboard and plaster commonly referred to as “drywall”.

Gypsum inspection areas At LL&S there are two gypsum inspection areas. These areas are located at:

- the Viewing Platform, and
- the Incoming Material Tipping Area.

Continued on next page

Gypsum Removal Action Plan, Continued

Gypsum removal/bypass area In addition to the inspection areas, the tipping area will serve as the gypsum bypass area. If incoming material is deemed to contain gypsum greater than de minimus quantities, the gypsum will either be removed from the load and/or the load will be bypassed and **will not** be used processed into a daily cover or shaping and grading material.

Signs The following signs will be posted at LL&S to assist with the removal of gypsum

- Inspection Station – “Advise if Load Contains Gypsum””
- Tipping Floor Area – “Gypsum Disposal Area”

Inspection procedures The following table outlines the protocols for the identification of gypsum containing materials at LL&S.

Step	Action						
1	<p>The Inspection Station attendant asks the delivery driver if the load contains a significant amount gypsum that cannot be easily removed from the load.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">If...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td>the driver answers yes</td> <td>the load gets sent to the Gypsum Disposal Area (designated portion of the tipping area)</td> </tr> <tr> <td>the driver answers no</td> <td>the load gets sent to the designated incoming material tipping area</td> </tr> </tbody> </table>	If...	Then...	the driver answers yes	the load gets sent to the Gypsum Disposal Area (designated portion of the tipping area)	the driver answers no	the load gets sent to the designated incoming material tipping area
If...	Then...						
the driver answers yes	the load gets sent to the Gypsum Disposal Area (designated portion of the tipping area)						
the driver answers no	the load gets sent to the designated incoming material tipping area						
2	<p>Tipping floor inspection personnel inspect the material during tipping activities.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">If...</th> <th style="text-align: center;">Then...</th> </tr> </thead> <tbody> <tr> <td>material exiting contains gypsum</td> <td>stop the unloading process and direct the driver to move to the Gypsum Disposal Area or move the material with heavy equipment</td> </tr> <tr> <td>material exiting does not contain gypsum</td> <td>allow the driver to continue offloading</td> </tr> </tbody> </table>	If...	Then...	material exiting contains gypsum	stop the unloading process and direct the driver to move to the Gypsum Disposal Area or move the material with heavy equipment	material exiting does not contain gypsum	allow the driver to continue offloading
If...	Then...						
material exiting contains gypsum	stop the unloading process and direct the driver to move to the Gypsum Disposal Area or move the material with heavy equipment						
material exiting does not contain gypsum	allow the driver to continue offloading						

Continued on next page

Gypsum Removal Action Plan, Continued

Removal procedures

The following table outlines the protocols for the removal of gypsum containing material at LL&S.

If...	Then...
gypsum is tipped within the Gypsum/Bulky Disposal Area	document the amount removed (estimate) so that it can be properly tracked.
gypsum is observed in the incoming material tipping area following the offloading of a truck	request an excavator or front-end loader to move the gypsum to the Bypass Stockpile Area

New wallboard

If LL&S personnel determine that the wallboard/drywall material is “recyclable” based on volume, quantity and/or quality, it may also be placed into a roll-off container for subsequent off-site recycling.

Storage

All bypassed materials will be stored following LL&S’s operating permit and other superceding permit approvals.

Tracking and reporting

During the workday, LL&S personnel will estimate the amount of gypsum removed and properly record it. Please note that since the gypsum may be mixed with other materials, the amount tracked will be an estimate.

LL&S will keep this information on file, which will be provided to MA DEP upon request.

APPENDIX V
LOCK-OUT, TAG OUT

LL&S
LOCKOUT / TAGOUT PROGRAM
FEBRUARY 1, 2010 EDITION

1. PURPOSE

The purpose of this Lockout/Tagout Program (hereinafter "Program") is to ensure that the unexpected energizing of machines and equipment does not occur during servicing or maintenance operations. The Program details the specific requirements for when lockout is to be performed, who is authorized to do it, responsibilities of various personnel, and a step-by-step procedure for performing lockout/tagout. Various appendices are included which detail key elements of the procedures, such as employee training and machine specific procedures. The Program was also prepared to meet the requirements of OSHA's Lockout/Tagout Standard 29 CFR 1910.147 and electrical lockout/tagout requirements in 29 CFR 1910.333.

2. SCOPE

The scope of this procedure applies to all equipment and machinery at LL&S. It applies to all employees and contractors that are performing servicing or maintenance (see definitions in Appendix A) at LL&S as explained below.

3. RESPONSIBILITIES

3.1 GENERAL MANAGER

1. To implement this Program by ensuring that proper training is provided and that appropriate locks and tags are available and approved. Maintain documentation of the procedure, training and related documents.
2. Ensure that periodic (at least annual) audits are performed to ensure this Program is being followed, adequately protects personnel, and that annual training is provided.
3. Prepare and maintain Machine Specific Lockout Procedures (MSP) for all machines and equipment that have more than one energy source, or one source that also stores energy.
4. Approve all lockout/tagout devices for the facility.

3.2 SUPERVISION

1. To ensure that lockout is being performed whenever servicing or maintenance is conducted.
2. To ensure that whenever major replacement, repair, renovation or modification of machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices are present that can be locked out.
3. To perform lock cutting (following the permit procedure in Appendix B) only when necessary.

4. To train all authorized personnel on this Program on initial hire, when deficiencies are identified in the involved department or work area, and when changes to this Program are made.
5. To use established disciplinary procedures for any employees that do not follow the Program.

3.3 SAFETY MANAGER

1. To keep under lock and key the second set of keys for lockout locks. The use of this key is to be only used when:
 - a) the person responsible for the lock can demonstrate that they have lost their first key, or
 - b) It will be used in lieu of cutting off the lock as explained in the "Lock Cutting Permit Procedure" in Appendix B.

3.4 AUTHORIZED EMPLOYEES

1. To follow the Program when performing servicing and maintenance of potentially energized equipment or machines. This includes locking out a machine even though later the machine will need to be energized to test the servicing and maintenance.
2. If the equipment or machine cannot be locked out, contact your Supervisor for assistance.
3. To discuss with affected employees that specific equipment and machinery is to be serviced/maintained.
4. To not leave the facility with any lock keys or locks unless authorized to do so.
5. Only electrically qualified individuals may perform work on electrical equipment and premises wiring. Electrical lockout procedures are included in this program.

3.5 AFFECTED EMPLOYEES

1. To follow this Program and training received and to assist authorized employees to perform lockout.
2. To not operate any equipment or machinery that is locked or tagged out.
3. To not remove any locks or tags.

3.5 OTHER EMPLOYEES

1. To be aware of the Lockout Program at LL&S, emphasizing its importance of keeping employees safe.
2. To not operate any equipment or machinery that is locked or tagged out.
3. To not remove any locks or tags.

3.6 ENGINEERING

1. To ensure that whenever major replacement, repair, renovation or modification to

machines or equipment is performed, and whenever new machines or equipment are installed, energy isolating devices are present that can be locked out.

2. To inform contractors of the requirements of this Program, and that by not following any aspects of it will result in disciplinary actions, possibly including their removal as an approved contractor.

4. LOCK AND TAG IDENTIFICATION

All lockout/tagout devices need to meet the following parameters:

1. Only locks and tags approved for lockout will be used for this purpose. These locks and tags are not allowed to be used for any other purpose. No other locks or tags can be used for lockout unless approved by the General Manager and communicated accordingly.
2. All locks and tags will have identification on them identifying the individual that installed them. Locks will have a tag on them with the authorized person's name.
3. Tagout alone is not authorized at LL&S as all equipment is capable of being locked out. Therefore tags are only used on locks to provide a warning statement and to identify the employee's lock.
4. Lockout tags must be durable and suitable for the environment they are used in.
5. All lockout/tagout devices need to be durable and used in a manner that they were intended.

5. LOCKOUT PROCEDURE

The following general Lockout procedure will be followed when performing servicing or maintenance on equipment or machines. The MSP procedure is located in Appendix D.

1. PREPARATION FOR SHUTDOWN: The authorized person that will be performing the servicing or maintenance will be knowledgeable of the type and magnitude of the energy, the hazards of the energy to be controlled and the method to control the energy. The affected person(s) and authorized person(s) will discuss the potential hazards as necessary before work begins. The Machine Specific Procedure for the machine is readily available in the Electrical Room for review.
2. MACHINE OR EQUIPMENT SHUTDOWN: The machine or equipment shall be turned off by the normal stopping procedure. If the machine or equipment is shut off in a different manner, such as by an emergency stop or breakage, the authorized employee needs to determine how this may affect kinetic or stored energies.
3. MACHINE OR EQUIPMENT ISOLATION: Isolate the machine or equipment from its energy source by operating the energy isolating device(s). Electrical equipment that is energized by plug and cord can be unplugged from the receptacle.

If the electrical plug is in the immediate visible vicinity of the person performing the servicing and maintenance, and they have full control that it will not be accidentally plugged in, it does not have to be locked out. If the plug is not in the immediate visible vicinity of the authorized person or they do not have full control that it won't be plugged

in, it needs to be physically locked with a plug-end lockout device. Additional information is provided in Appendix A under the definition for "Portable Equipment".

Multilock devices must be used when more than one authorized employee is performing the servicing or maintenance. EACH authorized employee is to perform lockout.

4. LOCKOUT DEVICE APPLICATION: A lock shall be affixed to each energy isolating device by all involved authorized employee(s).

Locks with tags and other necessary lockout devices will be used for lockout. If lockout is not possible, contact the General Manager for assistance.

Locks need to hold the energy isolating device in a safe position.

5. STORED ENERGY: Any stored energy needs to be relieved, disconnected, restrained or otherwise rendered safe. Safely determine if electricity has been discharged from capacitors, compressed gas from containers, spring tension, etc. Electrical work is only to be performed by qualified individuals.

6. VERIFICATION OF ISOLATION: Verify that isolation and de-energizing has been accomplished. This is normally performed by pushing the "on" control (switch, on/off button, etc.) on the machine or equipment. If more than one control is present, try them all.

7. PERFORM SERVICING AND MAINTENANCE: Perform the necessary servicing or maintenance. If the work is to be performed by different authorized personnel on the same or different shifts, communications between employees needs to be performed, and the integrity of the lockout needs to be maintained. Transfer of locks is discussed later in this procedure.

8. RELEASE FROM LOCKOUT: Before locks are removed and energy is to be restored the following actions need to take place:

- Work performed is completed;
- Nonessential items have been removed from equipment or machinery (i.e., wipe rags, hand tools).
- Employees are in a safe position.
- Affected employees have been informed that the locks are being removed.

9. LOCK REMOVAL: The employee that applied the lock needs to be the person that removes it. If this person is not available, the "Lock Cutting Permit Procedure" in Appendix B needs to be followed.

6. SPECIAL CIRCUMSTANCES

Any lockout activity that does not fall within the authorized procedures that is proposed to be performed needs to be reviewed and approved by the General Manager before it may be performed.

7. TESTING OR POSITIONING

When a machine or piece of equipment must be energized so that it can be tested or repositioned, it needs to be locked out during all servicing and maintenance tasks except for the actual testing or positioning. If additional servicing or maintenance is required, it needs to have the energy control procedures reapplied. Continue this process until the maintenance or servicing is completed.

8. CONTRACTORS

Contractors that are working onsite need to follow lockout procedures. Either LL&S will perform lockout for the contractor, or verify that the contractor is following acceptable lockout procedures. Involved LL&S employees need to be aware of the contractor's procedures with regards to restrictions and prohibitions. Contractors need to be educated on the requirements of the Program as it applies to the specific project they are performing.

9. GROUP LOCKOUT

When more than one employee is to perform servicing or maintenance on the same piece of equipment or machinery, each employee must apply their own locks and tags on each energy isolating device. Multilock devices are to be used for this purpose.

As an alternative, a lockout box may be used for group lockout. One lead authorized employee will lockout out all energy sources on a machine. He/she will then place all lock keys into a lock box. Additional employees will check every energy source to ensure that they have all been locked out. Once assured that lockout has been performed each employee will put a lock and tag on the multilock device on the locked lockout box.

10. SHIFT OR PERSONNEL CHANGES

If an employee(s) performing lockout is replaced by another authorized employee(s) for a shift change or other reasons, a continuity of lockout needs to occur. The two methods that are approved at LL&S are as follows:

1. The departing authorized employee will inform the incoming authorized employee of the status of the maintenance and servicing that has been performed. They will then transfer all locks and tags so that continuity of lockout is ongoing; or
2. A Supervisor (trained and authorized) installs his/her locks and tags before the departing authorized employee removes his/hers (using multilock devices). Next, the incoming authorized employee will apply their locks and tags before the Supervisor removes his/hers. The Supervisor will inform the incoming authorized employee of all work performed and hazards.

11. ELECTRICAL LOCKOUT

11.1 PURPOSE & SCOPE

Electrical lockout applies to work performed on or near exposed parts, for example to repair an electrical disconnect or install new circuit breakers in a panel. Specific lockout procedures need

to be followed to protect the qualified person performing the work from shock and arc flash hazards. Safe procedures for deenergizing circuits and equipment need to be determined by the electrically qualified employee before circuits or equipment are deenergized. Stored electric energy that might endanger personnel needs to be released, such as from capacitors. Arc flash clothing and other PPE, and electrically insulated gloves may need to be worn.

11.2 PROCEDURE

The circuits and equipment to be worked on shall be disconnected from all electric energy sources. Control circuit devices, such as push buttons, selector switches, and interlocks, may not be used as the sole means for deenergizing circuits or equipment. Interlocks for electric equipment may not be used as a substitute for lockout and tagging procedures. The circuitry of the emergency generator needs to be evaluated to determine if it automatically starts will energize "locked out" equipment due to separate wiring.

1. A lock and a tag must be placed on each electrical disconnecting device following the lockout procedures.
2. A tag used without a lock (only with the General Manager's permission) must be supplemented by at least one additional safety measure that provides a level of safety equivalent to that obtained by use of a lock. Examples of additional safety measures include the removal of an isolating circuit element, blocking of a controlling switch, or opening of an extra disconnecting device.
3. A qualified person shall operate the equipment operating controls or otherwise verify that the equipment cannot be restarted. Electrical test equipment needs to be used to test the circuit elements and electrical parts of equipment. The test shall also determine if any energized condition exists as a result of inadvertently induced voltage or unrelated voltage backfeed even though specific parts of the circuit have been deenergized and presumed to be safe. The test equipment shall be checked for proper operation immediately before and after the testing.
4. Before reenergizing equipment, a qualified person needs to conduct tests and visual inspections, as necessary, to verify that all tools, electrical jumpers, shorts, grounds, and other such devices have been removed, so that the circuits and equipment can be safely energized. Employees exposed to the hazards associated with reenergizing the circuit or equipment shall be warned to stay clear of circuits and equipment.
5. Each lock and tag shall be removed by the person that installed them, and equipment reenergized following electrical safe work practices.

12. PERIODIC AUDIT

LL&S audits the Program on an annual basis to identify any areas for improvement, and to comply with the OSHA auditing requirements. The details of the audit include:

1. Is performed by someone not utilizing the energy control procedures being observed;
2. Each authorized employee is observed performing a representative lockout. The findings of the observation are documented;
3. MSPs are reviewed annually to determine if they are accurate. If not accurate, the MSPs will

be updated. Documentation of the reviews needs to be made.

4. LL&S will certify that the periodic audit has been performed. The certification needs to contain what machine or equipment the audit was performed on, the date, the employees included in the audit, and the person performing the audit.
5. If deficiencies are identified, procedures will be updated and retraining performed as necessary to correct the deficiencies.

LOCKOUT PROGRAM APPENDICES

- APPENDIX A: DEFINITIONS
- APPENDIX B: LOCK CUTTING PERMIT PROCEDURE
- APPENDIX C: TRAINING INFORMATION
- APPENDIX D: MACHINE SPECIFIC PROCEDURES
- APPENDIX E: LIST OF MACHINES MSPs
- APPENDIX F: AUTHORIZED EMPLOYEE LOCKOUT AUDIT FORM

APPENDIX A

DEFINITIONS

AFFECTED EMPLOYEE

An employee whose job requires him/her to operate or use a machine or equipment on which servicing or maintenance is being performed under lockout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

AUTHORIZED EMPLOYEE

A person who locks out or tags out machines or equipment in order to perform the servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section. Employees that energize and de-energize electrical equipment need to be qualified to do so.

ENERGIZED

Connected to an energy source or containing residual or stored energy.

ENERGY ISOLATING DEVICE

A mechanical device that physically prevents the transmission or release of energy, including but not limited to the following: a manually operated electrical circuit breaker; a disconnect switch; a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors and, in addition, no pole can be operated independently; a line valve; a block; and any similar device used to block or isolate energy. Push buttons, selector switches, and other control circuit type of devices are not energy isolating devices.

ENERGY SOURCE

Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy

EXCLUSIVE CONTROL

"Under the exclusive control of employee" means that the authorized employee would be able to prevent the equipment from becoming reenergized during his or her servicing or maintenance of that equipment. The plug is under the exclusive control of the employee if it is physically in the possession of the employee, or within arms reach and in the line of sight of the employee, or if the employee has affixed a lockout/tagout device on the plug. This also applies to airline quick connects.

LOCKOUT

The placement of a lock on an energy isolating device, in accordance with an established Program, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lock is removed.

A tag is placed on the lock to provide additional warning information, and the name of the person that put it on. This tag should not be confused with "tagout", which is defined below.

MULTILOCK DEVICE

A multilock device is a metal or strong plastic hasp-like piece of hardware that is installed on an energy isolating device where a lock would normally be placed. Once this is closed, several individual locks can be placed on it.

PORTABLE EQUIPMENT

Portable equipment includes all equipment and machinery that is connected to its energy source by an electrical cord and plug, and/or airline with a quick disconnect. Portable equipment may not be required to be locked out, providing that the plug or quick connect is under the exclusive control (see above definition) of the individual performing the work. If the individual performing the work must leave the area for any reason (thus surrendering control of the plug or quick connect), a lockable device must be applied to the plug or quick connect. If more than one person is performing the work, it is the responsibility of all individuals to see that the equipment is under their exclusive control and that a lockable device be applied if unattended. If this condition creates a hazard lockout must be performed.

SERVICING AND/OR MAINTENANCE

Work place activities such as constructing, installing, setting up, adjusting, inspecting, modifying, and maintaining and/or servicing machines or equipment. These activities include lubrication, cleaning or unjamming of machines or equipment and making adjustments or tool changes, where the employee may be exposed to the unexpected energizing or startup of the equipment or release of hazardous energy.

Note: Minor tool changes and adjustments that are routine, repetitive and integral to normal production activities do not require lockout as long as alternative measures offer equally effective protection.

TAGOUT

The placement of a tag on an energy isolating device, in accordance with an established Program, to indicate that the energy isolating device and the equipment being controlled may not be operated until the tag is removed following this procedure. At LL&S, only lockout is allowed unless the General Manager approves tagout on a case by case basis.

Note: *Other definitions are present in the OSHA Regulation. A few of the above definitions were modified slightly from the regulation to be more site specific.*

APPENDIX B

LOCK CUTTING PROCEDURE

PURPOSE

This procedure is to be only used when the authorized person who applied the lockout device is not available to remove it.

PROCEDURE

1. Determine if the necessary maintenance or servicing has been performed on the equipment or machine. Do not remove the lock or tag if it is not safe to do so.
2. The supervisor will verify that the employee who applied the lock or tag is not at the facility.
3. Inform affected personnel that the lock or tag will be removed.
4. If it is safe to proceed, complete the lock cutting authorization permit and have it filled out and signed by the appropriate personnel.
5. Use bolt cutters or other means to remove the lock or tag. (The General Manager can use a lock's second key following this procedure, which is equivalent to cutting the lock off).
6. Follow the lockout procedure to relock out the machine or equipment. If it is to be put back into service, follow the part of the procedure for energizing equipment.
7. Make a reasonable effort to contact that employee to inform him that his lock or tag has been removed. Ensure that the employee is aware of this before they resume work at the facility.
8. Return the completed permit to the General Manager's office for filing.

LL&S
LOCK AND TAG CUTTING PERMIT

FOLLOW THE PROCEDURE ON THE BACK OF THIS PERMIT. FILL IN THE FOLLOWING INFORMATION:

LOCK AND TAG CUTTING PERMIT

NAME	
TITLE	
DATE	
DEPARTMENT	
EQUIPMENT OR MACHINE	
PERSON WHO PERFORMED LOCKOUT/TAGOUT	
REASON WHY THE LOCK HAS TO BE REMOVED	
AUTHORIZING SUPERVISOR	
DATE	

APPENDIX C

TRAINING INFORMATION

SEE

**LOCKOUT/TAGOUT TRAINING
POWER POINT PRESENTATION**

the updated training presentation has not been prepared yet

APPENDIX D

LOCKOUT MACHINE SPECIFIC PROCEDURE

1. PURPOSE & USE

The purpose of this procedure is to assist those responsible for the development of machine specific lockout procedures. The individual(s) that utilize it are to have a good working knowledge of the OSHA Lockout/Tagout regulation 29 CFR 1910.147, the comprehensive Lockout procedure at LL&S, and an understanding of the machinery or equipment being (hereafter called MSP) evaluated.

2. PROCEDURE REQUIREMENTS

Machine Specific Procedures (MSPs) require the following information:

1. Scope and purpose;
2. Authorization and rules and enforcement;
3. Specific statement of the intended use of the procedure;
4. Specific procedural steps for shutting down, isolating, blocking, and securing machines;
5. Specific procedural steps for the placement, removal and transfer of lockout devices and the responsibility of them;
6. Specific requirements for testing a machine or equipment to determine and verify the effectiveness of lockout devices and other energy control measures;
7. All energy sources and their magnitude identified;

Several of these items can be addressed in the facility wide procedure, either fully or partially. The MSPs need to address the machine specific information, and reference the other items that are in the facility wide procedure.

The following information explains how MSPs are to be generated.

METHODOLOGY

The methodology of this procedure is to gather the necessary information concerning the machinery, and to organize it into the MSP.

1. **MACHINE NAME:** Identify which machine, or part of a machine, that this procedure is being prepared. You may also include why it is to be locked out (machine jam vs. routine preventive maintenance) if there are different procedures.
2. **ENERGY SOURCES:** Determine all of the energy sources that may be involved with the machine. Energy sources include electrical, pneumatic, chemical, thermal, kinetic, potential,

and other energies.

3. MAGNITUDES OF THE ENERGY: The magnitude of the energies needs to be determined. For example, the voltage/ampereage, pounds per square inch (PSI), and temperature, need to be provided.
4. ENERGY ISOLATION: Explain how energy isolation is to take place. This will include actions such as turning off electrical disconnects, unplugging electrical cords and pneumatic hoses, closing (or opening) valves, etc. The energy isolating devices and their location need to be identified.
5. PROCEDURAL SHUT DOWN STEPS: List the steps that should be taken to shut down the machine. These will normally be the regular method used by employees to shut their machines off. Include the requirement to notify affected employees that the machine is being locked/tagged out.
6. LOCKOUT METHODS: Identify how lockout will be performed. List the location(s) where locks will be placed.
7. MACHINE TESTING: Explain how the employee is to test the machine to verify that the energy(s) have been relieved and/or isolated, and that the machine is locked and/or tagged out.
8. TASK PERFORMANCE: The employee may now perform the servicing or maintenance. An explanation of the task to be performed is optional, but is recommended for tasks performed by operators that are routinely performed.
9. RELEASE FROM LOCKOUT: Explain that non-essential items need to be removed from the work area, and affected employees informed that the machine will be started. Identify any special tools that may be used as part of the servicing or maintenance, such as chuck keys or measurement gauges.

APPENDIX E**LIST OF MACHINES MSPs**

This is not a complete list

1. Mobile Equipment
2. Trommel
3. Conveyors
4. Hammermill
5. Vibratory Screens
6. Overband Magnets
7. Vibratory Feeders
8. Eddy Current Magnets
9. Baler
10. Dust Suppression System
11. Fire Suppression
12. Pressure Washer
13. Oil Burner

LL&S

MACHINE SPECIFIC LOCKOUT/TAGOUT PROCEDURE

This Machine Specific Procedure details how lockout/tagout is to be performed on the identified machine. All applicable parts of LL&S's Lockout/Tagout Program need to be followed in addition to the following requirements.

(machine name)

ENERGY SOURCES & MAGNITUDES, ISOLATION AND LOCK/TAG LOCATION

ENERGY SOURCES	MAGNITUDE OF ENERGY	ENERGY ISOLATION LOCATION	LOCKOUT/TAGOUT METHOD

PROCEDURAL LOCKOUT/TAGOUT STEPS FOR (Machine name)

1. This procedure MUST be used when performing maintenance or servicing of the (*machine name*).
2. Inform any affected people in the area that lockout/tagout will be performed.
3. The machine should be shut down in its normal way.
4. Shut off disconnect on side of *machine name*.
5. In the Electrical Room locate #14 motor control and turn its switch to off.
6. Turn off motor controls for *any other machines list here*.
7. Run wire cable end through the lockout tabs on *list motor control #'s here*, and place cable end in cable lockout device and close.
8. Attach lock and tag to the cable lockout device.
9. Verify that *machine name* has been locked out by pushing the black Start button on *machine name* motor control. If it starts, immediately stop any planned servicing or maintenance, and ask Supervisor for assistance.
10. After #1-9 above have been performed, perform the servicing/ maintenance.
11. After the completion of the servicing/maintenance, ensure that all tools, etc. are removed from the machine, all guards and other safety devices reinstalled and all employees are in a safe position.
12. Inform employees in the immediate area that the machine will be reenergized.
13. Remove lockout/tagout devices.
14. Inform Supervisor or Group Leader that the machine name is ready to be reenergized.
15. After Supervisor or Group Leader starts the motor controls, turn on the *machine name* electrical disconnect.

LOCK IT, TAG IT, TRY IT!!!

APPENDIX F:

AUTHORIZED EMPLOYEE LOCKOUT AUDIT FORM

LL&S

AUTHORIZED EMPLOYEE LOCKOUT AUDIT FORM

The below listed Authorized Employee was observed performing a representative lockout of a machine. The purpose of this observation was to determine if the employee understood and followed the LL&S Lockout Program and the specific lockout machine specific procedure.

Employee _____ Date _____

Department _____ Shift _____

Machine being Serviced/Maintained _____

Brief Description of Work _____

Place a in the box if the employee performed the lockout/tagout element. If not, place a **NO** in the box and write a comment below why the lockout step was not performed properly.

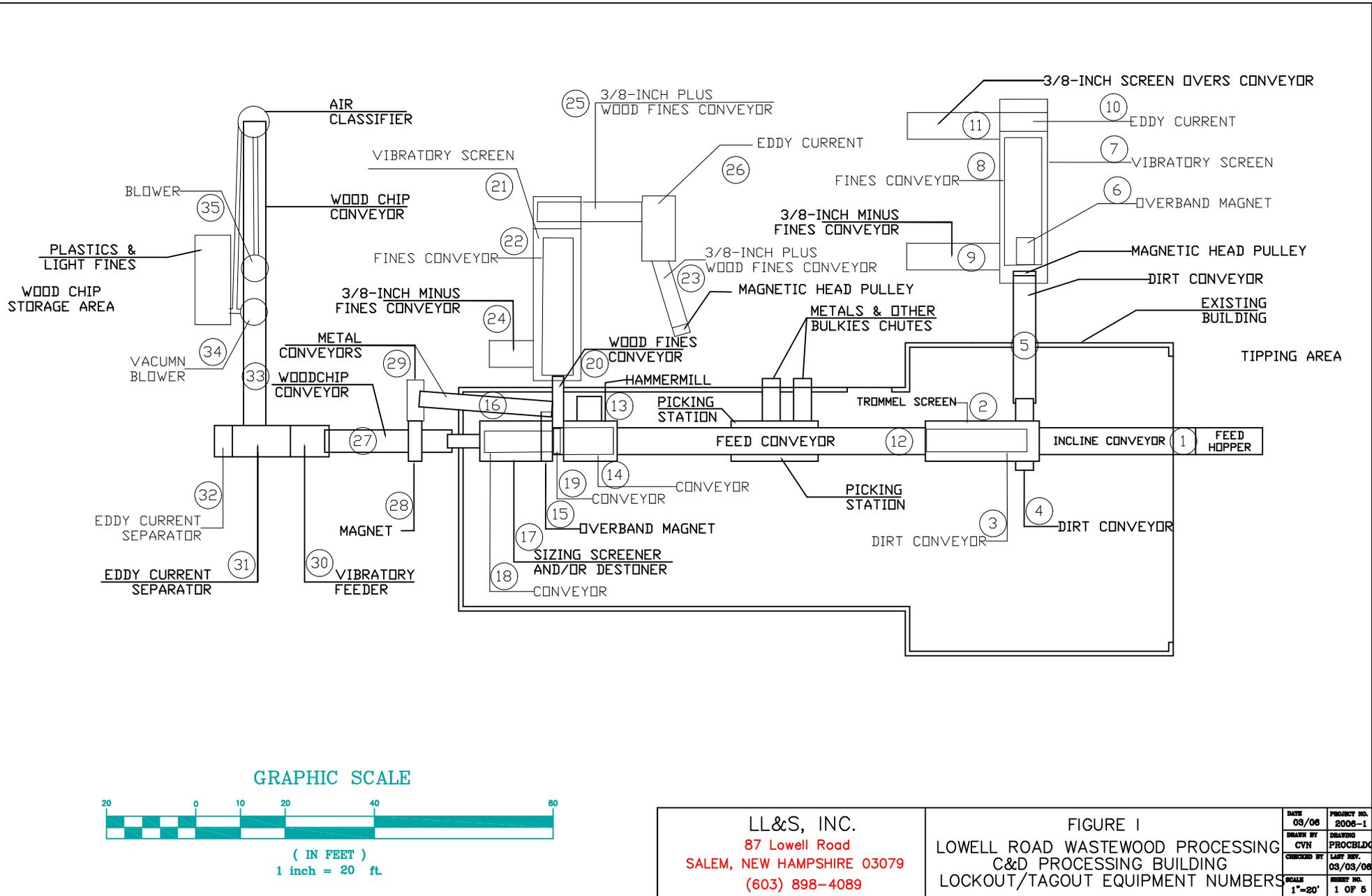
- 1. Knowledgeable about machine hazards, energy sources and lockout procedures.
- 2. Notified Affected Employees
- 3. Shutdown equipment
- 4. Isolated all energy to the equipment
- 5. Installed lock(s) with name tags on energy isolating devices
- 6. Released stored and/or residual energy
- 7. Tried to operate machine to verify locked out
- 8. Performed maintenance and servicing safely
- 9. Notified Affected Employees that lockout completed
- 10. Verify all guards in place and tools removed
- 11. Removed lock(s)
- 12. Machine ready for use

Comment(s) for any above "NO" determinations: _____

Auditor Signature _____ Date: _____

Employee Signature _____ Date: _____

Return this form to the Safety Officer for review and filing.



GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

LL&S, INC.
87 Lowell Road
SALEM, NEW HAMPSHIRE 03079
(603) 898-4089

FIGURE I
LOWELL ROAD WASTEWOD PROCESSING
C&D PROCESSING BUILDING
LOCKOUT/TAGOUT EQUIPMENT NUMBERS

DATE	PROJECT NO.
03/06	2006-1
DRAWN BY	DRAWING
CVN	PROCBLDG
CHECKED BY	LAST REV.
	03/03/06
SCALE	SHEET NO.
1"=20'	1 OF 5

APPENDIX VI
HAZ-COM PROGRAM

Hazard Communication Plan

Introduction LL&S has established this document to help ensure that their employees receive the proper Hazard Communication (HazCom) training as required by the Occupational Safety and Health Administration (OSHA).

Summary The following manual will provide the reader with an overview and understanding of the HazCom Standard. The following will be discussed in this document:

- LL&S's HazCom Program,
 - Responsibility for administering the Program,
 - Material Safety Data Sheets (MSDS),
 - Identification of Hazardous Materials,
 - Classification of Hazardous Materials,
 - Handling Hazardous Materials,
 - Types of Hazardous Materials on-site,
 - Identification of the hazards associated with Hazardous Materials,
 - Emergency procedures, and
 - Notification procedures.
-

Table of Contents

How to use this manual The table of contents below directs the reader to individual sections within this document. This document should be read and fully understood by the reader for protection from potential hazards, which could be encountered while performing various facility operations. Use this manual along with other documents and training (i.e. OSHA HAZWOPER) to perform safe operational and response duties at LL&S.

TOC The following table directs the reader to specific sections within this document.

Topic	See Page
Hazard Communication Standard	3-4
LL&S HazCom Program	5-6
Responsible Staff	7
Personal Protective Equipment (PPE)	8-12
<i>Material Safety Data sheets (MSDS)</i>	13
① General Information	14
① Hazardous Ingredients	15
① Physical Data	16
① Fire and Explosion Hazards	17-18
① Reactivity Data	19
① Health Hazards	20
① Spill or Leak Procedures	21
① Labeling	22
① Special Protection Information	23
① Special Precautions	24
Hazardous Chemicals and Their Labeling	25-26
Labeling Containers	27
Emergency Evacuation Plan & Protocols	28-30
Emergency Response Protocols	31-32
Emergency Contacts	33
<i>Using What You Have Learned</i>	34
① Accepting Materials	34
① Communication	35
① Transferring materials	36
Chemical Inventory	37-38
Chemical Inventory Form	Attachment 1

Hazard Communication Standard

Introduction Employers and employees must be trained to work safely in a potentially hazardous environment or in a setting where hazardous materials are used. The Hazard Communication Standard addresses the requirements for employers and employees.

Hazard Communication standard According to the OSHA Hazard Communication Standard [29 Code of Federal Regulations (CFR) 1910.1200], an employer is required to provide information to all company personnel exposed to the hazardous chemicals used in the workplace. The standard is based on the concept that all employees have a need and a right to know about the hazards associated with the chemicals they are exposed to while performing their duties in the workplace. OSHA is of the opinion that most chemicals used in the workplace have some hazard potential.

Applying the standards The most effective way to apply the standard is through training and education.

Communicating the standards The most effective way to communicate the standard is through the use of signs, labels, Material Safety Data Sheets (MSDSs) and training.

Continued on next page

Hazard Communication Standard, Continued

Employer's responsibility



The following list identifies the tasks required of an employer to satisfy the Hazard Communication Standard.

- Identify responsible staff.
 - Identify hazardous chemicals in the workplace.
 - Prepare and implement a hazard communication program.
 - Provide employees with information and training regarding;
 - ① safety and awareness of potential hazards,
 - ① personal protective equipment (PPE),
 - ① material safety data sheets (MSDS),
 - ① material labeling, and
 - ① emergency procedures and protocols.
-

Employee's responsibility

Once training has been provided, it is the employees responsibility to:

- ask questions,
 - demonstrate an understanding of the training,
 - be able to identify potential hazards,
 - be able to respond to an emergency in a practical manner, and
 - help other employees utilize safe work practices.
-

LL&S HazCom Program

Introduction

LL&S's HazCom Program has been designed to include the required information pursuant to the OSHA standard.

Overview



The following document discusses the HazCom program at LL&S and the information available to all LL&S personnel. LL&S's HazCom program involves initial and annual training for:

- ② Hazard Communication,
- ② Responsible Persons,
- ② Personal Protective Equipment (PPE),
- ② Material Safety Data Sheets (MSDS),
- ② Container labels,
- ② Emergency response protocols,
- ② Evacuation routes and procedures,
- ② Emergency Contacts, and
- ② Chemical Inventories.

While working at LL&S, use this HazCom training to help you understand chemicals and hazardous materials properties and locations.

Employee training

After initial training, employee training consists of an annual refresher training course using the HazCom Program, which is detailed within the LL&S Health and Safety Program Manual.

Contractor awareness

A responsible person will inform contractors of the hazardous chemicals and materials at LL&S facilities. This may involve supplying the contractor with the following information:

- ① a copy of this HazCom Program manual,
 - ① location of hazardous materials in their work area,
 - ① location of MSDS information,
 - ① precautionary steps the contractor can take to minimize exposure, and
 - ① protective measures in place at LL&S.
-

Continued on next page

LL&S HazCom Program, Continued

MSDS A Material Safety Data Sheet (MSDS) is required to be on-hand for all chemicals and/or hazardous materials that are used at LL&S. The MSDS provides personnel with detailed information for each hazardous material.

MSDS information will be maintained for a minimum of three years. Please refer to the MSDS Section of this document for detailed information regarding the MSDS.

Container labels At LL&S, all containers holding hazardous materials will be properly labeled. The labels will clearly identify the chemical and the safety hazards that the hazardous material presents. Please refer to the Container Labeling section of this document for detailed information.

Emergency evacuation procedures It is important that all personnel understand the emergency evacuation procedures for their work area. An identification system, evacuation route, and meeting place are the focus of the evacuation procedures. The emergency evacuation procedures are discussed in greater detail within the Emergency Evacuation Plan & Protocols section of this document.

Emergency response protocols Emergency response protocols include the procedures necessary to respond to a release of chemicals and/or hazardous materials. Specific protocols have been established to address emergencies at LL&S. Please refer to the Emergency Response Protocols Section of this document for detailed information.

Emergency Contacts Emergency contacts are people, agencies, departments, etc., that can be contacted in an emergency. A listing of Emergency Contacts and how to contact them is presented in the Emergency Contact Section of this document.

Chemical Inventories Chemical inventories are required to be updated annually. LL&S will conduct an annual chemical inventory and gather the proper labels, MSDS, and other pertinent information for new hazardous materials, as needed. The procedures for conducting and documenting chemical inventories are discussed in the chemical inventory section of this document.

Responsible Staff

Introduction

Responsible persons consist of personnel who have been formally trained to react, assess, and respond to a release and/or exposure to a hazardous material.

Who is responsible?



At LL&S, all employees who have undergone OSHA HAZWOPER (Hazardous Waste Operations & Emergency Response) 40-hour training are considered responsible persons. These persons include:

- 1 _____
- 1 _____
- 1 _____
- 1 _____

What do they do?

Responsible persons are knowledgeable in the following areas:

- ① identifying,
- ① labeling,
- ① understanding,
- ① responding, and
- ① cleaning up hazardous materials.

Responsible persons administer the HazCom program and ensure that it is understood, followed and updated.

How to reach them

In the event of a release, contact the responsible person in their office at their internal phone system extension or their mobile phone. The following table identifies the methods to be used when requesting assistance from a responsible person.

If	then
they are not available in their office	call the operator and ask to have the responsible person paged.
they do not respond to the page	call the responsible person's Nextel phone.
they still do not respond	call the facility manager and ask for assistance.

Personal Protective Equipment (PPE)

What is PPE?

Personal protective equipment is any type of clothing, tools, or materials that protect you from personal harm.

PPE at LL&S



Safety is a main priority and LL&S strives to keep it that way. With that said, let's review the type of PPE available at LL&S. The most common PPE available at LL&S is:

- **Hard hats** - they should be worn at all times,
 - **Safety glasses** - they should be covering your eyes, not your hard hat,
 - **Gloves** - they need to be on your hands, not in your pockets,
 - **Steel toed boots** - don't ever forget these,
 - **Safety vests** - high visibility so you won't be run into, and
 - **MSDS sheets** - these can be found in the MSDS binders, remember to check and update them as necessary.
-

Hazardous substance PPE

There are specific types of PPE that are used in conjunction with hazardous materials and toxic substances. Gloves, Smocks, Eyewear, Spray shields, Booties, Tyvek suits, Chemical-resistant pants/shirts, respirators, etc.

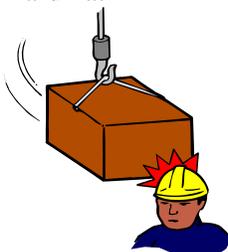
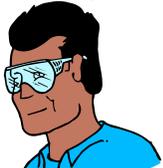
Continued on next page

Personal Protective Equipment (PPE), Continued

Identifying PPE Identifying the correct PPE for the task at hand is critical if you want to be protected. The following table will help when identifying what PPE is necessary for certain tasks. Please remember that this is a general table and you may have to ask for specific PPE at different times.

Activity	PPE Required
Working at picking/observation stations	Hardhat, safety glasses, steel-toed boots, gloves, hearing protection, dust mask/respirator, and safety vest.
Handling chemicals/hazardous materials	MSDS, safety goggles, dust mask/respirator, face shield, protective clothing (smock), chemical resistant gloves, steel toed boots.

Proper use of PPE In order for the PPE to work properly, the user must understand its function and how to use it. The following table identifies the PPE available, it's intended use and how it should be worn.

PPE Type	Intended Use	Proper Use
Hard hat 	Protects your head from falling objects and overhead structures.	A hard hat is worn on the head with the visor facing forward. The internal webbing should be snug around your head.
Safety glasses 	Protects your eyes from flying objects, debris, and dust.	Worn over the eyes with the earpieces sitting over your ears and the nosepiece upon the bridge of your nose.

Continued on next page

Personal Protective Equipment (PPE), Continued

Proper use of PPE (continued)

PPE Type	Intended Use	Proper Use
Steel or composite toed boots 	Protects your toes from dropped articles or equipment.	Worn on the feet and securely laced.
Safety vest	Promotes high visibility of the person wearing it.	Worn over all other clothing and fastened securely on the sides and the front.
Gloves	Protects your hands from sharp objects and blistering.	Worn over the hands and fitted properly.
Chemical Gloves 	Protects your hands from chemical burns or reactions.	Worn over the hands, fitted properly, and compatible with the chemical in use.
Face shield	Protects your face from liquids, sparks, flying objects, and debris.	Worn over the face, headband adjusted snugly, ensure that the face shield wraps around your face to your ears and the bottom extends below your chin.

Continued on next page

Personal Protective Equipment (PPE), Continued

Proper use of PPE (continued)

PPE Type	Intended Use	Proper Use
MSDS Sheet	Supplies the user with information regarding the chemical or hazardous material to be handled.	REFER TO THE MSDS SECTION OF THIS DOCUMENT FOR INFORMATION REGARDING THE PROPER USE OF MSDS.
Tyvek suits	Protects your clothing and body from chemical and hazardous materials.	A Tyvek suit is worn over your clothing. The wrist and leg cuffs should be secured to chemical resistant gloves and boots.
Safety goggles 	Protects your eyes from liquids and dust.	Worn over the eyes with the headband secured around the back of your head.
Respirator 	Protects your respiratory system from vapors, dust, and liquids of chemicals and hazardous materials.	ALL EMPLOYEES AT LL&S MUST HAVE THEIR RESPIRATOR FIT TESTED AND UNDERGO CARDIO-PULMONARY FUNCTION TESTING PRIOR TO WEARING A RESPIRATOR. REFER TO THE LL&S RESPIRATORY PROTECTION POLICY FOR ADDITIONAL INFORMATION.

Wearing the PPE

All employees are required to wear PPE during their work shift. All of the essential PPE will be provided. Employees must demonstrate how they will wear their PPE while working at LL&S. There will be **ZERO TOLERANCE** for any employee who does not follow LL&S's PPE policy.

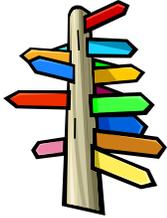
Continued on next page

Personal Protective Equipment (PPE), Continued

Inspecting PPE All PPE is to be inspected for damage on a daily basis. If your PPE appears severely worn, it should be replaced to ensure proper protection.

Where to get PPE You should have received the PPE necessary when you started working at LL&S. If you need to replace your PPE, request it from your immediate supervisor.

Where to find the MSDS



The MSDS inventory and appropriate MSDS sheets can be found in the MSDS binder. The MSDS binder can be found in the Break Room Trailer at LL&S.

How to use the MSDS

Refer to the following section for MSDS information on:

- 👇 what is in an MSDS,
 - 👇 where to find an MSDS,
 - 👇 how to use an MSDS, and
 - 👇 key points of an MSDS.
-

Material Safety Data sheets (MSDS)

Introduction This portion of the Hazard Communication plan is dedicated to the “Community Right-To-Know” information contained with a typical material safety data sheet (MSDS).

Purpose of MSDS An MSDS contains vital information provided by the manufacturer of a specific chemical and/or hazardous material. Employees who are properly trained can use this information to understand the hazards associated with a particular material. This information will help the user of the material take the proper safety measures.

TOC The following table directs the reader to various parts within a typical MSDS.

Topic	See Page
Section 1 - General Information. Critical are	14
Section 2 - Hazardous Ingredients	15
Section 3 - Physical Data	16
Section 4 - Fire and Explosion Hazard Data	17-18
Section 5 - Reactivity Data	19
Section 6 - Health Hazards	20
Section 7 - Spill or Leak Procedures	21
Section 8 - Labeling	22
Section 9 - Special Protection Information	23
Section 10 - Special Precautions	24

Note: The following example is for demonstration purposes only. Please consult the original MSDS for actual chemical hazard data.

General Information

Introduction



The following information can usually be found within the general information section of an MSDS:

- ① Manufacturer name,
 - ① Emergency telephone number(s),
 - ① Chemical name and synonyms,
 - ① Chemical family, and
 - ① Chemical formula.
-

Key points

This section enables the reader to become familiar with general information regarding the material. The most important information contained within this section is:

- the manufacturer,
 - an emergency phone number, and
 - the common trade name of the material.
-

Example

The following section demonstrates what the general information section looks like for motor oil.

Section 1 General Information	
Manufacturer: Dennis K. Burke, Inc. PO Box 6069 Chelsea, MA 02150	Emergency Phone #: 1-800-289-2875
Chemical Name: SAE 10W-30 Motor Oil	
Synonyms: Motor Oil, Engine Oil, Lubricating Oil	CAS #: Mixture Product Code: FLE 7030/7040
Chemical family: Petroleum hydrocarbons	Formula: not given

Hazardous Ingredients

Introduction



Section 2 of a typical MSDS will give the reader a list of hazardous ingredients associated with the particular chemical. The following list contains some examples of what is found in this section:

- summary of hazardous ingredients,
- carcinogenic exposure information,
- common chemicals found in the material,
- percentage of hazardous ingredients within the material,
- permissible exposure limits, and
- CAS (Chemical Abstracts Service) number(s).

Definition

A hazardous ingredient refers to any chemical (in amounts greater than 1% of the formula) that poses a potential health threat to an individual that is a “listed” material or a chemical with a hazardous characteristic (corrosive, explosive, etc.). For some chemicals an “exposure limit” will be given. The limit sets a standard for how much and how long an individual can work with the material before PPE or other controls need to be implemented. To avoid injuries, sickness and even death a person should not be exposed to the chemicals listed on the MSDS longer than the smallest “exposure limit” of the chemicals listed.

Example

The following example was derived from the hazardous ingredient section of the motor oil MSDS.

SECTION 2 - HAZARDOUS INGREDIENTS IDENTITY INFORMATION				
Does Product Contain hazardous Ingredients?			Does Product Contain Carcinogens?	
No			No	
Chemical/ Common Name	CAS Number	Percent	OSHA PEL	ACGIH-TLV
Refined Petroleum Distillates	64741-88-4 64741-89-5 64742-65-0 64742-54-7	>75	NA	NA
Antiwear, Rust and oxidizing Inhibitors (contains Zinc Dialkyl Dithiophosphate*)	Mixture	<15	5 mg/m ³	5 mg/m ³
Viscosity Improver	Mixture	<15	NA	NA
Pour Point Depressant	Mixture	<1	NA	NA
* Oil Mist, Mineral				
Chemical/ Common Name	CAS Number	Percent	OSHA PEL	ACGIH-TLV
Zinc Dialkyl Dithiophosphate	68649-42-3	<4	NA	NA

Physical Data

Introduction The following section identifies physical data about the specific material that may help the individual assess the hazards and characteristics of the material.

Definitions Physical data in the MSDS provides the user with scientific information that helps an individual assess the material. By assessing this data, the individual can take proper precautions such as storage, handling, and clean up. The following are key terms that should be understood to assess the data.

Term	Definition
Boiling point	As with water, different materials will change from a liquid to a gas at specific temperatures.
Solubility in water	If the material “dissolves” in water it is considered soluble.
Appearance and odor	What the material looks and smells like.
Specific gravity (water = 1)	This is a standard that uses water as a basis. Water is equal to 1 unit of specific gravity. If a material is denser than water it will sink and has a specific gravity value greater than 1. If the material is less dense than water it will float and have a specific gravity less than 1.
Evaporation rate	This is the rate at which the material will transform from a liquid into a gas at atmospheric temperature and pressure.

Example The following is an example of a typical physical data section for fuel oil.

Section 3 Physical Data			
Boiling point	>760°F	Specific gravity Water = 1	0.89
Vapor pressure	<1 x 10 ⁻³	Evaporation Rate n-BUTYL ACETATE = 1	<1
Vapor density Air = 1	>1	Melting Point	N/A
Solubility in water	Negligible		
Appearance and Odor: Amber, Slight petroleum odor			

Fire and Explosion Hazards

Introduction This section is an important part of the MSDS. It will help the reader identify fire and explosion hazards associated with the material.

Definitions The reader should be aware of the following definitions to understand this section.

Term	Definition
Flash point	The minimum temperature of a spark needed to ignite the material and start a fire or explosion.
Flammable limits	The temperature at which the material will burn and how much oxygen is needed for it to burn.
Extinguishing media	The type of fire extinguisher that is needed to put out a fire.

Key points



The most important points related to this section are:

- what fire fighting equipment is needed,
 - unusual explosion and flammable characteristics the material has, and
 - how much heat (spark) it will take for the material to ignite or explode.
-

Example The following example depicts the information contained in the fire and explosion section of a typical MSDS for motor oil.

Continued on next page

Fire and Explosion Hazards, Continued

Section 4 Fire and Explosion Hazard Data	
Flash point LEL/UEL	428°F No Data Available (NDA)
Extinguishing media	Foam and water spray, carbon dioxide or a dry chemical.
Special fire fighting procedures	Use a water spray to cool fire-exposed containers, structures and to protect personnel. If a leak or spill has not ignited, ventilate area to protect personnel attempting to stop the leak. Use water to flush spills away from sources of ignition. Do not flush down public sewers or other drainage systems. Exposed firefighters must wear NIOSH approved, positive pressure, self-contained, breathing apparatus with full-face mask and full protective clothing. Use a smothering technique for extinguishing fire of a combustible liquid. Do not use a forced water stream directly on oil fires, as this will scatter the fire.
Unusual fire and explosion hazards	This material will not burn unless preheated. Irritating or toxic substances may be emitted upon thermal decomposition. Containers may explode in heat of fire.

Reactivity Data

Introduction



Section 5 of a MSDS identifies physical reactions that may occur to the material when placed in certain conditions. The following areas are usually covered within this section:

- stability,
- conditions to avoid,
- incompatibilities,
- hazardous decomposition, and
- hazardous polymerization.

Key points

Reactivity data is valuable for identifying the following information.

- Dangerous and even life threatening conditions when the materials are not used properly.
- Materials that cannot come in contact with the chemical.
- The byproduct materials that may form when the material is improperly used or becomes outdated.

Example

The following table presents the information contained within the reactivity section of an MSDS for motor oil.

Section 5 Reactivity Data	
Stability:	Stable
Conditions to Avoid	Avoid heat, sparks, and open flames
Incompatibilities	This product may react with strong oxidizing agents
Conditions to Avoid	Avoid extremely high temperatures
Hazardous Decomposition or By-Products	Combustion may produce CO, CO ₂ , and reactive hydrocarbons
Hazardous Polymerization	None
Conditions to Avoid Polymerization	Not Applicable

Health Hazards

Introduction Section 6 of the MSDS is dedicated to health and safety issues. This section discusses the routes of entry, health hazards present, emergency and first aid procedures and other pertinent information.

Example The following example provides the reader with information usually found with the health hazard data section of a MSDS for motor oil.

Section 6 Health Hazard Data	
ROUTES OF ENTRY	
Inhalation, and Ingestion if hygienic practices are not observed	
HEALTH HAZARDS	
Eye Contact	Practically non-irritating.
Skin Contact	Slightly irritating. Symptoms may include pain or a feeling of heat, discoloration, swelling, and blistering.
Injection	High-pressure skin injections may not appear serious at first; but within a few hours, tissue will become swollen, discolored and extremely painful.
Dermal toxicity	Practically non-toxic to internal organs.
Inhalation	Low risk at ambient temperatures. Prolonged breathing of vapors can cause headache, dizziness, nausea, respiratory irritation or chemical pneumonitis.
Ingestion	Low toxicity. If less than one ounce is ingested, material may pass through the system without harm. On ingestion of large quantities, slight GI discomfort, diarrhea, and headaches may occur.
Medical conditions aggravated by exposure	Pre-existing dermatitis may be aggravated.
EMERGENCY AND FIRST AID PROCEDURES	
Eye Contact	Flush immediately with large amounts of water. Remove contact lenses if worn. Eyelids should be held away from the eyeball to ensure thorough rinsing.
Skin Contact	Remove contaminated clothes immediately. Wash skin thoroughly with soap and water. Get medical attention if irritation persists.
Injection	High-pressure injections are serious medical emergencies. Get medical attention immediately.
Inhalation	Remove victim from source of overexposure. If not breathing, ensure open airway and institute CPR. If breathing is difficult, administer oxygen if available. Get medical attention.
Ingestion	Induce vomiting and get medical attention.
OTHER INFORMATION	Notes to Physician.

Spill or Leak Procedures

Introduction Part 7 of an MSDS usually contains material specific spill and leak procedures in the event of an accidental spill.

Key points The following are the key points contained within this section.



Materials which may be needed to contain an accidental spill or leak of the material. Examples would be:

- ① spill pillows and booms,
- ① absorbents, and
- ① an emergency response kit.



Provides the reader with precautions and direction for safe disposal. Examples could be:

- ① to follow all state and federal hazardous waste regulations,
 - ① place in a steel or poly drum, and
 - ① dispose of as a liquid or regular solid waste.
-

Example The following example presents information taken from the Precautions section of an MSDS for motor oil.

Section 7 Precautions for Safe Handling and Use
Steps to be taken in case material is released or spilled - Shut off ignition sources; no flares, smoking, or flames in hazard area. Stop leak if you can do it without risk.
Considered a water pollutant. Contain release to prevent contamination of soil and groundwater. Use sand or other non-combustible absorbent materials and place into containers for later disposal.
Waste Disposal Methods – Place contaminated materials in disposal containers and dispose of in a manner consistent with applicable regulations.
Storage: Store in tightly closed containers in a cool, dry, isolated, and well ventilated area away from heat, flame and ignition sources.
Empty Containers – Empty containers contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse, or dispose of containers unless precautions are taken against these hazards.

Labeling

Introduction This section of an MSDS addresses proper labeling of materials. The labeling section can be found in multiple areas of an MSDS supplied by the manufacturer. This section will tell the reader what information should be present on the label.

Key point The main reason for labeling smaller containers with warning labels is to identify the material and to understand what hazards are associated with the material. Labels only contain limited information. Greater detail is found in the material's MSDS.

Example The following example presents the pertinent information that should be placed on a container label.

Section X Label Data			
Chronic hazard	No	Acute hazard	No
Fire hazard	No	Reactivity hazard	No
Sudden Pressure Release hazard	No	Product identification	Motor Oil
Health	0	Flammability	1
Reactivity	0	Protection	0

Special Protection Information

Introduction The special protection information section provides the reader with information about what type of personal protective equipment (PPE) should be used when working with or around a specific material.

Key point The following table defines some key terms, which need to be understood for the purposes of this section.

Key Term	Definition
Respiratory protection	Air purifying respirators will filter out impurities in air, dependent on which type of cartridge filter is attached. This device does not supply oxygen in an oxygen (O ₂) deficient environment.
Ventilation	A ventilator is any device, which will enhance air exchange. The device used is usually a type of mechanical fan.
Skin Protection	Usually means gloves that will protect the wearer from harm. These are commonly made of latex, neoprene rubber or another chemically resistant material. Also means protective clothing.
Eye protection	Goggles or face shields used for eye protection are usually chemical and impact resistant, and will protect your eyes in case of an unexpected splash.
Other PPE	Examples may be Tyvek suits, lead aprons, supplied air systems, hard hats, etc.

Example The following example was derived from the Special Protection section of an MSDS for motor oil.

Section X Special Protection Information	
Respiratory Protection	National Institute of Occupational Safety and Health (NIOSH) approved self-contained breathing apparatus or supplied air-mask must be available for non-routine and emergency use.
Ventilation	Not applicable.
Skin Protection	Wear impervious gloves and protective clothing to prevent skin contact.
Eye Protection	Wear safety glasses or chemical goggles to prevent eye contact.
Other PPE	Use eye wash station, chemically resistant apron. Keep container closed when possible.

Special Precautions

Introduction This section of an MSDS usually provides the reader with information about special precautions that should be taken when using the material.

Key point This section is a brief synopsis of the important sections of the MSDS. However, to get a full understanding, the MSDS should be consulted in its entirety.

Example The following table is an example of what is found in the Special Precautions section of a MSDS for motor oil.

READ THIS

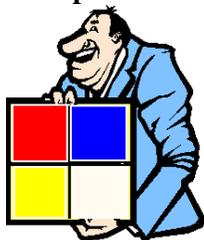
Section X Special Precautions
Precaution to be taken while handling, storing or use: Use proper personal protective equipment, remove all sources of ignition, store in a cool dry place, which is ventilated, and keep away from heat and open flame.
Do not wear clothing that has been contaminated by this product until it has been cleaned.
Do not cut, weld, or place in an area that may yield static electricity.

Hazardous Chemicals and Their Labeling

Introduction

The following section provides information regarding the understanding of hazardous material labels.

Groups



Generally labels have six different parts. They are:

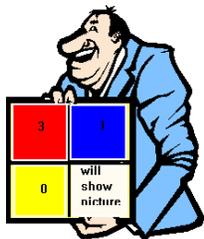
- name of the material,
- name, address and telephone # of the manufacturer,
- physical hazards associated with the material,
- health hazards associated with the material,
- how to store and handle the material, and
- what type of PPE is needed when using the material.

Colors

Most labels are color coded into four different groups. They are:

Color	Description
Blue	Health = the type of health hazards that are associated with the material (i.e. carcinogen, irritant, toxic agent, corrosive).
Red	Flammability = how easily the material will burn or catch on fire.
Yellow	Reactivity = how the material will react under certain conditions (i.e. heat, oxidizers, shock).
White	PPE = what PPE should be worn while using the material (i.e. gloves, glasses, respirator).

Numbers



Generally numbers are assigned to each color to indicate the degree of hazard associated with each. The National Fire Protection Association (NFPA) established the rating scale presented below.

- 0 = minimal hazard
- 1 = slight hazard
- 2 = moderate hazard
- 3 = serious hazard
- 4 = severe hazard

Note: The PPE section will usually show a picture of what PPE should be worn.

Continued on next page

Hazardous Chemicals and Their Labeling, Continued

Special symbols Many companies will have special symbols or pictures to identify specific hazards. Some examples are:



- COR – corrosive,
- ACID – acid,
- ALK – alkali,
- OXY – oxidizer,
- W – use no water,

and

-  - Radiation Hazard.
-

Labeling Containers

Using labels

Understanding labels and their use will assist you and others to be aware of the physical properties of the chemicals and/or hazardous material within a container. Knowing how to use labels to properly identify a hazardous material is the only way to effectively communicate the hazards associated with the hazardous material. The following tables will assist you when labeling a container of chemicals and/or hazardous materials.

Step	Action
1	Identify the material.
2	Get the MSDS sheet.
3	Look up the NFPA rating(s) for the material from the MSDS.
4	Get a label.
5	Write the name of the chemical on the label.
6	Write the manufacturers name & phone # on the label.
7	Note the Reactivity property using a number from 0-4 and write it on the yellow diamond.
8	Note the Fire Hazard potential using a number from 0-4 and write it on the red diamond.
9	Note the Health Hazard classification using a number from 0-4 and write it on the blue diamond.
10	Note the Specific Hazard using a symbol from above and note it on the white diamond.
11	Place the label on the container.
12	Properly store the container.

Emergency Evacuation Plan & Protocols

Introduction The following plan directs the reader to the action steps that should be followed in an emergency condition.

Definition An emergency is a major event such as:



- a release of hazardous materials,
 - a fire or explosion, and/or
 - other physical hazards.
-

Common sense In case of any emergency, the following steps will be taken.

Step	Action
1	Identify the emergency and begin to move away from it.
2	Notify all those within a close range to move away from the hazard.
3	Contact a responsible person.
4	Move all area personnel to a designated secure area (see next page).
5	Take a head count to see who is missing.
6	Survey for any injuries and use the telephone to dial 911 if there is an emergency condition that still exists.
7	Keep all observers away from the hazards until directed by the responsible person or a professional emergency service provider to do otherwise.
8	Assist as needed.

Continued on next page

Emergency Evacuation Plan & Protocols, Continued

Designated area



The reason for meeting at a designated area is because it provides a place for responsible person(s) to take a head count. The head count will assist the responsible person in determining the next course of action necessary to respond to the emergency at hand. The designated area has a telephone with emergency phone numbers posted visibly in the immediate vicinity. All personnel can enter the designated area during a hazardous situation until directed to move elsewhere.

Please refer to the Facility Emergency Evacuation Map in your work area for the appropriate designated area for your workgroup.

Other emergencies

No matter what other emergency occurs, follow common sense and/or specialized training to deal with the situation.

Equipment & information locations

The following section contains information regarding the location of emergency equipment and information.

Equipment/ Information	Location
Material Safety Data Sheets (MSDS)	In the Break Room Trailer.
Emergency Phone Numbers	Posted adjacent to each phone in the Break Room Trailer, and each phone in the administrative offices.
Spill Prevention Plan	In Health & Safety/Emergency Coordinator's (David DeVito's) office & Break Room Trailer.
Safety & Health Plan	In Health & Safety/Emergency Coordinator's (David DeVito's) office & Break Room Trailer.
Hazard Communication Plan	In Health & Safety/Emergency Coordinator's (David DeVito's) office & Break Room Trailer.
Spill Kit(s)	Located in the maintenance area and the processing building.

Continued on next page

Emergency Evacuation Plan & Protocols, Continued

Equipment & information locations (continued)

Equipment/ Information	Location
Fire Extinguishers	Clearly marked throughout the facility.
First Aid Kits	Located in the break room trailer.
Eye Wash Station	Located in the break room trailer.

Emergency Response Protocols

Introduction The following plans are an overview of what actions can be taken by all personnel in the event of an unforeseen release of hazardous materials at LL&S.

Definition Emergency response involves identifying, understanding, and responding to an unexpected venting, spill, leak, or release of a regulated material, which has the potential to cause injury, sickness, and/or death.

Training Not all employees will be trained to contain a release, if one should happen. However, there are employees on-site at all times who have been properly trained to handle emergency situations. These people will be introduced to you during your on-site training sessions.

What should you do? During an unexpected release of material, the following steps should be taken.

Step	Action
1	Move away from the release.
2	Contact a qualified emergency response trained employee.
3 	Tell the employee where the release occurred and identify any physical characteristics, if possible. Example of physical characteristics are: <ul style="list-style-type: none"> • color of material • odor of the material • solid (is it hard or soft) • liquid (fast or slow moving)
4	Stay a safe distance away from the release until instructed by a "qualified individual". Note: a qualified individual is one who has had at least 24 hours of emergency response training.

R.U.N.



LL&S wants all employees to follow the simple **R.U.N.** plan when dealing with releases and/or an emergency situation.

- **R**espond to the hazard in a safe manner.
- **U**nderstand what the potential hazards/dangers are where you are working.
- **N**otify a Responsible Person, management, or other qualified individual when you encounter a hazardous situation.

Continued on next page

Emergency Response Protocols, Continued

Action plan In the event of a release of a hazardous material, the following steps should be taken:

Step	Action
1	Stop the source of the release and contain the material using abatement measures (i.e. spill pillows, booms, dikes, dirt, non-sparking shovels and other portable equipment).
2	Contact a Responsible Person and provide them with the location, type, and extent of the release.
3	Clean up the release or contact a Hazardous Waste responder, if needed.
4	Inspect to ensure clean up was complete.
5	Report all releases and appropriate information to the governmental agencies as directed by the Health & Safety/Emergency Response Coordinator.

Emergency Contacts

Introduction The following section identifies emergency contacts and phone numbers.

Emergency contacts Use the following tables to assist you when contacting someone in an emergency. Emergency numbers will be posted at every facility telephone.

Step	Action
1	Identify the emergency.
2	Contact a Responsible Person.
3	Contact an Emergency Response Provider from the following table.

Agency/Contact	Phone Number
LL&S – David Guilherme Emergency Coordinator	(603) 231-0887
NH DES Petroleum Spill Response (M-F, 8-4)	(603) 271-3644
NH DES Hazardous Material (Non Oil Spill) (M-F, 8-4)	(603) 271-3899
NH State Police HAZ Material Response (24 Hour)	1 (800) 346-4009
Poison Control Center	911
Police Department	911
Fire Department	911
Ambulance/Rescue	911
Hospital / E.R. / Clinic (Holy Family Hospital - Methuen, MA)	1 (978) 687-0151
Local/Regional OSHA Office	1 (617) 565-7164
State Department of Health	1 (800) 852-3345
Salem Health Officer	(603) 890-2050
CYN Environmental Services	1 (800) 622-6365
Chemtrec	1 (800) 424-9300

Using What You Have Learned

Introduction The following information has been prepared to assist you when dealing with chemicals and/or hazardous materials.

Using what you have learned Understanding chemicals and/or hazardous materials, labels, MSDS, emergency response protocols, and evacuation procedures will assist you and others when receiving, transferring and/or responding to a release of a chemical or hazardous material. Having the required MSDS readily available will provide you guidance in the event that a label is missing.

Receiving and stocking Knowing how to use labels to properly identify a hazardous material is the only way to effectively communicate the hazards associated with the hazardous material. The following tables will assist you in understanding how to properly receive, label, and stock hazardous materials.

Step	Action
1	Check the incoming container for a label.
2	Check the packing list for an MSDS.
If...	Then...
There is a label and MSDS on the material,	place the container into stock and eth MSDS in the MSDS Binder.
There is a label on the container and no MSDS,	gather the manufacturers information, call the manufacturer and request an MSDS. Place the MSDS in the MSDS Binder upon receipt.
There is an MSDS and no label on the container,	review the MSDS and refer to the following steps.
Step	Action
3	Look in the MSDS for the NFPA rating(s) for the material.
4	Get a label & write the material name and manufacturer on the label. Include the Phone Number and Address of the manufacturer.
5	Note the Reactivity property using a number from 0-4 and write it on the yellow diamond.
6	Note the Fire Hazard potential using a number from 0-4 and write it on the red diamond.
7	Note the Health Hazard classification using a number from 0-4 and write it on the blue diamond.
8	Note the Specific Hazard using a symbol from above and note it on the white diamond.
9	Place the label on the container and file the MSDS in the MSDS Binder.
10	Place the container into stock with compatible materials.

Continued on next page

Using What You Have Learned, Continued

Communicating material hazards The following table describes the action steps to be used to effectively communicate what is in a container and what to do.

If...	Then...
A container of hazardous material arrives unlabeled	gather the necessary information and prepare a label.
A container of hazardous material arrives unlabeled and there is no shipping information	contact a responsible person for assistance.
A container of hazardous material is at the facility unlabeled	gather the necessary information and prepare a label.
A container of hazardous material is at the facility and is not labeled and there is no information	contact a responsible person for assistance.

Informing contractors

Customers who briefly enter the facility, such as hauling companies, do not need to be made aware of specific hazards at every visit. However, contractors that perform work for LL&S on site, who may be effected by the hazards, should be informed of potential hazards. A Responsible person will inform contractors of the hazardous chemicals and materials at the LL&S facility. This may involve supplying the contractor with the following information:

- ① a copy of this HazCom Program manual,
 - ① location of hazardous materials in their work area,
 - ① location of MSDS information,
 - ① precautionary steps the contractor can take to minimize exposure, and
 - ① protective measures in place at LL&S.
-

Continued on next page

Using What You Have Learned, Continued

Transferring materials

If you are going to take a hazardous material and place it into a smaller container, the following steps should be taken.

Step	Action
1	Gather hazard information from the original label.
2	Consult the MSDS for proper storage and container use.
3	Transfer the information onto a label.
4	Place the label onto the new container.
5	Transfer the hazardous material into the newly labeled container.

Emergencies

The following table identifies who to contact and what to do when a container of chemicals and/or hazardous materials arrives at the LL&S facility that is damaged.

If...	Then...
A container of hazardous material arrives unlabeled and leaking	do not accept the material and notify a responsible person.
A container of hazardous material is discovered to have leaked, spilled, etc.	notify a responsible person for assistance.
A responsible person is unavailable	refer to the R.U.N. plan, Emergency Response procedures, and contact the Fire Department and/or a Hazardous Waste Responder.

Chemical Inventory

Introduction The chemical inventory is a list of chemicals, hazardous materials and oils, which are currently stored on-site. Use the chemical inventory along with the MSDS sheets to assess potential on-site hazards. This chemical inventory will be updated every time a new material is added to LL&S's chemical inventory and/or annually.

Locations of the chemical inventory A "current" chemical inventory is appended into the front of the MSDS binder(s) at the LL&S facility. A floppy disk with the LL&S inventory document accompanies the binder.

Conducting the inventory A chemical inventory must be updated every time a new chemical and/or hazardous material is placed into inventory at LL&S, or annually as noted above. The chemical inventory needs to be conducted by a responsible person who understands the types of materials that need to be part of the inventory. The inventory will assist the facility with maintaining compliance with the applicable regulations. The following table will assist you when conducting the inventory.

Step	Action
1	Review the MSDS binder(s) "current" chemical inventory form(s).
2	Take the "current" chemical inventory form out of the MSDS binder(s).
3	Copy the "current" chemical inventory.
4	Return the "current" chemical inventory to the MSDS binder(s).
5	Get a copy of a "blank" chemical inventory form.
6	Walk through the facility with both inventory forms.
7	Note the chemicals that are not on the "current" chemical inventory on the "blank" chemical inventory form.
8	Add the "new" chemicals inventoried to the "current" list (re-write the list if necessary).
9	Place the updated chemical inventory in the MSDS binder(s).
10	Look in the MSDS binder(s) for the MSDS of the added chemicals.
11	Acquire the additional MSDS', if necessary.
12	Put the new MSDS' in the MSDS binder(s).
13	Repeat as new chemicals are added and/or at least annually.

Continued on next page

Chemical Inventory, Continued

Documenting the inventory

The chemical inventory should document the following:

- ✚ chemicals in use,
 - ✚ volumes of chemicals stored,
 - ✚ types of containers used to store the chemicals,
 - ✚ locations of chemicals,
 - ✚ manufacturers of chemicals,
 - ✚ MSDS sheets in-house, and
 - ✚ a list of MSDS sheets that need to be acquired at the facility.
-

Chemical inventory form

While conducting the inventory, use the chemical inventory form template. The chemical inventory form template is included as Attachment 1 of this document.

MAKE ADDITIONAL COPIES IF NECESSARY

APPENDIX VII
FIRE PROTECTION PLAN

FIRE PROTECTION AND CONTROL
(REVISION 3)

1. General
 - a. The facility will be designed, constructed, operated and closed in a manner that minimizes the risk of fires and to deal with them effectively if they occur.
 - b. Fire protection equipment is kept available, in accordance with state and local fire plans.
 - c. A fire prevention and control plan is included in the following sections.
 - d. Fire protection is provided to the Facility by the Salem Fire Department.

2. Fire Prevention and Control
 - a. The Lowell Road Wood Processing Facility will implement aggressive fire prevention and control procedures to manage spontaneous combustion and other fire hazards, which are described later in this section.
 - b. The Lowell Road Wood Processing Facility will be designed, constructed, operated and closed in a manner that, minimizes risk of fires and deals with them effectively if they occur.
 - c. Facility personnel will act as the first line of defense in the event of any fire. When a fire is detected it will be reported to Steve Whitney (or in his absence, David DeVito or Gil Sarno) who will in return dispatch one employee to notify the front office to call the Fire Department. (The Salem Fire Department **must** be notified immediately of all fires that occur at the Lowell Road Wood Processing Facility.) Mr. Whitney will then dispatch heavy equipment and hose crews to contain the fire until the Fire Department arrives.

Years of working in this type of facility has provided several of the LL&S' personnel with knowledge of how to early detect, suppress and contain the types of fires that occur within the facility. All personnel are trained to observe changes in odor and/or smoke from the pile. When a fire is detected, the preferred first response will be to smother the fire with using heavy equipment and then to apply water to it as needed. Foam is available on site for use by the Fire Department, not LL&S employees. Additionally, all employees are instructed as to the location and operation of fire extinguishers (ABC) within the facility.

Workers operating equipment on the pile of demolition debris in front of the existing processing building are instructed to immediately notify their supervisor and/or Steve Whitney if the odor emitting from the pile changes or if smoke is observed emanating from the pile. They are also trained to watch for “hot loads” and to direct those loads to one of the “hot load” pad areas.

Equipment operators moving and loading processed chip are also trained to watch for changes in the odor or for smoke coming from the chip pile and to report these conditions to their supervisor and/or Steve Whitney.

At this time, equipment operators with experience in using equipment to smother fires include: Stephen DeVito, owner; David DeVito; Gil Sarno; Steve Fontes; Ron Arseneault; John George; and Peter Whitney.

Steve Whitney coordinates labors (employees working within the existing recycling building: Guilherme Pereire, Tony Pereire, William Sinothe, and Clanginci Desouza; and the mill building: Tony Almeida, and Agortinko Tavares) in applying water to fire with hoses as needed.

All occurrences of fire will be placed on 24-hour watch until LL&S is sure all embers have been extinguished.

- d. This fire prevention, control and emergency contingency plan is an integral part of the Facility safety program and is included in the new employee orientation and annual refresher training. Key components of this plan include fire prevention methods and technology work place fire hazard surveys, location of fire detection systems and alarms, location and proper use of portable and fixed fire protection systems and fire fighting equipment, employee communication systems, evacuation routes and reassembly locations, and arrangements and procedures for notification of off-site fire departments and emergency personnel.
- e. Fire protection equipment is kept available, in accordance with state and local fire plans.
- f. Fire poses an obvious threat to Facility site personnel, buildings and equipment. It can create problems with smoke, damage monitoring and collection equipment and interfere with daily site operations.
- g. Fires can be caused by receiving “hot” loads, on the tipping floors, which contain hot or smoldering coals, wood or charcoal ashes. Prior arrangements are made with the Salem Fire Department for procedures to follow in the event of a fire. Each piece of Facility equipment is equipped with a fire extinguisher.

- h. The Facility will assure that the provisions for and contingency handling procedures for hot loads of waste will be clearly understood by all Facility personnel. Facility personnel will segregate all such materials from other combustible solid wastes on the hot load pad until cooled and for otherwise ensuring fire safe practices at the facility.
 - i. (Deleted)
 - j. The wood processing process train will be misted with a water spray from an installed misting system to minimize dust generation.
 - k. The wood chip discharge destoner from the hammermill wood hog is equipped with a vacuum dust collector which discharges through a cyclone and filter box.
 - l. Monitoring for the presence of explosive gases will be conducted periodically with the use of a Lower Explosive Limit (LEL) meter.
 - m. Daily precautions are taken to prevent spontaneous combustion and fire hazards.
 - n. Salvageable and recyclable materials will be removed from the site on a regular basis.
 - o. The facility will provide access to the facility for site and records inspections and emergency response by the division and local health and fire officials.
 - p. The Facility will follow the requirements of the Code of Federal Regulations, Title 29, Part 1910 – Occupational Safety and Health Standards (29CFR1910). The detailed requirements for each section is taken directly from 29CFR1910. Applicable sections of the Occupational Safety and Health Standards include:
 - i. Subpart A – General 29CFR1910.1-1910.7
 - ii. Subpart L – Fire Protection
3. Emergency Response
- a. Any foreseeable emergencies such as fire, explosion or operator injury will be managed by this contingency plan.
 - i. Fire hoses are on site, radios provide the means of quick communications between employees and from the employees to the office in order to phone for help in the even of an emergency.
 - ii. Operator injury due to accident with machinery.

b. The appropriate response of facility personnel for each emergency identified above:

i. Fire

(1) **Call Fire Department**

(2) Utilize fire extinguishers to contain or extinguish small fires.

ii. Operator injury

(1) Cut Power to any machinery involved.

(2) Utilize first aid supplies located in the processing building.

(3) Call ambulance.

c. Telephone numbers for all local and state officials that will be notified in the event of an emergency:

i.	Salem Fire Ambulance	911
ii.	Salem Fire Department	911
iii.	Salem Police Department	893-1911
iv.	NHDES	271-2925

d. Measures to prevent and control accidental fires include the use of a hot load pad. If a hot load is received on site, the Fire Department will be called and the driver will be instructed to hot load pad which is available. The hot load pad adjacent to the incoming door of the processing building will be equipped with fire hoses and a “second story” catwalk with appropriate safety railing. The load will be flooded with water and subsequently dumped on the hot load pad for further extinguishing of any hot spots.

If the primary hot load pad is unavailable for some reason, the driver will be directed to a secondary hot load pad located south of the recycling building. In this case, any closed container with a hose bib connection will be flooded with water prior to dumping the load. If an open top container, the load will be dumped with caution to avoid explosion and then extinguished with water.

4. Salem Fire Department

a. Fire protection is provided by the Salem Fire Department.

b. Fire compliance requirements will be reviewed with the Chief of the Salem Fire Department and the facility will take the necessary steps required by the Town of Salem to minimize the risk of fire.

c. First response fire protection will be provided by the on-site well. Primary fire protection when the Fire Department arrives on-site will be provided from

the Town of Salem water system hydrants located on the property. Secondary fire protection will be provided by the on-site well.

- d. A master fire alarm box will be installed at the Facility. Installation of a Knox Box in addition to the master fire alarm box will be investigated.

5. Salem Water System

- a. Primary fire protection water supply will be provided from the municipal water system.
- b. A 12-inch water main extends to the west of I-93 along the north side of Lowell Road to the Lowell Road and Delaware Drive area. A final fire hydrant is located on Lowell Road directly in front of the gasoline station and convenience store on the north side of Lowell Road across from Hedgehog Pond. A 12-inch main is located in Delaware Drive and extends from a Tee in the Lowell Road 12-inch main south to the Turner Well. Fire hydrants are located along Delaware Drive from Lowell Road to the cul-de-sac at the end and a fire hydrant is located at the Turner Well. The Lowell Road Wood Processing Facility will make a connection to the municipal system in the Lowell Road-Delaware Drive area.
- c. The hydrants at the site were flow tested in March of 2001 by the Salem Fire Department. There is a fire flow of 2,600 gallons per minute with a 35 psi residual and 3,000 gallons per minute with a 20 psi residual pressure.
- d. The Facility will install a 12-inch water line connection to the municipal water system with 8-inch water mains on site. These mains should provide 2,000 gpm at 20 psi residual at all hydrants on the site.
- e. The quantity of water available will be enough to allow for the longest continuing operation at the site which could be several days. A metered quantity of water used by the Salem Fire Department on September 11, 1992 during a 4 hour period was 6,810 cubic feet or 50,940 gallons for a flow rate of 212 gallons per minute. Total estimated flow over a 20 hour period was 34,050 cubic feet or 254,700 gallons. Prorating this amount over a two day or 48 hour period gives a total of 81,720 cubic feet or 611,265 gallons. This quantity of water is available from the municipal supply and/or from the on-site well.

6. Deleted

7. On-site Well
 - a. The existing well is located of the northeast corner of the recycling building and has a demonstrated yield of 220 gallons per minute and is fitted with a pump capable of delivering that quantity of water.

8. On-site Fire Hydrants
 - a. Fire protection systems at the Facility include outside hydrants with branch lines along the east and west sides of the tipping process building and storage areas with hose systems.
 - b. The on-site yard hydrant system will provide a minimum flow of 500 gpm at any hydrant in the wood chip pile area and fire mains are sized to deliver the above gallonage plus allowance for operational uses and special extinguishing equipment at residual pressure of 60 to 100 psi in accordance with NFPA 46.
 - c. The location of the yard hydrants is at a maximum spacing of 250 feet between hydrants, with accessibility of all portions of the pile reachable with 200 feet of fire hose in accordance with NFPA 46. All proposed fire hydrants shall be equipped with the materials list in Tale A7W2.

9. Fire Extinguishers
 - a. Fire extinguishers of sufficient quantity and of the appropriate type to respond to small fires are located within the Facility and will be maintained on site per local building regulations and BOCA requirements.
 - b. There will also be fire extinguishers throughout the building per local building regulations and BOCA requirements.
 - c. All vehicles that operate in and around the piles will be equipped with water extinguishers in addition to the extinguishers required by law. These water extinguishers will be of the two and one half gallon pressurized type, with an appropriate amount of Class A Foam mixed with the water in the extinguishers.

**Table A7W1
Stormwater Holding Pond Volume Analysis**

Table Deleted – Not Applicable

**Table A7W2
L.L. & S., Inc.
Lowell Road Wood Processing Facility
87 Lowell Road
Salem, New Hampshire 03079
Yard Hydrant Fire Fighting Equipment
NH/WMD Log #010-93, 018-93 and 078-93
12/6/93**

Line Item Installed	Quantity	Units
Yard Hydrant System		
Hydrants	4	EA
Hose House	1	EA
2.5" Fire Hose	800	LF
1.5/1.75" Fire Hose	800	LF
Gated Wye 2.5" NS x 1.5 NPSH Brass	4	EA
Nozzles, brass, adjustable fog, 2.5"	8	EA
Nozzles, brass, adjustable fog, 1.5"	8	EA

Prepared by Hoyle, Tanner & Associates, Inc., 5 Commerce Park North, Bedford, NH
03110, HTA #A4401.46, R. Faro (LLSYARDH.WK1)

10. Stockpiling of Materials
 - a. All construction and demolition debris, recyclables, wood chips and residuals will be stockpiled in a manner in which they will create NO handling problems in case of emergency.

11. Wood Chip Pile Storage
 - a. The Lowell Road Wood Processing Facility will follow the requirements of the National Fire Protection Association standards contained in NFPA 230, Standard for the Fire Protection of Storage, 1999 Edition. NFPA 664 of the 1999 Edition details fire protection measures to be used for the "Outside Storage of Wood Chips and Hogged Materials".
 - b. Internal fires in the wood chip caused by spontaneous combustion will be prevented and controlled by carefully following the procedures recommended in NFPA 230 and 664.

- c. Care will be taken to assure that only clean, screened wood chip, free from fines is placed in the wood chip storage piles. This will avoid placing those fine organic materials in the pile which will decompose and cause exothermic release of heat and spontaneous combustion.
 - i. New wood chip piles will be constructed on solid, level ground surfaced with bituminous concrete or compacted gravel.
 - ii. The storage site will be cleaned of all old chip and fines before starting a new pile.
 - iii. The quality of the stored chip will be controlled to avoid fines during pile build up.
 - iv. Operating plans for the buildup and reclaiming of the pile will be based upon a maximum turnover time of one year under ideal conditions.
 - v. Under normal operations, no wood chips will be stored for more than six (6) months. If storage is anticipated to be more than 6 months or if unanticipated events will result in storage beyond 6 months, provisions will be made to monitor the interior temperature of the pile(s). In these cases, wood chip piles will be monitored for temperature build up with thermocouples installed in the piles. Increasing pile temperatures and hot spots will be identified and controlled by wetting, pile break down or both.
 - vi. During periods of hot, dry weather, wood chip piles will be wetted regularly to maintain surface moisture content so as to reduce the hazard of surface fires.
 - vii. Wood chip piles stored in excess of 30 days will be constructed with an access roadway of wood chip to the top of the pile in order to reach any part of the pile.
 - viii. Pile size will be limited to maximum dimensions of 20 ft. in height, 120 ft. in width and 240 ft. in length.
 - ix. **Deleted.**
- d. The maximum size of wood chip piles will be 120 feet by 240 feet by 20 feet high.
- e. Wood chip piles will be constructed with the wood chips sloping to a natural angle of repose at the pile edges. A minimum of 50 feet of clear width will be maintained at all times between wood chip piles and for a fire lane. This exceeds the minimum of 30 feet required by NFPA.
- f. The wood chip piles will be constructed to allow access to the top of the piles by fire fighting equipment. Ramps not steeper than 1 on 4 will be constructed for equipment access.

12. Class A Foam will be used for fire protection in the wood chip processing and storage areas. A detailed description of the Class A Foam application methods and equipment is contained in Appendix 7V Class A Foam.
- a. It is proposed to provide the following Class A Foam generation equipment as recommended by Mr. Keith Puffer, President, Pufco, Inc., 557 Main Street, Winchester, MA 01890. The portable foam generation system will be equipped with the materials list in Table A7W3. The foam generator will be plumbed to allow immediate connection to the nearest fire hydrant and use.

**Table A7W3
L.L. & S., Inc.
Lowell Road Wood Processing Facility
87 Lowell Road
Salem, New Hampshire 03079
Class A Foam Equipment
NH/WMD Log #010-93, 018-93 and 078-93
12/6/93**

Line Item Installed	Quantity	Units
Portable Class A Foam System		
Flow-Mix Model 500 Foam Port/Proportioner	1	EA
Gated Wye 2.5" NS x 1.5 NPSH Brass	1	EA
Ball Valves, 1.5" NPSH x 1.5" NS	2	EA
Qtr/tFem Quick Releases's 1.5" NS	2	EA
Qtr/tMale Quick Releases's 1.5" NS	4	EA
95 GPM Fog/Straight Steam Nozzles	2	EA
60 GPM Multiport Foam Nozzles	2	EA
5 Gallon Pails Silvex	10	EA
1.5/1.75" Fire Hose	200	LF
2.5" Fire Hose	100	LF

Prepared by Hoyle, Tanner & Associates, Inc., 5 Commerce Park North, Bedford, NH 03110, HTA #A4401.46, R. Faro (LLSFOAM.WK1)

13. Building Sprinkler Systems
- a. Codes require the sprinkling of buildings with greater than 10,000 square feet in area. There will be no buildings on the Lowell Road Wood Processing Facility site that meet these criteria. Building areas are listed as follows:

Lowell Road Wood Processing Facility Building Areas	
Building	Area in Square Feet
Existing Processing Building	9,700
New Equipment and Recyclables Storage and Office Building	5,000
Scale House Trailer	300
Total	14,500

14. The Lowell Road Wood Processing Facility will comply with the following codes:
- a. The BOCA 1990 National Building Code with 1991 Revisions, Building Officials & Building Administrators International, Inc., Floosmoor Road, Country Club Hills, IL 60478-5795
 - b. The BOCA 1990 Fire Prevention Code, Building Officials & Building Administrators International, Inc., Floosmoor Road, Country Club Hills, IL 60478-5795
 - c. NFPA 230, Standard for the Fire Protection of Storage, 1999 Edition, National Fire Protection Association (NFPA), Batterymarch Park, Quincy, MA 02269.
 - d. NFPA 664, Standard for the Prevention of Fires and Explosions in Wood Processing and Wood Storage Facilities, 1999 Edition, National Fire Protection Association (NFPA), Batterymarch Park, Quincy, MA 02269.
 - e. NFPA 231 Standard for Storage of Rubber Tires, National Fire Protection Association (NFPA), Batterymarch Park, Quincy, MA 02269.
 - f. Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60060-2096 standards for construction materials and equipment.
15. Equipment Repair Procedures
- a. No repair work is started without cleaning up an area and hosing down flammable wood products.

APPENDIX VIII
EMERGENCY CONTACT LIST

Emergency Contacts LL&S, Inc.

Agency/Contact	Phone Number
David Guilherme – Emergency Coordinator	Mobile (603) 231-0887
Orlando Patricio – Back-up Emergency Coordinator	Mobile (603) 231-3580
LL&S Inc. – David DeVito – General Manager	Office (603) 894-9800 Mobile (603) 327-4060
NHDES Petroleum Spill Response (M-F, 8-4)	(603) 271-3644
MHDES Hazardous Material (non Oil Spill) (M-F, 8-4)	(603) 271-3899
NH State Police HAZ Material Response (24 Hr.)	1 (800) 346-4009
Poison Control Center	911
Police Department	911
Fire Department	911
Ambulance/Rescue	911
Hospital/E.R./Clinic (Holy Family Hospital – Methuen, MA)	1 (978) 687-0151
Local/Regional OSHA Office	1 (617) 565-7164
State Department of Health	1 (800) 852-3345
Salem Health Officer	(603) 890-2050
CYN Environmental Services	1 (800) 622-6365
Chemtrec	1 (800) 424-9300