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I. Introduction

Davidson River Village, LLC (DVR) contracted Mountain Environmental Services, Inc. (MESI) to conduct waste material inventory and characterization activities at the Ecusta Paper Mill facility. The MESI scope of work consisted of six primary components, as is listed below:

1. MESI will prepare a Health & Safety Plan recognizing both physical and chemical hazardous waste associated with the project. In order to do this, MESI will need access to the available MSDSs.
2. MESI will provide a team of 29 CFR 1910.120 40-Hr trained personnel to sweep the entire facility and stage all found and transportable containers of chemicals to staging areas strategically located on the site. The staging areas will be sited based on security, RCRA storage requirements, and ease of off-site transport loading efficiency. During the staging process, chemicals will be segregated by hazard code. Incompatible chemicals will be isolated from each other. MESI plans to use DRV fork trucks to facilitate the collection and staging. Spill Response equipment and materials will be provided and stored on-site during the staging and assessment phase.
3. Containers containing unknown materials will be isolated, sampled, and Haz-mat field tested. MESI will attempt to identify and characterize materials by the field test or by generator knowledge; if the haz-mat field testing and generator knowledge leaves doubt to the identity or hazard class of the material, a representative sample will be delivered to an analytical lab for waste characterization. Haz-mat field testing and analytical testing will be performed outside the lump sum scope of work and will be billed separately based on unit rates.
4. Once all “movable” chemical containers have been located, characterized, and staged in one of three locations, MESI will prepare an inventory spreadsheet detailing each waste stream by the hazard class, the number of containers, volumes, physical state and disposal options. MESI will work with DRV personnel knowledgeable with the Aeration Settling Basin (ASB) NPDES permit to determine which waste streams can be disposed of on-site through the ASB.
5. MESI personnel will physically inspect each bulk tank as listed on the tank inventory spreadsheet. The inspection will be performed to: confirm the chemical identity of the contents through field tests or generator knowledge, the volume, and the physical state of the material. During this bulk tank evaluation process, MESI will add to the inventory plant equipment with obvious fluid and/or chemical storage containers (hydraulic oil reservoirs, turbine oil tanks, etc.) as needed.
6. MESI will prepare a report with the two chemical inventory spreadsheets (movable containers and bulk containers). The report will include disposal options, with possible disposal facilities listed and costs associated with the packaging, transportation, and disposal of the inventoried chemicals.

This report fulfills the last component of this scope of work. Initial sections of the report document field activities and the status of the chemical inventory. Disposal options and costs are presented in the final section.

II. Site History

Ecusta Paper Mill was founded in 1939. Initially producing cigarette paper, the mill eventually diversified into other packaging products. Full operation continued until 2002. Over this period, mill ownership was transferred several times. Periodic operation of smaller portions of the mill continued through the 2006/2007 timeframe. Most recently, in early 2008, the Ecusta Business Development Group sold the property to Davidson River Village, LLC (DVR) to be redeveloped as a mixed-use development.

Current activities at the site include demobilization of plant equipment and associated materials. As part of this phase of work, three primary contractors maintain personnel at the site: Mountain Environmental continues work on waste disposal issues; D.H. Griffin is the demolition contractor and is conducting pre-demolition activities such as asbestos abatement; Shaw Environmental and Infrastructure (Shaw) is the primary environmental consultant on site and coordinates activities and liaisons with state and federal regulatory agencies.

III. Field Activities:

To date, 1,686 man-hours have been spent collecting, sorting, and inventorying containerized and bulk chemical products throughout the facility. The containers were numbered and inventoried on an Excel spreadsheet by commercial name, chemical contents, size, and quantity. Also during this time, the bulk tanks on-site were located, numbered, and inventoried onto an Excel spreadsheet. Information detailed on the bulk tank inventory within the spreadsheet included details such as tank size, contents, quantity, and building number. Tank contents were identified based on labeling and field testing or generator knowledge. After June 9th, MESI revisited each tank with liquid products and sampled. Through Haz-Cat field testing or analytical testing, the contents were already or will be verified. Currently, there are four liquid bulk tank samples being processed at a laboratory.

As the chemicals were collected, the containers were characterized by DOT/RCRA hazard class as possible from labels on the containers. Once all chemicals were staged, MESI began the process of determining disposal cost based on chemical composition. A cost estimate was started based on the information on hand. In order to further define the hazard class and finite disposal costing, Material Safety Data Sheets were required. MESI received all the MSDSs from the site, although incomplete, on June 19th. The chemical inventory spreadsheet was manipulated to segregate the chemical list by the hazard class of each chemical. Approximately 100 containers that were not labeled remain unidentified.

IV. Site Sampling

i. Bulk Tanks:

Upon completion of the bulk tank inventory list, representative samples of all tanks containing liquid product were collected. The samples were labeled by tank number. After cross-referencing the tank number with the inventory list, the samples were subjected to Hazardous Material Characterization field testing in an attempt to verify the labeling matched the material in the tank. The Haz-Cat testing results were added to the tank inventory spreadsheet. If the contents were unknown, the sample was Haz-Cat testing for the full array of hazardous. The sample was then sent to a NC Certified laboratory for analysis to confirm the field characterization.

ii. Containerized Materials:

Containers of material not labeled were subjected to Hazardous Material Characterization field testing in an attempt identify the material. If Haz-Cat testing could not positively identify the material, the sample was delivered to a NC Certified laboratory for analysis. The analysis was limited to test methods compatible with the physical properties of the material and with information gathered during the Haz-Cat field testing.

V. Proposed Waste Management Strategies

i. Oils

Various petroleum-based oils are stored on site, both in storage vessels and in equipment. Storage vessels consist of drums, totes, and larger tanks. MESI proposes to utilize a Cusco vacuum truck to aid in transporting oils from various areas of the facility. Oils will be consolidated into three 10,000-gallon bulk tanks (#59, #60 and #61). The bulk tanks are vertical above-ground storage tanks (ASTs) with concrete diking as secondary containment. Enterprise Waste Oil will be subcontracted to MESI to pump out and transport for oil for off-site recycling. Transportation will be documented by non-hazardous waste manifests. Enterprise Waste Oil is included on the Vendors to Be Approved list.

ii. Black Liquor

Black liquor is a byproduct of the sulfate pulping process during the production of paper pulp. It is an aqueous solution of lignin residues, hemicelluloses, and the inorganic chemicals used in the process. Two 250,000-gallon ASTs store black liquor on site. The two tanks combined currently contain an estimated 300,000 gallons. Black liquor is commonly used as a fuel source to produce steam at pulp mills. MESI proposes to contract with Martin Trucking to transport the black liquor off-site to one of two proposed paper mills (Temple-Inland in Rome, GA or Bowater Paper in Calhoun, TN). Martin Trucking will provide transport services

at no charge in return for the right to broker the black liquor as product for energy recovery.

In order to pump and transport the black liquor, it will require heating. The two ASTs are equipped with a system of heating coils for this very purpose. A 100 hp portable boiler powered by a 60 Kv generator will be rented and operated on site to supply steam to the coil system of one AST. The two ASTs are manifolded. While steam-heating will focus on one AST, the heated product will be pumped into the opposite tank after heating to allow for heating of that tank's contents. A DV100 trailer-mounted trash pump will be used to transfer the black liquor from the ASTs to tanker trucks. Mountain Environmental personnel will be on site to operate the boiler and pumping equipment. Each tanker load will be documented by a bill-of-lading.

Several small (10,000-gal) tanks store black liquor in remote areas of the mill. An estimated total of 50,000 gallons is stored in this manner. If possible, this product will be consolidated by using the MESI vacuum truck and added to the large ASTs.

VI. Bulk Tanks

i. Bulk Tanks: Sodium Hydroxide

In order to minimize the amount of material that is recorded as hazardous waste, efforts have been made to collect and transport the liquid Sodium Hydroxide (greater than or equal to 50% concentration) off-site as product and to be paid for the material. EEI, one of the listed TSDF's has offered \$0.15/gallon for the materials as product. Cost estimate pricing is the net cost including transport. The product will be transported under a bill of lading. This material will not be included in the hazardous waste generation volume. Approximately 75,000 gallons of sodium hydroxide is currently contained in bulk tanks and totes.

ii. Bulk Tanks: Hazardous Waste

There are six (6) bulk tanks on-site containing six (6) separate waste streams considered hazardous per RCRA guidelines. MESI proposes to collect the liquid contents of the bulk tanks and the process lines that will drain to the tanks in on-site empty 275 gallon totes. The waste material will be labeled according to the appropriate hazard class and profiled individually to the appropriate TSDF. Volumes may differ from the gallons estimated due to solidification of the tank bottoms. The estimates are based on a 90% collection rate. It is assumed that the tank bottoms will be the responsibility of the demolition contractor. Once profiled and accepted by the TSD facility, the totes will be transported off-site under hazardous waste manifest documentation.

iii. Bulk Tanks: Non-hazardous materials

There are 15 tanks on-site containing non-hazardous liquids consisting of six (6) separate waste streams that will require profiling. Upon acceptance of the profiles, MESI will vacuum the waste from the tanks in a 5,000 gallon vacuum truck and deliver to a wastewater treatment facility. MESI will consolidate bulk liquids as allowed by the TSDF. The price per gallon is based on transport and disposal cost on an estimated 51,000 gallons and 12 vacuum tanker loads. The water is included in the total gallonage. Draining the non-hazardous liquids to the ASB may be an option based on decisions by DRV, LLC personnel

iv. Bulk Tanks: Wastewater

There is an estimated 7,000 gallons of water combined among multiple tanks of varying sizes. Tanks range in volume from 50-gallon drums to 1,000-gallon ASTs. The MESI vacuum truck will be utilized to consolidate water into one bulk tank. A composite sample will be collected from the bulk tank and analyzed for the full range of potential contaminants. If the analysis from the water sample verifies the liquid in the tanks is indeed water, it possibly could be discharged to the ASB, upon approval by DVR, LLC personnel; however, if it is not acceptable for the ASB, it will be transported off site for proper disposal. The cost estimate provided is based on off-site disposal.

VII. Containerized Materials

All product containers were collected from the plant and are currently staged in one of four (4) locations on the site. Each container or group (pallet) of like materials was coded with a number. A spreadsheet was developed and each container number was listed by commercial name, chemical name, and manufacturer. The spreadsheet also listed if a MSDS was found for the individual product. After completing the list, the chemicals were separated by hazard class. Disposal options and cost were developed based on number and size of containers and by hazard class.

i. Non-Hazardous Materials

Non-hazardous materials are stored on site in various containers. Materials that are contained in drums or totes, or are palleted solids in good shipping condition will shipped by standard 'dry box' tractor trailer. Damaged drums or totes and palleted solids not in good shipping condition will be shipped in sealed roll-off containers or 'sludge boxes'. All costs involved in shipping materials by 'dry box' tractor trailer will be based on full loads and billed by the load. Roll-off loads will be billed by the ton. Non-hazardous materials leaving the site will be profiled to Clean Management for proper disposal by each individual chemical batch. Transport documentation will include manifests that will correspond to container numbers as assigned during the inventory process.

ii. Flammable Liquids: Hazard Class 3.0

The bulk number of the hazardous waste containers on-site falls under the flammable liquids hazard class. MESI proposes to bulk these materials into closed top steel 55-gallon drums. The drummed waste will be profiled to Giant Resource Recovery as one waste stream. The volume of drums will be dependant on the amounts of residue and liquids will pour from the containers. MESI assumes approximately twenty (20) 55-gallon drums of thin pumpable flammable liquids will be manifested off site between the drummed waste on-site and the waste material that will be drummed during consolidation. Due to the amount of drummed material on-site that is old product, MESI has assumed that some of the flammable liquid bottoms will be thick and considered only pourable; therefore, a volume and cost for thick, non-pumpable drums have been included in the cost estimate for disposal. Other chemicals stored on-site that will be manifested as flammable liquids include the oil based paints and other containers containing petroleum distillates. These materials will be packed in one yard cubic boxes for shipment. The packaging of the boxes will be completed at the same time the liquids are consolidated. MESI will insure that the boxes are full. Transport documentation will include manifests that will correspond to container numbers from the inventory process.

iii. Flammable Solids: Hazard Class 4.1

There are three (3) drums of flammable solids other than the eighteen (18) drums of spent carbon. The spent carbon could possibly be considered non-hazardous if verified by characteristic hazardous waste analytical analysis. MESI proposes to collect a representative sample of the drummed carbon and deliver the sample to a NC accredited laboratory for analysis for volatile organics (EPA Method 8260 with TCCLP extraction). If the analysis indicates no volatile organics above the RCRA limits remain, the spent carbon could be disposed of as non-hazardous waste, leaving the cellulose material as the only flammable solids requiring hazardous waste disposal. The cellulose waste material will be profiled, manifested, and transported to Giant Resource Recovery.

iv. Corrosive Liquids: Hazard Class 8

Corrosive liquids on-site include: waste corrosive liquids, alkaline / waste corrosive liquids, acidic, inorganic and waste corrosive liquids, acidic, organic. MESI will collect all the containers of corrosives in one area. Neat chemicals of like nature can and will be bulked (i.e., sulfuric acids together, hydrochloric or muriatic acids together). Chemicals containing a mixture but carrying hazard class 8 will be lab-packed. In order to reduce volume, totes with solid or liquid residues will be transferred to drums wherever possible. The corrosive materials will be profiled as the three waste streams listed above and then manifested to EEI for treatment and disposal. Volumes are estimated, based on assumptions of consolidation and packaging; the estimate is given based on the estimated volume.

v. Cylinders: Hazard Class 2 and 2.2

Cylinders on-site include flammable gases, inert gases, halogenated gases, and several unknown gases. All large number of compressed gases are fire extinguishers of varying variety. MESI proposes to manage the compressed gases based on the following classes:

a. Fire Extinguishers:

Fire extinguishers that contain powder or water that meets the current cylinder standards can be left on-site for use by the demolition contractor, the developer, or can be donated to Habitat for Humanity for a tax credit donation.

Fire extinguishers that do not meet the current cylinder standards or contain halogenated compounds can be removed from the site as a product. MESI plans to transport these cylinders to a facility that will collect the extinguishing media and the metal carcasses for recycling.

Fire extinguishers that contain water and do not meet the current cylinder standards will be discharged on-site and the carcasses will be rendered un-usable and recycled as scrap metal.

b. Oxygen / Acetylene:

There are approximately 4 cylinders each of oxygen and acetylene that can be removed from the site as product. MESI plans to take the cylinders on a bill of lading.

c. Inert Gases:

Inert gases, such as the calibration gases (container 274, 275, 571, 249), compressed air, compressed oxygen, compressed nitrogen, and CO₂, will be carefully released to the atmosphere.

The empty carcasses will be rendered useless and sent for scrap metal recycling.

d. Genetron 22:

There are pallets of empty and partially full gas cylinders of refrigerant (chlorofluoromethane).

Empty containers can be punctured to render useless, while the partially full containers can be shipped off-site as product. It is my understanding that Mr. Bill Ashbrook, a licensed heating & air contractor will collect the refrigerant for reuse. Off-site removal will be accomplished with a bill-of-lading.

e. Aerosol cans:

During the waste collection process, a 275 gallon tote was filled with aerosol cans. These aerosols would be placed in a hazardous waste cubic yard container and will be manifested and shipped off-site as a flammable gas to Giant Resource Recovery.

f. Unknown cylinders:

There are two, possibly three, compressed gas cylinders with unknown contents. The identity of the gas can be determined by the valve and thread pattern. Once identified, if determined to be inert, then the gas will be released and the carcass recycled. If gases are determined to be flammable or chlorinated, then they will be labeled and shipped off-site for disposal. In order to provide a conservative cost estimate, it was assumed the cylinders will require disposal on the cost estimate given.