OPERATIONS PLAN

CITY WIDE RECYCLING

Ocala, Marion County, Florida

September 22, 2019

GDC JN 17-04

Prepared For:

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1 DEFINITIONS

Project:	City Wide Recycling Facility
Owner/Operator:	Friends Recycling, L.L.C.
WPB:	Waste Processing Building refers to everything inside the building, including the Tipping Slab, Push Walls, Leachate Collection System, Truck Tunnel.
WPF:	Waste Processing Facility refers to everything within the property dedicated to the waste processing facility, including the scale house, roadways and drives, leachate storage tank, stormwater facilities, utilities.
Tipping Slab:	That portion of the concrete slab contained within the WPB dedicated to receiving and sorting of the waste stream. It is also known as the tipping floor.

2 GENERAL DESCRIPTIONS

2.1 Introduction

Friends Recycling, L.L.C. has constructed a Materials Recovery Facility to remove recyclable materials from solid waste. The facility was designed to handle Class I, Class III, and Construction and Demolition (C&D) Debris waste. The specific types of waste that will be processed will be determined by the marketplace.

It will be referred to as City Wide Recycling to distinguish it from the C&D debris recycling and disposal operations governed by FDEP Permit # 0019600-012-SO.

Both City Wide Recycling and the C&D debris recycling and disposal operations are on the property owned by Friends Recycling, L.L.C. (aka Friends Recycling, LLC).

This Operation Plan has been prepared to meet requirements set forth by Rule 62-701.710(4) and (8), F.A.C. A copy of this document shall be kept at the facility at all times and shall be made available to all employees and for inspection by agencies having jurisdiction over this facility.

All operations shall be conducted in accordance with this Operation Plan. FDEP Central District shall be notified before any substantial changes or revisions to the approved Operation Plan are implemented in order to determine whether a permit modification is required.

2.2 Site Description

The proposed Project will operate in a 14.69-acre property located along the west side of NW 27th Avenue in Ocala, Marion County, Florida. The site is bounded on the north and west sides by the existing Friends Recycling construction and demolition (C&D) debris disposal and recycling facility; to the east by NW 27th Avenue; to the south by NW 21st Street. Both Friends Recycling and City Wide Recycling are on property owned by Friends Recycling, L.L.C.

As required by the City of Ocala, access to City Wide Recycling is made through a driveway shared with the existing Friends Recycling facility, which allows utilization of the existing scale house and provides a single-point access on NW 27th Avenue.

The Site Plan for the infrastructure to support the WPF has been reviewed by the City of Ocala, FDEP Central District Environmental Resource Permitting, and the Army Corps of Engineers. As of this application, the site facilities, including the WPB, are under construction.

2.3 Waste Processing Facility (WPF)

The WPF consists of a 4.12-acre project area within a 14.69-acre property, a 21,875 square foot building (WPB) and all supporting infrastructure including driveways,

access roadways, scale house, stormwater management facilities, leachate storage tank, water and sanitary sewer systems, electrical power, access control features (such as fences and gates). The Site Plan is attached as Appendix A.

The WPB contains a tipping slab of approximately 16,000 square feet to receive the waste stream, to sort the waste and ultimately recover it in recycling bins or load it into trucks at the truck tunnel (loading bay). The WPB also includes reinforced concrete push and bump walls to aid in the sorting and loading of the waste stream, as well as, the truck tunnel.

The WPB also contains a leachate system consisting of a collection trench (with screens) strategically located in the tipping slab, a leachate conveyance pipe delivering the leachate to a collection wet well with a pump system suitable for leachate, to ultimately deliver it to the storage tank equipped with the required monitoring systems. City Wide Recycling expects to be able to connect the leachate system directly to the City of Ocala sanitary sewer system, but initially the leachate storage tank will be used.

The WPF will receive Class I, Class III, and Construction and Demolition debris. It may receive dedicated loads of recovered materials (such as, cardboard or metal). Prohibited waste (for example, lead acid batteries) will be removed from incoming waste and shipped to facilities approved for their recycling or disposal.

3 PROCESS DESCRIPTION

3.1 Receiving

Incoming waste will approach the WPF from NW 27th Avenue, enter the property through a single-access point containing a gated driveway and continue to the scale house for weighing and physical observation of the load.

If the load is observed to contain unacceptable waste, it will be rejected and directed to a facility permitted to accept such waste.

If the load is accepted, it will be weighed and then directed to the WPB where the waste will be offloaded on to the tipping slab inside the building for further processing. Typically, Class I and Class III waste will be unloaded on the left side (east side) of the tipping floor; C&D waste will be unloaded on the right side.

If the vehicle is a dedicated load of C&D debris, the scale house person can decide whether it should go the disposal mound for processing (recycling and disposal) or to the WPB.

The traffic pattern will be clearly identified by signs. Spotters will enforce traffic patterns on the facility.

3.2 Observation, Spotting and Sorting

A trained spotter will direct the truck to the spot on the tipping floor where the waste will be dumped and, if necessary, sorted. (Dedicated loads will not require sorting, for example, a dedicated load of cardboard. The waste is simply moved to appropriate storage area.)

As it is dumped on the tipping floor, each load of waste must be visually inspected by a trained spotter. Any unauthorized waste shall be removed from the waste stream prior to being loaded into a waste transfer vehicle.

If the dumped waste has many types of materials, it will be spread so items that can be recycled can be pulled from the waste. Segregation of the recyclable material is done either by hand or using available equipment (such as, a front end loader).

When unauthorized waste is discovered, the heavy equipment operator must either move the unauthorized waste away from the active area for later removal and proper management, or must stop his/her operation and notify another person on the ground or on other equipment who will come to the area and remove the unauthorized waste before tipping floor operations are resumed.

Class I and Class III Solid Waste: All Class I solid waste shall be placed on the designated area of the tipping floor for observation, spotting and sorting. Unauthorized materials removed from the incoming waste during this process, shall be placed in the appropriate dedicated container for offsite disposal. All Class I and III waste will be managed on a first-in, first-out basis for transfer to a permitted Class I landfill. Residency time for Class I and III waste shall not exceed 48 hours. Recyclable/recoverable material, such as, paper, metals and cardboard, shall be collected by the Spotter or Equipment Operator and placed in the appropriate container or storage area.

C&D Debris: All C&D Debris waste shall be tipped, observed, spotted and sorted in the same manner as Class I and III waste, except that C&D Debris waste may remain up to seven (7) days within the WPB.

Spotters may be stationed either on the tipping floor or on the heavy equipment. The spotter who sees unauthorized waste is responsible for making sure it is removed from the waste stream. Anyone doing spotting will be a trained spotter.

3.3 Storage of Segregated, Recyclable Materials:

Recyclables shall be placed inside bins located within the building or in a designated storage area.

3.4 Loading & Shipping

After all unauthorized, recoverable or recyclable waste is removed from the solid waste on the tipping floor, the waste shall be pushed for temporary storage to separate sides of the tipping slab. The waste shall then be loaded on to trucks for shipping off-site, within 48 hours of receipt of Class I and III waste and within 7 days for C&D debris. No over-the-weekend storage for Class I waste, especially putrescible waste, is permitted.

Using the rubber-tire front end loader, outgoing waste will be dumped over the "bump wall," dropping it into the waiting waste transfer truck in the vehicle tunnel. Care should

be exercised to minimize the amount of waste which falls off the truck. (Litter patrols will be used to make sure the vehicle tunnel stays clean.)

The waste transfer trucks will deliver the material to facilities approved for the disposal of the type of waste being transported.

Construction and Demolition Debris (C&D) that cannot be recycled shall be delivered to the adjacent Friends Recycling C&D disposal facility.

If the waste was received as Class III waste and it does not contact any Class I waste, it may be transported to a permitted Class III landfill for disposal.

If the waste was received as Class I waste or the waste came into contact with Class I waste, it will be transported to a permitted Class I landfill for disposal.

3.5 Clean-Up

The Operator shall maintain the WPB clean of putrescible waste on areas of the slab not used for temporary storage or staging. When the tipping floor is clear of waste, the slab shall be swept clean of dust and debris. On Fridays, if waste removal and sweeping does not remove noxious odors, the Operator may rinse the floor within the WPB.

Housekeeping (Clean-up) of Facility
As necessary, but at least once each day, a litter patrol will be used to pick up waste from around the facility, especially in the truck tunnel and outside the building.

At the end of each workday, the tipping floor will be free of any unprocessed waste.

This shall be accomplished by loading all waste onto outgoing waste transfer trucks, placing the recyclable material into the proper bins or storage areas, and sweeping the tipping floor.

If a waste transfer truck with waste remains at the Facility overnight, it will either be

stored in the truck tunnel or the waste will be covered with a tarp.

The supervisor will decide if any area on the tipping floor requires more cleaning than just sweeping. The additional cleaning might include mopping, rinsing, or pressure cleaning.

If odors in the building become a problem, the area causing the odor problem will be rinsed or pressure washed to remove rotting waste that might be the reason for the odor.

Rinsing or Pressure Washing: Any water used for rinsing or pressure washing an area that had previously had waste is considered to be leachate. This wastewater will be collected by the leachate collection system.

DO NOT rinse any area if there is waste on it. Move the waste to an appropriate storage location before beginning the cleaning. This ensures waste does not go into the floor drains or clog the leachate collection system.

Prior to rinsing the slab, visually verify that the leachate tank has capacity to receive the runoff from the cleaning operation. If only rinsing a small area, the tank should be no more than 75% full; if cleaning the entire tipping floor, the tank should be no more than 10% full.

4 WASTE QUANTITY PROJECTION

During initial operations, this facility is estimated to receive 2,500 cubic yards (CY) of solid waste per day, distributed as 1,500 CY for C&D debris and 1,000 CY for Class I Solid Waste.

Future volumes within the first 4 years are estimated to increase to 2,000 CY/day for C&D Debris and 2,000 CY/day for Class I and III waste.

5 OPERATION PERSONNEL

A trained waste processing facility operator (as defined in Rule 62-701.320(15), F.A.C.) will be at the WPF during all operating hours. The trained operator may also do spotting of waste.

All equipment operators and spotters will be trained spotters as defined in Rule 62-701.320(15), F.A.C. There will be at least one trained spotter at the tipping floor when waste is received.

Besides spotting the waste, the duties of the equipment operator shall include assisting in waste sorting and handling, as well as, operation of the front end loader to load waste into containers or trucks for hauling the waste and recovered materials.

One additional employee will be required to operate the scale and manage the scale house, provide record keeping of incoming waste loads, identification of the hauler, documenting unacceptable materials and general management.

6 WASTE MANAGEMENT, CONTROL & MEASUREMENT

6.1 Waste Management & Control

To the maximum practical extent, the following procedures shall be followed to ensure compliance with requirements set forth by the permit conditions.

6.1.1 Signs will be displayed at the WPF entrance to indicate what type of waste is allowed at the facility.

6.1.2 Each load will be visually screened by the scale house personnel. Loads deemed to contain unauthorized waste shall be turned away from the WPF and directed to an approved facility.

6.1.3 Upon acceptance of the load and tipping on the WPB, trained spotters shall sort out recoverable/recyclable or unauthorized material and place it in appropriately marked containers for later disposal or recycling at approved facilities.

6.1.4 The following containers will be provided within the WPB for use by the spotters and equipment operators:

One (1) - 20 CY container for metal
One (1) - 40 CY container for cardboard and paper
One (1) - 20 CY container for plastic
One (1) - 20 CY container for waste tires

6.1.5 CCA treated wood will be accepted at the WPB. All CCA treated wood recovered from the waste stream shall be placed with the Class I waste for offsite disposal. Refer to Appendix B for guidance on how to identify CCA treated lumber.

6.2 Waste Weighing & Measurement

All Class I and III waste incoming or outgoing from the WPF shall be weighed at the scale house on a calibrated scale. C&D waste and recovered materials may go to the WPB after the volume has been recorded.

It shall be the responsibility of the scale house person to maintain records of all waste routed through the scale and make these records available for review by regulatory agencies upon request.

If the facility has reached its permitted capacity for storage of wastes or recyclable materials, it shall not accept additional waste for processing until sufficient capacity has been restored.

6.3 Traffic Management

All traffic shall utilize the sole access point for the WPF at NW 27th Avenue. Incoming traffic shall be routed through the scale house where it shall be directed to the WPB.

Signs shall be installed past the scale house to clearly route traffic to the WPB.

The scale house person will decide whether an incoming load should be directed to the WPB (City Wide Recycling) or to the C&D debris mound (where C&D recycling can also occur). For example, dedicated loads of waste concrete would be directed the C&D debris mound, but a load of C&D waste that contains mainly cardboard would be directed to the WPB.

7 NUISANCE MANAGEMENT & CONTROL

7.1 Noise

Operations shall be limited to regular working hours from seven (7) a.m. to six (6) p.m., Monday through Saturday.

7.2 Odor Control

The Operator is required as part of this Operations Plan to take pro-active steps to prevent the formation of nuisance odors from leaving the WPB. Steps include:

7.2.1 Removal of Class I and III waste within 24 hours of delivery (not later than 48 hours).

7.2.2 Clean the WPB slab used for tipping and sorting on a daily basis by removal of waste, sweeping, and/or rinsing if necessary.

7.2.3 If considered necessary, use nuisance odor masking agents and deodorizers.

If odor is detected, the waste causing the odor will be placed in a waste transfer truck as soon as possible. At the end of the day the area where that waste had been will be checked for odors. If odors are still present, that area will be cleaned.

7.3 Dust Control

In the event that the waste stream generates dust, the Operator shall take action to prevent dust pollution beyond the WPF. These actions may include sweeping as needed and application of moisture to keep dust down.

The operator shall also inspect the WPB on a regular basis to ensure that dust within the building does not create a hazardous working condition for slipping and / or breathing. When necessary, the building will be swept and rinsed with the provided water connections.

7.4 Litter Control

The Operator is required to maintain a clean project site, that is, free of litter. Daily inspections for litter within and around the WPB will be accomplished. Periodic clean up runs (at least one per week or sooner if needed) will be done. The cleanup run will encompass the entire WPF site.

Litter collected during cleanup shall be placed in the appropriate waste container or storage pile for disposal at a later time.

Since the building has been permitted as an open building, high winds during operations may carry waste outside. It is the Operator's responsibility to control waste and trash from exiting the building or picking it up. Extreme wind may require the Operator to load the waste and cease operations.

7.5 Vector Control

The Operator shall be responsible for the following practices:

7.5.1 The use of industry-standard pest control measures, including the use of approved pesticides.

7.5.2 Class I and III waste shall be removed from the WPB every 24 hours (not to exceed 48 hours).

7.5.3 Unacceptable waste shall be rejected or removed by the equipment operator or tipping floor spotter.

7.5.4 Rejected waste shall be removed to an offsite approved facility within one week of arrival at the WPF.

8 SITE ACCESS CONTROL

The property shall be surrounded by an access barrier, as indicated on the drawings, made up of earth berm on the west side of the Friends Recycling, L.L.C. property and/or chain link fence. The entrance to the property shall be gated, and the gate shall be locked when the facility is not open for business or unsupervised. (The property perimeter surrounds the waste processing facility, the C&D disposal area, and other operations at the facility.)

The entrance gate shall have a sign showing the name of the facility and a telephone number for normal and emergencies (that is, non-business hours).

The drainage retention area (DRA) shall be enclosed with chain link fence in its entirety. Upon facility closure, install an uninterrupted 6-foot high chain link fence along the entire perimeter of the facility. This requirement is not applicable if the DRA is maintained with side slopes of 4:1 (horizontal:vertical) or flatter.

9 HOURS OF OPERATION

The WPF shall operate in accordance with the following schedule:

Monday through Saturday	7 AM to 6 PM
Sunday	No Operation

10 STORMWATER MANAGEMENT

The WPF has an approved stormwater management system. It was reviewed by the City of Ocala, FDEP Central District, and the Army Corps of Engineers. FDEP CD issued ERP permit number is 019600-014-EM. The stormwater management system will be operated and maintained as required by that permit.

The stormwater management system consists of swales, storm inlets, spillways, storm pipes and interconnected drainage retention areas (DRAs).

As part of this operations plan, the Operator is required to comply with the requirements of the stormwater management permit. Additionally, the following procedures are required:

1. Maintain the adjacent areas and the side slopes of swales and the DRA. Typically, this is mowing on a regular basis.
2. Avoid equipment travel along the bottom of the DRA and swales to preserve the permeability characteristics of the soil.
3. Remove waste and debris from storm inlet on a regular basis.
4. Repair washouts and erosion as soon as noted.
5. Notify the Engineer of Record and FDEP Central District of the formation of a sinkhole.

11 LEACHATE COLLECTION AND DISPOSAL

11.1 System Description

The leachate system consists of a trench drain strategically located across the tipping floor of the WPB. The trench drain has been designed with a grate to prevent larger particles from entering the system.

A leachate pipe conveys the fluid from the trench drain to a sump located outside of the loading bay on the south of the WPB. An inlet located inside the vehicle tunnel is also part of the leachate collection system, connecting to the leachate pipe between the trench drain and the sump. The sump contains a submersible pump suitable for the leachate, which pumps the effluent to a leachate storage tank (2,500 Gallons) equipped with high-level alarms and outflowing valves.

All drains and leachate conveyances shall be maintained so that leachate flow is not impeded. At least weekly, the leachate drain will be inspected to ensure no materials are blocking any portion or piping. If leachate is puddling on the tipping floor, it will be cleaned up as soon as possible because this is also a slipping hazard.

11.2 Inspections of the Leachate Collection System

The overfill control equipment shall be inspected weekly to ensure it is in good working order.

The exposed exterior of all aboveground tanks shall be inspected weekly.

Interior inspection of tanks shall be performed whenever the tank is drained or at a minimum of every three years.

If an inspection reveals a tank or equipment deficiency, leak, or any other deficiency which could result in failure of the tank to contain the leachate, remedial measures shall be taken immediately to eliminate the leak or correct the deficiency.

Inspection reports shall be maintained and made available to the Department upon request for the lifetime of the leachate storage system.

11.3 Utilization

As part of the Operations Plan, the WPB floor slab (tipping slab) may have to cleaned.

The wash water (which is considered to be leachate) will be contained by the Leachate Collection System and not be allowed to exit the building to mix with stormwater runoff.

It is estimated that washing the entire floor will generate less than 2,200 gallons of leachate. Usually the floor cleaning will be for specific areas, so less than 1,000 gallons of leachate will be generated. The 2,500 gallon storage tank will be sufficient to accommodate several clean up sessions before the tank must be emptied.

Prior to rinsing the slab, the operator must visually verify that the leachate tank has capacity to receive the runoff from the slab rinsing operation.

11.4 Disposal of Leachate

At least once per week, the leachate storage tank will be inspected. The level of the liquid will be recorded. Also, the inspection will determine whether there are any leaks or parts (especially the level sensor) that may fail soon. If so, repairs will be made as soon as possible.

The storage tank is a translucent tank which allows its level to be visually determined. Additionally, it is equipped with a level-alarm.

The storage tank shall be emptied whenever its level reaches 3/4 full. Disposal of the leachate tank's contents shall be disposed of at an approved facility.

In the future the facility expects to be able to discharge the leachate directly to the City of Ocala sewer system.

12 RECORD KEEPING AND REPORTING

12.1 The Operator or the delegated personnel shall maintain the following daily records. The records may be kept electronically.

1. Quantity and type of material accepted at the WPF (Class I and III waste, C&D debris, or recovered materials). This includes information about the origin of waste, county, and hauler
2. Quantity of solid waste processed at the WPF.
3. Quantity of solid waste removed from the facility for Recycling and for Disposal.
4. Any additional records which may be required by regulatory agencies having jurisdiction over this facility

12.2 Record logs shall be totaled monthly and shall be available at the facility for inspection upon request. These logs may be kept electronically.

12.3 Because the facility accepts dedicated loads of C&D waste and will recycle construction and demolition debris, it will submit an annual report to the Department on Form 62-701.900(7), Annual Report for a Construction and Demolition Debris Facility, either online through the Business Portal or by email. (Rule 62-701.730(8)(b), F.A.C.)

12.3.1 This report will be consolidated with the report for the C&D disposal operations at the property.

12.3.2 This report shall include a summary of the amounts and types of wastes disposed of or recycled. The county of origin of materials which are recycled, or a statement that the county of origin is unknown, shall be included in the report.

12.3.3 The report shall be submitted no later than February 1 of each year and shall cover the preceding calendar year.

13 CLOSURE REQUIREMENTS

Closure shall be in accordance with Chapter 701.710(6), F.A.C., reproduced as follows:

"(6) Closure Requirements

(a) The owner or operator shall notify the Department in writing prior to ceasing operations, and shall specify a closing date. No waste shall be received by the facility after the closing date.

(b) Within 30 days after receiving the final solid waste shipment, the owner or operator shall remove or otherwise dispose of all solid waste or residue in accordance with the approved closure plan. Stored putrescible wastes shall continue to be managed in accordance with paragraph 62-701.710(4)(b), F.A.C.

(c) Closure must be completed within 180 days after receiving the final solid waste shipment. Closure will include removal of all recovered materials from the site, as well as performing any contamination evaluation required by subparagraph 62-701.710(1)(d)2., F.A.C. The owner or operator shall certify in writing to the Department when closure has been completed ..."

The Closure Plan is to remove all waste and recovered materials from the WPF within 30 days after receiving the final solid waste shipment. The waste and recovered materials will be taken to appropriate facilities for disposal or recycling. A contamination evaluation is not required because this is an enclosed facility with a leachate collection system. Within 180 days after receiving the final solid waste shipment, the owner will certify the facility has been properly closed in a letter to FDEP Central District.

14 FINANCIAL ASSURANCE

Annually the cost estimate must be updated. If the amount increases the new amount must be funded not later than March 1.

15 AUTHORIZED SOLID WASTE

15.1 The following types of waste may be accepted at the WPF:

1. Class I Waste
2. Class III waste

3. Commercial Solid Waste
4. Recovered Materials (such as, cardboard, plastic, metal, clean wood)
5. Construction and Demolition (C&D) Debris

15.2 Class I Waste: Includes solid waste that is not hazardous, and that is not prohibited from disposal in a lined landfill under Rule 62-701.300, F.A.C.

15.3 Class III Waste: The definition includes yard trash, construction and demolition debris, processed tires, asbestos, carpet, cardboard, paper, glass, plastic, furniture other than appliances, or other materials approved by the Department, that are not expected to produce leachate that poses a threat to public health or the environment. However, this facility will not accept regulated asbestos containing materials.

15.4 Commercial Solid Waste: Includes all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding household and industrial waste.

15.5 Recovered Material: Includes metal, paper, glass, plastic, textile, or rubber materials that have known recycling potential, can be feasibly recycled, and have been diverted and source separated or have been removed from the solid waste stream for sale, use, or reuse as raw materials, whether or not the materials require subsequent processing or separation from each other, but does not include materials destined for any use that constitutes disposal. Recovered materials as described above are not solid waste.

15.6 Clean Wood: Refers to wood, lumber, tree and shrub trunks, branches and limbs, which is free of paint, glue, filler, pentachlorophenol, creosote, tar, asphalt, chromated copper arsenate (CCA), and other wood preservatives or treatments. However, tree and shrub trunks, branches and limbs will be transported directly to the C&D debris disposal mound for processing.

15.7 Construction and Demolition (C&D) Debris: This waste is defined in Rule 62-701.200(24) as discarded materials generally considered to be not water soluble and non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt material, pipe,

gypsum, wallboard, and lumber from the construction or destruction of a structure as part of a construction or demolition project. The term also includes rocks, soils, tree remains, trees, and other vegetative matter that normally results from land clearing or land development operations for a construction project; clean cardboard, paper, plastic, wood, and metal scraps from a construction project; yard trash and unpainted, non-treated wood scraps from sources other than construction or demolition projects; scrap from manufacturing facilities that is the type of material generally used in construction projects and that would meet the definition of construction and demolition debris if it were generated as part of a construction or demolition project, including debris from the construction of manufactured homes and scrap shingles, wallboard, siding concrete, and similar materials from industrial or commercial facilities and de minimis amounts of other non-hazardous wastes that are generated at construction or demolition projects, provided such amounts are consistent with best management practices of the construction and demolition industries. However, vegetative waste and dedicated loads of some materials (for example, concrete, asphalt, wallboard) will be transported directly to the C&D debris disposal mound for processing.

16 UNAUTHORIZED SOLID WASTE

The following waste products are not approved for processing at the WPF.

- Hazardous wastes
- Chemicals / Solvents
- Paint or containers of paint
- Biomedical wastes, treated or untreated
- Lead-acid batteries
- Mercury containing devices and lamps, for example, fluorescent lamps
- PCBs
- Used oil
- White goods
- Electronic waste
- Non-containerized liquids

- Containers or tanks with liquids
- Sludges, including Wastewater Treatment Plant sludges or waste solids
- Unprocessed waste tires (Unprocessed waste tires may be accepted by Friends Recycling, L.L.C., FDEP Permit # 0019600-012-SO, but not at the WPB.)
- Septage
- Materials containing regulated asbestos
- Waste with free liquids
- Contaminated soil
- Ash residue
- Dedicated loads of yard trash (Dedicated loads of yard trash will be taken to the disposal area for processing or disposal.)

16.1 Handling of prohibited waste if it does get to the tipping floor

16.1.1 Whenever possible, the hauler will be required to take the prohibited waste from the facility.

16.1.2 If necessary, the waste will be stored in a separate area at the facility until it can be transported to an appropriate treater or disposal facility.

16.1.3 Whole waste tires may be processed at the Friends Recycling facility (FDEP Permit # 0019600-012-SO) and then properly disposed or recycled.

16.2 Handling of Special Wastes. Special waste is defined as white goods, waste tires, used oil, lead-acid batteries, construction and demolition debris, ash residue, yard trash, biological wastes, and mercury-containing devices and lamps." Except for C&D and yard trash, the special wastes named in rule 62-701.200(113), F.A.C., are prohibited from the WPB.

16.2.1 Whenever possible, the hauler will be required to take the special waste from the facility.

16.2.2 If necessary, the waste will be stored in a separate area at the facility until it can be transported to an appropriate treater or disposal facility.

17 MANAGEMENT OF CCA AND OTHER TREATED WOOD

17.1 The WPF may accept waste loads that contain wood treated with chromated copper arsenate (CCA), Creosote or Pressure Treated wood ("Treated Wood"). However, treated wood will not be recycled; it will be sent to a permitted Class I landfill.

17.2 The C&D Debris Disposal mound is not allowed to accept treated wood for disposal. It has a CCA treated wood management plan.

17.3 Personnel shall be instructed by the operator about methods to help identify and handle CCA treated wood, by making available to them the "Guidance for the Management and Disposal of CCA-Treated Wood" (Appendix B). This guidance document is required reading by new personnel.

17.4 Incoming trucks should be visually inspected to look for dedicated loads of treated wood, especially from contractors specializing in the demolition of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. For additional information, the scale operator shall ask the driver what they are hauling. All dedicated loads shall be diverted at the scale house to the WPB; the load must not be taken to the C&D debris disposal mound..

17.5 A trained operator or spotter must inspect each load on the tipping floor and pull out wood that is suspected to be treated wood. Separated wood will be stored with Class I waste for disposal at a lined disposal facility.

17.6 When handling Treated Wood, personnel shall wear sufficient clothing to prevent skin contact. In case of skin contact, the area coming in contact shall be washed thoroughly with soap and water.

18 EMERGENCY AND CONTINGENCY PLAN

18.1 Communications and Emergency Contacts

18.1.1 The occurrence of an emergency condition does not preclude the WPF from receiving or shipping waste unless these operations are impacted by the emergency or present a risk to the health, safety and welfare of the personnel or those using the WPF.

18.1.2 Personnel shall be trained to operate in contingency mode and shall be fully capable of operating existing communication equipment as well as telephones available at the site and office.

18.1.3 The Operator shall post in a conspicuous place within the facility office a list of emergency contacts, which shall be updated on a monthly basis, containing as a minimum, the following contacts:

- FDEP Receptionist - Central District: (407) 897-4100
- City of Ocala Fire Department: 911 Emergency or 629-8513 Non-emergency
- City of Ocala Police Department: 911 Emergency or 369-7070 Non-emergency
- Guerra Development Corp.: (352) 629-8060
- St. Johns River WMD: (386) 329-4500
- Gerald Lourenco, Operator: (352) 266-9497

18.2 Fire

In the case of a fire at the waste processing facility, all reasonable efforts shall be made

to immediately extinguish or control the fire. If there is any doubt whether the workers can extinguish the fire, CALL THE FIRE DEPARTMENT AT 911.

Accidental fires, although unlikely, are possible. The most likely type of fire is one which is deliberately set; ensuring that access to the facility is controlled by the end of the workday will help minimize this risk. The following guidelines have been developed to minimize the potential for fires, limit their spread, and control them.

18.2.1 To the extent possible, ensure that all or most of the waste has been cleared from the facility at the end of the workday or has been properly segregated and hazardous material removed from the facility.

18.2.2 Fire extinguishers shall be maintained throughout the WPB. Quarterly it will be verified that they in perfect working condition. A fire hydrant is located near the WPB. Its location shall be known to the personnel to either tap or assist fire department personnel responding to a fire.

18.2.3 Equipment capable of moving large amounts of dirt shall be maintained on-site and in working condition for use in putting fires out or creating new fire break lanes. The same front-end loader used for sorting and loading waste within the WPB may be used for this purpose. Personnel should be aware of the potential use of this equipment for fire-fighting.

18.2.4 Personnel shall be made aware of the water hookups available at the WPB which may be used to put out small fires within the WPB.

18.2.5 No smoking, burning, or open flames inside the WBP is allowed.

18.2.6 A chain link fence shall be provided to secure the WPF property perimeter. The gates to the site shall be kept locked at all times when the facility is not being operated.

18.2.7 The owner / operator shall post outside the portable office and inside by the

telephone, the telephone numbers for applicable emergency agencies having jurisdiction over the facility, such as 911, police, fire department.

18.2.8 A working telephone (landline or cellular) shall be available in the office at all times during operation of the facility. Additionally, at least one working cellular telephone shall be available outside the office building, to be used by the trained operators or trained spotters in the event line telephone service at the office is down.

18.2.9 Within 24 hours of a fire affecting the facility, the Operator shall contact FDEP by phone call, e-mail, or facsimile. Additionally, a letter must be submitted within five days to the Department describing how the fire began, what was done to extinguish it, and what will be done to prevent future fires.

18.3 Hot Load and Smoldering Waste

18.3.1 If a fire is discovered in an incoming load of waste, the load shall be dumped away from the WPB (preferably, at the C&D debris disposal mound next door) where equipment can cover it with dirt to smother the fire.

18.3.2 If the fire is discovered after the load has been dumped on the tipping floor, using the front end loader at the WPB the load shall be immediately separated, picked up, and delivered to the adjacent C&D facility to be covered with dirt and smothered.

18.3.3 If the operator believes the fire is beyond the capability of the workers, he will call 911 for assistance.

18.4 Hazardous Waste and Spills

18.4.1 All personnel shall be fully aware that hazardous materials and regulated hazardous waste are not to be accepted at the WPF.

18.4.2 Should a hazardous material be discovered within the WPF the hazardous material shall be isolated and placed in a designated container for prompt and proper disposal offsite at a permitted facility.

18.4.3 Should liquid hazardous material be spilled, personnel shall promptly utilize the spills kit available at the WPB to recover and clean up as much of the liquid as possible and prevent it from running outside the building or inside the leachate system. Absorbent material used in the cleanup shall be treated as hazardous material and stored in the appropriate container for disposal at a Class I landfill (if the material is not a regulated hazardous waste).

18.4.4 The Operator shall maintain within the WPB the following material:

1. Spills response kit containing absorbent pads, sock and brooms.
2. Personal protective equipment, gloves, boots and aprons.
3. First aid kit and eye wash.
4. Fire extinguishers.

18.4.5 If the hazardous material is a regulated hazardous waste, the facility operator shall:

1. Promptly notify the FDEP Central District, the person responsible for shipping the wastes to the facility, and the generator of the wastes, if known.
2. The area where the wastes are deposited shall immediately be cordoned off from public access.
3. If the generator or hauler cannot be identified, the facility operator shall assure the cleanup, transportation, and disposal of the waste at a permitted hazardous waste management facility. (Call 911 for the HazMat team and / or ask FDEP Central District for guidance.)
4. Inform the FDEP Central District when the cleanup and disposal operations have been completed.

18.5 Health and Injury

The operator shall be responsible for conducting the operation of this site at all times in accordance with OSHA and other applicable safety best management practices.

The following minimum safety measures shall be taken:

18.5.1 Persons working in the WPB (spotter, driver and or front end loader operator) shall have access within the site to two-way communication with the main office. Cellular telephones or radios would be acceptable.

18.5.2 A First Aid Kit shall be available at the site during operations. The first aid kit can be placed in the front end loader. A First Aid Kit shall also be located inside the project office.

18.5.3 A written notification shall be sent by the Owner and/or Operator of the facility to emergency management entities, such as Police, and Fire Department. The notification shall include as a minimum, the telephone number, address, name of business, contact person, directions for access to the site and the type of work conducted within the site. The written notification should mention both the WPB and the C&D debris disposal mound.

18.6 Sinkhole Formation

Upon the discovery of a sinkhole, the owner of the facility shall notify the following entities:

- Engineer of Record: Guerra Development Corp.: (352) 629-8060
- St. Johns River Water Management District: (386) 329-4500
- Department of Environmental Protection – Central District: (407) 897-4100

18.7 Severe Weather

This section applies to approaching weather such as hurricanes and tropical storms, or the aftermath of tornados and design-level rainfall events (100-year, 24-hour storms).

18.7.1 Severe Weather (Tornados, Lightning): Gerry Lourenco or the manager on duty will decide which precautions will be taken and whether operations will be suspended when a lightning storm or tornado is in the area.

18.7.2 Within 72-hours of an expected hit by a hurricane:

18.7.2.1 Emergency numbers shall be verified.

18.7.2.2 Communication tools such as land lines and cellular phones shall be checked.

18.7.2.3 Essential supplies (equipment fuel, spares, bottled water) shall be topped off.

18.7.2.4 Leachate tank shall be emptied in the approved manner.

18.7.2.5 The Facility Operator/Manager shall hold a meeting with facility personnel to discuss actions to be taken.

18.7.3 Within 48 hours of an expected hit by a hurricane:

18.7.3.1 Contact the facilities that receive waste and recyclable materials to find out how long they will remain open.

18.7.3.2 Dumpsters and Bins for recyclable material shall be lawfully emptied at approved facilities. C & D debris material shall be disposed of at an approved facility. Plastic bins shall be secured or moved to enclosed locations.

18.7.3.3 Since the WPB is an open building, all equipment, parts, tools, etc. which may become airborne shall be properly secured or removed.

18.7.3.4 All components for the leachate collection and stormwater systems

(ditches, swales, pipes, inlets, etc.) shall be verified to be in proper working conditions to prevent flooding, erosion, or contamination.

18.7.4 Within 24 hours of an expected hit by a hurricane:

18.7.4.1 The WPF Operator/Manager shall make the determination regarding shutting down.

18.7.4.2 Upon shutting down, no additional waste shall be received. Advise solid waste collectors and haulers that facility will be closed.

18.7.4.3 As much as possible, waste materials will be removed from the site. If the disposal facilities have closed, the waste will be pushed as close to the bump wall as possible.

18.7.4.4 As much of the recyclable material as possible will be moved inside the covered portion of the building. All will be secured to keep it from becoming airborne.

18.7.4.5 Leachate Tank shall be filled at least 50% full of water

18.7.4.6 Fuel tank shall be secured, shed access shall be locked and power to the fuel pump disconnected.

18.7.4.7 All gates to the facility shall be locked.

18.7.4.8 Emergency contact information, visible from outside of the facility shall be verified.

18.7.4.9 The Owner/Operator/manager shall make a visual inspection of the WPF prior to leaving.

18.7.5 After severe weather has passed:

18.7.5.1 The WPF Operator/Manager shall make the determination for re-opening the facility after an inspection of the facility has been made.

18.7.5.2 If any significant damage is observed the owner/operator shall retain a licensed professional engineer to assess if the damage may affect permit conditions, and to take appropriate action.

18.7.5.3 In the event of damage which may affect permit conditions, the

Owner/Operator/Manager or the retained licensed professional engineer shall notify FDEP of the damage and remedial actions to be taken. This notification to FDEP shall be made within 72 hours (or as soon as practical) of the event.

18.7.5.4 Coordinate with FDEP and local authorities if special operations are required to assist federal, state and local authorities in the cleanup effort.

19 SITE RESOURCES LIST

19.1 Personnel

Friends Recycling, L.L.C. will use its employees for both the C&D disposal operations and the materials recovery facility.

1. At least one person at the portable office who may also operate the scale house.
2. At least one trained operator who may over see both the C&D disposal operations and the materials recovery facility.
3. At least one trained spotter. This person may either be on the tipping floor or operating the heavy equipment at the WPB.
4. The heavy equipment operator may act as a trained spotter.

19.2 Operators and spotters shall be trained as described in Rule 62-701.320(15), F.A.C.

19.2.1 At least one trained operator shall be on duty whenever the facility is operating. An operator is any person, including the owner, who is principally engaged in, and is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility and includes the on-site person in charge of a shift or period of operation during any part of the day, such as facility managers, supervisors and equipment operators. The trained operator may also act as a trained spotter.

19.2.2 At least one trained spotter shall be on duty at all times that waste is received at the facility to inspect the incoming waste. A spotter is any person employed at a solid waste management facility whose job is to inspect incoming waste and to identify and properly manage any hazardous or prohibited materials which are received at the facility. "Spotters" shall be stationed where they can thoroughly inspect each shipment of waste for prohibited materials. The spotter can be on heavy equipment or on the tipping floor.

19.2.3 Interim Operators and interim Spotters may be used at the facility in accordance with the requirements of subsection 62-701.320(15), F.A.C.

19.2.3.1 An "interim operator" means a person who has, in the opinion of the facility manager, shown competency in his chosen occupation through a combination of work experience, education and training and who has at least one year of experience at that facility or a similar facility. An interim operator must become a trained operator within one year of employment as an interim operator.

19.2.3.2 An "interim spotter" means a person who has, in the opinion of the facility manager, shown competency in his chosen occupation through a combination of work experience, education and training. An interim spotter must become a trained spotter or trained operator within three months of employment as an interim spotter.

19.3 Equipment

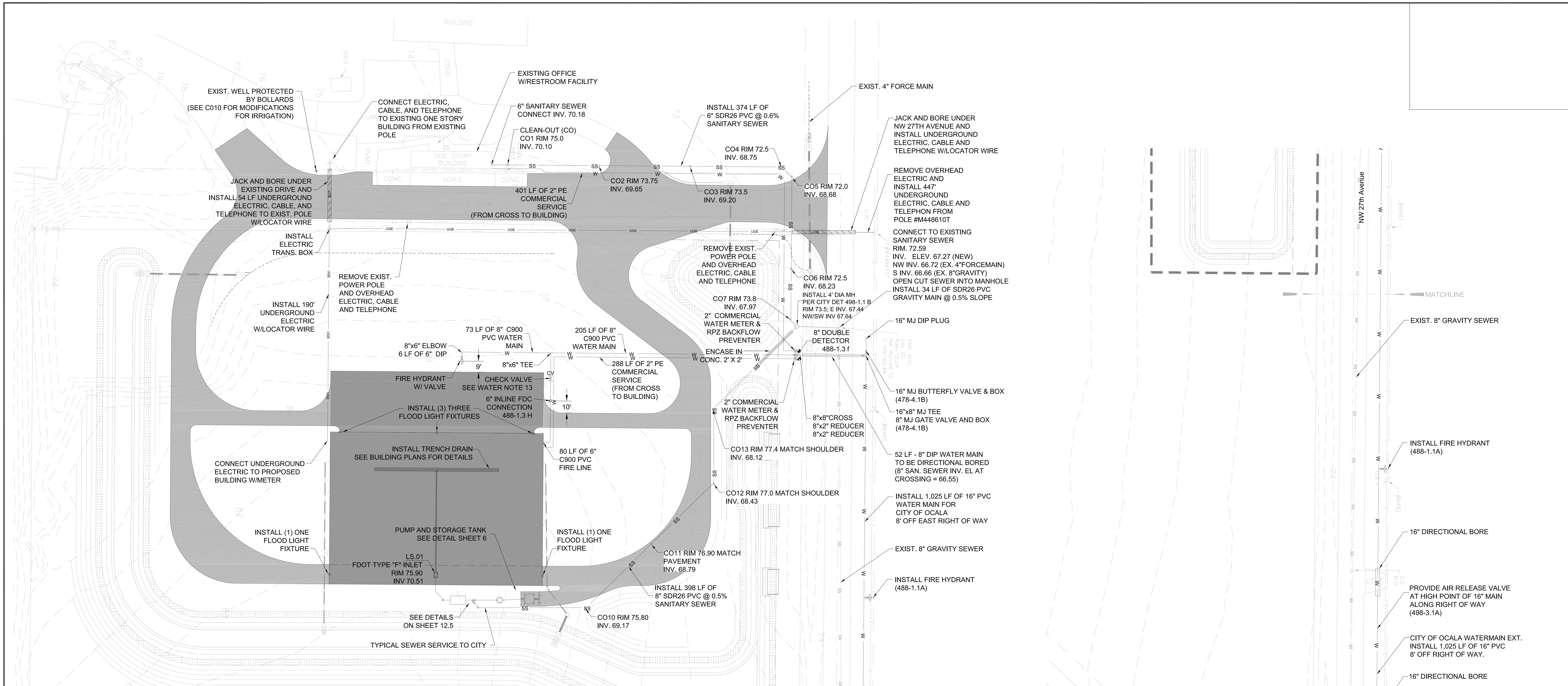
City Wide Recycling and the C&D debris recycling and disposal mound will share equipment resources, such as, the 4,000-gallon water truck. The rubber tired front-end loader with rubber insert in the bucket to prevent damage to the slab will be for WPB use.

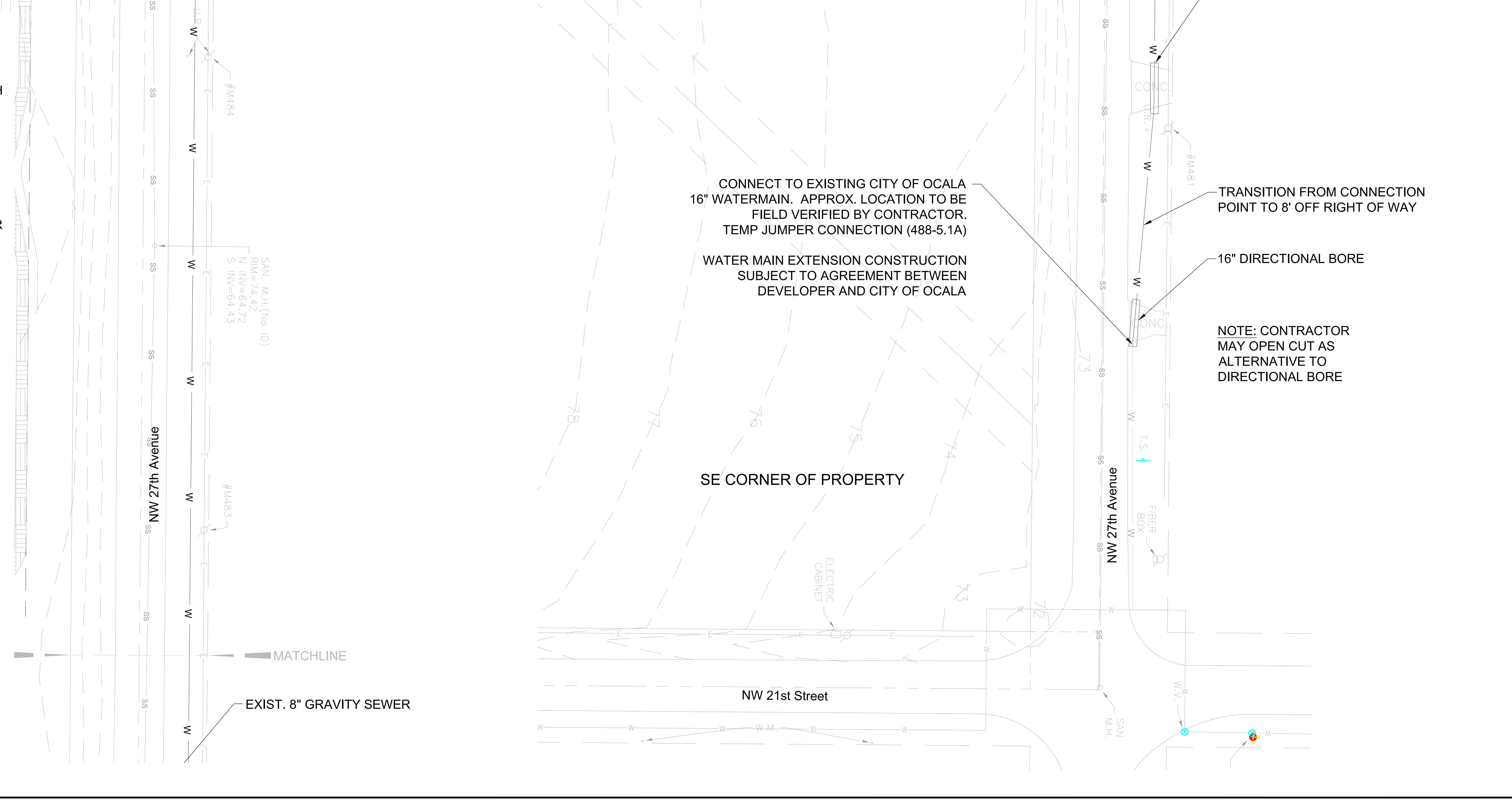
20 STORAGE OF PETROLEUM

No storage of fuel, diesel, gasoline shall take place within the WPB. Equipment may refuel on the Friends Recycling, L.L.C., property, but not inside the WPB.

APPENDIX A

SITE PLAN





WATER NOTES

1. THE WATER SERVICE PIPE, FROM THE MAIN TO THE METERED LOCATION, SHALL BE TWO INCHES (2") MINIMUM.
2. WATER CLEARANCE FROM FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) MUST BE OBTAINED BEFORE PLACING THE WATER SYSTEM IN OPERATION AND BEFORE ISSUANCE OF PARTIAL OR FINAL CERTIFICATE OF OCCUPANCY (CO).
3. WATER SYSTEM ASBUILT MUST BE SUBMITTED TO CITY PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY IN ACCORDANCE WITH SECTION 486 OF THIS MANUAL. ALL INSTALLED INFRASTRUCTURE SHALL BE REFERENCED TO STATE PLANE COORDINATES ON THE ASBUILTS.
4. CITY WILL MAINTAIN ALL WATER MAINS TWO INCH (2") IN DIAMETER AND ABOVE TO THE POINT OF METERING AND DOUBLE DETECTOR CHECK ASSEMBLY (DDC) LOCATION.
5. ALL BACKFLOW PREVENTERS ARE TO BE INSTALLED "BY CONTRACTOR" AND MAINTAINED "BY OWNER".
6. METER SERVICE IS TO BE INSTALLED BY CITY OF OCALA.
7. A GATE VALVE SHALL BE PROVIDED AT THE MAIN FOR ALL NEW SERVICE LINES WITH 2" PIPING.
8. ALL EXISTING METER BOXES AND BACKFLOW PREVENTERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
9. CONTRACTOR SHALL CLEARLY MARK EACH METER BOX WITH THE UNIT IT SERVES.
10. ALL NEW BACKFLOW PREVENTION DEVICES SHALL BE TESTED BY CERTIFIED TESTERS AND COPIES OF SUCH TESTS SHALL BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO) FOR THE UNIT TO WHICH THE DEVICE HAS BEEN INSTALLED FOR TESTING AND CERTIFICATION SHALL BE IN ACCORDANCE WITH 6.1, TESTING, MAINTENANCE, AND CERTIFICATION OF REQUIRED BACKFLOW PREVENTERS OF THE CITY'S MANUAL OF CROSS CONNECTION CONTROL.
11. ALL FIRE FIGHTING EQUIPMENT AND APPARATUS TO COMPLY WITH PRESENT STATE CODE/REQUIREMENTS.
12. ALL FIRE HYDRANTS SHALL BE FACTORY PAINTED RED WITH APPROPRIATELY COLORED CAPS / BONNETS.
13. FIRE PROTECTION SYSTEM DESIGN TO BE CONFIRMED WITH BUILDING DESIGNERS FOR APPROPRIATE PRESSURES. SHOULD ANY MODIFICATIONS BE REQUIRED THEY SHALL BE APPROVED BY THE CITY.

SEWER NOTES

1. CITY WILL MAINTAIN ALL SEWER MAINS UP TO THE PROPERTY LINE, THAT INCLUDE MANHOLES BOTH ONSITE AND OFFSITE. SEWER SERVICES AND CLEANOUTS WILL BE PRIVATE.
2. SEWER SYSTEM ASBUILT TO BE SUBMITTED TO WATER AND SEWER ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY (CO). ASBUILT TO BE IN ACCORDANCE WITH SECTION 496.
3. ALL MANHOLE COVERS ARE TO BE HINGED WITH LOCKS.
4. MANHOLE FLOW CHANNELS ARE TO BE RECONSTRUCTED AS REQUIRED BY THE WATER AND SEWER ENGINEER.
5. ALL EXISTING SANITARY SEWER MANHOLE COVERS THAT FALL IN AREAS OF NEW CONSTRUCTION ARE TO BE ADJUSTED TO THE NEW SURROUNDING GRADE.
6. ALL SEWER MAINS THAT ARE TO BE CITY MAINTAINED WILL REQUIRE AN ASBUILT DRAWING. THE DRAWING SHALL SHOW THE LOCATION OF ALL SEWER MAINS, MANHOLES AND SERVICES. ASBUILT DRAWING SHALL BE IN ACCORDANCE WITH SECTION 496, VOLUME III, CITY OF OCALA STANDARD SPECIFICATIONS FOR WATER AND SANITARY SEWER CONSTRUCTION.
7. NO OAKS, LARGE OR AGGRESSIVELY ROOTED TREES CAN BE INSTALLED WITHIN 30 FEET OF SEWER MAINS.
8. DIP PIPE SHALL BE CLASS 350 AND CONFORM TO THE LATEST REQUIREMENTS OF ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51.
9. ALL SANITARY SEWER CLEAN-OUTS SHALL BE MAINTAINED BY THE OWNER AND THOSE WITHIN THE PAVEMENT SHALL BE TRAFFIC BEARING .
10. ALL RIMS ARE TO BE FLUSH WITH THE FINAL GRADES TO CREATE A SMOOTH FINISH.
11. DEFLECTION OF FLEXIBLE PIPE SHALL NOT EXCEED 5% AND SHALL BE TESTED PER FDEP METHODS AT LEAST 30 DAYS AFTER FINAL BACKFILL HAS BEEN PLACED. LEAKAGE EXFILTRATION OR INFILTRATION SHALL NOT EXCEED 200 GAL PER INCH OF PIPE DIAMETER PER MILE PER DAY AND BE PERFORMED WITH A MIN POSITIVE HEAD OF 2 FEET. AIR TESTS CONFORMING TO ASTM F-147 FOR PLASTIC PIPE SHALL ALSO BE REQUIRED.

SHEET TITLE:	UTILITY LAYOUT		JOB NO: 17-04
PROJECT:	CITY WIDE RECYCLING		
DESIGNED BY: AMM	DRAWN BY: AMM	GDC DWG NAME: 17-04_UTIL	
CHECKED BY: PRW / JCG	APPROVED BY: JCG	CLIENT: NICK GIUMARELLI	
DATE:	MAR. 16, 2018	SHEET NO: C006 of C012	

REVISIONS

DATE	BY	DESCRIPTION
9-6-18	PRW	ADDED SEWER LATERAL FROM RECYCLE CENTER AND NOTES
9-28-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER
10-03-18	PRW	MINOR INVERT ADJUSTMENTS- SEWER

24x36 SCALE: 1" = 40'
11x17 SCALE: 1" = 80'
0 20' 40'

SEAL:

Juan C. Guerra, P.E.
Fla. Reg. # 0041000
Date:

ENGINEER OF RECORD:
GDC
Consulting Engineering
2817 NE 3rd St. Ocala, Florida 34470
(352) 629-8060 Phone
GDC@GuerraCorp.net
State of Florida Certificate of Authorization #4954

APPENDIX B

GUIDANCE FOR THE MANAGEMENT OF CCA TREATED WOOD

GUIDANCE FOR THE MANAGEMENT AND DISPOSAL OF CCA-TREATED WOOD 2017 (Final)

Prepared for:
The Hinkley Center for Solid and Hazardous Waste Management and Florida Department of Environmental Protection

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1. Introduction

The purpose of this document is to develop guidance for the regulated community and the Department in Florida on the management and disposal of wood treated with chromated copper arsenate (CCA). It contains recommendations, which are of an advisory nature, for the collecting and recycling of treated wood. It also contains specific Best Management Practices (BMPs) that are designed to reduce the amount of treated wood disposed of at unlined facilities and to minimize the processing of treated wood into mulch at processing facilities. If the owner/operator of a facility employs and properly implements the BMPs contained in this document the Department will presume that the owner/operator is making a reasonable effort to prevent significant quantities of CCA-treated wood from being disposed of or processed at the facility and will not take enforcement action should disposal or processing of some CCA-treated wood at the facility actually occur.

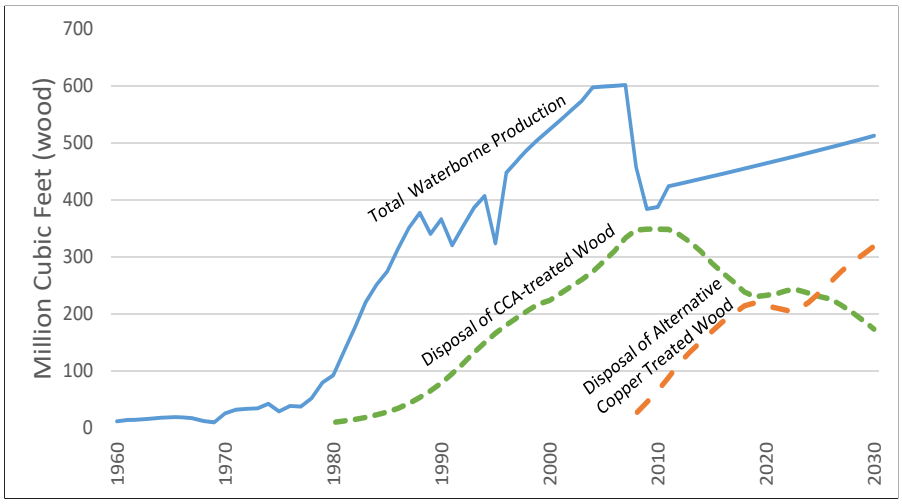
2. Background

CCA is a wood preservative containing chromium, copper and arsenic. These chemicals protect the wood from rotting due to insects and microbial agents. As a result, the use of CCA to pressure treat wood can prolong the service life of the wood 20 to 40 years beyond that without the preservative.

CCA has been used to treat wood since the 1940s, and since the 1970s CCA-treated wood has been used extensively in residential applications. Wood treated with CCA produces no odors or vapors, and you can paint or seal its surface easily. Wood products treated with CCA include lumber, timber, utility poles, posts and plywood. Because of its ease of use and the effectiveness of its treatment, CCA-treated wood was the most widely used type of treated wood in the country and represented about 80 percent of the wood preservation market through 2004. As of 2004, CCA-treated wood has been phased out from residential treated wood uses in lieu of wood treated with copper based alternative chemicals. The alternatives do not contain arsenic, the chemical in CCA that has the highest human health risks.

Although the amount of CCA-treated wood in the disposal sector has been estimated to be decreasing since 2010, it is still important for wood waste recyclers to implement best management practices (BMPs) to avoid the inclusion of CCA from marine, farm, and utility applications plus remnant wood waste from residential structures constructed prior to the voluntary industry CCA phase-out effective January 1, 2004.

2. Background (continued)



Projected Amounts of CCA- and Copper-Treated Wood in the U.S. Disposal Sector

In the late 1990s the Florida Department of Environmental Protection became concerned about the large quantity of arsenic that was being imported into the state in the CCA chemicals and the CCA-treated wood. Due to population growth, this wood was needed to supply the high demand for residential housing in Florida. The Department was also concerned about how this CCA-treated wood might be managed when it was to be removed from service. Research conducted by a team of researchers at the University of Miami and the University of Florida (Dr. Helena Solo-Gabriele, and Dr. TimothyTownsend, Principal Investigators), showed that the amount of this wood being disposed of after it reached the end of its service life was significant (Solo-Gabriele et al. 2003). The disposal forecast above shows that the amounts of CCA-treated wood disposed are expected to decrease from their peak in 2013. This decrease will be offset by an increase in the amount of alternative copper-treated wood disposed. Although projections indicate that the amount of CCA-treated wood in the disposal sector is declining, the amounts will remain significant through 2030.

In addition, while not clearly confirmed by ground water data from Florida's unlined disposal facilities, research also indicated that CCA-treated wood and ash from burning this wood could pose a significant leaching threat to ground water if disposed of in unlined disposal facilities in Florida (Townsend et al. 2001, 2004). The research also showed that the ash from burning wood waste containing as little as five percent– treated wood could be considered a characteristic hazardous waste due to the high CCA arsenic concentrations in the ash. These concerns led to communications by the Department with regulatory agencies in other states, with members of the wood treating industry in Florida, and with the US Environmental Protection Agency (EPA). On March 17, 2003, the EPA signed an order in response to a voluntary request by wood preservative pesticide producers for cancellation of registration and termination of uses of certain CCA-treated wood products. This agreement required that production of CCA-treated wood for most identified residential uses cease by December 31, 2003. EPA published this notice of cancellation order on April 9, 2003 (EPA 2003).

The Department is still faced with the problem that the amount of CCA -treated wood being disposed of will continue at significant levels in the years to come, and may pose an environmental risk if disposed of in unlined facilities. If treated wood is made into mulch and then used in a residential setting, it may also pose unacceptable human health or environmental risks.

Consequently, in 2003 the Department convened two Technical Advisory Groups (TAGs) to help study these issues. One TAG focused on potential ground water impacts and, the other focused on operational issues. The TAGs consisted of voluntary members from the scientific, engineering and regulated communities who were familiar with the management problems associated with CCA-treated wood in Florida.

One of the recommendations of the Operation TAG was for the Department to develop a guidance document on the management and disposal of CCA-treated wood.

The first guidance document was published in 2006. This current document, published in 2017, is an update that incorporates the changes in the wood treatment industry and subsequently in the wood waste sector since 2006.

3. Overview and Applicability

Solid waste disposal facilities in Florida are regulated by the Solid Waste Management Facilities rule, Chapter 62-701, Florida Administrative Code (F.A.C.). This rule establishes standards for the operation of solid waste management facilities. Given the studies cited above as well as advice from the EPA (EPA 2004a), Chapter 62-701 was amended effective January 6, 2010 along with the development of the original guidance document of 2006. The amendment required that operators of unlined facilities implement a program to remove CCA-treated wood from the waste stream prior to final disposal or use. Historically Florida's unlined disposal facilities would include most of the Class III landfills and C&D debris disposal sites in the state. Use of the guidance as part of such a program has helped owners and operators comply with Department rules as well as minimize future liability for environmental impacts or injury.

In addition, both the Department (DEP, 2002) and the EPA (EPA, 2004b) have determined that CCA-treated wood should not be recycled as mulch or used as fuel in a wood- fired boiler unless that wood -fired facility is specifically authorized by the Department to accept CCA-treated wood. The amendment of January 6, 2010 also prohibits the use of CCA- treated wood as mulch, compost, or a soil amendment. Owner/operators of facilities that process wood wastes for disposal or use should follow this guidance to reduce any future liability for injury to people or the environment, as well as to comply with Department rules regarding CCA.

Finally, as is explained in the following section of this guidance, the Department recognizes the difficulty of identifying CCA-treated wood separately from other forms of wood treated with copper-containing preservatives. At this time there is no cost effective and efficient method to specifically identify arsenic in treated wood. The only practical solution to this dilemma at this time is to require the separation of wood waste which can be reasonably assumed to be treated with preservatives which might contain arsenic. Consequently, the advisory recommendations and the BMPs in this document will focus on managing all those forms of treated wood.[1]

[1] *Wood treated with other chemicals such as pentachlorophenol and creosote, while perhaps posing different environmental concerns, is not addressed by this guidance document.*

4. How To Identify Treated Wood

There are several types of wood preservative chemicals. Waterborne preservatives are dry to the touch and thus used almost exclusively for residential applications. Right after the 2004 phase-out the most common alternative for residential applicatons was alkaline copper quat (ACQ) and copper boron azole (CBA). Both of the early phase copper formulations leached copper at a greater rate. Later generation “micronized” preservatives have since been developed which leach at slower rates. The most common alternatives used today in residential applications are micronized copper quat (MCQ) and micronized copper azole (MCA).

Some wood in residential applications is also treated with borate alone. Other chemicals have also been used to treat wood for industrial applications. For example, pentachlorophenol (PCP) has been used in the past for telephone poles, but is becoming less popular today. Creosote is used to treat railroad ties and some construction pilings. Treated industrial wood products can typically be identified based upon their large dimensions (e.g., railroad ties and utility poles). Thus, they are easier to visually identify and then remove from the waste stream. Treated wood used in residential applications, however, is largely composed of lumber, timbers and plywood in varying sizes and can be found in both treated and untreated forms. So how does one determine if these materials are treated?

The most common method for identifying treated wood among lumber, timber and plywood is to look at the color of the wood. Untreated wood and borate-treated wood typically have a light yellow color. The yellow color is the natural color of Southern Yellow Pine (SYP), the most common wood species used for building construction in Florida.

4. How To Identify Treated Wood (continued)

Wood treated with copper, which includes CCA-, MCQ- and MCA-treated wood, varies in color from a very light green to an intense green color depending upon the amount of chemical impregnated into the wood. The figure to the right shows the color variations in wood resulting from different chemical treatment levels using CCA.

Color of CCA-Treated Wood at Different Retention Levels

For CCA-, MCQ- and MCA- treated wood, a lower amount of chemical is added to wood intended for above ground and ground contact applications. Higher concentrations of CCA are added to wood intended for marine applications or serving as a load-bearing support for structures. MCQ and MCA have not yet been approved for harsher marine and load bearing environments. The majority of the dimensional wood produced is treated using the lower amounts of chemical which imparts a light green color to the wood. Once wood treated with copper has been in-service and has weathered, the green color is generally converted to a silver color. Unfortunately, untreated wood generally weathers to nearly the same silver color as observed in the second image to the right. This change in color for treated wood occurs for wood containing the lower concentrations of chemical after only a year or two of weathering. As a result, sorting out CCA-treated and other copper treated wood from the waste stream based on the green color alone cannot ensure that all the treated wood is identified and removed.

Color of New and Weathered CCA-Treated Wood

To further complicate sorting, in some cases wood from the construction and demolition (C&D) waste stream can be covered in dust. Clean dimensional wood is common of construction projects. Demolition wood waste on the other hand is typically covered in dust which makes it very difficult to identify the green hue associated with treated wood as can be seen in the images to the right.

Clean construction wood (top) and dusty demolition wood (bottom)

Because of the difficulty in identifying treated wood based on its color alone, researchers have developed methods to assist with this identification. Some of these methods may be useful to owner/ operators who seek to improve their separation processes for treated wood. The rest of this Section will describe four of these methods.

4. How To Identify Treated Wood (continued)

Chemical Stains

Chemical stains refer to specially designed chemicals that can be applied directly to treated wood and show the appearance of a particular chemical in the wood by changing color, i.e., "staining" the wood. These stains can be easily used in the field to sort treated wood but are labor intensive since stain has to be applied to each piece of wood to be identified. The color change will usually occur within a few seconds and the costs of individual tests are low, on the order of a few cents per sample.

There are several stains that can be used to identify copper-treated wood. They were developed by the wood treatment industry to check the depth of penetration of the CCA preservative into wood. These stains include chrome azurol, PAN indicator, and rubeanic acid. They result in a distinctive color change if copper is present in wood. PAN indicator is the preferred stain for sorting wood within the waste stream due to its short reaction time of about 12 seconds. When it reacts, it produces a color ranging from magenta to red. Untreated wood turns orange in color.

Stain effects on untreated wood (left) and treated wood. (right). Wood with PAN indicator stain is circled

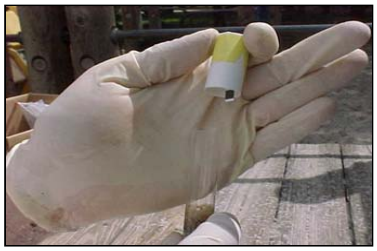
It is important to note that these stains will also test positive if the wood is treated with the new copper-based alternatives, such as MCQ and MCA. Thus a positive result using PAN indicator will indicate that the wood is copper-treated but not necessarily arsenic-treated.

While the PAN indicator is copper specific rather than arsenic specific, because of its low cost and ease of use it is currently the method of choice for assisting owner/operators to sort out treated wood. More information about the PAN stain indicator can be found on page 12.

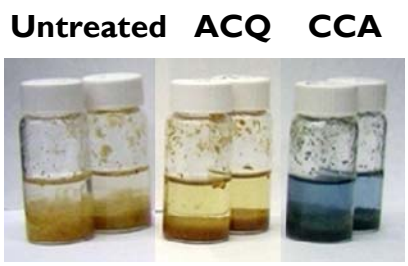
Arsenic Test Kits

These tests correspond to kits developed for the analysis of arsenic in drinking water which can be also used for the analysis of arsenic in wood. The method requires the collection of a sawdust sample of the wood which is immersed in water. A series of chemicals are added to the wood/water mixture which convert arsenic dissolved in the water to arsine gas. This gas then reacts with a test strip to produce a distinctive color change on the strip. The method requires 45 minutes per sample for processing. Because the use of strong reagents and the formation of arsine gas (a highly poisonous form of arsenic that is dangerous to inhale), this test is not recommended for use by those who are inexperienced with the handling of chemicals.

Additional arsenic specific tests (Omae et al. 2007) have been developed specifically to identify arsenic in CCA but they require the immersion of CCA-treated wood sawdust in water. The process takes time and is more suitable for analyses in the laboratory.



Positive arsenic test kit result shown by the dark brown spot on the test strip



Arsenic-specific stains shown by blue color

X-Ray Technologies

The use of X-ray technologies for sorting wood waste has been evaluated at the pilot scale showing very promising results. The hand-held XRF units were found to identify the presence of arsenic in treated wood within seconds. Moisture and coatings on the wood did not interfere with the ability of the XRF units to identify arsenic.

XRF unit for analyzing wood in the field

4. How To Identify Treated Wood (continued)

The widespread use of XRF technologies is limited because of the high capital costs of the equipment. For example, hand-held units as of 2017 sell for about $30,000, but they can also be rented.

XRF has been investigated for potential on-line applications (Hasan et al. 2011a,b). On-line systems are characterized by high capital costs (about $250,000 as of 2017) and may be suitable for very large facilities that process C&D wood waste. Further research and development is needed before on-line sorting can be implemented at operating facilities.

On-line sorting system for separating treated from untreated wood

Laser Technologies

Similar to X-ray technologies, laser induced breakdown spectroscopy (LIBS) has been evaluated at the pilot scale for on-line sorting. An experimental LIBS system has been tested for sorting wood waste by determining how well it can detect chromium in CCA-treated wood. However, the effectiveness of the system to identify treated wood was hampered by wood with high moisture content and the presence of coatings on the wood. Because LIBS can detect coatings, it may be helpful if painted wood is to be separated from a waste stream.

5. Recommendations for Generating, Collecting and Recycling Treated Wood Waste

The Department recognizes that it may be difficult to remove CCA-treated wood from other forms of treated wood. Consequently, the following recommendations are designed to address all treated wood, as much as is practical. These recommendations are also advisory in nature and are separate from the BMPs described in the next section.

Generation and Collection

The best location to separate treated wood waste for proper management is at the generating source. Generators will be more knowledgeable of the type of wood that is being handled, and separation at the source is much more effective than trying to separate treated wood later at a disposal or processing facility.

Dedicated roll-offs: Dedicated, separate roll-offs should be used at job sites involving the construction or demolition of wooden decks, stairs, fences, play ground equipment, landscaping materials, docks and for any other large-scale uses of treated wood. Generators should place all treated wood scraps in these roll-offs for later disposal at permitted lined landfills or other facilities permitted to receive treated wood. As much as is practical, sawdust generated from cutting the treated wood should also be bagged and disposed of at a lined landfill. Bags of sawdust can be placed in the dedicated roll-offs for treated wood.

No on-site burning of treated wood: Treated wood should not be burned as part of the site cleanup efforts. The burning of CCA-treated wood releases toxic fumes and produces a residual ash which is toxic.

No on-site mulching of treated wood: Treated wood, especially CCA-treated wood, should not be ground up on-site and used as landscaping mulch or soil amendment.

Curbside collection: When feasible, local governments should ensure that treated wood from renovation of fences and decks by homeowners that is collected through a curbside pickup program is not mixed with vegetative wastes, but is instead taken to a lined landfill for disposal.

Recycling

At this time, there are no acceptable recycling alternatives for CCA-treated wood, other than reuse of discarded lumber, timbers and poles through reuse and salvage centers.

Recycling at Materials Recovery Facility emphasizing the process for wood sorting

6. Best Management Practice (BMP) For Treated Wood

Yard trash processing facilities that receive and process only yard trash as defined in Rule 62-701.200(135), F.A.C. need not follow this Guide for their operations.

As is described in the section, "How to Identify Treated Wood," the Department recognizes that it may be difficult to separate CCA-treated wood from other forms of treated wood. Consequently, this BMP is designed to maximize the removal of all treated wood from the waste stream. By following this guidance document, the Department will assume that all reasonable measures are being taken by the owner/operator to prevent the disposal or processing of CCA-treated wood at the facility. The following applies to all facility types listed in this section.

A **minimal amount of recordkeeping** is required for all facilities that received treated wood. The owner/operator must maintain records of the volumes or weights of treated wood removed and disposed of and the name of the landfill used for disposal. These records must be kept with the other operational records of the facility and maintained as required by the facility's permit or applicable rules.

Treated wood which is separated from yard trash or other clean wood[2] should be stored in a separate container and taken for disposal to a lined disposal facility. Treated wood must not be burned in open piles, air curtain incinerators or other uncontrolled conditions.

Authorized Mulching Operations

The Department recommends that facilities that mulch or compost any clean wood as defined in Rule 62-701.200(16), F.A.C., including yard trash processing facilities and mulching facilities at landfills, implement the procedures listed above plus the following.

No mulching of treated wood: The owner/operator (or spotter in the case of a landfill mulching operation) must make reasonable efforts to remove any treated wood listed in the table below from the wood waste stream prior to processing. Because of the difficulty of identifying it after-the-fact, extra care should be taken to assure that decorative wood mulches are free of treated wood.

Materials Recovery Facilities (MRFs)

This Section applies to MRFs regulat-ed under Rule 62-701.710, F.A.C. and C&D MRFs regulated under Rule 62-701.730(13), F.A.C. Typically, wood is separated from the waste stream at these facilities, size reduced, and used as landscaping mulch, boiler fuel or, when mixed with soil, initial cover at Class I landfills. In other cases the wood is disposed of in either Class III landfills or C&D debris disposal facilities. To ensure that significant quantities of treated wood are not managed in these ways at MRFs, the Department recommends that the following procedures be implemented by the owner/operator of the facility in addition to those listed earlier in this section.

Types of Wood That Are Typically Treated with CCA
Lumber, timber and plywood with a green color
Wood and wood posts from fences
Wood and wood posts from docks
Wood and wood posts from decks and outdoor stairs
Wood 4 inches by 4 inches or larger in dimension
Dimensional lumber labeled (with end tags) as treated wood
Wood from playground equipment
Lumber used in landscaping flower beds, gardens, etc.

[2] *Clean wood means wood, including lumber, tree and shrub trunks, branches, and limbs, which is free of paint, glue, filler, pentachlorophenol, creosote, tar asphalt, CCA and other wood preservatives or treatments. While this definition specifically excludes treated wood, the Department expects that a facility that accepts clean wood will inadvertently accept some treated wood that will need to be properly managed.*

6. Best Management Practice (BMP) For Treated Wood (continued)

Initial scale house inspection/driver interview: Incoming trucks should be inspected visually to look for dedicated loads[3] of treated wood, especially from contractors specializing in the demolition and construction of fences, decks and docks. The name of the company may help identify contractors who would be likely to have a dedicated load. The scale house operator may also ask the drivers what they are hauling. All dedicated loads should be diverted at the scale house for disposal at a lined disposal facility or properly managed at the MRF before disposal at a lined disposal facility.

Floor spotters and picking line workers: A trained operator or spotter must inspect the load and pull out larger pieces of treated wood that are listed in the table on page 7. By rule, the MRF must have at least one trained spotter on duty whenever waste is being received. It is recommended that the MRF employ at least one floor spotter per sorting train at the facility. The floor spotter should observe loads as they are tipped onto the tipping floor and pull out larger pieces of treated wood that are listed in the table on the prior page. The picking line workers should pull out the smaller pieces of treated wood not removed by the floor spotters. Separated treated wood should be placed in a roll-off container for disposal at a lined disposal facility.

Training requirements: The owner/operator should implement a training plan designed to help operators, floor spotters and picking line workers identify treated wood. This training plan is in addition to the trained spotter requirements contained in Rule 62-701.710(4)(c), F.A.C. A teaching tool "example board" like that shown on page 11 should be posted near the picking line. Teaching aids like those shown in the photos of typical waste loads (page 11) may be also used.

Spot-checking program: If wood is mulched at the facility, the owner/operator must implement a monthly spot-checking program to evaluate how effectively treated wood is being removed from the recovered wood waste stream. This program can include the PAN indicator test (page 12) to identify the presence of copper-treated wood. The program can also include more sophisticated testing procedures to look for arsenic-treated wood. The details of any spot-checking program will have to be developed case-by-case, with the purpose of helping the owner/operator improve operations. The results of the spot-checking program need not be reviewed by Department staff for compliance purposes, and detections of treated wood in the mulch will not in themselves be indicative of a violation of Department standards.

More extensive recordkeeping: The owner/operator should maintain records of the following: (1) volumes or weights of treated wood removed and disposed of in a lined disposal facility; (2) the name of the facility used for disposal; (3) treated wood training records for the floor spotter and picking line workers; and (4) results of the monthly spot-checking program, if required. These records must be kept with the other operational records of the facility and maintained as required by Rule 62-701.710(8), F.A.C.

[3] *Dedicated loads are defined as loads of predominantly or exclusively treated wood that would typically be generated by deck, dock and fence contractors.*

6. Best Management Practice (BMP) For Treated Wood (continued)

Class I Landfills, Lined Class III Landfills, and Lined C&D Facilities

If mulching occurs at these facilities, the operator should take adequate steps to ensure that treated wood is not being processed into mulch for off-site uses or for on-site uses outside of the lined disposal area. Because of the potential to increase leaching rates, the Department does not recommend size reduction of treated wood. However, treated wood may be processed and used as initial cover at the disposal area provided it is only used on interior slopes and meets the other requirements for initial cover contained in Chapter 62-701, F.A.C.

If the lined disposal facility is co-located with other unlined facilities, the owner/operator should include specific conditions in its operation plan to assure that the treated wood is disposed of only in lined areas.

Unlined Class III Landfills and C&D Debris Disposal Facilities

To ensure that significant quantities of treated wood are not improperly managed at unlined Class III landfills and C&D debris disposal facilities, the Department recommends that it be managed in a similar fashion as a MRF with an initial scale house inspection, spotters, training requirements, spot-checking program, and more extensive recordkeeping. In addition signage is required.

Signage: Facilities must install signs in the area of incoming traffic flow notifying customers that treated wood will not be accepted for disposal at the facilities, and that the only approved method of disposal is at a lined disposal facility.

Waste-to-Energy (WTE) Facilities

Effective March 2016, the EPA issued a rule which is part of the amendments to the Non-Hazardous Secondary Materials (NHSM) regulations. The rule lists "construction and demolition (C&D) wood processed from C&D debris according to best management practices (C&D-BMP)" as a categorical non-waste when used as a fuel in combustion units (EPA 2016). The BMPs described by the EPA include visual sorting, trained operators, and record-keeping, in a fashion similar to that outlined in this document for the disposal of C&D wood in Class III landfills.

The listing is important because it determines which Clean Air Act (CAA) standards are applicable, either CAA section 112 standards which corresponds to a non-waste determination (fuel) or CAA section 129 standards which corresponds to a waste determination. These standards are different with respect to which pollutants are regulated, the level of monitoring and operator training, as well as which combustion sources are required to have a Title V CAA operating permit.

For WTE facilities that handle refuse derived fuel, it is believed that the proportion of treated wood in the fuel is small. The emissions from the de minimis amounts in the waste-stream are believed to be adequately handled by each facility's air pollution control equipment. However, the impacts from large-scale burning of treated wood in WTE facilities have not been tested, and it is not known how much treated wood can be safely burned. Therefore, the use of WTE facilities for large-scale bulk disposal of treated wood is not recommended.

Wood Cogeneration

Wood cogeneration has the potential for having a larger proportion of treated wood given the predominance of vegetative waste in the fuel source. These facilities can receive wood waste from MRFs and implementation of BMPs at the MRFs can reduce the inclusion of treated wood in the fuel stream. In order to check the quality, spot checking of the incoming fuel stream is recommended if the facility accepts recycled C&D wood waste. Spot checking can be done through traditional laboratory analyses which takes several days to obtain results, through the use of PAN stain, or through hand-held XRFs which provide results in near real-time.

7. Frequently Asked Questions

Q1. What do those labels/end tags mean? Can I use them when I sort?

A1. Yes. There is a lot of useful information on the labels attached to the end of dimensional wood. Labels identify the type of chemical that was used to treat the wood (CCA, MCQ, MCA, etc.), the level of treatment (pounds of chemical per cubic foot of wood, for example 0.25, 0.40, 0.80, 2.5, etc.) and the location of the treating plant. If the wood has a label then it is probably treated and according to this guidance should be separated out for disposal at a lined disposal facility.

Q2. Are pallets ever made from treated wood?

A2. Pallets are very rarely made from treated wood. For the most part, pallets can be safely ground up into wood chips for use as mulch or as fuel in a wood- fired boiler. As with other types of wood, inspection of pallets should follow the recommended guidelines.

Q3. Do I need to remove the arsenic-free treated wood products? Is there any harm from them?

A3. Compared with CCA, these other products pose lower risk to the environment or to human health. However, because of the difficulty in differentiating CCA-treated wood from other types of treated wood, this guidance recommends you remove all treated wood from the waste stream.

Q4. What precautions do I need to take when handling treated wood? Should my pickers who handle this type of material take more precautions than others?

A4. All pickers should wear eye protection, dust masks and gloves to prevent splinters. CCA-treated wood splinters in the hands and fingers of workers can get infected and should be removed as soon as possible. It is important to make sure that the entire splinter is removed. Removal may require medical attention. Workers handling wood preserved with CCA should be sure to wash their hands before eating or smoking.

Q5. How do I store this material?

A5. Treated wood, including CCA-treated wood, should be placed directly into a separate container for storage prior to disposal in a lined disposal facility. Simply storing the treated wood in a pile outdoors could continue to pose an environmental threat.

Q6. How do I find lined disposal facilities?

A6. The waste program staff at your District office of the Florida Department of Environmental Protection will know where the lined disposal facilities are located in your part of the state. See the contact information on page 14.

Q7. Can I refuse to accept loads of CCA-treated wood or any other treated wood?

A7. There is nothing in Florida state laws or rules that would require you to accept any particular kind of waste. Unless you are contractually obligated to accept this waste stream by your haulers or local government, you can refuse to accept loads of treated wood.

8. Teaching Tools For Sorting Without Chemical Testing

Materials Recycling Facilities (MRFs) and other facilities that will sort their waste wood can use signs like the two below to help sorters distinguish between wood that can be recycled and wood that should be sent to a lined disposal facility. Signs include text in English and Spanish. The bottom four images can also be used for training.

Explains how to sort wood based on the structure in which it was used.

Explains how to sort wood based on its treatment.

Loads from the demolition of outdoor structures will typically contain CCA-treated wood. Pole at the upper left is treated.

The green colored pole in the front of this pile is treated. Complete recovery of untreated wood from this pile will likely require testing in addition to visual separation.

This load is almost solely CCA-treated wood. It came from a marine construction contractor.

This load is from a construction company that builds trusses and floor joists. It contains treated wood. Green colored boards are treated. Other boards may be un-treated.

9. Pan Stain Indicator

Principle: PAN stands for the chemical name of 1-(2-pyridylazo) -2-naphthol, an orange-red solid with a molecular formula $C_{15}H_{11}N_3O$. It is used to determine the presence of almost all metals excluding alkali metals. The reaction with the metals in CCA-treated wood produces a magenta to red color. Untreated wood turns orange in color. It is important to note that the stain is not specific to arsenic within CCA. It reacts with the copper, so that wood treated with any copper-based preservative (such as MCQ and MCQ) will also test positive using this stain.

Safety: Gloves and safety goggles should be used during the application of the stain. The stain should be applied in an environment that would prevent inhalation. The stain should not be ingested and should be kept in a safe place that would prevent children or animals from ingesting the solution. A safety data sheet (SDS) is also available on this product that supplies additional safety information. You may also want to contact the chemical supplier of the stain for additional safety instructions.

Reagents: The PAN Indicator solution (a.k.a.,"stain") can be purchased as a pre- mixed solution or a basic chemical ingredients. The pre-mixed solution is more convenient but usually more expensive, in particular if large quantities of the stain are needed. If large quantities of stain are needed, a more economical option would involve purchasing the basic chemical ingredients and mixing these ingredients in a laboratory. The pre-mixed solution can be purchased from Spectrum Chemicals. More information is provided below.

Procedure for Use:

1. Using a dropper bottle, apply the stain to the wood. If the wood is relatively clean, the stain can be added directly to the wood. If the wood is soiled we recommend that a small area of the wood be carefully cut away to expose a clean area (approx 1 square centimeter). The stain works best If the wood is dry.

2. If testing mulch, it may be easiest to use a spray bottle. When using a spray bottle, be careful to spray the solution downwind to avoid inhalation.

3. Wait for color development (about 15 seconds). Color development is fastest if applied to the transverse direction of the wood instead of the radial direction.

4. Note the color. If the sample turns a magenta color, then the wood is positive for copper. If the wood turns orange in color, then the wood is negative for most metals and is considered untreated.

Interferences

1. Stain will not work properly on colored mulches or mulches that are very soiled.

2. Stain will sometimes react as positive with paint and nails on wood, even though the wood maybe untreated.

Company	Phone Number	Cat. # for PAN	Cat. # for Methanol	Pre-mixed Solution
Spectrum	*800-772-8786*	*P1000-04 (25g)*	*M1240 (20L)*	*P-358-100mL*
Sigma	***800-325-3010***	***82960-5G (5g)***	***34860***	
Fisher	*800-766-7000*	*AC14631- 0100 (10g)*	*A411-20*	***5487-34***

10. References

DEP (Department of Environmental Protection), 2002, Tedder, R. B. and McGuire, C., "Management of Components of Yard Trash: Dirt, Ash and Mulch," Florida Department of Environmental Protection Memorandum SWM-05.6, Solid Waste Section, Tallahassee, Florida, April 4.

EPA (U.S. Environmental Protection Agency), 2003, "Response to Requests to Cancel Certain Chromated Copper Arsenate (CCA) Wood Preservative Products and Amendments to Terminate Certain Uses of other CCA Products," Notice of a Cancellation Order, 68 FR 17366, April 9.

EPA (U.S. Environmental Protection Agency), 2004a, Springer, R., "Recommendation on the Disposal of Waste Lumber Preserved with Chromated Copper Arsenate (CCA)," EPA Memorandum, Office of Solid Waste, Washington, D.C., April 12.

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Omae, A., Solo-Gabriele, H., and Townsend, T., 2007. A Chemical Stain for Identifying Arsenic-Treated Wood Products. Journal of Wood Chemistry and Technology, 27(3-4): 201-217.

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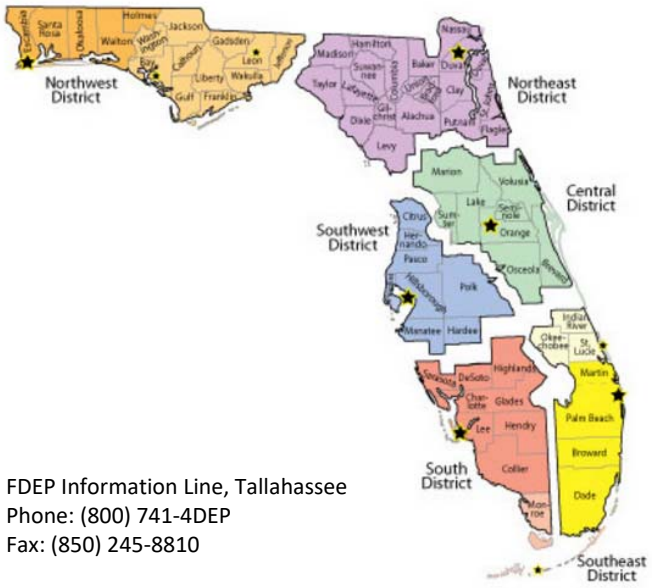
Solo-Gabriele, H.M., Jones, A.S., Marini, J., Townsend, T.G., and Robey, N., 2017, “Impacts of Treated Wood in the Florida Disposal Sector.” Hinkley Center for Solid and Hazardous Waste Management Report #10916, Gainesville, Florida.

11. Florida Department of Environmental Protection Districts



The waste program staff at your District office of the Florida Department of Environmental Protection can provide additional information including a list of lined disposal facilities that are located in your area of the state. The appropriate contacts and District boundaries are shown below.

FDEP Information Line, Tallahassee
Phone: (800) 741-4DEP
Fax: (850) 245-8810

FDEP Headquarters
2600 Blair Stone Road Tallahassee,
FL 32399-2400
http://www.dep.state.fl.us/waste/

FDEP District Offices

Northwest District Office
160 W. Government Street
Suite 308
Pensacola, FL 32502
(850) 595-8300

South District Office
P.O. Box 2549
Fort Myers, FL 33902
(239) 344-5600

Northeast District Office
8800 Baymeadows Way West
Suite 100
Jacksonville, FL 32256
(904) 256-1700

Central District Office
3319 Maguire Boulevard,
Suite 232
Orlando, FL 32803
(407) 897-4100

Southeast District Office
3301 Gun Club Road,
MSC7210-1
West Palm Beach, FL 33406
(561) 681-6600

Southwest District Office
13051 N Telecom Parkway
Temple Terrace, FL 33637
(813) 470-5700

Additional information on CCA-treated wood can be found at the Hinkley Center for Solid and Hazardous Waste Management's website for CCA research: www.ccaresearch.org.

This book is dedicated to the memory of William W. (Bill) Hinkley 1945-2005

DISCLAIMER. The information contained in this document is intended for guidance only. It is not a rule and does not create any standards or criteria which must be followed by the regulated community. While the management of treated wood in accordance with this guidance is not expected to result in contamination of ground water or surface water or to pose a significant threat to human health, compliance with this document does not relieve the owner or operator from the responsibility for complying with the Department's rules nor from any liability for environmental damages caused by the management of these materials.