

## Best Management Practices for Construction and Demolition Debris (C&DD) Recycling Facilities in Ohio

The intent of this guidance is to provide practical best management practices (BMPs) for operators to utilize in their operation of Construction & Demolition Debris (C&DD) recycling facilities in Ohio. Facilities committed to following BMPs can benefit their business, the local community, the environment, and the citizens of Ohio.

### Development of a Site Specific Plan

A site specific plan and description of operations is a beneficial tool for a facility operator. The plan can also be utilized for business and process analysis and employee training.

A site specific plan may contain the following items:

- A narrative description of all activities at the C&DD recycling facility including the procedures for receiving, unloading, loading, temporary storage and processing of C&DD, residual screened material management, and any incidental solid waste:
  - The narrative description may also include the intended holding/storage time for each input and output (including partially processed material). The operator may also consider including the facility's methods for tracking and documenting the holding/storage time.
  - Flow diagrams for all recycling processes from acceptance through removal.
  - A description of all working surfaces used on site.
- A narrative description of the pre-acceptance C&DD screening process. A key factor to consider including in the description:
  - Procedures for recording and maintaining records which include: the identification of the generator, the source, an affirmation that the load is not prohibited material in accordance with Ohio Revised Code (ORC) 3714 and associated rules, and a written verification by the hauler for each load setting forth all of the information stated above.
- A narrative description of the procedures and personnel responsible for determining material acceptance. This description should include all of the following :
  - Procedures for conducting random inspections of incoming loads including visual observation of the load to identify prohibited materials.
  - Procedures to be utilized upon discovery of prohibited materials.
  - Procedures for recording the discovery of prohibited materials and actions taken in response.
  - Procedures for training personnel conducting debris/waste review and inspection activities. and
  - Procedures for documenting all decisions concerning material acceptance.

### **Applicable and Related Law**

Ohio Revised Code (ORC) - 3714 & 3734

### **More Information**

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### **Disclaimer**

The procedures set out in this document are intended solely for guidance. The procedures in this document are not intended and cannot be relied upon to create rights, enforceable by any party against Ohio EPA.

While this guidance document is not legally binding, all statutes and rules referenced herein are binding and enforceable. Ohio EPA reserves the right to vary this guidance to change it any time without public notice and also reserves the right to deviate from this guidance on a case-by-case basis.

## BMPs for C&DD Recycling Facilities

- Plan drawings of the operation that details the location of the following items:
  - The boundaries for all existing and proposed C&DD handling areas and stockpiles.
  - The current general topography and direction of flow for all surface waters.
  - All access roads needed to be constructed and operated.
  - The dimensions and location of existing C&DD storage piles and the maximum dimensions of any proposed C&DD storage piles.
  - The planned dimensions and location of the material storage area for material being transported offsite for recycling, disposal, or approved beneficial use.
- Provide a narrative description and diagram for the management of surface water control structures for run-on and run-off including the facility's plan for managing any leachate.
- A fire prevention and response plan.
- Written and dated notification to the local fire department that the facility exists.

### Acceptable Wastes

#### *Communication Regarding Acceptable and Prohibited Materials*

A C&DD recycling facility should make it as clear and easy as possible for customers to understand the types of material the facility accepts for recycling. The facility should post on visible signs the types of material that are accepted and prohibited. These signs should be clearly viewable at the entrance of the facility and the initial receiving and tipping areas. The recycling facility should have staff onsite to verbally provide information on the facility's policies on acceptable and prohibited materials. Clear communication will save the facility and its customer's time and increase the efficiency of the operation.

#### *Communication Procedures for Acceptance of Materials*

Signs should direct customers to take their vehicles to the check in station. Once the category of materials are determined through visual inspection (i.e. mixed material, segregated material), the vehicle and its load should be checked in.

After check in, the vehicle should be directed to the appropriate tipping area. If the materials are source segregated and consist wholly of one type of C&DD material, and the facility accepts source segregated material, then customers can be sent to the appropriate staging area for that material rather than unloaded in the general/mixed waste tipping area after the check in.

While each C&DD recycling facility differs somewhat, some general approaches may be described. Mixed C&DD waste is tipped and targeted materials are removed. Such materials include large items that may prove incompatible with processing equipment and materials that are easily removed and have good market value. Large pieces of lumber that may have a future reuse value are an example. Loads of waste consisting of primarily one component may be routed to a specific tipping area.

Operators that intend on creating mulch out of recycled wood should take adequate measures through signage, training, load checking, and/or detection systems, to avoid incorporating any creosote treated railroad ties, CCA pressure treated wood, and lead based painted materials into C&DD mulch. Such contaminated feedstock should be stored in a separate designated area for proper handling and disposal.

#### *Inspects Loads Prior to Unloading*

The facility's initial visual inspection should separate unacceptable loads before the tipping stage. Operators should employ staff to remove non-C&DD materials and segregate and contain the material as it is discovered for appropriate management. Segregated, single stream materials should be directed to the appropriate staging areas to minimize integration with other materials. This practice would reduce unnecessary sorting by facility personnel.

## **BMPs for C&DD Recycling Facilities**

Facility management and employees should be familiar with the definition of C&DD and have established protocols in place for inspection of incoming loads. Protocols should establish procedures to determine whether the load is acceptable, unacceptable or acceptable after unacceptable material has been removed.

A C&DD recycling facility may unintentionally receive recyclable and non-recyclable materials that may not meet the definition of C&DD. Any non-recyclable and non-C&DD material should be separated from the C&DD material in the unloading process or first stage of processing for proper handling. For example, a tire should be removed from the C&DD material and recycled in a proper way in the unloading process or the first stage of processing.

### *Speculative Accumulation of Recyclable Materials or Wastes*

The size of the unprocessed C&DD storage area should be appropriate to the recycling efforts being completed. Appropriate storage of C&DD recyclable materials should be provided and a system for the removal, proper handling and disposition of other materials should be used.

In addition, an operator should not store materials in such a way that the site is not able to accept additional materials for ongoing operations. Materials intended for disposal should be removed from the site on a regular basis to prevent accumulation. Materials may be stored on the site for short periods of time but no longer than a year prior to the materials use.

### **Management of Materials**

#### *Site is Organized and Tidy*

C&DD should be transported to ensure that materials are not scattered on the site's ground or on public roadways. Access roads should be designed and constructed to be passable by vehicles, including emergency vehicles, so that traffic will flow smoothly and not be interrupted during inclement weather. The facility should be operated in a manner that minimizes mud, dirt, and dust on public roads before vehicles leave the premises.

#### *Working Surface*

C&DD stored at the facility should be staged on a working surface that is appropriate to support the load of earth-moving/recycling equipment and material stockpiles utilized on site. The area topography can be maximized to benefit the facility's use. If on a slope, use gravity as an ally. Establish the tipping area and processing line at a higher elevation and the out-feed line drops into transfer trucks at lower elevations.

#### *Storm Water Controls*

Facilities must also employ reasonable protections against storm water run-on and run-off. Diversion of run-on storm water is beneficial to maintaining efficient operation.

Enclosing the operations may provide advantages but is not required.

### **Site, Equipment and Staffing**

#### *Staffing to Accommodate Amount of Materials to be Processed*

The facility also needs to have enough trained staff onsite during hours of operation to ensure that the facility and process lines are run safely, effectively, and in accordance with all regulations.

#### *Office Onsite*

The recycling facility should have an office onsite that contains the facility's records including material logistics, training records, contact information for the operators, and calibration records.

## BMPs for C&DD Recycling Facilities

### *Equipment in Working Order*

There is a wide range of equipment that may be used at a C&DD recycling facility. Adequate operating equipment should be available during posted operating hours. Equipment should be regularly maintained and used with the appropriate protective gear.

### *Name of Facility and Contact information are Posted*

Gates and signage should be used to help limit/restrict access and provide information such as, business name, hours of operation, materials accepted and prohibited, and emergency contacts. The facility should limit access to the premises to authorized personnel only for safety reasons and not allow the removal of material from the facility by unauthorized personnel.

### *Fire Prevention and Contingency Plan*

The facility should have a plan to prevent fires and to respond to a fire should one occur. The facility should be operated in a manner that minimizes the risk of fires. Facility management and employees should be familiar with emergency protocols, including fire response and be properly trained to operate any fire equipment that may be available.

### *Recordkeeping*

A daily log of incoming and outgoing materials should be utilized at all times and accessible for review by the Health Department, Ohio EPA, or an outside certifying body. The daily log is a beneficial tool to record daily operations. It is recommended that the daily log identify the point of origin of the materials received and the hauler/transporter of the material. For example, the logs may identify categories such as mixed C&DD debris, source segregated C&DD material and clean hard fill.

The daily logs should also track the amounts and types of outgoing materials in sufficient detail that material flows out of the facility can be understood. The log should track outgoing loads by material type, including the quantity and disposition of non-recyclable material and any solid waste removed from the waste stream and transported out for disposal. The facility should have a system for documenting and tracking stockpiled materials waiting C&DD processing and processed materials awaiting sale into the market. Each customer should be given a receipt for the type of material being delivered.

A recycler should make data available to customers to provide support of recycling efforts. For example, the facility's overall recycling rate for materials accepted should be made available. Ideally, the facility should invest in operating software and reporting system capable of tracking all material flows into and out of the facility.

All daily logs, applications, permits, licenses, site drawings and related materials should be available at the site for inspection. This information may be made available to Ohio EPA, the health district, or certifying body upon request.

### *Permits and Environmental Compliance*

The facility needs to conduct all of its activities and operations in compliance with all applicable Federal, State, and local laws, regulations, ordinances, and requirements. The facility must have all applicable Federal, State, and local permits, licenses, registrations, and certifications and those permits, licenses, registrations, and certifications are valid, not revoked, and not suspended. Additionally, it should operate in a manner that avoids the creation of any nuisance to the surrounding community.

The facility should operate in a manner that minimizes any threats to surface water or ground water sources. Any litter at the site should be collected and properly disposed or recycled on a regular basis. Frequent policing of the area should occur to minimize any nuisance issues.

## BMPs for C&DD Recycling Facilities

The facility should have the appropriate environmental permits based upon the characteristics of the site and the activities completed. These permits may include an National Pollutant Discharge Elimination System (NPDES) Storm Water permit, appropriate fugitive air emissions permits as well as any fuel burning emissions permit for necessary equipment utilized onsite, permits required by applicable local requirements, ordinances, and zoning. In addition, businesses operating in Ohio must register with the Secretary of State.

### Applicable Ohio Definitions

**"Clean hard fill"** means construction and demolition debris which consists only of reinforced or nonreinforced concrete, asphalt concrete, brick, block, tile, and/or stone which can be reutilized as construction material. Brick in clean hard fill includes but is not limited to refractory brick and mortar. Clean hard fill does not include materials contaminated with hazardous wastes, solid wastes, or infectious wastes. [OAC 3745-400-01(E)]

**"Construction and demolition debris" or "debris" [C&DD]** means those materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure, including, without limitation, houses, buildings, industrial or commercial facilities, or roadways. "Construction and demolition debris" does not include materials identified or listed as solid wastes, infectious wastes, or hazardous wastes pursuant to Chapter 3734. of the Revised Code and rules adopted under it; or materials from mining operations, nontoxic fly ash, spent nontoxic foundry sand, and slag; or reinforced or nonreinforced concrete, asphalt, building or paving brick, or building or paving stone that is stored for a period of less than two years for recycling into a usable construction material. [OAC 3745-400-01(F)]

For the purpose of this definition, "materials resulting from the alteration, construction, destruction, rehabilitation, or repair of any manmade physical structure," are those structural and functional materials comprising the structure and surrounding site improvements, such as brick, concrete and other masonry materials, stone, glass, wall coverings, plaster, drywall, framing and finishing lumber, roofing materials, plumbing fixtures, heating equipment, electrical wiring and components containing no hazardous fluids or refrigerants, insulation, wall-to-wall carpeting, asphaltic substances, metals incidental to any of the above, and weathered railroad ties and utility poles.

"Materials resulting from the alteration, construction, destruction, rehabilitation, or repair" do not include materials whose removal has been required prior to demolition, and materials which are otherwise contained within or exist outside the structure such as solid wastes, yard wastes, furniture, and appliances. Also excluded in all cases are liquids including containerized or bulk liquids, fuel tanks, drums and other closed or filled containers, tires, and batteries.

**"Disposal"** means the discharge, deposit, injection, dumping, spilling, leaking, emitting, or placing of any construction and demolition debris into or on any land or ground or surface water or into the air, except if the disposition or placement constitutes storage, reuse, or recycling in a beneficial manner. [OAC 3745-400-01(N)]

**"Pulverized debris"** means a load of debris that, after demolition has occurred, but prior to acceptance of the load of debris for disposal, has been shredded, crushed, ground, or otherwise rendered to such an extent that the load of debris is unidentifiable as construction and demolition debris. [ORC 3714.01(I)]

### **Ohio Regulatory Issues -**

Ohio Revised Code Chapter 3714 establishes requirements regarding C&DD that apply generally, including facilities that recycle C&DD. These include:

- No person shall conduct or allow illegal disposal of C&DD. [OAC 3745-400-04]
- No open burning of C&DD not authorized under OAC Chapter 3745-19. [OAC 3745-400-04]
- Management of clean hard fill. [OAC 3745-400-05]
- Storage of C&DD as defined in ORC 3714.01(K) and OAC 3745-400-01(OO).
- Prohibition on accepting pulverized debris [ORC 3714.081] and the management of residual screened material.

## BMPs for C&DD Recycling Facilities

**“Prohibited materials”** includes items whose removal has been required prior to demolition, and materials which are otherwise contained within or exist outside the structure such as solid wastes, yard wastes, furniture, appliances, bulk liquids, fuel tanks, drums and other closed or filled containers, tires, batteries, as well as pulverized debris.

**“Recycling”** means processing a material using such methods, including but not limited to, screening, sorting, or shredding, for use in a beneficial manner that does not constitute disposal. [OAC 3745-400-01(II)]

**“Reuse”** means reincorporating a material as part of a structure and does not include reincorporating a material as fill. [OAC 3745-400-01(LL)]

**“Storage”** means the holding of debris for a temporary period in such a manner that it remains retrievable and substantially unchanged and, at the end of the period, is disposed, reused, or recycled in a beneficial manner. [OAC 3745-400-01(OO)]