



OHIO E.P.A.  
JUL -1 2013

John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

ENTERED DIRECTOR'S JOURNAL

CERTIFIED

July 1, 2013

I certify this to be a true and accurate copy of the official documents as filed in the records of the Ohio Environmental Protection Agency.

Mr. Frank Petrick  
City of Cleveland  
Department of Public Utilities  
Division of Water  
1201 Lakeside Ave  
Cleveland, Ohio 44114-1175

By: [Signature] Date: 7-1-13

**Re: Statewide Land Application Management Plan Permit Approval for Reuse of Alum Residuals from the Nottingham Water Treatment Plant**  
Application Received April 16, 2013

Effective Date: July 1, 2013

Expiration Date: July 1, 2018

PERMITTEE: City of Cleveland

Dear Mr. Petrick,

The Ohio Environmental Protection Agency (Ohio EPA) has reviewed the land application management plan (LAMP) permit application submitted on April 16, 2013 by the City of Cleveland pursuant to Chapters 6111 and 3734 of the Ohio Revised Code (ORC) for the proposed beneficial use of alum residuals generated by the Nottingham Water Treatment Plant (Nottingham Plant) in Cleveland, Ohio. The submitted LAMP permit application proposes to beneficially use Conditioned Alum Residuals (CAR), which consists of alum residuals from drinking water treatment, for soil blending. Once conditioned, the CAR will be incorporated into soil blends and sold as a commercial landscaping material by local commercial topsoil blenders. Emerald Environmental Services, Inc. (Emerald) will remove alum residuals from the Nottingham Plant, located at 1300 Chardon Rd. in Cleveland for conditioning and use in soil blending. Pursuant to the authority of the Director of Ohio EPA (Director) under ORC Chapters 6111 and 3734, this LAMP permit for the Nottingham Plant is approved subject to compliance with all conditions below.

Pursuant to ORC Section 3734.02(G), the Director hereby exempts the City of Cleveland and any recipient of alum residuals, as conditioned by Emerald's patented CAR process, from the Nottingham Plant under this LAMP permit from the applicable solid waste provisions of ORC Chapter 3734 and rules adopted thereunder specific to the land application of CAR as authorized in this permit approval. The Director has determined that granting an exemption from the applicable solid waste provisions of ORC Chapter 3734 to use CAR in quantities and under the circumstances specifically authorized in this LAMP permit is unlikely to adversely affect the public health or safety or the environment.

This permit authorizes the City of Cleveland to beneficially use alum residuals, as conditioned by Emerald for soil blending, from the Nottingham Plant by conditioning it for soil blending in accordance with the LAMP permit application submitted on April 16, 2013, which is attached and incorporated herein. The CAR may be mixed with soil and shall comprise no more than thirty percent of the soil blend. All other beneficial uses must be separately approved by Ohio EPA. Only alum residuals from the Nottingham Plant as identified in the attached LAMP application are eligible for beneficial use under this permit. The Director, or his authorized representative(s), may enter upon the premises of the Nottingham Plant or any site where CAR/soil amending takes place, at any reasonable time, for the purpose of conducting inspections, collecting samples of CAR and soil blends mixed with CAR, conducting tests, or examining records or reports pertaining to the soil blending process of the alum residuals from the Nottingham Plant.

Issuance of this permit does not relieve the City of Cleveland or Emerald of the duty to comply with all applicable federal, state, and local laws, ordinances, and regulations, except as exempted herein.

The City of Cleveland shall notify Ohio EPA if it anticipates a change in, or does change, the generating process or if the raw materials used in the generating process of the alum residuals change. Additionally, Ohio EPA shall be notified if Emerald changes the process to create the CAR. Under such circumstances, the Director may request that the City of Cleveland submit a revised LAMP application for approval.

The following records shall be maintained by the City of Cleveland for a minimum of 5 years and be made available to Ohio EPA upon request:

- 1) The name, address, and telephone number of all companies receiving CAR from the Nottingham Plant for soils blending.
- 2) A description of the process, including raw materials, used to generate the CAR and soils amended with CAR.
- 3) Records of the annual volume of CAR and CAR-amended soil that is designated for beneficial use under this approval.
- 4) A sampling plan detailing where samples of CAR and/or CAR-amended soil are to be collected, how frequently those samples are to be collected, and a list of parameters and test methods that are used to characterize the samples.

- 5) All laboratory reports of all characterizations of the CAR from the Nottingham Plant.
- 6) A statement authorizing Ohio EPA staff to conduct inspections, collect samples, conduct tests, or examine records pertaining to the generation of CAR or CAR-amended soil.

By January 31 of each year, the City of Cleveland shall submit a report identifying the materials characterization and the beneficial use activities using CAR for the previous calendar year. At a minimum, the annual report shall include a description of the beneficial use (soil blending) along with the dry tons used for that beneficial use and the analytical results for the previous calendar year's materials characterization.

The annual report shall be accompanied by the following annual certification:

*"I certify, under penalty of law, that the information contained in this annual report that will be used to determine compliance with the requirements contained in Chapters 6111 and 3734 of the ORC, and all rules thereunder, for the period beginning (insert date of last certification statement) and ending (insert current certification statement date) was prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate this information. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."*

The first annual certification statement shall encompass the period beginning on the effective date of this permit and ending one calendar year thereafter. The certification statement shall be signed by either a principal executive officer or ranking elected official with the City of Cleveland.

The annual report shall be sent to the following address:

The Ohio Environmental Protection Agency  
Division of Materials and Waste Management  
PO Box 1049  
Columbus, OH 43216-1049

Storage and blending of the CAR shall not create a nuisance and shall not adversely affect public safety or health or the environment. Should a nuisance condition develop, or a determination be made by Ohio EPA that storage or blending of CAR is a threat to human health or the environment, then permission to use this material may be revoked upon written notification from the Director. Immediately upon the effective date of any such revocation, Emerald shall cease blending of the CAR from the Nottingham Plant.

The City of Cleveland or Emerald shall not cause pollution or cause any CAR to cause pollution to any waters of the state and shall only discharge to waters of the state in accordance with an effective national pollutant discharge elimination system (NPDES)

permit. Any unauthorized discharges to waters of the state must be reported to Ohio EPA (call 1-800-282-9378) within 2 hours of discovery.

The Director shall be notified in writing within seven days if the City of Cleveland or Emerald discovers noncompliance with this LAMP permit. The Director may add, delete, or change any conditions to a LAMP permit to protect human health or the environment.

This permit to beneficially use CAR from the Nottingham Plant shall expire at midnight on the expiration date shown above. In order to receive authorization to beneficially use CAR beyond the above date of expiration, the City of Cleveland shall submit such information and forms as are required by Ohio EPA no later than 90 days prior to the above date of expiration.

You are hereby notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission pursuant to ORC Section 3745.04. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00 which the Commission, in its discretion, may reduce if by affidavit it is demonstrated that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
77 South High Street, 17<sup>th</sup> Floor  
Columbus, Ohio 43215

Sincerely,



Scott J. Nally  
Director

SJN/DH/ljm

Attachment: LAMP

cc: Scott Hershberger, Emerald Environmental Services, Inc.  
Bill Fischbein, Legal, CO  
Jeff Hurdley, Legal, CO  
Virginia Wilson, DSW, NEDO  
Natalie Oryshkewych, DMWM, NEDO



RECEIVED

APR 16 2013

**Plan Approval - Management Plan For Sludge or Industrial Byproducts other than Treated Sewage**

Note: This form, with the attachments indicated, is intended to serve as the main substance of the management plan. If you prefer to submit a separate and complete document to serve as your management plan, then to respond to a question where a description or calculation is requested (such as Items C.1 through C.4), simply enter the page numbers of the submitted plan where the information requested can be found. Please respond on this form when just a check mark or brief statement is requested.

FOR AGENCY USE ONLY	
Application Number:	Date Received:
Applicant: City of Cleveland	<p style="text-align: center;"><b>APPROVED</b></p> <p style="text-align: center;">OHIO ENVIRONMENTAL PROTECTION AGENCY</p> <p style="text-align: center;">JUL 01 2013</p> <p style="text-align: center;"><b>AS EVIDENCED BY COPY OF LETTER OF APPROVAL HERETO ATTACHED</b></p>
Facility Owner: Same	
Application/Plans Prepared by: Emerald Environmental	
Project Name: Nottingham Water Treatment Plant Residuals Reuse	

**A. Background Information**

a. Briefly describe type and source of material to be land applied: Conditioned Alum Residuals,

b. Briefly describe proposed uses of materials (agronomic uses, soil blends, structural fill, etc.): Soil Blends

c. Existing Plan Approval number: \_\_\_\_\_  N/A

**B. Generating Facility**

a. Amount of sludge/byproduct generated \_\_\_\_\_ up to 5,000 dry tons/year

b. Amount proposed for beneficial use \_\_\_\_\_ up to 5,000 dry tons/year

c. Disposal method for amount not used \_\_\_\_\_ N/A

d. Storage capacity at facility: \_\_\_\_\_ N/A days

**C. Land Application (If N/A, Skip to D)**

a. Use category of land application area (check all that apply):  Unrestricted Access site  Restricted Access site

b. Quantity of material to be land applied: \_\_\_\_\_ Inches/acre/year (annual average-liquid) \_\_\_\_\_ Dry tons/acre/year (annual average-sludge)

c. Does the land application area have subsurface drains/tiles located less than 24 inches below natural grade?  
 Yes  No  Unknown at this time

d. Amount of land area available for land application if known (do not include buffer zones in the figure) \_\_\_\_\_ N/A acres

e. Maximum slope of land to be used for land application = \_\_\_\_\_ %

f. Type(s) of crops or vegetation to be grown on land application area: **Landscaping or other vegetative cover**

**C.1 Describe the method or methods used for the storage and land application of sludge/other byproducts (including detailed information about the distribution system):**

This application is to condition alum residuals generated at The Nottingham Water Treatment Plant, 1300 Chardon Road Cleveland, OH 44117 and include them into the Emerald Topsoil Blending Process for beneficial reuse. Conditioned Alum Residual (CAR) is a dewatered water treatment residual that has been conditioned so that it contains in excess of 55% solids and has agronomic benefit. CAR is produced by dewatering and conditioning alum residuals within the permitted facility at the Akron Water Supply Plant, 1570 Ravenna Road, Kent, OH. Once dewatered and conditioned, this loose, dry material will be incorporated into soil blends and sold as a commercial landscaping material by local commercial topsoil blenders that have contracted with Emerald Environmental to participate in this program.

**C.2 State what the maximum land application rate(s) are proposed to be and the total acres required and available for land application. Attach calculations and references showing how the application rates and acreage needs were determined.**

Commercial topsoil with CAR utilize blends of up to 30% CAR.

**C.3 Describe the monitoring of the material to be land applied and the soils in the land application area(s), including frequency, methods and parameters that will be measured in each:**

Sampling, testing and analysis will be conducted in accordance with approved sludge management plan for the Akron's facility.

**C.4 Describe the appropriate weather conditions required for the land application of sludge/other byproducts and how they will be determined and documented:**

N/A - material will be blended as weather conditions allow. Materials must be loose and dry for blending to be done efficiently.

**C.5 Check which land application activities listed below are proposed. If yes, please explain how runoff, ponding or discharges to waters of the state will be prevented (attach separate pages as needed).**

- |   |   |
|---|---|
| Do you propose to land apply during precipitation events?<br>If <b>yes</b> , please explain:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Do you propose to spray irrigate when instantaneous wind speeds exceed 20 miles per hour?<br>If <b>yes</b> , please explain:      Material will not be spray irrigated  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Do you propose to land apply within 10-year floodplain?<br>If <b>yes</b> , please explain:      Not Applicable  | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| Do you propose to land apply in wetlands?<br>If <b>yes</b> , please explain:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Do you propose to land apply where the land application contract is expired or void?<br>If <b>yes</b> , please explain:      Not Applicable   | <input type="checkbox"/> Yes <input type="checkbox"/> No            |
| Do you propose to land apply when the ground is saturated at or near the surface?<br>If <b>yes</b> , please explain:  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| Do you propose to land apply where there is at less than 12 inches between final grade and bedrock, sand or gravel lenses, compacted glacial till, and/or normal ground water elevation?<br>If <b>yes</b> , please explain:      Not Applicable | <input type="checkbox"/> Yes <input type="checkbox"/> No            |

**C.6 List setback distances that will be observed for all of the following:**

Ditches/Streams/Waterways: _____ feet	Private Water Supply Well: _____ feet
Residences/Business: _____ feet	Public Water Supply Well: _____ feet
Sinkholes: _____ feet	Public Surface Drinking Water Intake: _____ feet

Pond or Lake: \_\_\_\_\_ feet

Other: Setbacks not applicable to blended soil \_\_\_\_\_ feet application use.

*Attach additional pages if different setbacks are proposed for different methods of application (e.g. greater setbacks should be observed for surface application than injection).*

**C.7 Land application on frozen/snow-covered ground is not recommended. If land application on frozen/snow-covered ground is proposed, please indicate which of the following practices will be used to minimize pollutant discharges or nuisances:**

- Application rate is limited to 10 wet tons/acre for solid materials (50% moisture or more) and 5 wet tons/acre for material less than 50% moisture. For liquids the application rate is limited to 5,000 gallons/acre.
- Applications will be made on land with at least 90% surface residue cover.
- Material shall not be land applied on more than 20 contiguous acres, separated by breaks of at least 200 feet.
- Application setbacks shall be increased to at least 200 feet from all grassed waterways, drainage ditches, streams, surface inlets, and water bodies.
- The rate of application will not exceed: \_\_\_\_\_ lbs Nitrogen/acre or \_\_\_\_\_ lbs Phosphorus/acre
- Application will not take place on slopes greater than 6% unless material is applied in alternating strips less than 200' wide generally on the contour, or in the case of contour strips, on alternating strips.

*If any of these practices are not proposed to be followed, please attach a description of how pollutant discharges will be minimized during application on frozen/snow covered ground.*

**C.8 Describe or list any other practices that will be used to minimize pollutant discharges or nuisances:**

There are no specific pollutant discharges or nuisances associated with the blended soil materials different than application of virgin topsoil.

**C.9 Land Application Records**

How will land application information be recorded? : Records are kept for shipments from dewatering/conditioning facility to soil blending facilities.

- Ohio EPA's Land Application Record Form       Our Own Land Application Record Form (attached)

Where will the records be kept? : Emerald Environmental

**C.10 Application Site Map (If known)**

a. A map locating each land application site shall be attached. Each site shall be labeled "Restricted access site" or "Unrestricted access site". The map(s) should show the following items and are considered part of this plan:

- All present and known proposed occupied buildings within 300 feet of the land application area.
- All present and known proposed non occupied buildings within 300 feet of the land application area.
- All present and known proposed public and private water supply wells within 1,000 feet of the land application area.
- All sinkholes and waters of the state (including ditches, grass waterways, streams and rivers) within 200 feet of the land application area.
- All public surface drinking water supply intakes within 1500' of the land application area.
- All present and known proposed developments and public access areas within 300 feet of the land application area.

b. If the land application site(s) are not known, will site maps be submitted before land application starts?       Yes  No

**D. Other Beneficial Uses**

1. Is this material one of the following:
- Spent Foundry Sand
  - Bottom Ash From Coal Combustion
  - Fly Ash
  - Steel Slag
  - Sludge
  - Other:
2. If the material is "Other", have you contacted Ohio EPA to discuss the applicable regulations?       Yes  No
3. Is a comprehensive management plan attached for uses other than land application?       Yes  No

**E. Miscellaneous Information:**

The following items shall be included with this land application management plan:

- Two copies of the Permit-to-Install/Plan Approval Application Form A or the NPDES Permit Application.
- If applicable, two copies of the site and soil evaluation(s) (For renewal applications, this is only needed if additional or different areas)
- One copy of the sampling results for the material to be beneficially used (the most recent, but no older than one year).
- Four copies of this management plan and any attachments or  Four copies of a separate/complete management plan.
- Fee check payable to "Treasurer, State of Ohio."

The following additional information is included with this form: None

**F. The foregoing data is a true statement of facts pertaining to this proposed management plan.**

Printed (Person Preparing Plan):

*Scott Hershberger* Title: *Sec/Treas*

Signed:

*[Signature]*

Date:

*4/15/13*

**APPROVED**  
OHIO ENVIRONMENTAL PROTECTION AGENCY  
JUL 01 2013  
AS EVIDENCED BY COPY OF  
LETTER OF APPROVAL  
HERETO ATTACHED



City of Cleveland  
Frank G. Jackson, Mayor

Department of Public Utilities  
Division of Water  
1201 Lakeside Avenue  
Cleveland, Ohio 44114-1175  
(216) 664-2444  
www.clevelandwater.com

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HERETO ATTACHED



April 11, 2013

Ohio Environmental Protection Agency (EPA)  
50 West Town Street, Suite 700  
Columbus, Ohio 43215  
Attention: Mr. John Schierberl

Re: **Water Treatment Residuals, Nottingham Water Treatment Plant – 1300 Chardon Road, Cleveland, OH 44117**

Dear Mr. Schierberl:

1. The City of Cleveland Water Department (CWD) is grateful for your assistance with our beneficially reuse of Water Treatment Residuals (WTR) from the Nottingham Water Treatment Plant (Nottingham).
2. WTR from Nottingham will be reused in the same Ohio EPA approved manner as WTR produced at our other facility, Crown Water Treatment Plant (Crown). Nottingham and Crown use Lake Erie for their water source. Additionally, they have a very similar treatment process that includes the uses alum-based flocculants. Because of this, WTR from both plants are also similar in content and will be managed the same.
3. I will be the regulatory correspondence contact for CWD. Mr. Scott Hershberger with Emerald Environmental Services, Inc. is working with CWD and can address any technical issues and will be coordinating approval efforts for beneficial reuse including EPA 4309 submittal. Please call me with any questions regarding this letter at (216) 664-2444 extension 5839.

Thank you.

Sincerely,

Frank J. Petrik, CIH, CSP, CHMM  
Regulatory Compliance Manager  
Cleveland Department of Public Utilities, Division of Water

cc: Scott Hershberger, Emerald Environmental  
Ryan Olinek, Environmental Programs Manager  
Rolfe Porter, Operations Manager  
Sam Feinberg, Plant Manager