

# Landfill Leachate

## Local Limits and Compliance





THE CITY OF  
**COLUMBUS**  
ANDREW J. GINTHER, MAYOR

## Landfill Leachate

## Local Limits and Compliance

# What Type of Landfill

Landfills are Regulated under two Regulations:

Resource Conservation and Recovery Act (RCRA)

1. Subtitle C; Hazardous Waste Landfill Category
2. Subtitle D; Non-Hazardous Waste Landfill Category



## RCRA Subtitle C Hazardous Waste Landfill Subcategory

**Subpart A** of 40 CFR Part 445, “RCRA Subtitle C Hazardous Waste Landfill Subcategory,” applies to wastewater discharges from a solid waste disposal facility subject to the criteria in:

- 40 CFR Part 264 Subpart N; Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR Part 265 Subpart N; Interim Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities

Hazardous waste landfills are subject to requirements outlined in 40 CFR Parts 264 and 265 that include the requirement to maintain a leachate collection and removal systems during the active life and post-closure period of the landfill.



## RCRA Subtitle D Non-Hazardous Waste Landfill Subcategory

**Subpart B** of 40 CFR Part 445, “RCRA Subtitle D Non-Hazardous Waste Landfill Subcategory,” applies to wastewater discharges from all landfills classified as RCRA Subtitle D non-hazardous landfills subject to either of the criteria established in:

- 40 CFR Parts 257 (Criteria for Classification of Solid Waste Disposal Facilities and Practices)
- 258 (Criteria for Municipal Solid Waste Landfills)

The final limitations and standards cover pollutants in wastewater discharges associated only with the operation and maintenance of those landfills regulated under Subtitles C and D of the Resource Conservation and Recovery Act (RCRA). The rule applies to wastewater generated at both active as well as closed landfills regulated under Subtitle C or Subtitle D of RCRA.



# HOWEVER

## **Pretreatment Standards for Existing Sources (PSES)**

EPA did not establish PSES for either subcategory. Any source subject to this rule that introduces wastewater pollutants into a publicly owned treatment works (POTW) must comply with 40 CFR Part 403

## **Pretreatment Standards for New Sources (PSNS)**

EPA did not establish PSNS for either subcategory. Any new source subject to this rule that introduces wastewater pollutants into a POTW must comply with 40 CFR Part 403.



# What Type of Landfill

## Subtitle D Landfills:

- Municipal Solid Waste Landfills (MSWLF); household and nonhazardous wastes
- Industrial Waste Landfills; commercial and institutional waste
  - Construction and Demolition (C&D) Landfills; Construction and Demolition Only
  - Coal Combustion Residual (CCR) Landfills; Fly Ash, Bottom Ash, Boiler Slag, Flue Gas Desulfurization Material, Fluidized Bed Ash, Scrubber Residuals and Cenospheres (hollow spheres of silica and alumina)



# What Type of Landfill

## Subtitle C Landfills:

- Hazardous Waste Landfills; manage wastes from cradle to grave
- Polychlorinated Biphenyl (PCB) Landfills; PCB (only 1 in Ohio – Cincinnati)



# What Could Possibly Be In That Landfill?

- ❖ Paints
- ❖ Mercury - Silver
- ❖ Paper – Plastics - Linens
- ❖ Food
- ❖ Pesticides - Herbicides
- ❖ Household Hazardous Waste
- ❖ Industrial Waste from Olde
- ❖ Yard Waste
- ❖ Pharmaceuticals
- ❖ Glass - Metal
- ❖ Industrial Hazardous Waste
- ❖ Animals (Dead & Alive)
- ❖ Oils and Greases
- ❖ Rubber - Timber
- ❖ Animal Waste
- ❖ Batteries





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# O.K., So I've Been Talking About Leachate But What is Leachate?

Development Document for Final Effluent Limitations Guidelines and Standards for the Landfills Point Source Category, EPA-821-R-99-019, January 2000) states:

Landfill leachate is liquid that has passed through or emerged from solid waste and contains soluble, suspended, or miscible materials removed from such waste.



# Leachate Happens

According to the National Solid Waste Management Association:

Landfills are not designed to break down waste, only to store it. But garbage in a landfill does decompose, slowly and in a sealed, largely oxygen-free environment.

Landfills seal their waste over a liner that keeps liquids from seeping out.

Drains at the bottom of the sealed pile collect the leachate and transport it to a lagoon or a tank for storage. Some don't... the leachate is treated and discharged either directly (NPDES Permit) or indirectly (to a POTW).

The Leachate can either be recirculated back to the pile to assist with decomposition, evaporated or, the Owner/Operator of the Landfill asks to discharge it to the POTW.



# Is it Leachate or Landfill Wastewater?

## 40 CFR 445.2(f):

Landfill wastewater means all wastewater associated with, or produced by, landfilling activities except for sanitary wastewater, non-contaminated storm water, contaminated ground water, and wastewater from recovery pumping wells.

Landfill wastewater includes, but is not limited to, leachate, gas collection condensate, drained free liquids, laboratory derived wastewater, contaminated storm water and contact wash-water from washing truck, equipment, and railcar exteriors and surface areas which have come in direct contact with solid waste at the landfill facility.



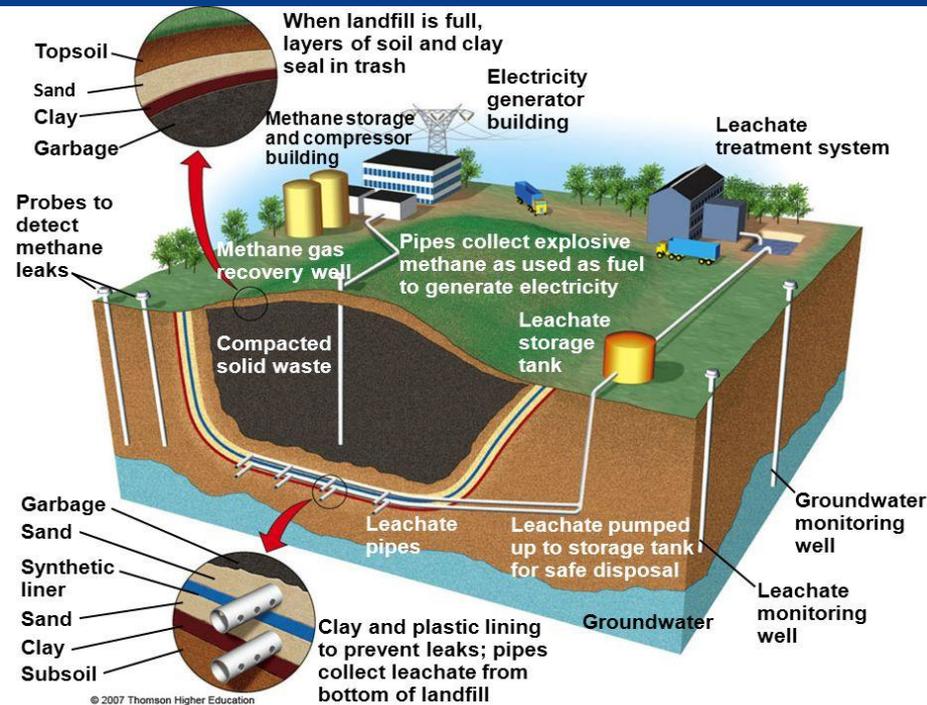
# Storage and Handling



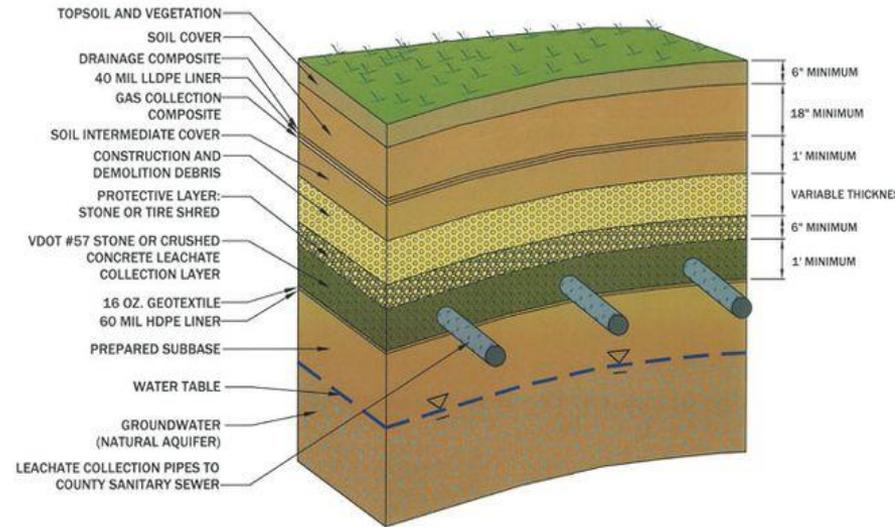
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# Leachate Collection System



## CROSS-SECTION OF LANDFILL CONTAINMENT SYSTEMS



# Getting the Leachate to the POTW

There are only **TWO** ways to get Leachate to the POTW

1. Direct Discharge from the Landfill to the Sanitary or Combined Sewer
2. Trucked Waste Hauler



## Wastewater Pump Station from Landfill

- How Large and What is the Length of Force Main
- Where Does Force Main Terminate
- Sewer Capacity
- Approximate Frequency of Pump Cycle
- Distance to Wastewater Facility
  - ❖ What else is connected between Landfill and Wastewater Facility
- Volume pumped
  - ❖ Each Pump Cycle
  - ❖ Per Day

## Wastewater Gravity Line from Landfill

- How Large and What is the Length of the Gravity Line
- Where Does the Gravity Line Terminate
- Sewer Capacity
- Distance to Wastewater Facility
  - ❖ What else is connected between Landfill and Wastewater Facility
- Flow Volume
  - ❖ Continuous Discharge
  - ❖ Batch Discharge

## Hauled Waste

- Volume of Hauled Waste per Load
  - ❖ How often is Leachate Discharged as Hauled Waste
- Where in System is Hauled Waste Accepted
  - ❖ Wastewater Facility
  - ❖ Other Location
- Sewer Capacity at Discharge Location
- Distance to Wastewater Facility
  - ❖ What else is connected between Discharge Point and Wastewater Facility



# Permitted Landfills

Columbus has two (2) Permitted Landfills

- 1) Solid Waste Authority of Central Ohio: Model Landfill
- 2) Solid Waste Authority of Central Ohio: Main Landfill

# The Model Landfill

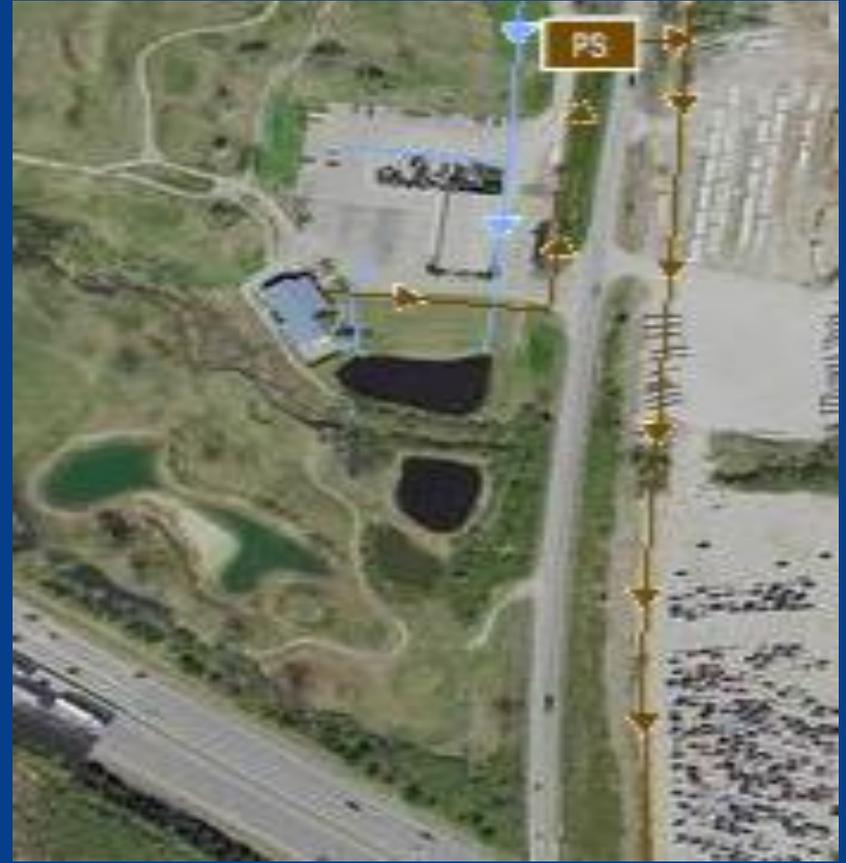
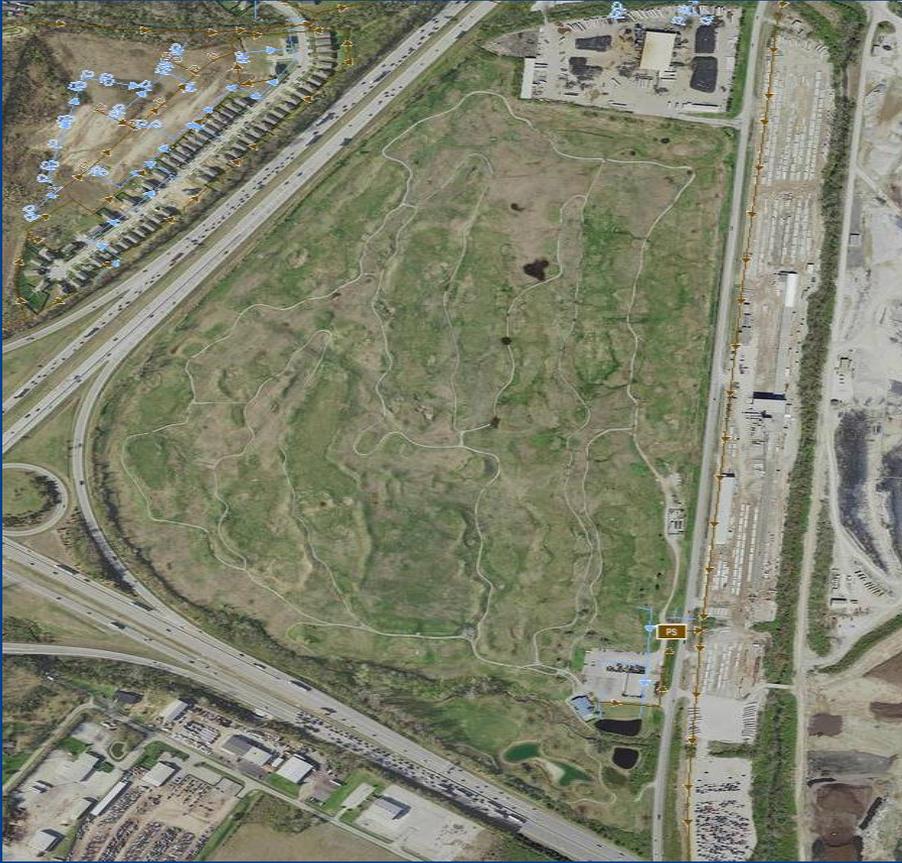
This facility is a closed solid waste landfill. Landfill gas and leachate are collected via landfill gas collection wells and leachate de-watering wells to prevent landfill gas migration.

The 2016 permit application indicates the facility discharges an average of 11,285 gallons per day per day and average water usage consists of:

- Sanitary = 50 gpd estimated
- Plant and equipment washdown = 50 gpd estimated

The remaining volume is leachate. The sanitary and plant and equipment washdown wastewater does not discharge through the leachate sampling station.

# The Model Landfill



# The Main Landfill

The facility does not have pollution abatement facilities for the leachate discharge. There is an oil/water separator that receives flow from trench drains in the Operations Facility Building and a second oil/water separator receives discharges from the floor drains in the Contractor's building.

## 2016 Production:

- Landfill leachate = 32,843 gpd average, 350,000 gpd maximum
- Sewage = 3,000 gpd average, 5,000 gpd maximum

## 2017 Estimated:

- Landfill leachate = 90,000 gpd average, 350,000 gpd maximum
- Sewage = 3,000 gpd average, 5,000 gpd maximum

# The Main Landfill



# Permitted Landfills

## Both Landfills are Sampled for:

- ❖ Extra-Strength Parameters
  - BOD
  - TKN
  - TSS
  
- ❖ Columbus City Code Chapter 1145 Local Limits
  
- ❖ Screening:
  - Phosphorus
  - TDS

# Potentially Permitted Landfills

Scotts Landfill (Active)

Frank Road Recycling Solutions (Active)

Bedford Landfill (Closed)

**HOW DO WE DECIDE WHETHER TO ALLOW PERMITTED DISCHARGE?**

# Potentially Permitted Landfills

Will Discharge be Directed Through the Sanitary Sewer?

Or

Will Discharge be Delivered Through Trucked Waste?

The Discharge Method will Determine the Type of Permit to be Issued, but not necessarily the Limits

Sanitary Sewer: Facility Will Need an Indirect Discharge Permit

Or

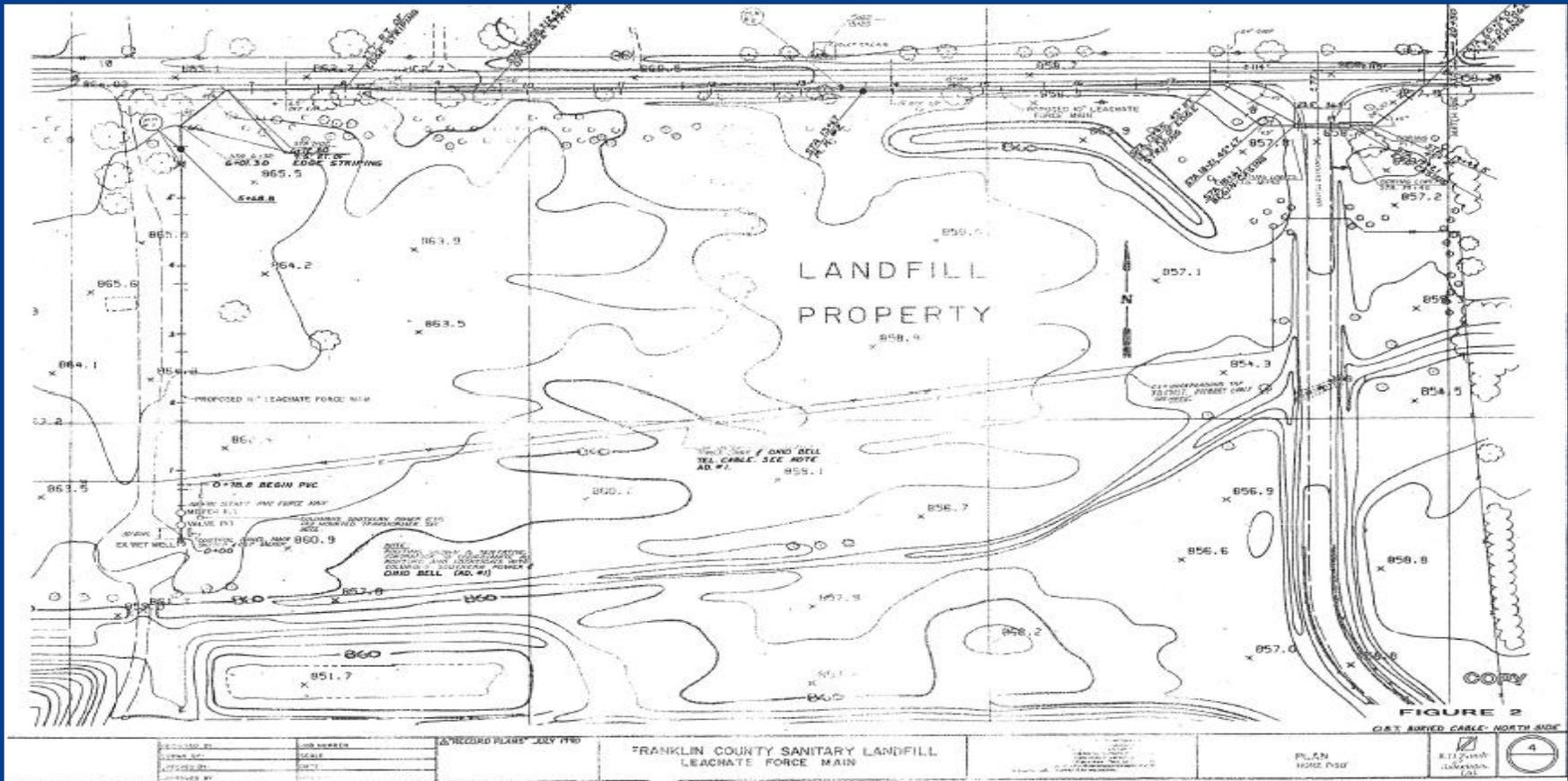
Trucked Waste: Waste Hauler Should Already be Permitted, but Facility Should be Issued an Indirect Discharge Permit

# Approving Landfill Discharges

- ✓ Request Facility Layout
- ✓ Request Permit Application
- ✓ Request Detailed Information on Landfill Wastewater Sources
- ✓ Request Analytical Data on Wastewater at End-of-Pipe
- ✓ Request Information on Potential Waste Hauler
- ✓ Request Site Visit and City Sampling to Verify Data Submitted by Facility
- ✓ Facility Active or Closed
- ✓ Request Permit Application
- ✓ Determine Mode of Discharge



# Approving Landfill Discharges



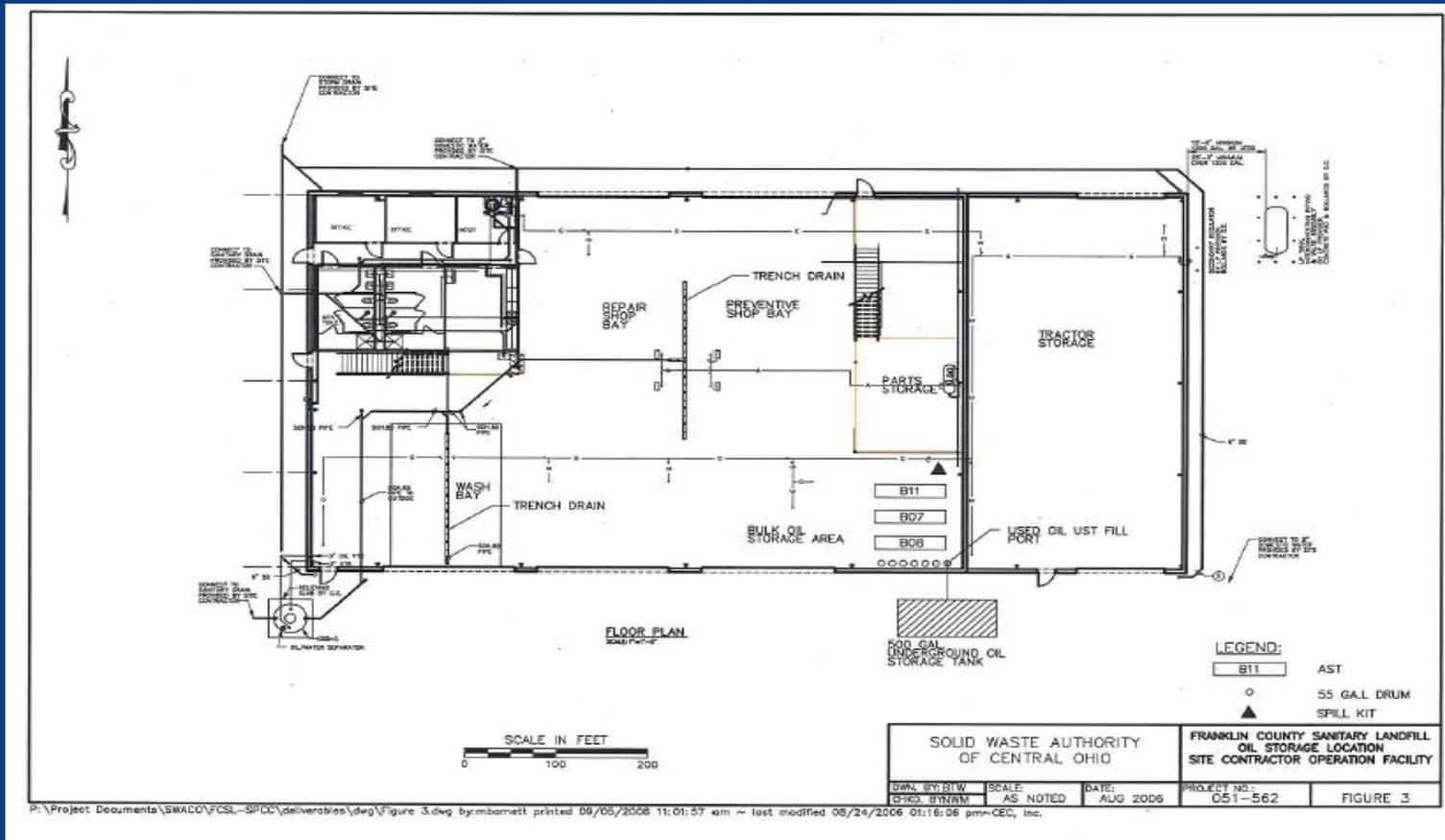


# Approving Landfill Discharges

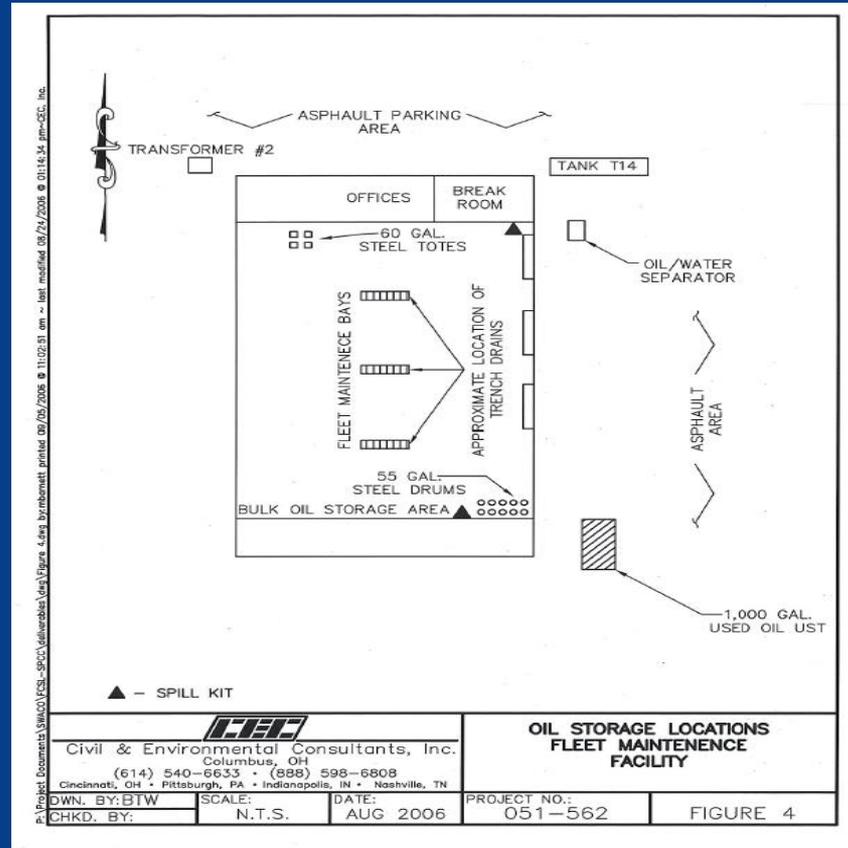




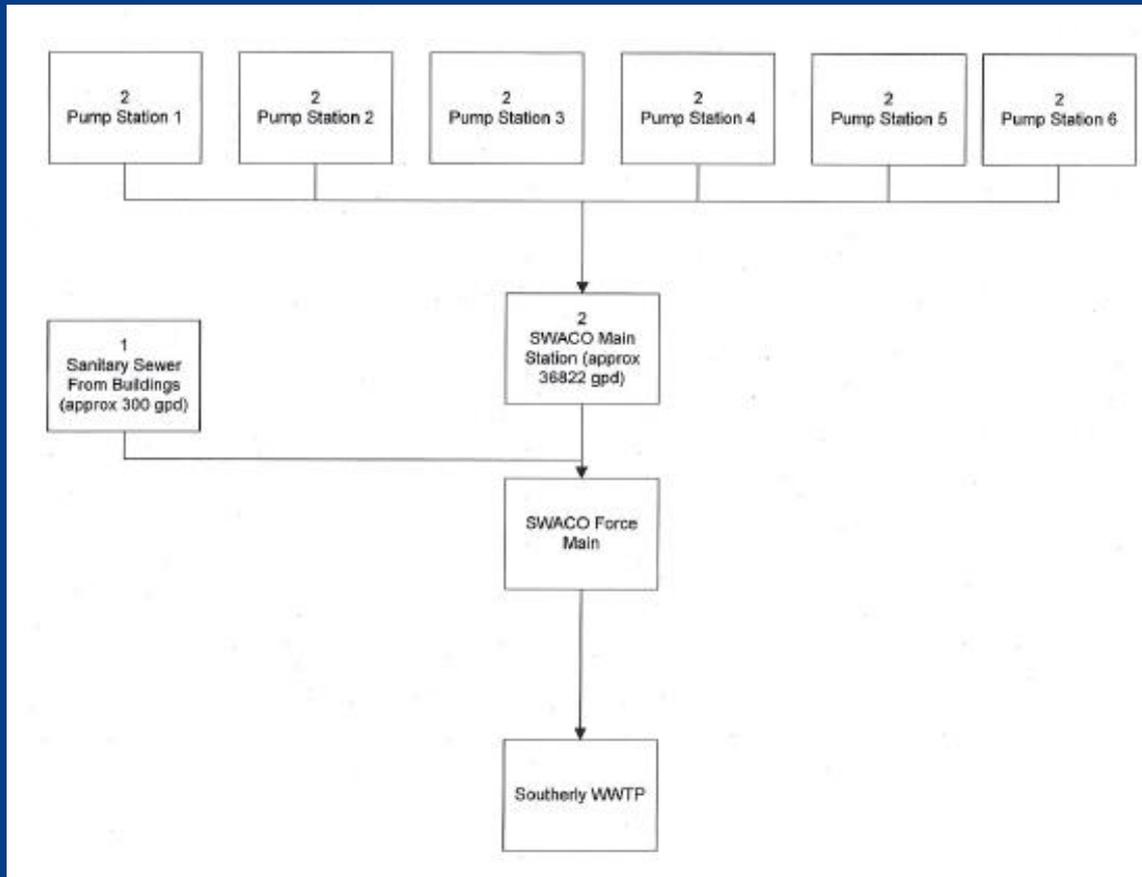
# Approving Landfill Discharges



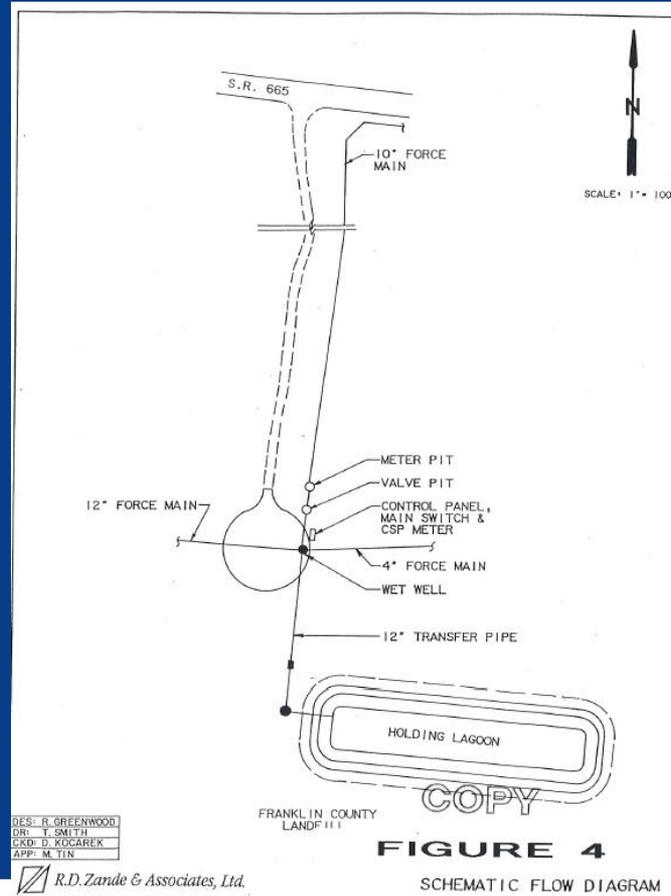
# Approving Landfill Discharges



# Approving Landfill Discharges



# Approving Landfill Discharges





**INDUSTRIAL WASTEWATER DISCHARGE  
PERMIT RENEWAL APPLICATION**



**NOTE:** Complete all questions using the attached instructions. Mark N/A if the question does not apply. If additional space is required, use the available space provided on page 9.

**SECTION A - IDENTIFICATION**

1. Name of Industrial User applying for Permit: Solid Waste Authority of Central Ohio
2. Secretary of State Charter/Registration Number of applicant: \_\_\_\_\_
3. Mailing Address: 6220 Young Road, Grove City, OH 43123
4. Address of permitted discharge(s) (if different from mailing address):  
3851 London-Groveport Road, Grove City, OH 43123
5. Facility phone #:(614) 871-5100 Fax #: (614) 871-5103
6. Designated Signatory Authority(ies) of the Industrial User: Michael D. Long, Ronald J. Mills  
Rick A. Dodge, Paul D. Flory
7. Designated recipient for correspondence: Paul D. Flory
8. Contact Person regarding wastewater discharges: Paul D. Flory  
Title: Env. Compliance Manager Phone #: (614) 801-6429  
E-Mail: paul.flory@swaco.org
9. Date operations commenced at this facility: 1985

Request Permit Application



# Request Permit Application

## SECTION B - BUSINESS ACTIVITY and OPERATIONAL CHARACTERISTICS

### 1. SHIFT INFORMATION:

Work Days/Year: 304 Business Hours: 5 am-5 pm M-F, 6 am-

Seasonal Shutdown: None

Shifts	Employees	Start Time	Duration	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1 <sup>st</sup> Shift	<u>~50</u>	<u>5 am</u>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				
2 <sup>nd</sup> Shift				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 <sup>rd</sup> Shift				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: Average 50 people on weekdays 5 am to 5 pm, 8 people on Saturday 6 am to noon.

### 2. Give a brief description of all operations at this facility (use page 9 if additional space is required):

Municipal Solid Waste Landfill, Fleet Maintenance Garage, Administrative Office Building, Education Center, Site Operator Facility

### 3. Indicate applicable Standard Industrial Classification (SIC) and description for all processes (if more than one applies, list in descending order of importance):

4953

### 4. PRODUCT VOLUME:

PAST CALENDAR  
YEAR AMOUNTS  
PER DAY (INCLUDE UNITS)

ESTIMATE THIS CALENDAR  
YEAR AMOUNTS  
PER DAY (INCLUDE UNITS)

(BRAND NAME)

AVERAGE

MAXIMUM

AVERAGE

MAXIMUM

Leachate/Sewage

32996 gpd

150,000 gpd

37,000 gpd

150,000 gpd

## Request Permit Application

5. List types and amounts (mass or volume per day) of raw materials used, or planned for use (use page 9 if additional space is required):

The SWACO facilities connected to the City of Columbus sewer system are not manufacturing facilities and do not consume raw materials. In 2006, the Franklin County Sanitary Landfill received 879,878.48 tons of municipal solid waste for an average of 3,143 tons per day. SWACO expects similar waste receipts for the near future.

6. List types and quantity of chemicals used and planned for use (use page 9 if necessary):

All solvents and spent fluids used at the Fleet Maintenance Garage and Site Operators Facility are collected in storage tanks for offsite transfer and disposal/recycling. No chemicals are discharged into the sewer system.

7. List any waste liquids or sludges generated that are not discharged to the sanitary sewer system (use page 9 if additional space is required)

<u>WASTE GENERATED</u>	<u>QUANTITY (PER YEAR)</u>	<u>DISPOSAL METHOD</u>	<u>WASTE HAULER</u>
NA			

## Request Permit Application

8. Facility layout - Draw to proportionate scale the location of each building on the premises. Show on a scaled map, the orientation and location of all water meters, storm drains, storm sewers, numbered unit processes (see Section D-Items 6 & 7), public and private sewers, clean outs, floor drains, manholes, north arrow, and legend of symbols used.

The facility layout drawings should be submitted on 11" by 17" or smaller sheets. Alternatively, larger size (drawn to scale) blueprints or drawings may be accompanied by copies reduced to 11" by 17" (scale proportionate).

9. A facility with processes that are listed below may be regulated by the Environmental Protection Agency's (EPA) Categorical Pretreatment Standards. These facilities are termed "Categorical Users". Place an X beside all applicable categories of business activity (regardless of whether they generate wastewater).

### INDUSTRIAL CATEGORIES

- |  |   |
|--|---|
| <input type="checkbox"/> 40 CFR 413 - Electroplating   | <input type="checkbox"/> 40 CFR 442 - Transportation Equipment Cleaning                   |
| <input type="checkbox"/> 40 CFR 414 - Organic Chemicals, Plastics and Synthetic Fibers Manufacturing | <input type="checkbox"/> 40 CFR 443 - Paving and Roofing Manufacturing                    |
| <input type="checkbox"/> 40 CFR 415 - Inorganic Chemicals  | <input type="checkbox"/> 40 CFR 444 - Waste Combustors                                    |
| <input type="checkbox"/> 40 CFR 418 - Fertilizer Manufacturing                                       | <input type="checkbox"/> 40 CFR 446 - Paint Formulating                                   |
| <input type="checkbox"/> 40 CFR 419 - Petroleum Refining   | <input type="checkbox"/> 40 CFR 447 - Ink Formulating                                     |
| <input type="checkbox"/> 40 CFR 420 - Iron and Steel   | <input type="checkbox"/> 40 CFR 455 - Pesticides Chemicals                                |
| <input type="checkbox"/> 40 CFR 421 - Nonferrous Metals Manufacturing                                | <input type="checkbox"/> 40 CFR 458 - Carbon Black  |
| <input type="checkbox"/> 40 CFR 423 - Steam Electric Power Generating                                | <input type="checkbox"/> 40 CFR 461 - Battery Manufacturing                               |
| <input type="checkbox"/> 40 CFR 425 - Leather Tanning and Finishing                                  | <input type="checkbox"/> 40 CFR 464 - Metal Molding and Casting                           |
| <input type="checkbox"/> 40 CFR 426 - Glass Manufacturing  | <input type="checkbox"/> 40 CFR 465 - Coil Coating  |
| <input type="checkbox"/> 40 CFR 428 - Rubber Manufacturing   | <input type="checkbox"/> 40 CFR 466 - Porcelain Enamel                                    |
| <input type="checkbox"/> 40 CFR 429 - Timber Products  | <input type="checkbox"/> 40 CFR 467 - Aluminum Forming                                    |
| <input type="checkbox"/> 40 CFR 430 - Pulp, Paper, and Fiberboard Manufacturing                      | <input type="checkbox"/> 40 CFR 468 - Copper Forming                                      |
| <input type="checkbox"/> 40 CFR 433 - Metal Finishing  | <input type="checkbox"/> 40 CFR 469 - Electric and Electronics Component Manufacturing    |
| <input type="checkbox"/> 40 CFR 437 - Centralized Waste Treatment                                    | <input type="checkbox"/> 40 CFR 471 - Nonferrous Metals Forming                           |
| <input type="checkbox"/> 40 CFR 439 - Pharmaceutical   | <input checked="" type="checkbox"/> Other, describe <u>Municipal Solid Waste Landfill</u> |

10. Is the facility subject to any subpart of the National Emission Standards for Hazardous Air Pollutants (NESHAP) found in the Code of Federal Regulations Title 40, Parts 61 and 63?  
 Yes     No

If yes, does the facility's compliance with the NESHAP involve discharge to the Columbus sewer system?     Yes     No

## Request Permit Application

### SECTION C - WATER and SEWER SERVICE

1. WATER SOURCES: (mark all that are applicable) For water sources other than municipal water, provide information on average volume (gpd - estimated or measured) and type of usage.

- Municipal water utility (Specify City): City of Columbus
- Private well: truck wash
- Surface water: Dust suppression and mud control
- Other (Specify): \_\_\_\_\_

2. NAME ON THE WATER/SEWER BILL:

Name: Solid Waste Authority

Street: 6220 Young Rd

City: Grove City State: OH Zip: 43123

3. WATER/SEWER SERVICE ACCOUNT NUMBER: 101471-1135668 (3851 London- Groveport Road)  
 WATER/SEWER SERVICE ACCOUNT NUMBER: 285226-1260153 (4109 London- Groveport Road)  
 WATER/SEWER SERVICE ACCOUNT NUMBER: 285226-1265587 (4239 London- Groveport Road)  
 WATER/SEWER SERVICE ACCOUNT NUMBER: 285226-1264354 (4149 London- Groveport Road)  
 CITY OF COLUMBUS PRETREATMENT ACCOUNT NUMBER: \_\_\_\_\_

4. List average water usage on premises (new facilities may estimate) and describe discharge method (sanitary, combined and/or storm sewer, stream, ground, not discharged, or unknown).

TYPE	Average Water Use (gpd)	Estimate (E) or Measured (M)	Discharge Method
Contact Cooling Water	<u>NA</u>	<u>_____</u>	<u>_____</u>
Non-Contact Cooling Water	<u>NA</u>	<u>_____</u>	<u>_____</u>
Boiler feed	<u>NA</u>	<u>_____</u>	<u>_____</u>
Process	<u>NA</u>	<u>_____</u>	<u>_____</u>
Sanitary	<u>500</u>	<u>E</u>	<u>Sanitary</u>
Air Pollution Control	<u>NA</u>	<u>_____</u>	<u>_____</u>
Contained in Product	<u>NA</u>	<u>_____</u>	<u>_____</u>
Plant & Equip. Wash-down	<u>NA</u>	<u>_____</u>	<u>_____</u>
Irrigation & Lawn Watering	<u>NA</u>	<u>_____</u>	<u>_____</u>
Other	<u>NA</u>	<u>_____</u>	<u>_____</u>
Totals	<u>500</u>	<u>E</u>	<u>Sanitary</u>

# Request Permit Application

## SECTION D - SEWER INFORMATION

1.
  - a. Is the building presently connected to the public sanitary sewer system?  
 Yes       No
  - b. Does (or will) this facility discharge any wastewater other than sanitary (domestic) wastewater to the City sewer?  
 Yes       No
  - c. Do you have floor drains in your manufacturing or chemical storage area(s)?  
 Yes       No
2. List size, descriptive location, and flow of each facility sewer that connects to the City's sewer system. (use page 9 if additional space is required).

<u>Sewer Size</u>	<u>Descriptive Location of Sewer Connection or Discharge Point</u>	<u>Average Flow (gpd)</u>
10 inch	Lift station to Southerly WWTP	36882
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. Indicate what water/sewer service account is associated with each sewer discharge location.

<u>Sewer Size</u>	<u>Descriptive Location of Sewer Connection or Discharge Point</u>	<u>Account Number</u>
10 inch	Lift station to Southerly WWTP	101471-1135668
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

4. Provide the hours of discharge (e.g., 9 a.m. to 5 p.m.) for any process related wastewater discharges. (New facilities may estimate).

<u>Day of Operation</u>	<u>Hours of Discharge</u>	<u>Day of Operation</u>	<u>Hours of Discharge</u>
Sunday	<u>Intermittent</u>	Monday	<u>Intermittent</u>
Tuesday	<u>Intermittent</u>	Wednesday	<u>Intermittent</u>
Thursday	<u>Intermittent</u>	Friday	<u>Intermittent</u>
Saturday	<u>Intermittent</u>		

# Request Permit Application

5. If Batch Discharge occurs, or will occur, indicate: (new facilities may estimate.)

TYPE	# of Batches per day	Avg. gallons per Batch	Day of Week	Hours of Day
			S - M - T - W - T - F - S	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	
			<input type="checkbox"/> - <input type="checkbox"/>	

6. Flow Diagram - for each activity in which wastewater is, or will be generated, draw a diagram of the flow of materials, products, water and wastewater from the start of the activity to its completion, showing all unit processes. Number each unit process to correspond with a brief description in the drawing legend. Use these numbers when completing information in item # 7 below.

7. List the average wastewater discharge, maximum discharge, and type of discharge (Batch, Continuous, or both), for each process. Include the unit process number from the flow diagram in item # 6 above that corresponds to each process (New facilities should provide estimates for each discharge).

No.	Process Description	Average Flow (g.p.d)	Maximum Flow (g.p.d)	Type of Discharge (batch, continuous, both)
1	Sewage	500	1000	Intermittent
2	Leachate	36882	150,000	Intermittent

# Request Permit Application

## SECTION E - TREATMENT

1. Treatment devices or processes used or proposed for treating wastewater or sludge (mark as many as appropriate).

- |   |  |
|---|--|
| <input type="checkbox"/> Air Flotation  | <input type="checkbox"/> Ion Exchange                          |
| <input type="checkbox"/> Biological Treatment   | <input type="checkbox"/> Neutralization, pH Correction         |
| <input type="checkbox"/> Centrifuge   | <input type="checkbox"/> Ozonation                             |
| <input type="checkbox"/> Chemical Precipitation   | <input type="checkbox"/> Reverse Osmosis                       |
| <input type="checkbox"/> Chlorination   | <input type="checkbox"/> Screen                                |
| <input type="checkbox"/> Cyclone  | <input type="checkbox"/> Sedimentation                         |
| <input type="checkbox"/> Filtration   | <input type="checkbox"/> Solvent Separation                    |
| <input type="checkbox"/> Flow Equalization  | <input type="checkbox"/> Other Chemical Treatment, type: _____ |
| <input checked="" type="checkbox"/> Grease or Oil Separation <b>Fleet Garage and Site Operators Facility only</b> | <input type="checkbox"/> Other Physical Treatment, type: _____ |
| <input type="checkbox"/> Grease Trap  | <input type="checkbox"/> Other, type: _____                    |
| <input type="checkbox"/> Grinding Filter  |  |
| <input type="checkbox"/> Grit Removal   |  |

## SECTION F - AUTHORIZED SIGNATURES

**AUTHORIZED REPRESENTATIVE'S STATEMENT:** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted, is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for known violations.

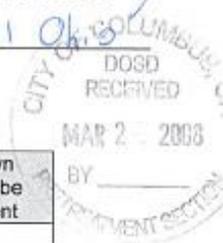
NAME: Paul D. Flory TITLE: Environmental Compliance Manager  
Paul D. Flory 5-16-07 (614) 801-6429  
SIGNATURE DATE PHONE

Please note that this statement must be signed by the duly authorized representative of the Industrial User in accordance with Columbus City Code Chapter 1145.04 and its subparts (A) - (C) and 40 CFR 403.12, if applicable.

## INDUSTRIAL WASTEWATER DISCHARGE PERMIT SUPPLEMENTAL QUESTIONNAIRE

Current Industrial Users are required to submit data on all pollutants that are regulated specific to Columbus City Code Chapter 1145. Please indicate whether the pollutant is known to be present, suspected to be present, or known not to be present in your discharge to the City of Columbus POTW by placing a check mark in the appropriate box next to the listed pollutant.

Name of Industrial User: Solid Waste Authority of Central Ohio  
 (Same as Question 1, Section A of Permit Application)



Pollutant	Known to be Present	Suspected to be Present	Known not to be Present
Arsenic	✓		
Cadmium			✓
Chromium, Total	✓		
Chromium, Hexavalent		unknown	
Copper			✓
Cyanide	✓		
Lead			✓
Mercury			✓
Nickel	✓		
Selenium	✓		
Silver			✓
Zinc			✓

**AUTHORIZED REPRESENTATIVE'S STATEMENT;** I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for known violations.

NAME (Print) Paul O Flory TITLE Environmental Compliance Manager  
 DATE 3-19-08 PHONE 614-871-5100  
 SIGNATURE

Please note that this statement must be signed by the duly authorized representative of the Industrial User in accordance with Columbus City Code Chapter 1145.04 and its subparts (A) - (C) and 40 CFR 403.12(l) if applicable.

Request Additional Information



# Approving Landfill Discharges

- ✓ Request Detailed Information on Landfill Wastewater Sources
  - ✓ On-site Laboratories
  - ✓ Landfill Cells
  - ✓ Detention / Retention Ponds
  - ✓ Equipment Washing

# Approving Landfill Discharges

- ✓ Request Information on Potential Waste Hauler
  - ✓ Will This be an Annual Contract, or
  - ✓ Will Facility Call Someone When System Needs to Discharge
  - ✓ Inform Facility That Only PERMITTED Waste Haulers Shall be Employed
  - ✓ MAKE THAT A PERMIT CONDITION
  - ✓ Waste Hauler CANNOT Mix Load with Other Wastes
  - ✓ Waste Hauler MUST CALL 24 Hours Prior to Hauling Load
  - ✓ Waste Hauler SHOULD Be Sampled Each Delivery

# Approving Landfill Discharges

- ✓ Request Site Visit and City Sampling to Verify Data Submitted by Facility
  - ✓ Take ALL Documents Previously Provided With You for Verification
  - ✓ Take Sample Bottles and Ice
  - ✓ Be Prepared to Get Dirty

# Approving Landfill Discharges

- ✓ Facility Active or In-Active
  - ✓ Active Landfills and In-Active Landfills are Equally Problematic
  - ✓ Don't Know Historically, What is In Either
  - ✓ Active Landfills Hold Many Surprises
  - ✓ In-Active Landfills Hold Many Surprises

# Approving Landfill Discharges

- ✓ Determine Mode of Discharge
  - ✓ Batch
  - ✓ Continuous
  - ✓ Pump
  - ✓ Gravity
  - ✓ Trucked

# What Limits to Apply

- **Local Limits, Concentration-Based**
- **Local Limits, Mass-Based (if flow is <10,000 gpd)**
- **Other Limits**
- **Flow Limits**



# Local Limits, Concentration

Pollutant	Maximum Composite Sample, ug/L
Arsenic	1,000
Cadmium	500
Chromium, total	20,000
Copper	2,700
Cyanide	5,000
Hydrocarbon FOG	200,000
Lead	4,000
Mercury	20
Nickel	5,000
Selenium	10,000
Silver	3,000
Zinc	5,500

**City of Columbus pH Range:**

**Greater Than 5.0 S.U**

**Less Than 12.5 S.U.**

# Local Limits, Concentration

Pollutant	Maximum Daily Mass, Grams/day
Arsenic	38
Cadmium	19
Chromium, total	757
Copper	102
Cyanide	189
Hydrocarbon FOG	7573
Lead	151
Mercury	1
Nickel	189
Selenium	379
Silver	114
Zinc	209

**City of Columbus pH Range:**

**Greater Than 5.0 S.U**

**Less Than 12.5 S.U.**

### Other pollutants to sample:

1,1-Dichloroethane	Dieldrin
1,1-Dichloroethene	Diethyl phthalate
1,2-Dichloroethane	Dinitrotoluene
1,2-Dichlorobenzene	Endrin
1,2-Dichloropropane	Ethyl benzene
1,3-Dichloropropene	Ethylene dichloride
1,4-Dichlorobenzene	Formaldehyde
1,1,1-Trichloroethane	Heptachlor
1,1,2-Trichloroethane	Hexachloro-1,3-butadiene
1,2,4-Trichlorobenzene	Hexachloroethane
1,1,2,2-Tetrachloroethane	Hexachlorocyclopentadiene
4,6-Dinitro-o-cresol	Methyl chloride
cis-1,2-Dichloroethene	Methyl ethyl ketone
trans-1,2-Dichloroethene	Methylene chloride
Acrylonitrile	Naphthalene
Aldrin	Nitrobenzene
Aroclor 1242	Pentachlorophenol
Aroclor 1254	Phenol
Benzene	Styrene (vinyl benzene)
Bis(2-chloromethyl)ether	Tetrachloroethylene
Bromoform	Toluene
Bromomethane	Toxaphene
Carbon disulfide	Trichloroethylene
Carbon tetrachloride	Trichlorofluoromethane
Chlordane	Vinyl acetate
Chlorobenzene	Vinyl chloride
Chloroethane	Vinylidene chloride
Chloroform	Total polynuclear aromatic hydrocarbons
Chloromethane	Xylene
Dichlorodifluoromethane	

# WHAT?

## ❖ Physical & Aggregate Properties

- ✓ Color
- ✓ Odor
- ✓ Turbidity
- ✓ Acidity
- ✓ Alkalinity
- ✓ Hardness
- ✓ ORP
- ✓ TDS
- ✓ TSS
- ✓ Asbestos

## ❖ Metals, Other Than Local Limits

- ✓ Aluminum
- ✓ Iron
- ✓ Lithium
- ✓ Magnesium
- ✓ Potassium
- ✓ Sodium
- ✓ Strontium
- ✓ Tin
- ✓ Vanadium

# WHAT?

- \* Inorganic Nonmetallic Constituents

- \* Boron
- \* Bromide
- \* Iodide
- \* Sulfide
- \* Sulfate

- \* Miscellaneous

- \* Pesticides
- \* PCB
- \* Phenols
- \* Herbicides
- \* Radioactivity
- \* Toxicity

# WHY?

- \* To prevent the introduction of pollutants into the sewer system which will pass through the Publicly Owned Treatment Works (POTW) treatment plants, or otherwise be incompatible with treatment processes.
- \* To improve opportunities to recycle and reclaim Columbus treated wastewaters and sludges.
- \* To prevent adverse affects to the water quality of receiving waters, prevent damage to the environment, and prevent violation of any federal or state discharge permit issued to the city.
- \* To protect both POTW personnel and the general public.



# Approving Landfill Discharges

- COMPARE ALL DATA TO PLANT DESIGN PARAMETERS
- COMPARE ALL DATA TO LOCAL LIMITS
- RUN LOADINGS CALCULATIONS TO ENSURE PLANT HAS SUFFICIENT TREATMENT CAPACITY
- IF POSSIBLE RUN BENCH TESTS FOR TREATABILITY
- SHARE EVERYTHING WITH PLANT PERSONNEL
- SHARE EVERYTHING WITH COLLECTION SYSTEM PERSONNEL

# Questions?

**Jeff Bertacchi**

**Office: (614) 645-5912**

**Fax: (614) 645-0227**

**Email: JLB at Columbus.gov**

**Or: Just Grab One of My Cards**

