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MEMORANDUM

12 October 2016
File No. 40373-442

SUBJECT: Inflow Design Flood Control System Plan
Ash Pond
Dayton Power & Light Company
Killen Electric Generating Station
Manchester, Ohio

Haley & Aldrich, Inc. has assisted Dayton Power & Light Company (DP&L) with creating the Inflow Design Flood Control System Plan for the Ash Pond at the Killen Electric Generating Station in Manchester, Ohio to satisfy requirements of the Environmental Protection Agency (EPA) 40 CFR Parts 257 and 261, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities" (CCR Rule) section §257.82. The Ash Pond flood control system existing conditions documentation has been reviewed and associated stormwater modeling and analysis performed to satisfy the Inflow Design Flood Control System Plan requirements of CCR Rule section §257.82 as described below.

The Ash Pond is comprised of the Bottom Ash Pond (BAP) and the Fly Ash Pond (FAP), but is considered to be a single impoundment by the Ohio Department of Natural Resources (ODNR). Therefore, for the purposes of this report, the overall impoundment is referred to as the "Ash Pond." A complete description of the Ash Pond and associated inflow and outflow structures and appurtenances has been provided in a separate report titled "Report on Initial Periodic Structural Stability Assessment – Ash Pond" prepared by Haley & Aldrich, Inc. dated October 2016.

§257.82(a): The owner or operator of an existing or new CCR surface impoundment or any lateral expansion of a CCR surface impoundment must design, construct, operate, and maintain an inflow design flood control system as specified in paragraphs (a)(1) and (a)(2) of this section.

§257.82(a)(1): The inflow design flood control system must adequately manage flow into the CCR unit during and following the peak discharge of the inflow design flood specified in paragraph (a)(3) of this section.

The Ash Pond was modeled in HydroCAD in conjunction with the appropriate inflow design flood (IDF) as determined per the Ohio Department of Natural Resources as further described below. Two versions of the model were prepared to capture the most conservative case conditions within both the BAP and FAP by assuming a fixed head weir flow in one model (resulting in highest BAP peak Water Surface Elevation (WSEL)) and a free discharge weir flow in the second model (resulting in highest FAP peak WSEL). Based on the results from these two modeling scenarios, the IDF control system for each portion of the Ash

Pond was determined to adequately manage flow into the impoundment during and following the IDF peak discharge. **Table 1** summarizes the effects of the IDF peak discharge during normal operation of the impoundment. The output from the two HydroCAD model simulations is provided as **Appendix 1**. See **Figure 1** for the Ash Pond existing site plan.

Table 1: HydroCAD Output Summary

	Bottom Ash Pond	Fly Ash Pond
Peak flood level (ft)	570.1	569.3
Minimum Dike Elevation	572.1	571.7
Minimum freeboard (ft)	2.0	2.4
Peak inflow (cfs)	351	1,713

§257.82(a)(2): The inflow design flood control system must adequately manage flow from the CCR unit to collect and control the peak discharge resulting from the inflow design flood specified in paragraph (a)(3) of this section.

Estimated maximum flows into the Bottom Ash Pond and Fly Ash Pond were provided by the Shaw Environmental Water Balance Figure (provided as **Appendix 2**). The outlet control structures and spillways are detailed in the DP&L Killen Electric Generating Station Handling System dated 4 November 1977 and prepared by Ebasco Services Inc. Pertinent pages providing the required information have been provided as **Appendix 3**. Based on the HydroCAD analyses described above, the IDF control system for the Ash Pond was determined to adequately manage flow from the impoundment by collecting and controlling the IDF peak discharge. The peak level and resulting freeboard in the Ash Pond during the probable maximum flood is noted in Table 1 (above). Under the same conditions, the peak outflow from the Ash Pond is 176 cfs through the primary outlet. The HydroCAD model simulation output is provided as **Appendix 1**.

§257.82(a)(3): The inflow design flood is:

- i. For a high hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the probable maximum flood;*
- ii. For a significant hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the 1,000-year flood;*
- iii. For a low hazard potential CCR surface impoundment, as determined under § 257.73(a)(2) or § 257.74(a)(2), the 100-year flood; or*
- iv. For an incised CCR surface impoundment, the 25-year flood.*

Haley & Aldrich, Inc. determined the Ash Pond to be high hazard potential so the IDF is the probable maximum flood. The basis of the determination is discussed in Initial Hazard Potential Classification Assessment, Ash Pond dated October 2016 and prepared by Haley & Aldrich, Inc. The probable maximum flood storm characteristics were detailed in the Probable Maximum Precipitation Application

Guideline dated 23 August 2013 and prepared by the Ohio Department of Natural Resources. Pertinent pages providing the required information have been provided as **Appendix 4**.

§257.82(b): Discharge from the CCR unit must be handled in accordance with the surface water requirements under § 257.3–3.

§257.3-3(a): For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of pollutants into waters of the United States that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES) under section 402 of the Clean Water Act, as amended.

§257.3-3(b): For purposes of section 4004(a) of the Act, a facility shall not cause a discharge of dredged material or fill material to waters of the United States that is in violation of the requirements under section 404 of the Clean Water Act, as amended.

§257.3-3(c): A facility or practice shall not cause non-point source pollution of waters of the United States that violates applicable legal requirements implementing an areawide or Statewide water quality management plan that has been approved by the Administrator under section 208 of the Clean Water Act, as amended.

Discharge from the Ash Pond is subject to the Authorization to Discharge Under the National Pollution Discharge Elimination System dated 1 October 2014 and prepared by the Ohio Environmental Protection Agency. Pertinent pages providing the required information have been provided as **Appendix 5**.

§257.82(c)(1): Content of the plan. The owner or operator must prepare initial and periodic inflow design flood control system plans for the CCR unit according to the timeframes specified in paragraphs (c)(3) and (4) of this section. These plans must document how the inflow design flood control system has been designed and constructed to meet the requirements of this section. Each plan must be supported by appropriate engineering calculations. The owner or operator of the CCR unit has completed the inflow design flood control system plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(4).

This document and all attachments serve as the initial IDF control system plan. Periodic inflow design flood control system plans will be prepared and placed in the facility operating record at 5-year increments or whenever there is a change in conditions that would affect the plan.

§257.82(c)(2): Amendment of the plan. The owner or operator of the CCR unit may amend the written inflow design flood control system plan at any time provided the revised plan is placed in the facility's operating record as required by § 257.105(g)(4). The owner or operator must amend the written inflow design flood control system plan whenever there is a change in conditions that would substantially affect the written plan in effect.

The inflow design flood control system plan will be amended at least 60 days prior to a planned change in the operation of the facility or the CCR impoundment, or no later than 60 days after an unanticipated

event requires the need to revise the IDF control system plan. If the plan needs to be revised after closure activities have commenced, the plan will be revised no later than 30 days following the triggering event.

Any amendments to the plan will include written certification from a qualified professional engineer that the initial and any amendments to the flood control plan meet the requirements of the CCR Rule.

A record of amendments to the plan will be tracked below. The latest version of the flood control plan will be noted on the front cover of the plan.

Version	Date	Description of Changes Made
1	12 October 2016	Initial Issue

§257.82(c)(3): Timeframes for preparing the initial plan

- i. Existing CCR surface impoundments. The owner or operator of the CCR unit must prepare the initial inflow design flood control system plan no later than October 17, 2016.

This IDF control system plan has been prepared within the specified timeframe.

- ii. New CCR surface impoundments and any lateral expansion of a CCR surface impoundment. The owner or operator must prepare the initial inflow design flood control system plan no later than the date of initial receipt of CCR in the CCR unit.

N/A – Ash Pond is an existing impoundment.

§257.82(c)(4): Frequency for revising the plan. The owner or operator must prepare periodic inflow design flood control system plans required by paragraph (c)(1) of this section every five years. The date of completing the initial plan is the basis for establishing the deadline to complete the first periodic plan. The owner or operator may complete any required plan prior to the required deadline provided the owner or operator places the completed plan into the facility's operating record within a reasonable amount of time. In all cases, the deadline for completing a subsequent plan is based on the date of completing the previous plan. For purposes of this paragraph (c)(4), the owner or operator has completed an inflow design flood control system plan when the plan has been placed in the facility's operating record as required by § 257.105(g)(4).

This IDF control system plan or any subsequent IDF control system plan will be assessed and amended whenever there is a change in operation of the CCR impoundment that would substantially affect the

IDF control system plan or when unanticipated events necessitate a revision of the plan either before or after closure activities have commenced.

Professional Engineer Certification

§257.82(c)(5): The owner or operator must obtain a certification from a qualified professional engineer stating that the initial and periodic inflow design flood control system plans meet the requirements of this section.

I certify that the design of the flood control system referenced in this Inflow Design Flood Control System Plan for DP&L's Ash Pond at the Killen Electric Generating Station meets the USEPA's Final CCR Rule requirements of §257.82.

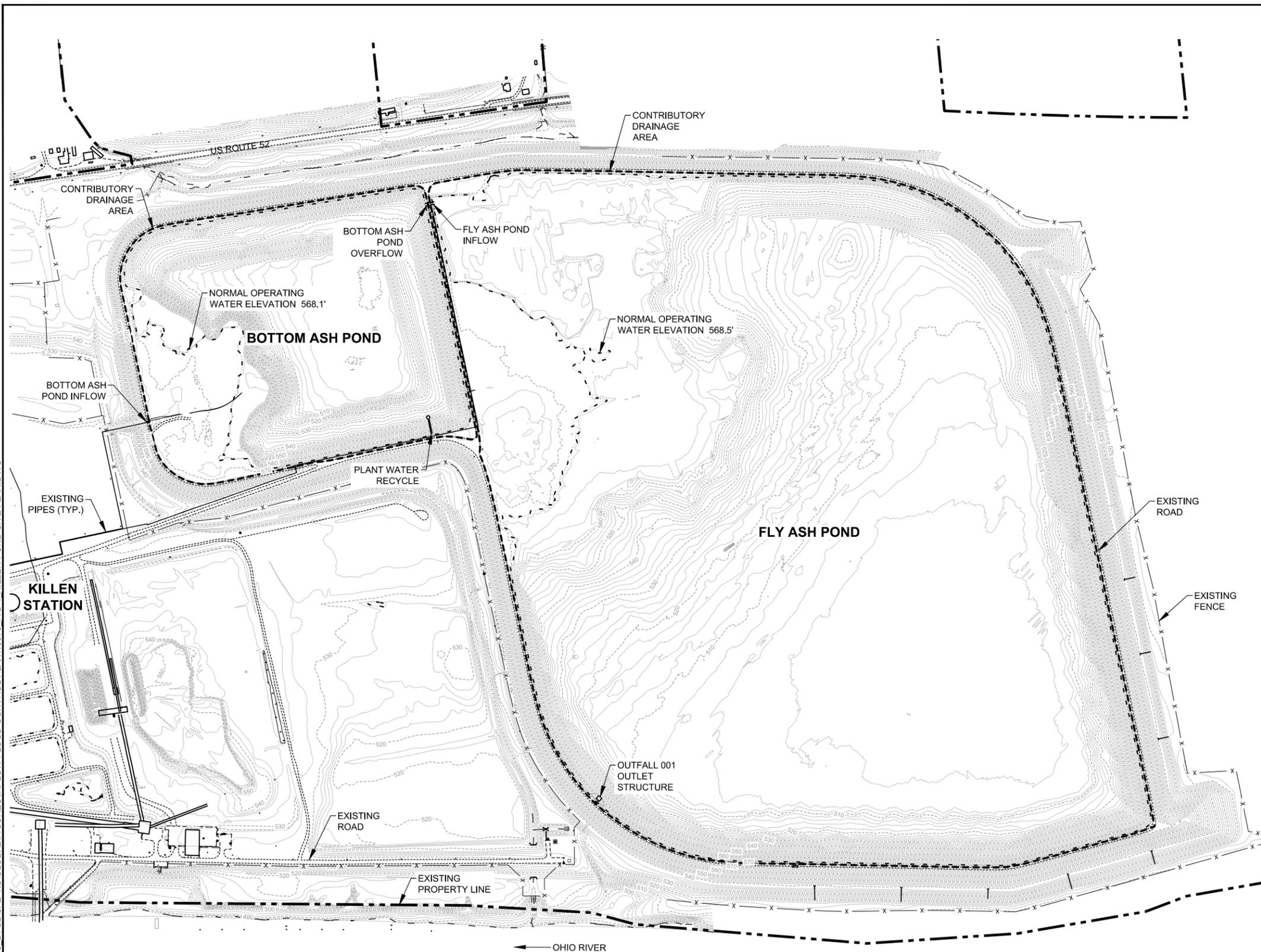
Signed: 
Consulting Engineer

Print Name: Steven F. Putrich
Ohio License No.: 67329
Title: Vice President
Company: Haley & Aldrich, Inc.

Professional Engineer's Seal and date:



LUCAS, ANDY
 \IC\COMMON\PROJECTS\40373_DP&LICAD-KS\GLOBAL\FIGURES\FLOW FLOOD CONTROL PLAN\40373 FIG-1 KILLEN POND SITE PLAN.DWG
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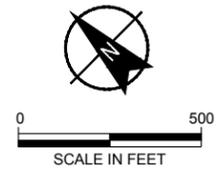


LEGEND

- EXISTING PROPERTY LINE
- - - - - 490 --- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING PIPES
- EXISTING GRAVEL ROAD
- NORMAL OPERATING WATER
- CONTRIBUTORY DRAINAGE AREA
- - - - - TYPICAL OPERATING WATER LEVEL
- x - EXISTING FENCE

NOTES

1. SITE TOPOGRAPHY PREPARED BY R. B. JERGENS, BASED ON ACTUAL FIELD AND HYDROGRAPHIC SURVEY, PERFORMED AUGUST 13, 2014.
- SITE COORDINATES ESTABLISHED USING THE ODOT VRS NETWORK BASED ON THE U.S. STATE PLANE COORDINATE SYSTEM, NAD83(2011), OHIO SOUTH ZONE # 3402, USFT.
 - ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) GEOID12A.



HALEY ALDRICH DAYTON POWER & LIGHT COMPANY
 KILLEN ELECTRIC GENERATING STATION
 MANCHESTER/WRIGHTSVILLE, OHIO

**KILLEN POND
 SITE PLAN**

SCALE: AS SHOWN
 OCTOBER 2016

FIGURE 1

Appendix 1.1



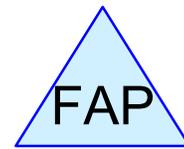
Bottom Ash
Subcatchment



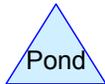
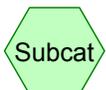
Bottom Ash Pond



Fly Ash Subcatchment



Fly Ash Pond



DPL_KS_Stormwater_Shaw_Est Max Flows_BA weir fixedhead_rev10-09-16

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.815	69	Pasture/grassland/range, Fair, HSG B (BAPS, FAPS)
204.900	98	Water Surface, HSG B (BAPS, FAPS)
233.715	94	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
233.715	HSG B	BAPS, FAPS
0.000	HSG C	
0.000	HSG D	
0.000	Other	
233.715		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	28.815	0.000	0.000	0.000	28.815	Pasture/grassland/range, Fair	BAPS
0.000	204.900	0.000	0.000	0.000	204.900	Water Surface	, FAPS BAPS
0.000	233.715	0.000	0.000	0.000	233.715	TOTAL AREA	, FAPS

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	FAP	515.81	514.60	160.0	0.0076	0.025	36.0	0.0	0.0
2	FAP	558.50	513.50	1.0	45.0000	0.013	48.0	48.0	0.0
3	FAP	558.50	558.50	10.3	0.0000	0.013	42.0	0.0	0.0

DPL_KS_Stormwater_Shaw_Est Max Flows_BOH 24 HR PMP KS 24 PMP Rainfall=27.70"

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Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment BAPS: Bottom Ash Runoff Area=40.179 ac 79.30% Impervious Runoff Depth=26.68"
Tc=5.0 min CN=92 Runoff=342.63 cfs 89.342 af

Subcatchment FAPS: Fly Ash Runoff Area=193.536 ac 89.41% Impervious Runoff Depth=27.08"
Tc=5.0 min CN=95 Runoff=1,652.79 cfs 436.718 af

Pond BAP: Bottom Ash Pond Peak Elev=570.05' Storage=1,161.873 af Inflow=351.07 cfs 122.830 af
Outflow=56.85 cfs 102.636 af

Pond FAP: Fly Ash Pond Peak Elev=569.27' Storage=274,300,965 cf Inflow=1,704.13 cfs 552.012 af
Outflow=175.54 cfs 418.258 af

Total Runoff Area = 233.715 ac Runoff Volume = 526.060 af Average Runoff Depth = 27.01"
12.33% Pervious = 28.815 ac 87.67% Impervious = 204.900 ac

Summary for Subcatchment BAPS: Bottom Ash Subcatchment

Runoff = 342.63 cfs @ 11.95 hrs, Volume= 89.342 af, Depth=26.68"

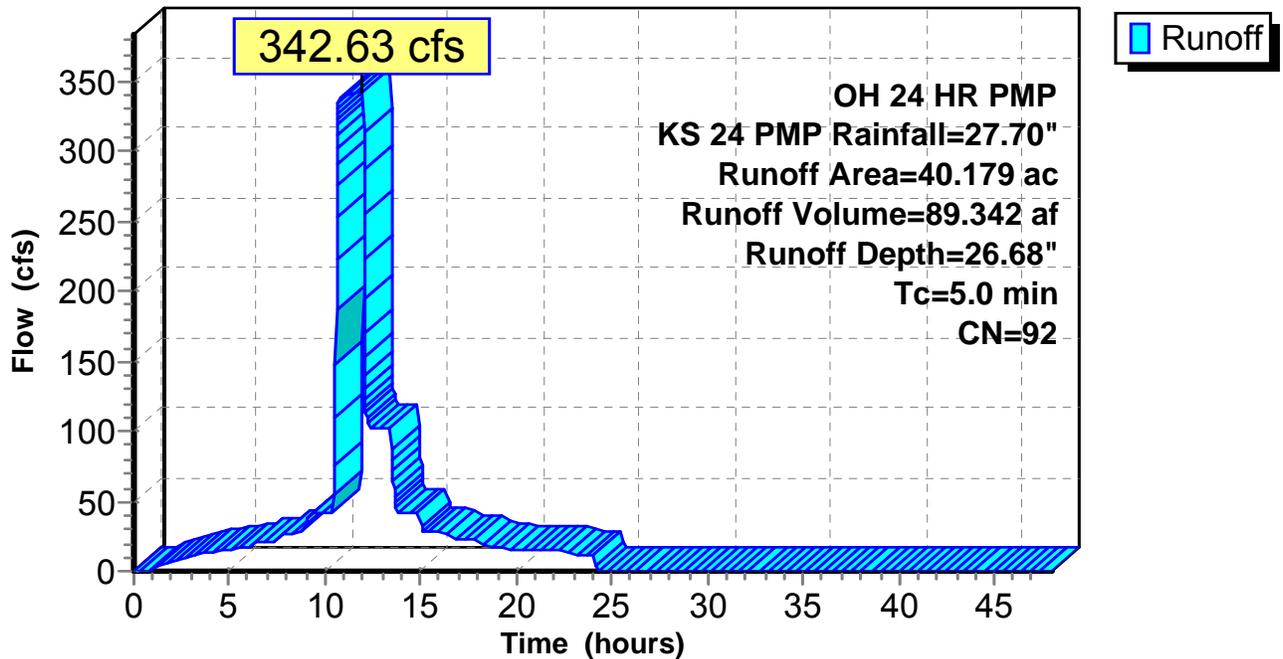
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 OH 24 HR PMP KS 24 PMP Rainfall=27.70"

Area (ac)	CN	Description
31.861	98	Water Surface, HSG B
8.318	69	Pasture/grassland/range, Fair, HSG B
40.179	92	Weighted Average
8.318		20.70% Pervious Area
31.861		79.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, direct rainfall into impoundment
5.0					Direct Entry, Perimeter Dike Runoff
5.0	0				Total

Subcatchment BAPS: Bottom Ash Subcatchment

Hydrograph



Summary for Subcatchment FAPS: Fly Ash Subcatchment

Runoff = 1,652.79 cfs @ 11.95 hrs, Volume= 436.718 af, Depth=27.08"

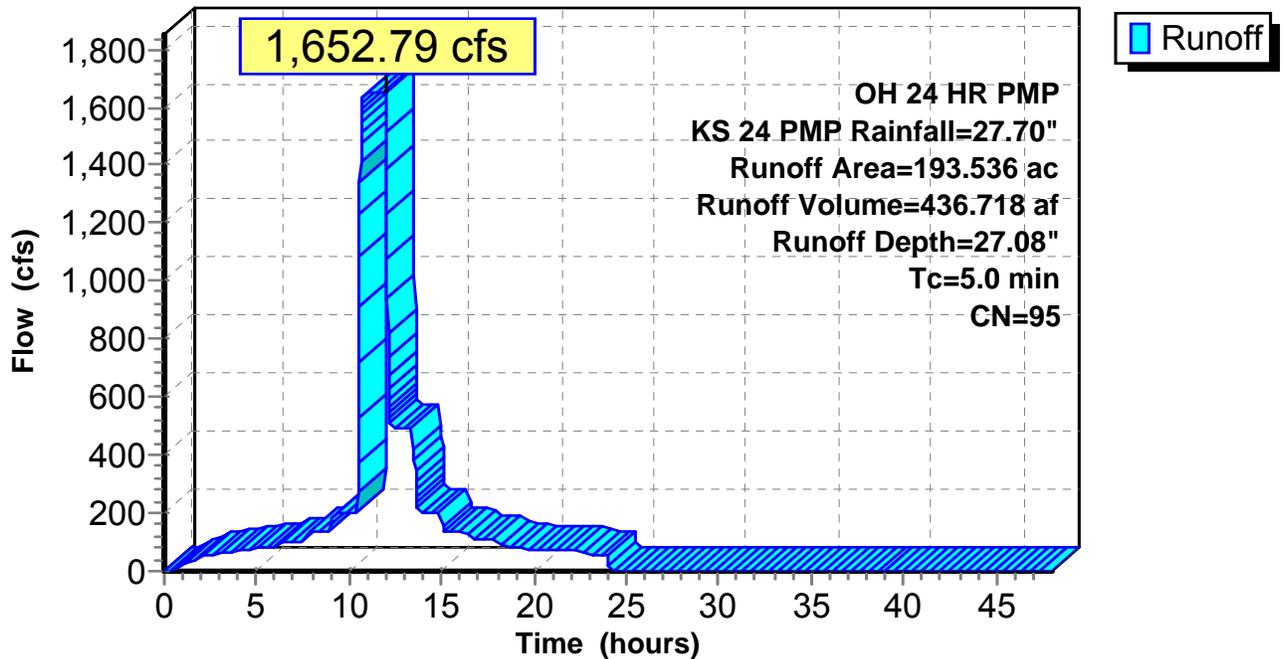
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 OH 24 HR PMP KS 24 PMP Rainfall=27.70"

Area (ac)	CN	Description
173.039	98	Water Surface, HSG B
* 20.497	69	Pasture/grassland/range, Fair, HSG B
193.536	95	Weighted Average
20.497		10.59% Pervious Area
173.039		89.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, Direct rainfall into impoundment
5.0					Direct Entry, Perimeter dike runoff
5.0	0	Total			

Subcatchment FAPS: Fly Ash Subcatchment

Hydrograph



Summary for Pond BAP: Bottom Ash Pond

Weir width and elevation measured by DP&L per correspondence to H&A on 3/28/16.

See drawings 400-12-1083 and 400-12-1092

Baseflow incorporated from Shaw flow diagram. Bottom Ash System (0.245 MGD) + Cooling Tower Basin Blowdown (6.57 MGD) + Collection Basin (2.06 MGD) - Recycle to Fly Ash System and Bottom Ash System (3.42 MGD) = 5.46 MGD.

Starting water level taken as worst-case-scenario elevation equal to weir elevation.

Bottom Ash Pond (BAP) weir discharge set at fixed head = 0.85' to simulate worst case scenario in BAP.

Inflow Area = 40.179 ac, 79.30% Impervious, Inflow Depth > 36.68" for KS 24 PMP event
 Inflow = 351.07 cfs @ 11.95 hrs, Volume= 122.830 af, Incl. 8.44 cfs Base Flow
 Outflow = 56.85 cfs @ 13.62 hrs, Volume= 102.636 af, Atten= 84%, Lag= 99.9 min
 Primary = 56.85 cfs @ 13.62 hrs, Volume= 102.636 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Starting Elev= 568.13' Surf.Area= 31.861 ac Storage= 1,096.007 af
 Peak Elev= 570.05' @ 13.62 hrs Surf.Area= 36.182 ac Storage= 1,161.873 af (65.866 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 533.4 min (1,455.5 - 922.0)

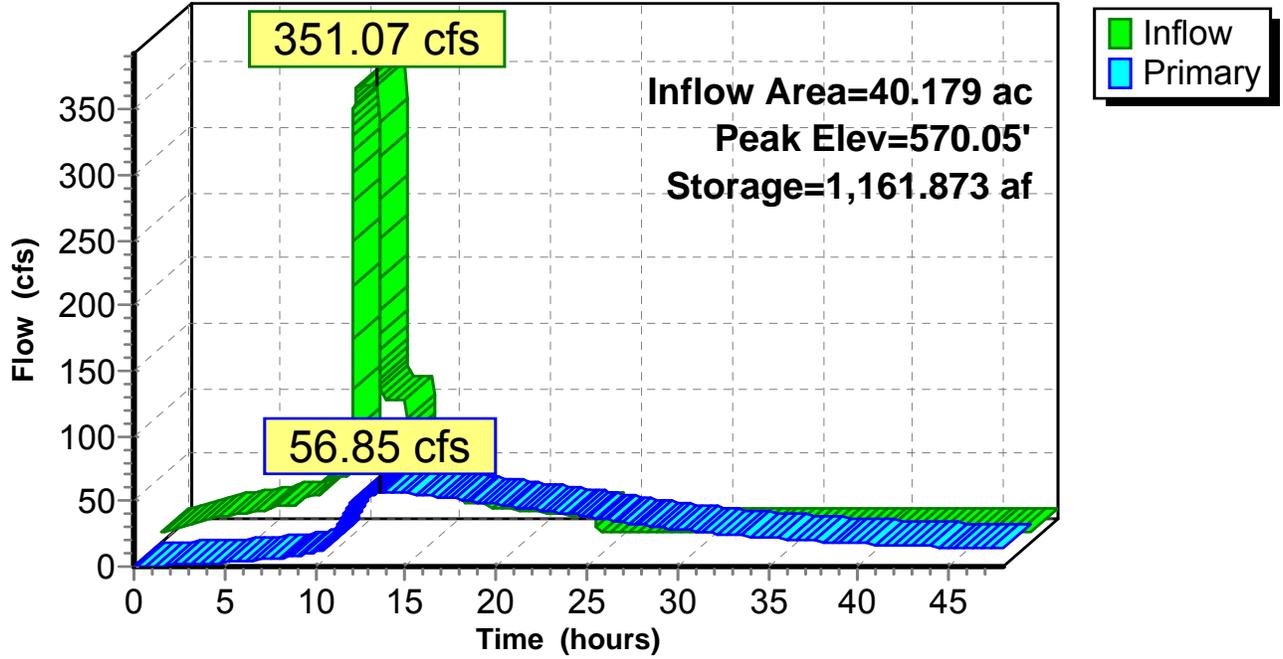
Volume	Invert	Avail.Storage	Storage Description
#1	500.00'	1,239.623 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
500.00	0.313	0.000	0.000
568.13	31.861	1,096.007	1,096.007
569.00	34.460	28.850	1,124.857
570.00	36.082	35.271	1,160.128
571.00	38.147	37.115	1,197.242
572.00	38.835	38.491	1,235.733
572.10	38.948	3.889	1,239.623

Device	Routing	Invert	Outlet Devices
#1	Primary	568.13'	10.0' long x 60.5' breadth Outfall No. 2 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=56.82 cfs @ 13.62 hrs HW=570.05' TW=569.20' (TW follows 0.85' below HW)
 ←1=Outfall No. 2 (Weir Controls 56.82 cfs @ 2.96 fps)

Pond BAP: Bottom Ash Pond

Hydrograph



Summary for Pond FAP: Fly Ash Pond

See drawings 400-12-1082, 400-12-1083, 400-12-2167.

Baseflow taken for Shaw flow diagram. Fly Ash system (2.06 MGD).

Weir length and elevation taken from DP&L phone call and email correspondence on 3/28/16.

Starting water level taken as worst-case-scenario elevation equal to weir elevation.

[79] Warning: Submerged Pond BAP Primary device # 1 by 1.14'

Inflow Area = 233.715 ac, 87.67% Impervious, Inflow Depth > 28.34" for KS 24 PMP event
 Inflow = 1,704.13 cfs @ 12.00 hrs, Volume= 552.012 af, Incl. 3.19 cfs Base Flow
 Outflow = 175.54 cfs @ 16.58 hrs, Volume= 418.258 af, Atten= 90%, Lag= 274.7 min
 Primary = 175.54 cfs @ 16.58 hrs, Volume= 418.258 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Starting Elev= 567.38' Surf.Area= 7,537,594 sf Storage= 259,692,978 cf
 Peak Elev= 569.27' @ 16.58 hrs Surf.Area= 7,912,420 sf Storage= 274,300,965 cf (14,607,987 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 693.3 min (1,568.0 - 874.7)

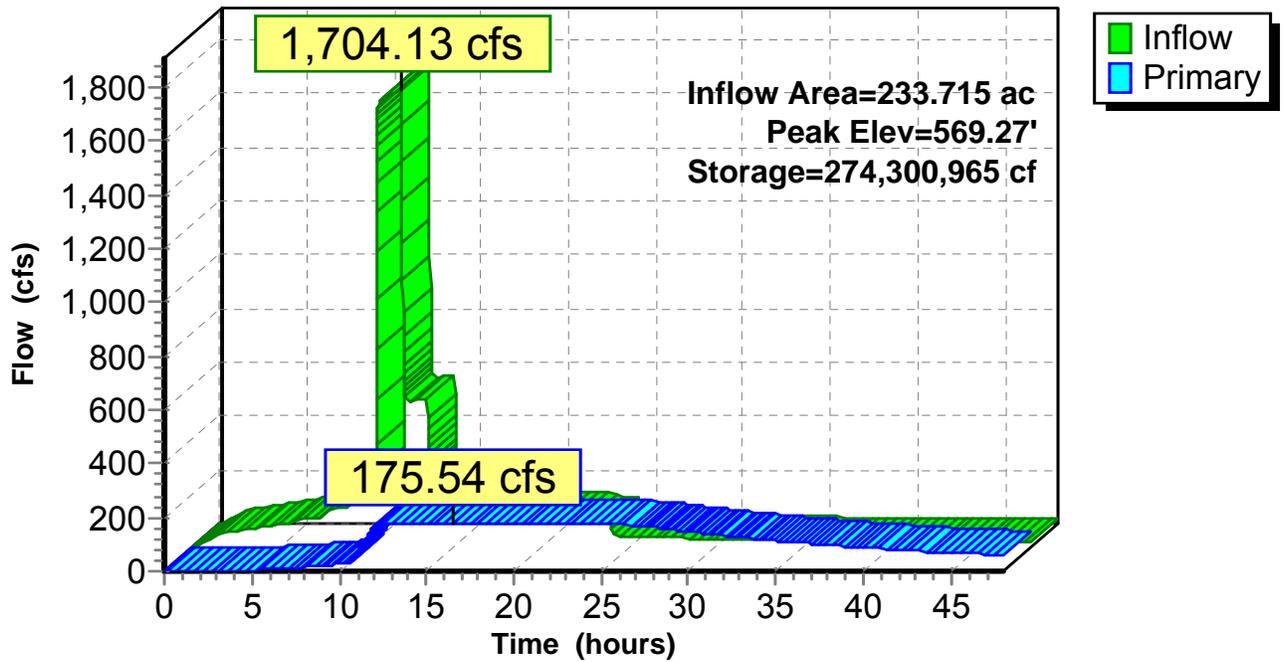
Volume	Invert	Avail.Storage	Storage Description
#1	502.00'	293,955,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
502.00	44	0	0
503.00	521,805	260,925	260,925
567.38	7,537,594	259,432,054	259,692,978
568.00	7,690,458	4,720,696	264,413,674
569.00	7,865,542	7,778,000	272,191,674
570.00	8,040,871	7,953,207	280,144,881
571.00	8,141,582	8,091,227	288,236,107
571.70	8,200,954	5,719,888	293,955,995

Device	Routing	Invert	Outlet Devices
#1	Primary	515.81'	36.0" Round Outfall No. 1 36" pipe L= 160.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 515.81' / 514.60' S= 0.0076 '/' Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 7.07 sf
#2	Device 1	558.50'	48.0" W x 48.0" H Box Outfall No. 1 standpipe L= 1.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 558.50' / 513.50' S= 45.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 16.00 sf
#3	Device 2	558.50'	42.0" Round Outfall No. 1 42" pipe L= 10.3' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 558.50' / 558.50' S= 0.0000 '/' Cc= 0.900 n= 0.013, Flow Area= 9.62 sf
#4	Device 3	567.38'	14.0' long Outfall No. 1 weir X 2.00 2 End Contraction(s)

Primary OutFlow Max=175.54 cfs @ 16.58 hrs HW=569.27' (Free Discharge)
 1=Outfall No. 1 36" pipe (Barrel Controls 175.54 cfs @ 24.83 fps)
 2=Outfall No. 1 standpipe (Passes 175.54 cfs of 310.38 cfs potential flow)
 3=Outfall No. 1 42" pipe (Passes 175.54 cfs of 189.70 cfs potential flow)
 4=Outfall No. 1 weir (Passes 175.54 cfs of 231.00 cfs potential flow)

Pond FAP: Fly Ash Pond

Hydrograph



Appendix 1.2



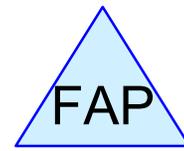
Bottom Ash Subcatchment



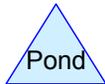
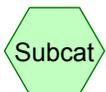
Bottom Ash Pond



Fly Ash Subcatchment



Fly Ash Pond



Routing Diagram for DPL_KS_Stormwater_Shaw_Est Max Flows_BA weir free discharge_rev10-09-16

Prepared by {enter your company name here}, Printed 10/10/2016
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DPL_KS_Stormwater_Shaw_Est Max Flows_BA weir free discharge_rev10-09-16

Prepared by {enter your company name here}

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
28.815	69	Pasture/grassland/range, Fair, HSG B (BAPS, FAPS)
204.900	98	Water Surface, HSG B (BAPS, FAPS)
233.715	94	TOTAL AREA

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
233.715	HSG B	BAPS, FAPS
0.000	HSG C	
0.000	HSG D	
0.000	Other	
233.715		TOTAL AREA

DPL_KS_Stormwater_Shaw_Est Max Flows_BA weir free discharge_rev10-09-16

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Printed 10/10/2016

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	28.815	0.000	0.000	0.000	28.815	Pasture/grassland/range, Fair	BAPS
0.000	204.900	0.000	0.000	0.000	204.900	Water Surface	, FAPS BAPS
0.000	233.715	0.000	0.000	0.000	233.715	TOTAL AREA	, FAPS

DPL_KS_Stormwater_Shaw_Est Max Flows_BA weir free discharge_rev10-09-16

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	FAP	515.81	514.60	160.0	0.0076	0.025	36.0	0.0	0.0
2	FAP	558.50	513.50	1.0	45.0000	0.013	48.0	48.0	0.0
3	FAP	558.50	558.50	10.3	0.0000	0.013	42.0	0.0	0.0

Summary for Subcatchment BAPS: Bottom Ash Subcatchment

Runoff = 342.63 cfs @ 11.95 hrs, Volume= 89.342 af, Depth=26.68"

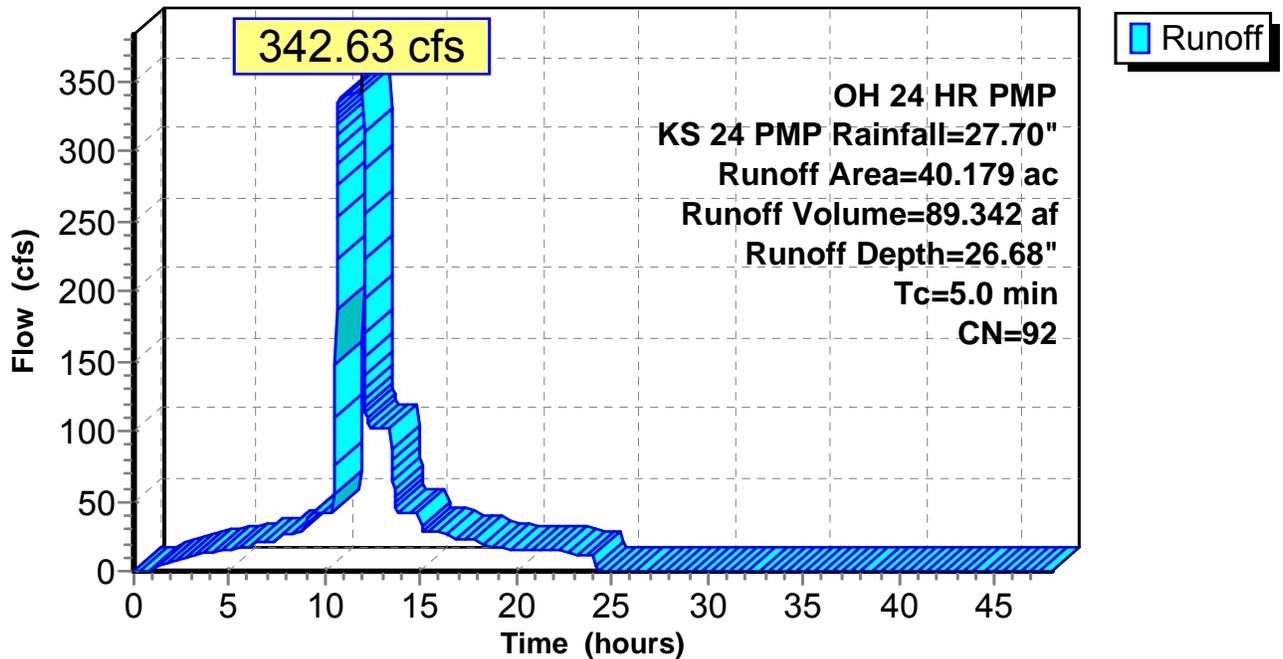
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 OH 24 HR PMP KS 24 PMP Rainfall=27.70"

Area (ac)	CN	Description
31.861	98	Water Surface, HSG B
8.318	69	Pasture/grassland/range, Fair, HSG B
40.179	92	Weighted Average
8.318		20.70% Pervious Area
31.861		79.30% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, direct rainfall into impoundment
5.0					Direct Entry, Perimeter Dike Runoff
5.0	0				Total

Subcatchment BAPS: Bottom Ash Subcatchment

Hydrograph



Summary for Subcatchment FAPS: Fly Ash Subcatchment

Runoff = 1,652.79 cfs @ 11.95 hrs, Volume= 436.718 af, Depth=27.08"

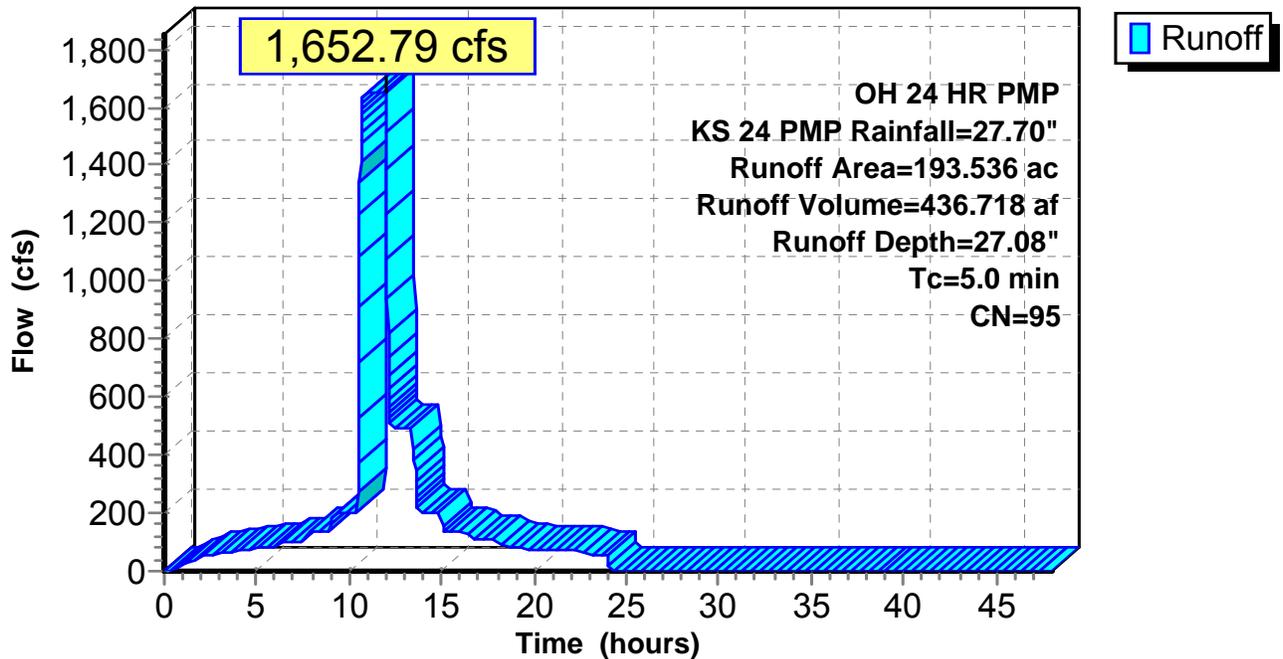
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 OH 24 HR PMP KS 24 PMP Rainfall=27.70"

Area (ac)	CN	Description
173.039	98	Water Surface, HSG B
* 20.497	69	Pasture/grassland/range, Fair, HSG B
193.536	95	Weighted Average
20.497		10.59% Pervious Area
173.039		89.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.0					Direct Entry, Direct rainfall into impoundment
5.0					Direct Entry, Perimeter dike runoff
5.0	0	Total			

Subcatchment FAPS: Fly Ash Subcatchment

Hydrograph



Summary for Pond BAP: Bottom Ash Pond

Weir width and elevation measured by DP&L per correspondence to H&A on 3/28/16.

See drawings 400-12-1083 and 400-12-1092

Baseflow incorporated from Shaw flow diagram. Bottom Ash System (0.245 MGD) + Cooling Tower Basin Blowdown (6.57 MGD) + Collection Basin (2.06 MGD) - Recycle to Fly Ash System and Bottom Ash System (3.42 MGD) = 5.46 MGD.

Starting water level taken as worst-case-scenario elevation equal to weir elevation.

Bottom Ash Pond (BAP) weir set at free discharge to simulate worst case scenario in Fly Ash Pond.

Inflow Area = 40.179 ac, 79.30% Impervious, Inflow Depth > 36.68" for KS 24 PMP event
 Inflow = 351.07 cfs @ 11.95 hrs, Volume= 122.830 af, Incl. 8.44 cfs Base Flow
 Outflow = 67.45 cfs @ 13.59 hrs, Volume= 103.649 af, Atten= 81%, Lag= 98.1 min
 Primary = 67.45 cfs @ 13.59 hrs, Volume= 103.649 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Starting Elev= 568.13' Surf.Area= 31.861 ac Storage= 1,096.007 af
 Peak Elev= 570.00' @ 13.59 hrs Surf.Area= 36.089 ac Storage= 1,160.248 af (64.241 af above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 483.1 min (1,405.1 - 922.0)

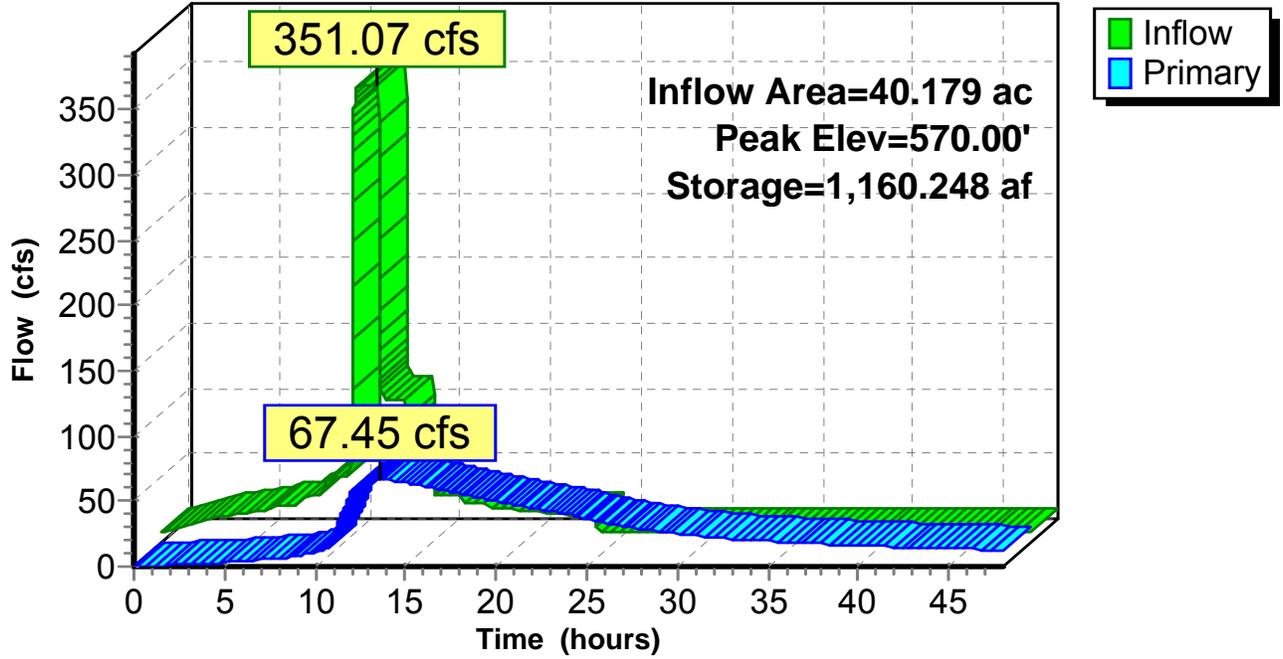
Volume	Invert	Avail.Storage	Storage Description
#1	500.00'	1,239.623 af	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
500.00	0.313	0.000	0.000
568.13	31.861	1,096.007	1,096.007
569.00	34.460	28.850	1,124.857
570.00	36.082	35.271	1,160.128
571.00	38.147	37.115	1,197.242
572.00	38.835	38.491	1,235.733
572.10	38.948	3.889	1,239.623

Device	Routing	Invert	Outlet Devices
#1	Primary	568.13'	10.0' long x 60.5' breadth Outfall No. 2 Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Primary OutFlow Max=67.43 cfs @ 13.59 hrs HW=570.00' (Free Discharge)
 ↑1=Outfall No. 2 (Weir Controls 67.43 cfs @ 3.60 fps)

Pond BAP: Bottom Ash Pond

Hydrograph



Summary for Pond FAP: Fly Ash Pond

See drawings 400-12-1082, 400-12-1083, 400-12-2167.

Baseflow taken for Shaw flow diagram. Fly Ash system (2.06 MGD).

Weir length and elevation taken from DP&L phone call and email correspondence on 3/28/16.

Starting water level taken as worst-case-scenario elevation equal to weir elevation.

[79] Warning: Submerged Pond BAP Primary device # 1 by 1.16'

Inflow Area = 233.715 ac, 87.67% Impervious, Inflow Depth > 28.39" for KS 24 PMP event
 Inflow = 1,712.75 cfs @ 12.00 hrs, Volume= 553.024 af, Incl. 3.19 cfs Base Flow
 Outflow = 175.57 cfs @ 16.61 hrs, Volume= 419.831 af, Atten= 90%, Lag= 276.5 min
 Primary = 175.57 cfs @ 16.61 hrs, Volume= 419.831 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
 Starting Elev= 567.38' Surf.Area= 7,537,594 sf Storage= 259,692,978 cf
 Peak Elev= 569.29' @ 16.61 hrs Surf.Area= 7,915,990 sf Storage= 274,462,105 cf (14,769,127 cf above start)

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
 Center-of-Mass det. time= 702.4 min (1,568.7 - 866.3)

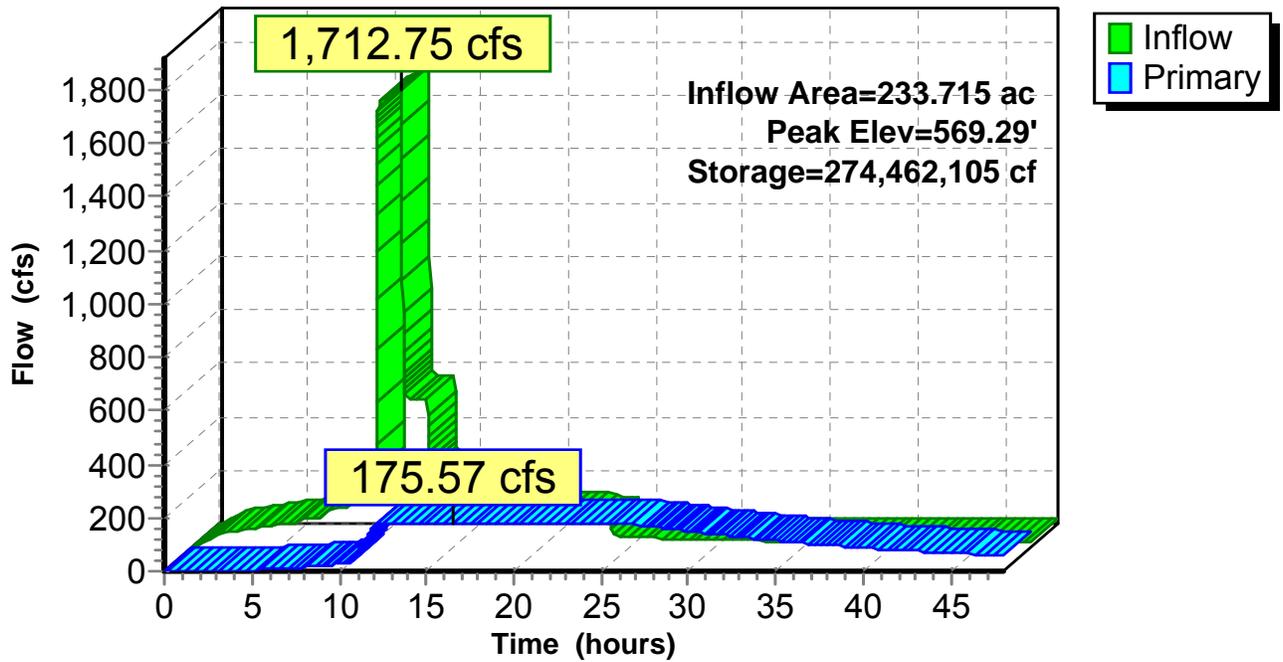
Volume	Invert	Avail.Storage	Storage Description
#1	502.00'	293,955,995 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
502.00	44	0	0
503.00	521,805	260,925	260,925
567.38	7,537,594	259,432,054	259,692,978
568.00	7,690,458	4,720,696	264,413,674
569.00	7,865,542	7,778,000	272,191,674
570.00	8,040,871	7,953,207	280,144,881
571.00	8,141,582	8,091,227	288,236,107
571.70	8,200,954	5,719,888	293,955,995

Device	Routing	Invert	Outlet Devices
#1	Primary	515.81'	36.0" Round Outfall No. 1 36" pipe L= 160.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 515.81' / 514.60' S= 0.0076 1/8" Cc= 0.900 n= 0.025 Rubble masonry, cemented, Flow Area= 7.07 sf
#2	Device 1	558.50'	48.0" W x 48.0" H Box Outfall No. 1 standpipe L= 1.0' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 558.50' / 513.50' S= 45.0000 1/8" Cc= 0.900 n= 0.013, Flow Area= 16.00 sf
#3	Device 2	558.50'	42.0" Round Outfall No. 1 42" pipe L= 10.3' RCP, rounded edge headwall, Ke= 0.100 Inlet / Outlet Invert= 558.50' / 558.50' S= 0.0000 1/8" Cc= 0.900 n= 0.013, Flow Area= 9.62 sf
#4	Device 3	567.38'	14.0' long Outfall No. 1 weir X 2.00 2 End Contraction(s)

Primary OutFlow Max=175.57 cfs @ 16.61 hrs HW=569.29' (Free Discharge)
 1=Outfall No. 1 36" pipe (Barrel Controls 175.57 cfs @ 24.84 fps)
 2=Outfall No. 1 standpipe (Passes 175.57 cfs of 310.74 cfs potential flow)
 3=Outfall No. 1 42" pipe (Passes 175.57 cfs of 189.91 cfs potential flow)
 4=Outfall No. 1 weir (Passes 175.57 cfs of 234.68 cfs potential flow)

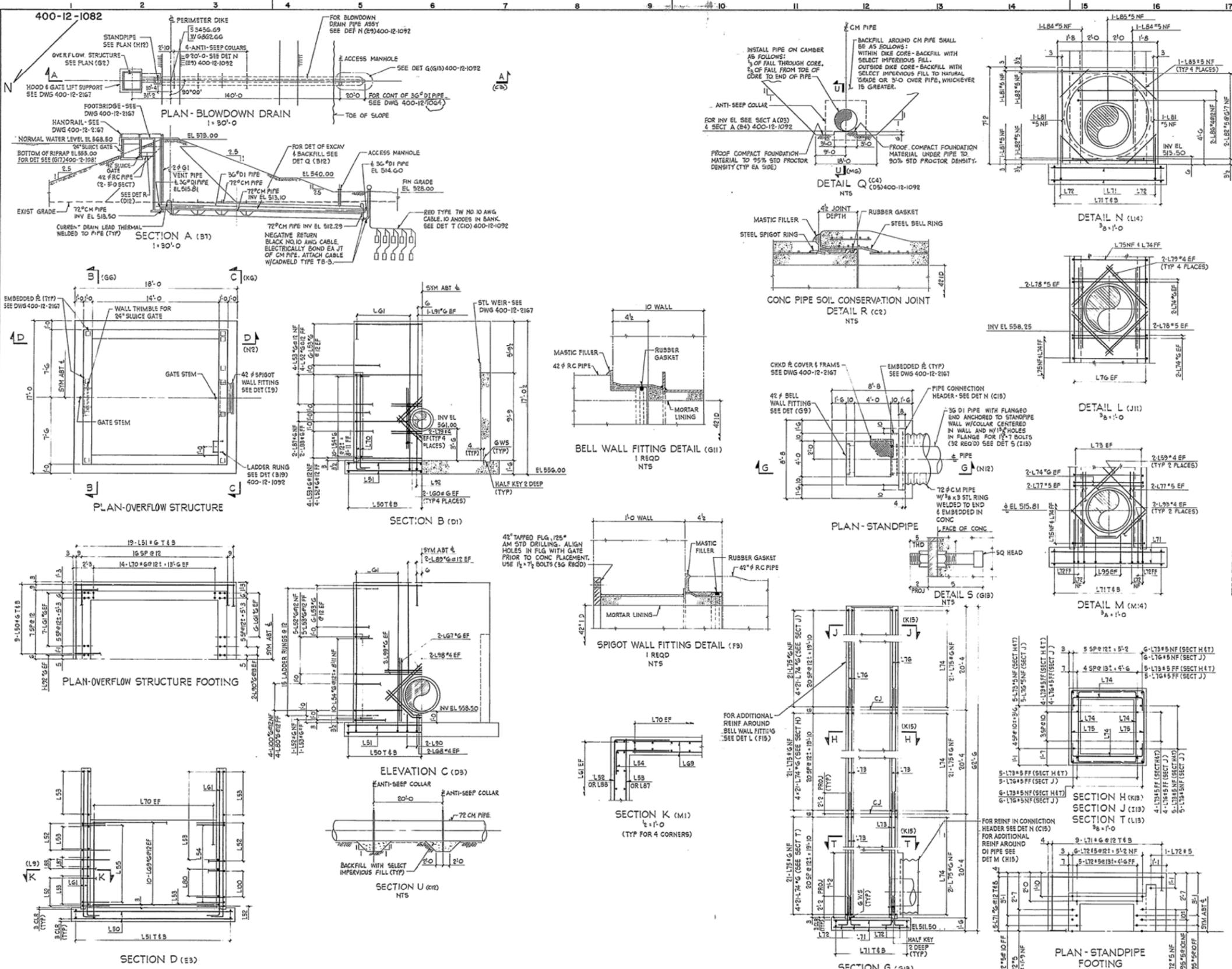
Pond FAP: Fly Ash Pond

Hydrograph



Appendix 2

Appendix 3



QUANTITIES (NET BY FIELD UNLESS NOTED)

CONCRETE CLASS "A" (3500 PSI)	93 CU YD
FOR REINF STEEL SEE BAR BENDING SCHEDULE 400-12-1900-14	
42" BELL WALL FITTING	1 REQD
42" SPIGOT WALL FITTING	1 REQD
42" R/C PIPE	11 LIN FT
6"x8" PVC WATERSTOP	80 LIN FT
72" CM PIPE (12 GAUGE)(3/4 CORRUGATIONS)	167 LIN FT
CM ANTI-SEEP COLLAR	4 REQD
36" DI PIPE	169 LIN FT
24" SLUICE GATE & LIFT	1 REQD
24" WALL THIMBLE	1 REQD
2 1/2" G1 PIPE	60 LIN FT
42" SLUICE GATE 4 LIFT	1 REQD
1 1/2" BOLT (A-307) STEEL W/2 HEX NUTS	32 REQD
1 1/2" BOLT (A-307) STEEL W/HEX NUTS	36 REQD
200 CUTO D	200 CUTO D
SELECT SAND FILTER & BEDDING	85 CU YD
32 LB MAGNESIUM ANODES - AS PER DET T (C10) 400-12-1092	10 REQD
LADDER RUNGS - AS PER DET (S19) 400-12-1092	15 REQD

NOTES

CONCRETE SHALL BE CLASS "A" (3500 PSI) SEE SPECIFICATION EBASCO DAY 3848-GH 5

ALL ANCHOR BOLTS, DRAIN PIPES, PIPE SLEEVES, ELECTRICAL CONDUITS AND EMBEDDED PARTS SHALL BE IN POSITION BEFORE CONCRETE IS PLACED.

CURRENT ACI STANDARDS SHALL GOVERN FOR ALL DESIGN AND CONSTRUCTION UNLESS OTHERWISE NOTED.

FOR SPECIFICATIONS FOR STEEL FOR CONCRETE REINFORCEMENT BARS AND FOR BAR DETAILS SEE BAR BENDING SCHEDULE.

PLACING DIMENSIONS ARE GIVEN TO CENTER OF BARS UNLESS NOTED.

ALL SPLICES IN REINFORCEMENT SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318-71 CODE SECTIONS 7.5 TO 7.12 INCLUSIVE.

ALL BARS SHALL HAVE 2" MINIMUM CONCRETE COVER UNLESS OTHERWISE NOTED.

SHIFT OR BEND BARS TO CLEAR ANCHOR BOLTS, DRAINS, PIPE SLEEVES AND EMBEDDED PARTS.

WATERSTOPS TO BE 6"x8" PVC (UNLESS NOTED) PLACED CONTINUOUSLY. SPLICES TO BE LAPPED AND WELDED.

SLUICE GATES SHALL BE HEAVY DUTY SLUICE GATES, ARMO MODEL 55-10 OR EQUAL, WITH ROUND OPENING, RISING STEM, STANDARD BOTTOM FLANGE BACK AND ADJUSTABLE SIDE WEDGES. PEDESTAL BASE HANDHELD LIFTS SHALL BE ARMO MODEL HFB-18 WITH 1 1/2" DIA STAINLESS STEEL STEM AND BRONZE LIFT NUT OR EQUAL. WALL THIMBLE SHALL BE ARMO ROUND FLANGE ROUND OPENING, 1" O LONG WALL THIMBLE OR EQUAL, WITH STAINLESS STEEL ANCHOR BOLTS. GATES SHALL NOT BE REMOVED FROM FRAMES FOR ANY REASON PRIOR TO INSTALLATION. STEM GUIDES SHALL BE ATTACHED TO WALLS AS PER MANUFACTURER'S RECOMMENDATION. FOR LOCATIONS AND DETAILS OF EMBEDDED PLATES SEE DWG 400-12-2167.

IN SMALL AREAS AROUND PIPES AND STRUCTURES WHERE IT IS NOT POSSIBLE TO COMPACT USING LARGE SCALE MOBILE COMPACTION EQUIPMENT, FILL MATERIAL SHALL BE BROUGHT UP IN LIFTS NOT TO EXCEED 6" INCHES AND COMPACTED BY HAND. SMALL MECHANICAL TAMPERS OR OTHER SUITABLE MEANS TO OBTAIN MINIMUM REQUIRED DENSITY FOR DUCTILE IRON PIPE SPECIFICATION SEE NOTE (L18) 400-12-1092

REFERENCE DRAWINGS

LIST OF DRAWINGS	400-12-1000
BAR BENDING SCHEDULE	400-12-1900-14
ASH HANDLING SYSTEM -	
ASH POND AREA GENERAL PLAN	400-12-1080
ASH HANDLING SYSTEM DIKES, SECT & DET	400-12-1081
ASH HANDLING SYSTEM -	
ASH POND DITCH 18" x 4" PROFILE	400-12-1087
ASH HANDLING SYSTEM -	
MISC STRUCTURES, SECT & DET-M&R-SH 3	400-12-1092
ASH POND MISC STEEL	400-12-2167
NEUTRALIZATION FACILITY	400-12-1064

FOR ADDITIONAL REF DWG SEE DWG 400-12-1080



WORK THIS DWG WITH DWG 400-12-1080 573 C 129:1420-2267

EBASCO REFERENCE NUMBER **DAY3848G 12-1082 R-4**

EBASCO SERVICES INCORPORATED

ASH HANDLING SYSTEM
MISC STRUCTURES, SECT & DET-M&R-SH 1

FOR KILLEN ELECTRIC GENERATING STATION
600,000 KW INSTALLATION UNIT NO. 1
600,000 KW INSTALLATION UNIT NO. 2

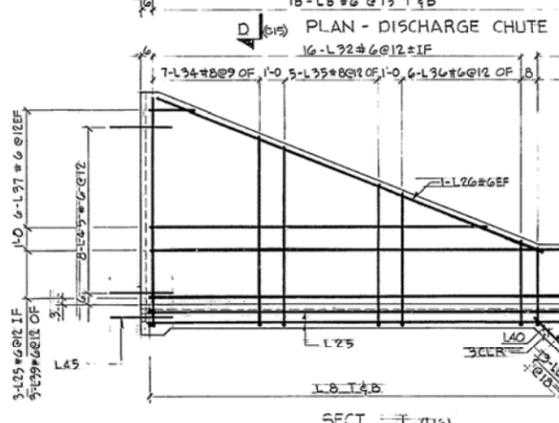
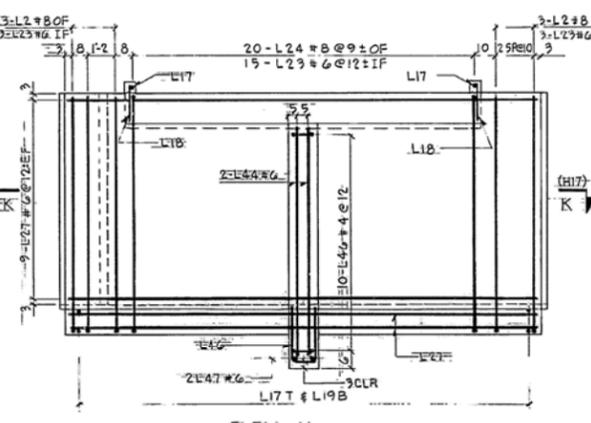
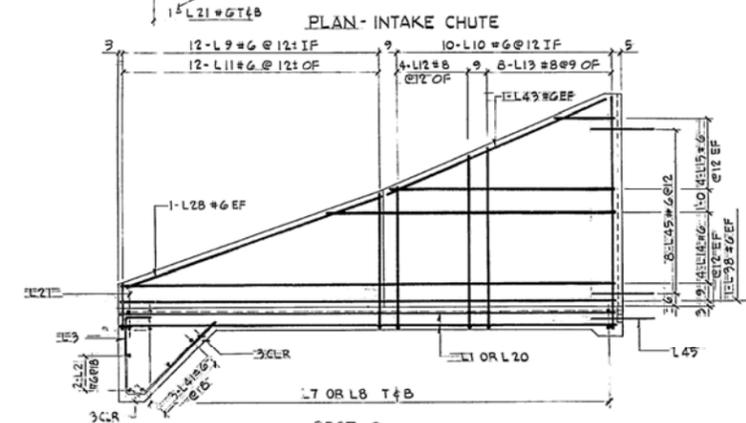
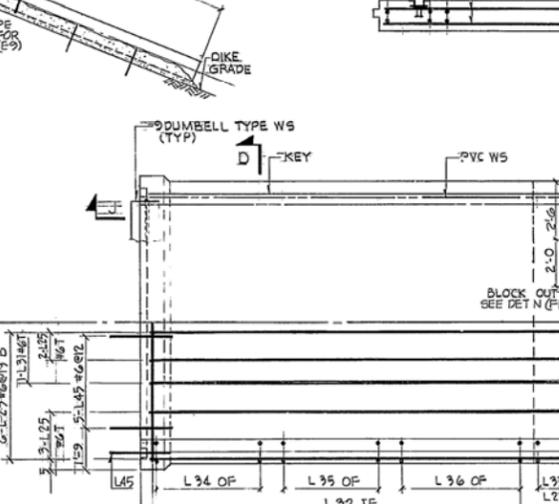
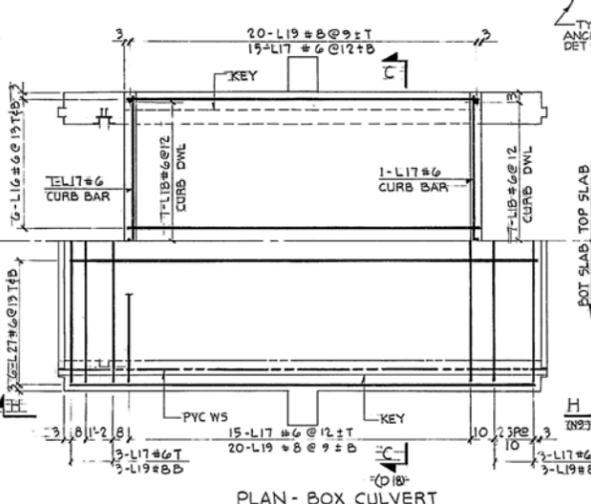
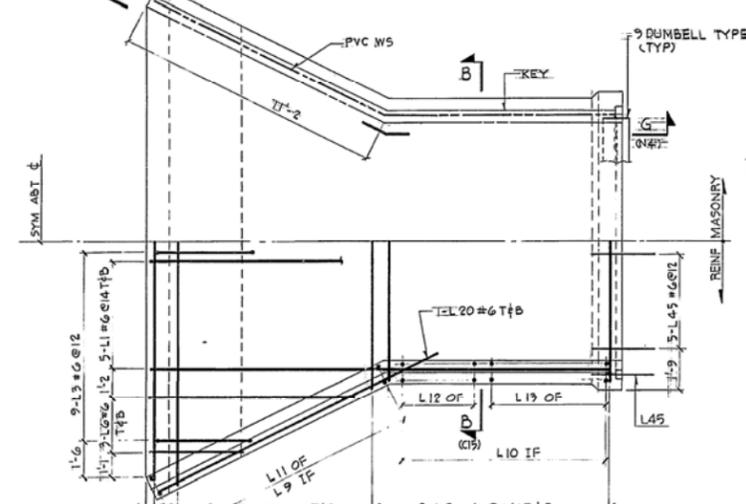
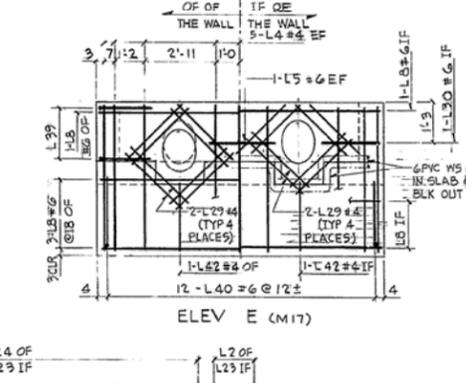
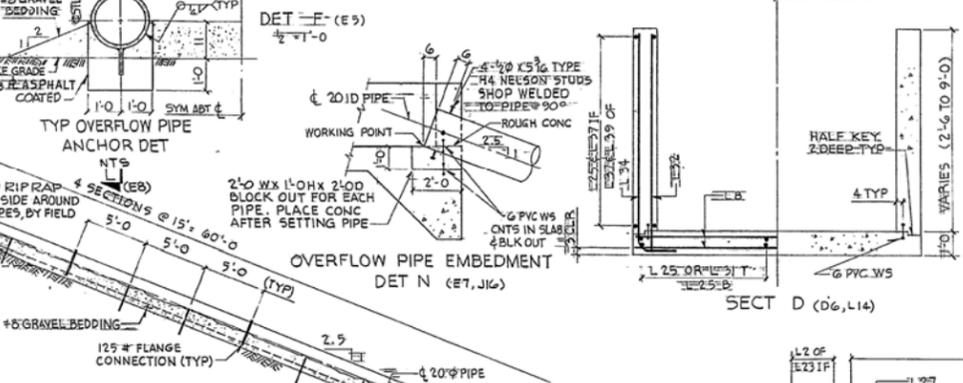
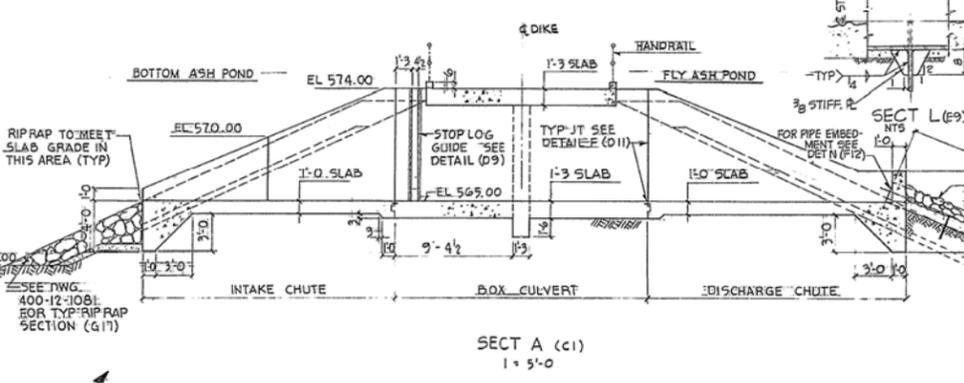
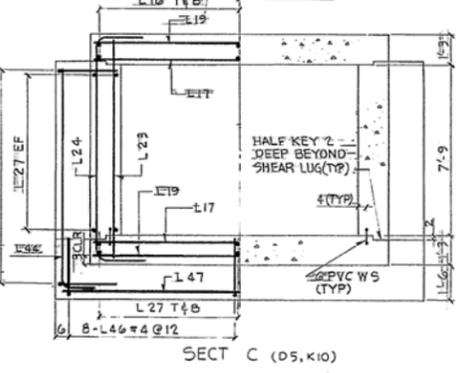
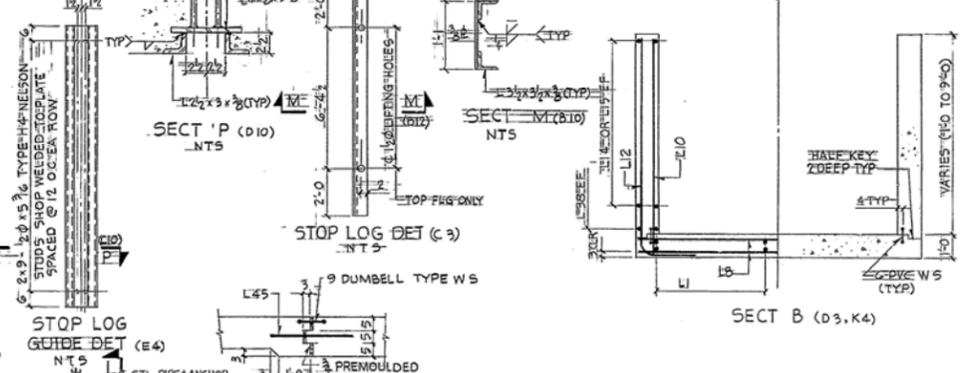
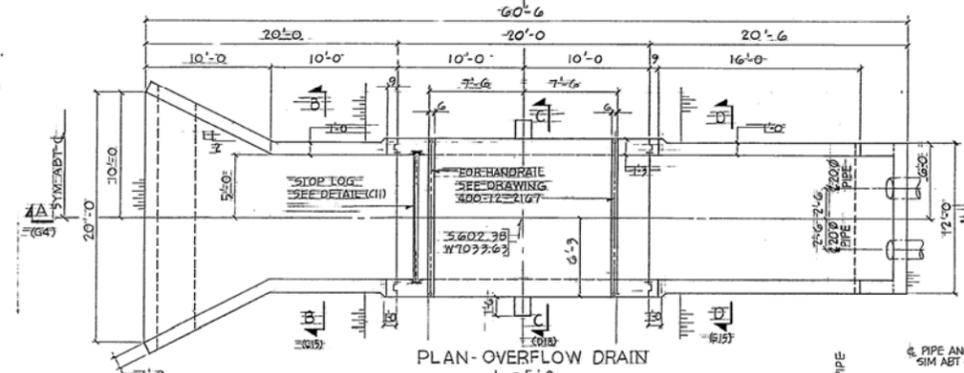
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DRAWN D. NORD/S.GOODHEAD	APPROVED [Signature]
CHECKED A. MICHAEL/T.H.S.	APPROVED [Signature]
ENGINEER [Signature]	APPROVED [Signature]

THE DAYTON POWER AND LIGHT COMPANY
THE CINCINNATI GAS & ELECTRIC CO.

400-12-1082
SHEET OF SHEETS

REVISIONS

1	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
2	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
3	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
4	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
5	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
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8	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
9	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
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11	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
12	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
13	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
14	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
15	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
16	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
17	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
18	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
19	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE
20	REVISED (C) AS PER DET (S19) 400-12-1092 FOR 24" SLUICE GATE



- QUANTITIES (NET BY FIELD UNLESS NOTED)
- CONCRETE CLASS 'A' (3500 PSI) 85 CU YD
 - FOR REINF STEEL SEE BAR BENDING 5CH 400-12-1300-13
 - STL PIPE 20" STD WT W/STUDS/ANCHOR RS (2 REQ) 120 LIN FT
 - 6" PVC WS 139 LIN FT
 - 9" DUMPELL TYPE WS (TYP) 65 LIN FT
 - STOP LOG GUIDE W/STUDS (AS PER DETAIL (C3)) 50 SQ FT
 - STOP LOG (AS PER DET (C1)) 2 REQ
 - DUMPED ROCK RIP RAP (SEE 400-12-1081 Q18) 29 CU YD
 - SELECT SAND FILL (SEE EBASCO SPEC DAY-3848-CH-3) OR APPROVED ALTERNATE 15 CU YD
 - #8 GRAVEL BEDDING AS PER AASHTO M43 OR APPROVED ALTERNATE 3 CU YD

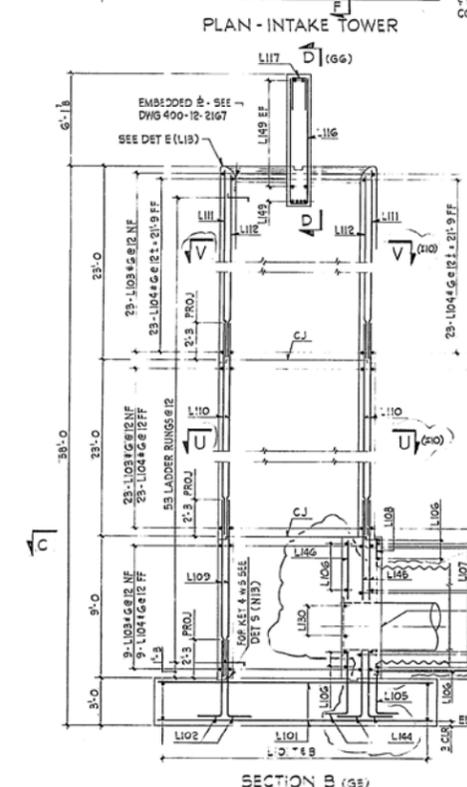
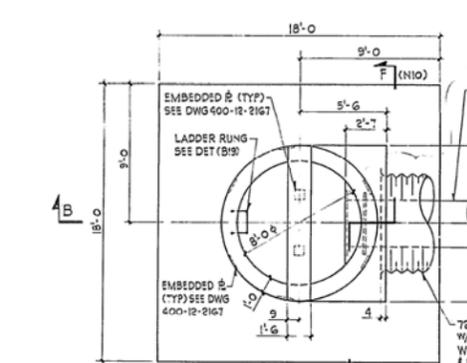
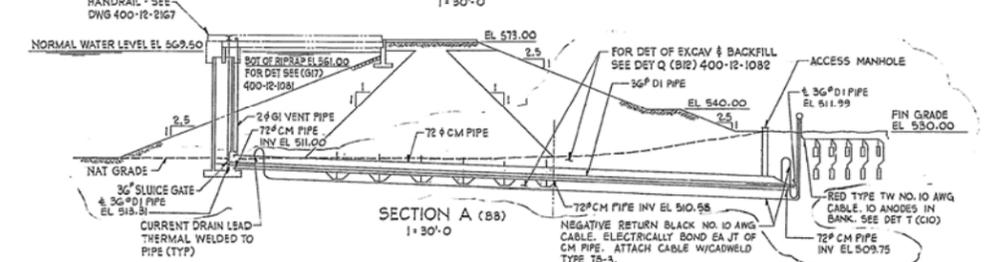
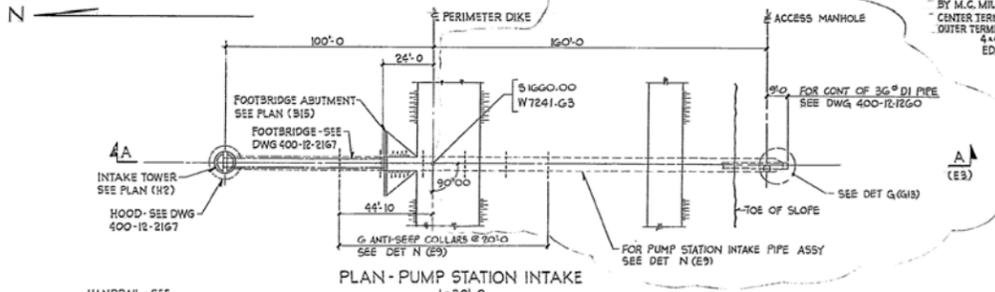
NOTES
FOR GENERAL NOTES SEE DWG 400-12-1082

- REFERENCE DRAWINGS
- LIST OF DRAWINGS 400-12-1000
 - BAR BENDING SCHEDULE 400-12-1300-13
 - ASH HANDLING SYSTEM MISC STRUCTURES SECT & DET M&R SH 1 400-12-1082
 - ASH HANDLING SYSTEM DIKE SECTIONS & DETAILS - SH 1 400-12-1081
 - FOR ADDITIONAL REFERENCE DWG SEE DWG 400-12-1082



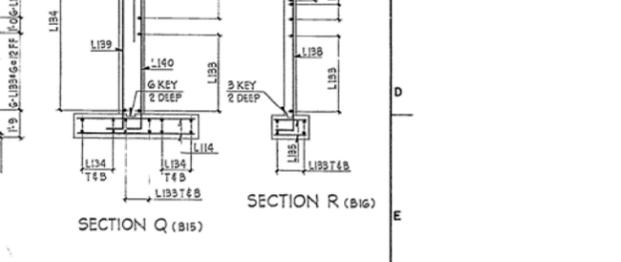
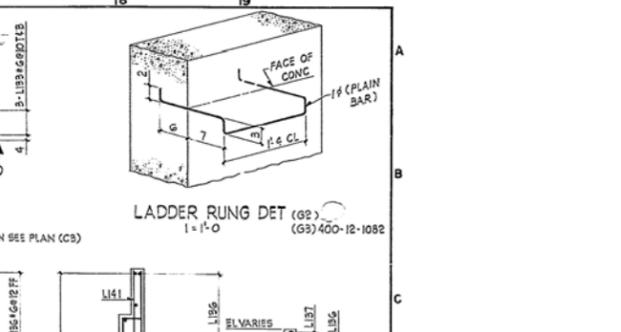
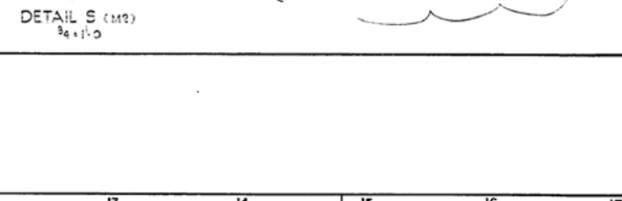
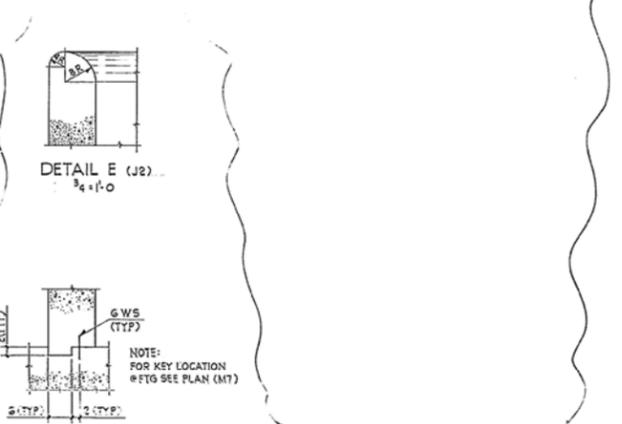
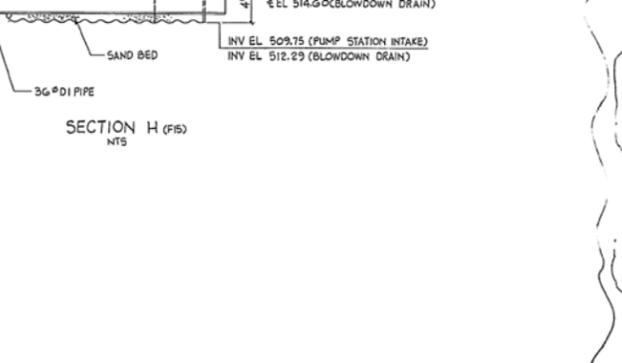
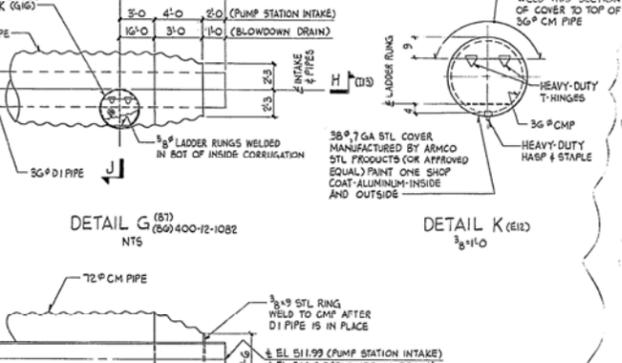
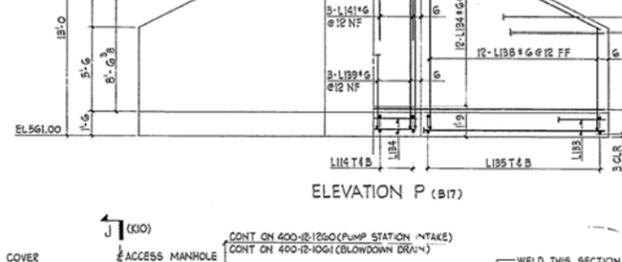
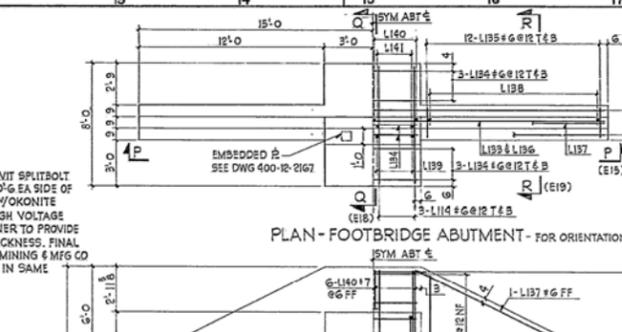
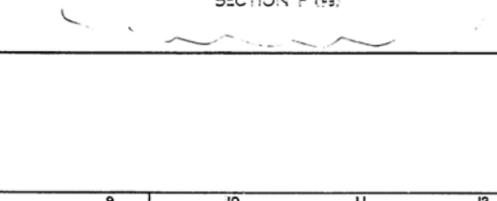
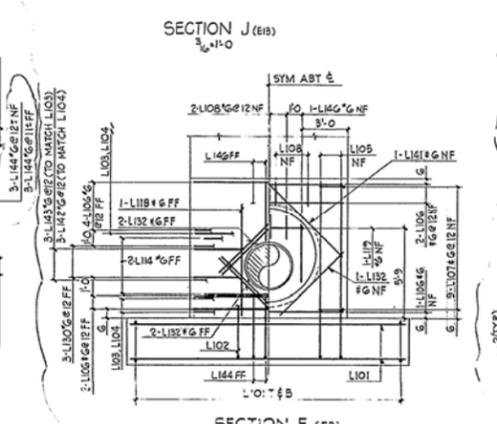
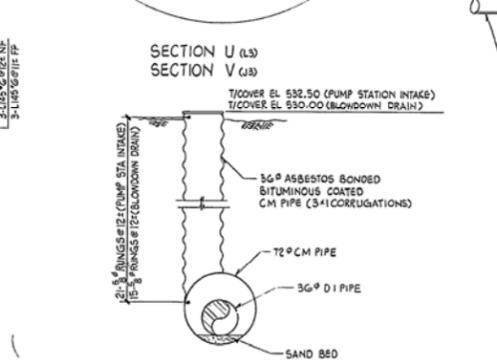
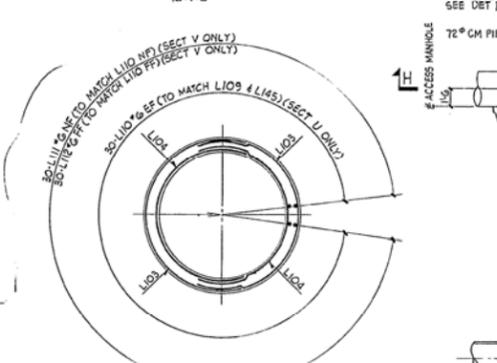
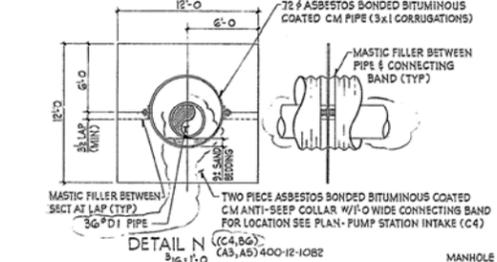
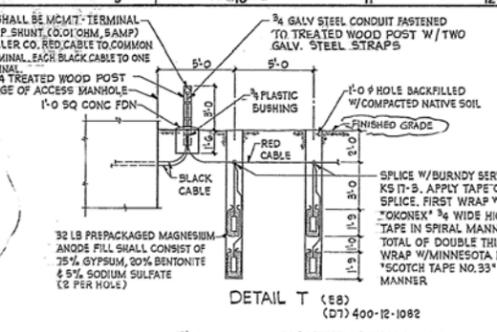
WORK THIS DWG WITH DWG 400-12-1080

EBASCO REFERENCE NUMBER	DAY 3848G	12-1083	R-0
EBASCO SERVICES INCORPORATED			
TITLE ASH HANDLING SYSTEM MISC STRUCTURES SECTIONS & DETAILS M&R SH 2			
FOR KILLEN ELECTRIC GENERATING STATION 608,028 KW REINSTALLATION UNIT NO.2 608,028 KW REINSTALLATION UNIT NO.1			
SCALE: 1"=0' (UNT) FOR CIVIL	FOR MECH		
DRAWN (DATE) BY	7-23-76	APPROVED (DATE) BY	8-29-76
CHECKED (DATE) BY	8-2-76	APPROVED (DATE) BY	8-2-76
ENGINEER (DATE) BY	8-2-76	APPROVED (DATE) BY	8-2-76
THE DAYTON POWER AND LIGHT COMPANY THE CINCINNATI GAS & ELECTRIC CO.			400-12-1083 SHEET 67 OF 100



REVISIONS

NO.	DATE	BY	CHKD.	APP'D.	DESCRIPTION
1	11/15/82	JL	MS	MS	REVISED 25 NTS
2	11/15/82	JL	MS	MS	REVISED 25 NTS
3	11/15/82	JL	MS	MS	REVISED 25 NTS
4	11/15/82	JL	MS	MS	REVISED 25 NTS
5	11/15/82	JL	MS	MS	REVISED 25 NTS
6	11/15/82	JL	MS	MS	REVISED 25 NTS
7	11/15/82	JL	MS	MS	REVISED 25 NTS
8	11/15/82	JL	MS	MS	REVISED 25 NTS
9	11/15/82	JL	MS	MS	REVISED 25 NTS
10	11/15/82	JL	MS	MS	REVISED 25 NTS
11	11/15/82	JL	MS	MS	REVISED 25 NTS
12	11/15/82	JL	MS	MS	REVISED 25 NTS
13	11/15/82	JL	MS	MS	REVISED 25 NTS
14	11/15/82	JL	MS	MS	REVISED 25 NTS
15	11/15/82	JL	MS	MS	REVISED 25 NTS
16	11/15/82	JL	MS	MS	REVISED 25 NTS
17	11/15/82	JL	MS	MS	REVISED 25 NTS
18	11/15/82	JL	MS	MS	REVISED 25 NTS
19	11/15/82	JL	MS	MS	REVISED 25 NTS



QUANTITIES (NET BY FIELD UNLESS NOTED)

CONCRETE CLASS "A" (3500 PSI)	120 CU YD
FOR REIN. STEEL SEE BAR BENDING SCHEDULE 400-12-1000-18	85 LIN FT
6 X 3/8 PVC WATERSTOP	262 LIN FT
36" DI PIPE	6 REOD
72" CM PIPE (12 GAGE) (3-1 CORRUGATIONS)	1 REOD
CM ANTI-SEEP COLLAR AS PER DET N (E9)	60 LIN FT
36" SLUICE GATE & LIFT	1 REOD
LADDER RUNG AS PER DET (B15)	53 REOD
2 1/2" DI PIPE	60 LIN FT
RIPRAP	150 CU YD
SELECT SAND FILTER & BEDDING	75 CU YD
32 LB MAGNESIUM ANODE AS PER DET T (C10)	10 REOD
LADDER RUNG AS PER DET J (K00)	36 REOD
36" STL COVER (7GA) AS PER DET K (G16)	2 REOD
36" CM PIPE (12 GAGE) (3-1 CORRUGATIONS)	17 LIN FT

NOTES

FOR GENERAL NOTES SEE DWG 400-12-1082

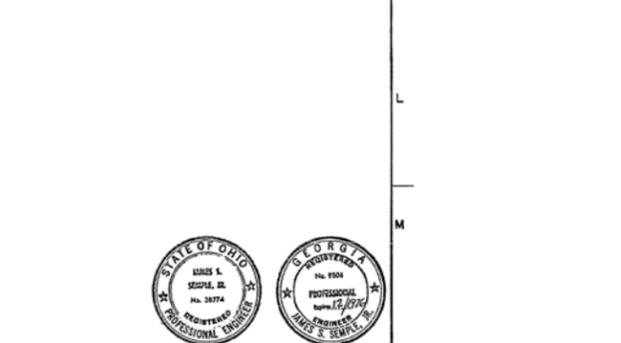
PEDESTAL BASE HANDWHEEL LIFTS SHALL BE ARMCO MODEL HPB-24 WITH 1/2 DIA STAINLESS STEEL STEM AND BRONZE LIFT NUT OR EQUAL

ALL 24" AND 36" DUCTILE IRON PIPE SHALL BE IN ACCORDANCE WITH ANSI A 21.5-76 (AWWA C 151.76) FOR CLASS 50 PIPE HAVING A WALL THICKNESS OF 0.38" FOR 24" AND 0.45" FOR 36" ALL PIPE JOINTS TO BE PUSH ON TYPE IN ACCORDANCE WITH ANSI A 21.11 (AWWA C 111)

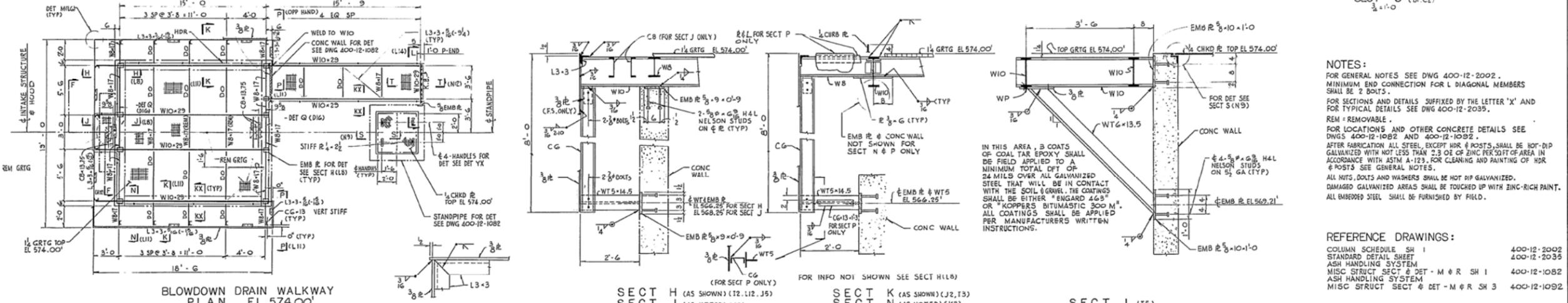
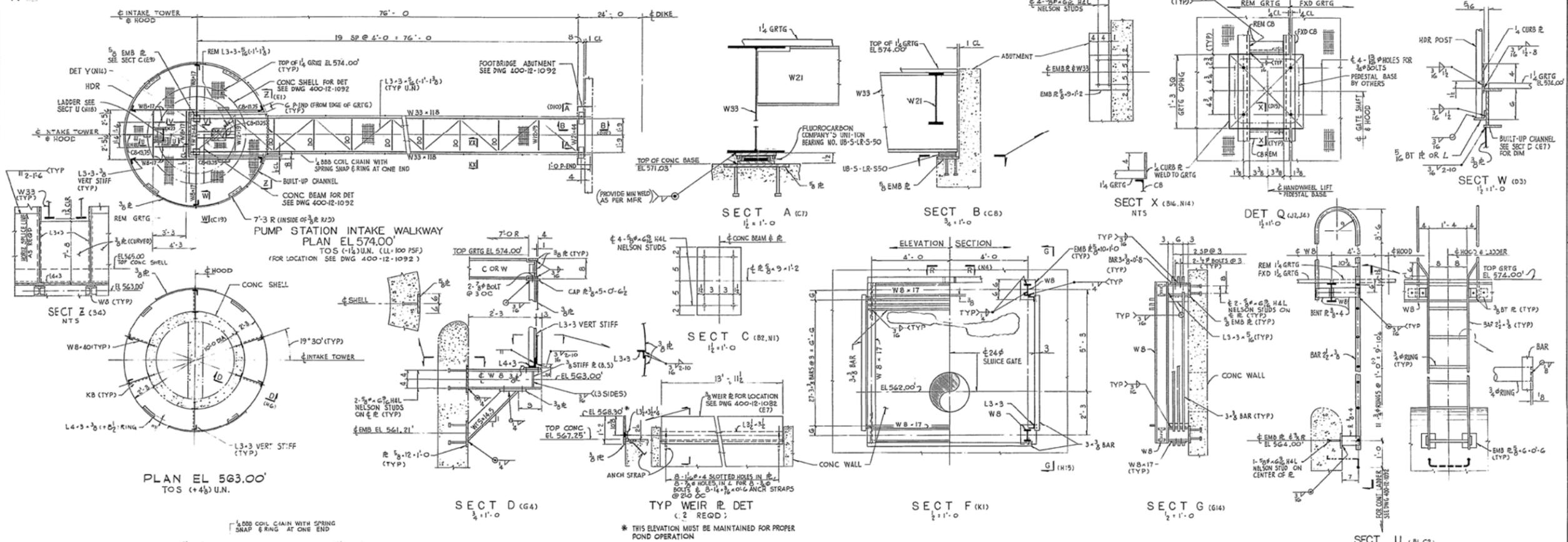
FITTINGS, INCLUDING TEES, REDUCERS, AND BENDS SHALL BE IN ACCORDANCE WITH ANSI A 21.10 WITH JOINTS IN ACCORDANCE WITH SEC 11.2.3 OF ANSI A 21.11 FOR PUSH ON JOINTS.

REFERENCE DRAWINGS

ASH HANDLING SYSTEM - MISC STRUCTURES, SECT 4 DET-M&R-SH 1	400-12-1082
ASH POND MISC STEEL YARD PIPING & GRADING SCHEDULES	400-12-10167
ASH HANDLING SYSTEM - ASH POND RETURN LINE PLAN, SECT 4 DET	400-12-10338
ASH HANDLING SYSTEM - DIKES, SECT 4 DET SH 1	400-12-12600
LIST OF DRAWINGS	400-12-10281
BAR BENDING SCHEDULE	400-12-10000
FOR ADDITIONAL REF DWG SEE DWG 400-12-1082	400-12-1500-16



WORK THIS DWG WITH DWG 400-12-1080, 400-12-1081, 400-12-1082, 400-12-1083, 400-12-1084, 400-12-1085, 400-12-1086, 400-12-1087, 400-12-1088, 400-12-1089, 400-12-1090, 400-12-1091, 400-12-1092, 400-12-1093, 400-12-1094, 400-12-1095, 400-12-1096, 400-12-1097, 400-12-1098, 400-12-1099, 400-12-1100, 400-12-1101, 400-12-1102, 400-12-1103, 400-12-1104, 400-12-1105, 400-12-1106, 400-12-1107, 400-12-1108, 400-12-1109, 400-12-1110, 400-12-1111, 400-12-1112, 400-12-1113, 400-12-1114, 400-12-1115, 400-12-1116, 400-12-1117, 400-12-1118, 400-12-1119, 400-12-1120, 400-12-1121, 400-12-1122, 400-12-1123, 400-12-1124, 400-12-1125, 400-12-1126, 400-12-1127, 400-12-1128, 400-12-1129, 400-12-1130, 400-12-1131, 400-12-1132, 400-12-1133, 400-12-1134, 400-12-1135, 400-12-1136, 400-12-1137, 400-12-1138, 400-12-1139, 400-12-1140, 400-12-1141, 400-12-1142, 400-12-1143, 400-12-1144, 400-12-1145, 400-12-1146, 400-12-1147, 400-12-1148, 400-12-1149, 400-12-1150, 400-12-1151, 400-12-1152, 400-12-1153, 400-12-1154, 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NOTES:
FOR GENERAL NOTES SEE DWG 400-12-2002.
MINIMUM END CONNECTION FOR L DIAGONAL MEMBERS SHALL BE 2 BOLTS.
FOR SECTIONS AND DETAILS SUFFIXED BY THE LETTER 'X' AND FOR TYPICAL DETAILS SEE DWG 400-12-2035.
REM - REMOVABLE.
FOR LOCATIONS AND OTHER CONCRETE DETAILS SEE DWGS 400-12-1082 AND 400-12-1092.
AFTER FABRICATION ALL STEEL EXCEPT HDR & POSTS, SHALL BE HOT-DIP GALVANIZED WITH NOT LESS THAN 2.3 OZ OF ZINC PER SQ FT OF AREA IN ACCORDANCE WITH ASTM A-123. FOR CLEANING AND PAINTING OF HDR & POSTS SEE GENERAL NOTES.
ALL NUTS, BOLTS AND WASHERS SHALL BE HOT-DIP GALVANIZED.
DAMAGED GALVANIZED AREAS SHALL BE TOUCHED UP WITH ZINC-RICH PAINT.
ALL EMBEDDED STEEL SHALL BE FURNISHED BY FIELD.

REFERENCE DRAWINGS:
COLUMN SCHEDULE SH 1 400-12-2002
STANDARD DETAIL SHEET 400-12-2035
ASH HANDLING SYSTEM
MISC STRUCT SECT # DET - M & R SH 1 400-12-1082
ASH HANDLING SYSTEM
MISC STRUCT SECT # DET - M & R SH 3 400-12-1092



EASCO REFERENCE NUMBER DAY3848G 12-2167 R-1	
EASCO SERVICES INCORPORATED	
TITLE ASH POND MISC STEEL	
FOR KILLEN ELECTRIC GENERATING STATION 606,025 KW INSTALLATION UNIT NO. 1 606,025 KW INSTALLATION UNIT NO. 1	
SCALE: AS SHOWN	PROJECT: 12-2167
DRAWN BY: M. MANDEL	APPROVED: J. D. SMITH
CHECKED BY: PATEL	APPROVED: J. D. SMITH
ENGINEER: J. D. SMITH	APPROVED: J. D. SMITH
THE DAYTON POWER AND LIGHT COMPANY THE CINCINNATI GAS & ELECTRIC CO.	
400-12-2167 SHEET OF SHEETS	

THIS DWG IS RELEASED TO YOU FOR FABRICATION OF GOODS.
BY: M.H. GEORGE DATE: 12-4-77

REVISIONS

NO.	DATE	DESCRIPTION
1	12-4-77	ISSUED FOR FABRICATION

Appendix 4



Probable Maximum Precipitation Application Guidelines



August 23, 2013

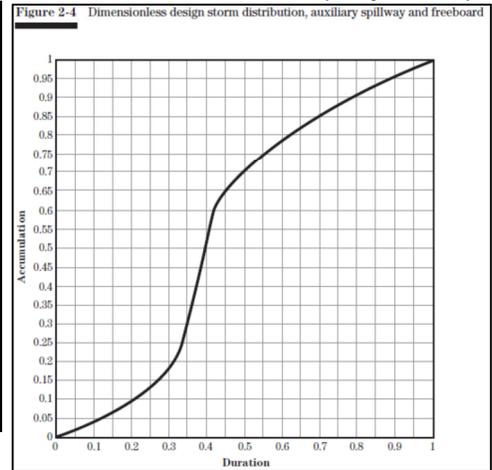
“Probable Maximum Precipitation Study for the State of Ohio” (April 2013, Applied Weather Associates, LLC) is acceptable and appropriate for determining Probable Maximum Precipitation (PMP) values under Ohio Administrative Code Rule 1501:21-13-02. This study shall supersede Hydrometeorological Report No. 51 (HMR51) by the National Weather Service for the purpose of determining design floods for dams within the division’s jurisdiction.

"Probable Maximum Flood" or "PMF" means the flood that may be expected from the most severe combination of critical meteorologic and hydrologic conditions that are reasonably possible in the drainage basin under study. The "PMF" is derived from the PMP and is determined by using a hydrologic model to simulate the drainage basin's response to those critical conditions which produce the most severe flood runoff. **Because each basin is different, it is necessary to simulate multiple flood events using different PMP durations to determine the most severe flood. The most severe flood would then be called the PMF.** The table below provides guidance for application of PMP values for determining the PMF for a given drainage basin.

Drainage Basin Size	Storm Duration	Rainfall Depth and Spatial Extent	Temporal Distribution
<1 mi ²	6 hours	Obtain the rainfall depth from the 1 mi ² PMP chart. The spatial extent of the storm is 1 mi ² .	Dimensionless Design Storm Distribution ^A
	24 hours	Obtain the rainfall depth from the 1 mi ² PMP chart. The spatial extent of the storm is 1 mi ² .	SCS Type II at 1.5-hour time step ^B
1 mi ² - 10 mi ²	6 hours	Determine the rainfall depth by interpolation between 6-hour, 1 mi ² and 6-hour, 10 mi ² PMP rainfall depths based on the drainage basin size. ^C The spatial extent of the storm is equal to the drainage basin size.	Dimensionless Design Storm Distribution ^A
	24 hours	Determine the rainfall depth by interpolation between 24-hour, 1 mi ² and 24-hour, 10 mi ² PMP rainfall depths based on the drainage basin size. ^C The spatial extent of the storm is equal to the drainage basin size.	SCS Type II at 1.5-hour time step ^B
>10 mi ²	24 hours	Use HMR52 (computer program) to generate a 72-hour basin-specific storm (the time step should be set to 1 hour); extract the most severe 24 hours from within the 72-hour storm ^D .	Use HMR52 (computer program) to generate a 72-hour basin-specific storm (the time step should be set to 1 hour); extract the most severe 24 hours from within the 72-hour storm ^D
	72 hours	Use HMR52 (computer program) to generate a 72-hour basin-specific storm (the time step should be set to 1.5 hours) ^D .	Use HMR52 (computer program) to generate a 72-hour basin-specific storm (the time step should be set to 1.5 hours) ^D

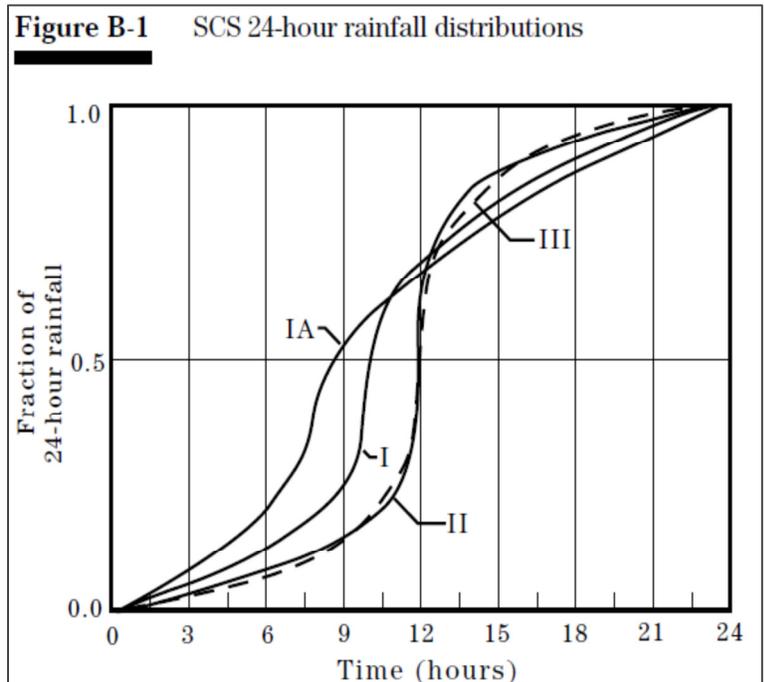
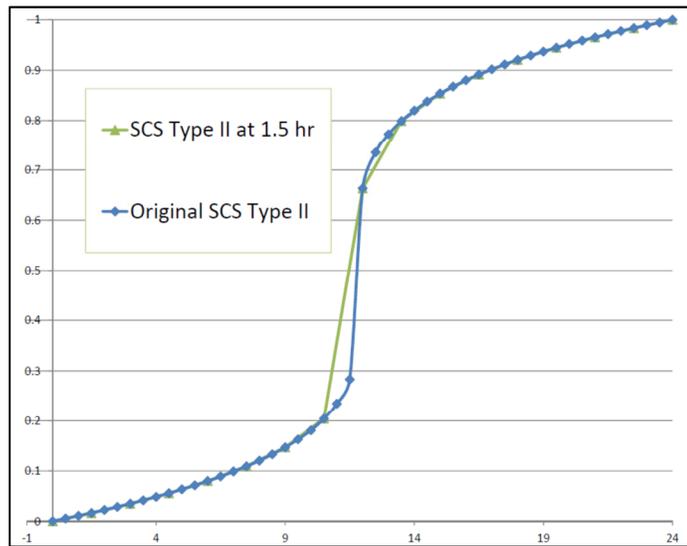
^A The Dimensionless Design Storm Distribution is from NRCS, Technical Release 60 (July 2005).

Hr.	Cum.	Incr	Hr.	Cum.	Incr	Hr.	Cum.	Incr
0	0.000	0	2.2	0.379	0.150	4.2	0.856	0.020
0.2	0.013	0.013	2.4	0.530	0.150	4.4	0.875	0.019
0.4	0.026	0.013	2.6	0.625	0.095	4.6	0.893	0.018
0.6	0.041	0.015	2.8	0.670	0.045	4.8	0.910	0.017
0.8	0.058	0.017	3	0.705	0.035	5	0.927	0.016
1	0.077	0.019	3.2	0.736	0.031	5.2	0.942	0.016
1.2	0.098	0.021	3.4	0.764	0.028	5.4	0.957	0.015
1.4	0.121	0.023	3.6	0.790	0.026	5.6	0.972	0.015
1.6	0.146	0.025	3.8	0.814	0.024	5.8	0.986	0.014
1.8	0.179	0.033	4	0.836	0.022	6	1.000	0.014
2	0.229	0.050						

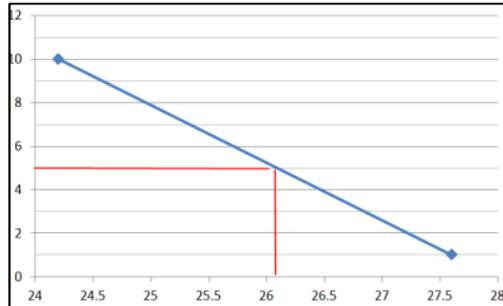


^B The SCS Type II distribution at a 1.5-hour time step is shown below. The time step has been modified from the original distribution to provide peak intensities that are appropriate for Ohio storms. Please note that computer programs that use the original SCS Type II distribution will likely generate a flood peak that is inappropriately high.

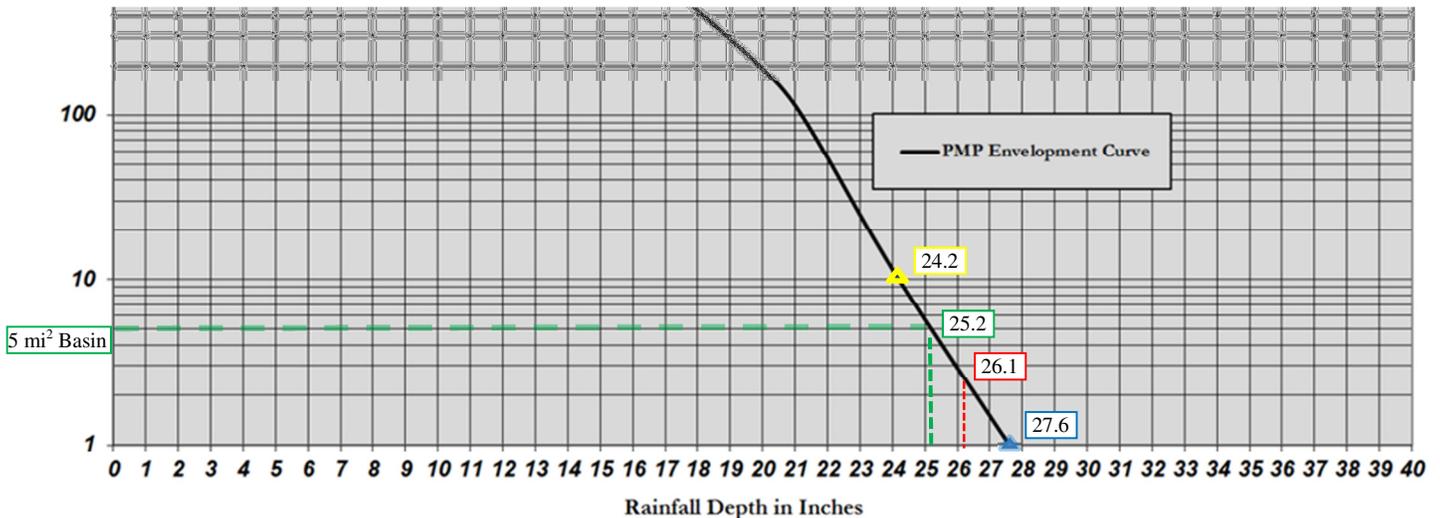
Hr.	Cum.	Incr	Hr.	Cum.	Incr
0	0	0	12	0.663	0.459
1.5	0.016	0.016	13.5	0.799	0.136
3	0.035	0.018	15	0.854	0.055
4.5	0.056	0.021	16.5	0.891	0.038
6	0.080	0.024	18	0.921	0.029
7.5	0.109	0.029	19.5	0.945	0.024
9	0.147	0.038	21	0.965	0.021
10.5	0.204	0.058	22.5	0.984	0.018
12	0.663	0.459	24	1	0.016



^C HMR51 does not provide PMP rainfall depths for areas less than 10 mi². The 2013 PMP Study provides PMP rainfall depths for areas 1.0 mi² and greater. PMP rainfall depths for drainage basins between 1 mi² and 10 mi² generally fit a straight line when the drainage basin/storm area is taken as log10. For the example shown below, the PMP rainfall depth for a 10 mi² basin (storm area) is 24.2 inches, and the PMP rainfall depth for 1 mi² basin is 27.6 inches. For a 5 mi² basin, a straight line interpolation (no log10) would calculate the PMP to be 26.1 inches, which is incorrect. The correct value for the 5 mi² PMP rainfall depth is 25.2 inches.



PMP Rainfall Depth for a 5 mi² basin using linear interpolation (incorrect)



PMP Rainfall Depth for a 5 mi² basin using interpolation with basin size as log10 (correct)

^D Hydrometeorological Report No. 52 (HMR52) describes application of PMP values east of the 105th Meridian. The report is available through the National Weather Service:

<http://www.nws.noaa.gov/oh/hdsc/studies/pmp.html>. The US Army Corps of Engineers developed a computer program for applying this report (the computer program is also called HMR52). The computer program is available at <http://www.dodson-hydro.com/download>.

Comments:

In past analyses, there was confidence that the PMP values from HMR51 and the rainfall distributions were very conservative. The new PMP values and distributions no longer provide an additional safety factor; therefore, it is important to assure that appropriate, justified hydrologic parameters are used. Important items that need to be specifically addressed and documented in a hydrologic study for a dam are listed below:

- More detailed investigation of the time of concentration/lag time
- Justification for unit hydrograph duration
- When assessing infiltration/runoff using curve numbers, specifically address connected impervious, and the "Quality Cover" should be no higher than "fair" unless specifically justified.

Important References:

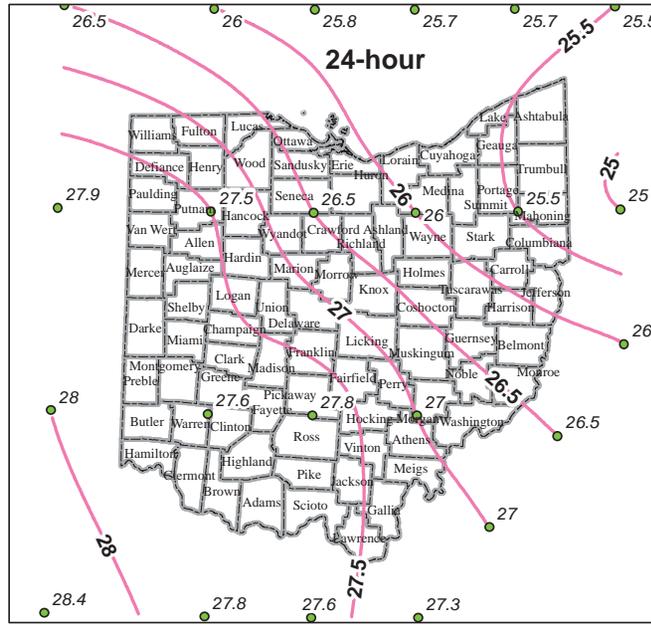
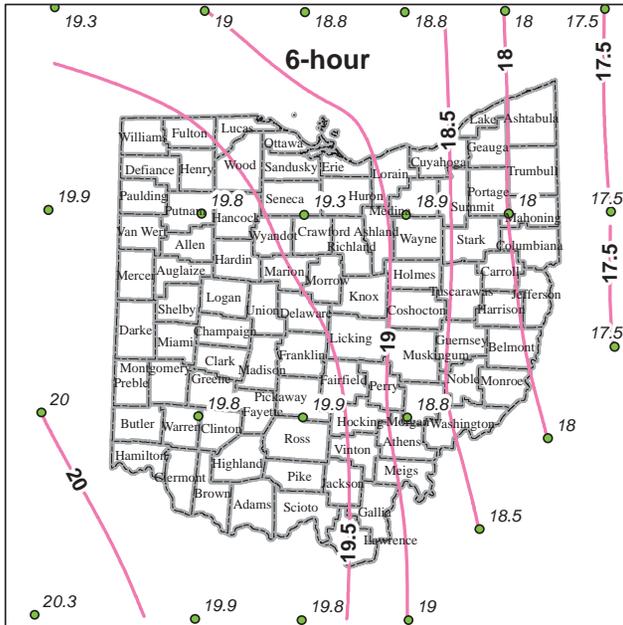
Natural Resources Conservation Service, National Engineering Handbook

Part 628 Dams, Chapter 50 Earth Spillway Design (1997)

Part 630 Hydrology, Chapter 9 Hydrologic Soil-Cover Complexes (2004), Chapter 15 Time of Concentration (2010), Chapter 16 Hydrographs (2007)

Natural Resources Conservation Service, Conservation Engineering Division
Earth Dams and Reservoirs, TR-60, July 2005

US Army Corps of Engineers, Hydrologic Engineering Center
HEC-1, Flood Hydrograph Package, User's Manual (1998)

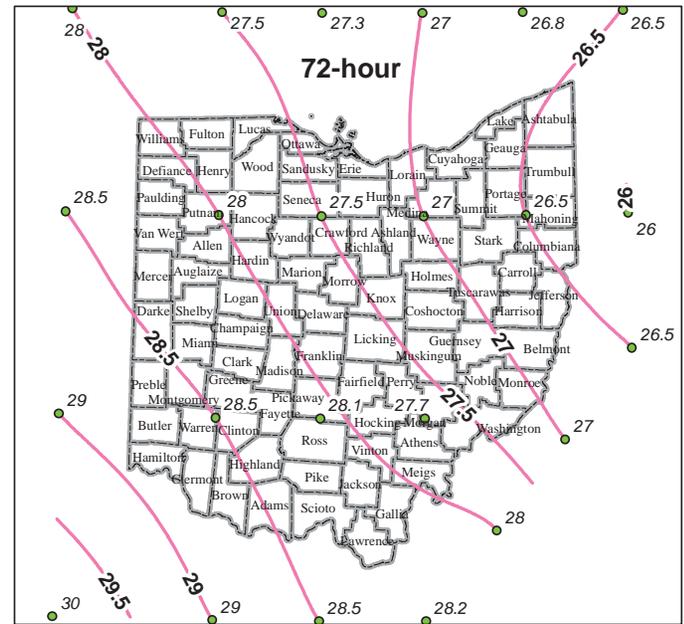
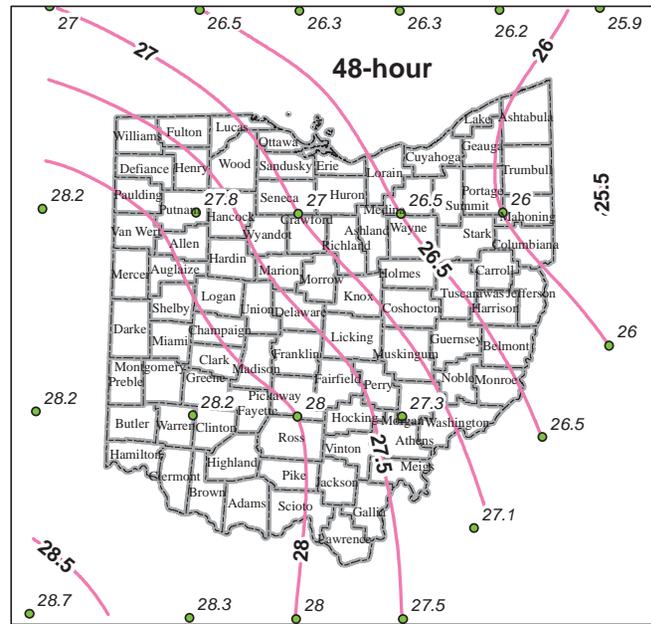
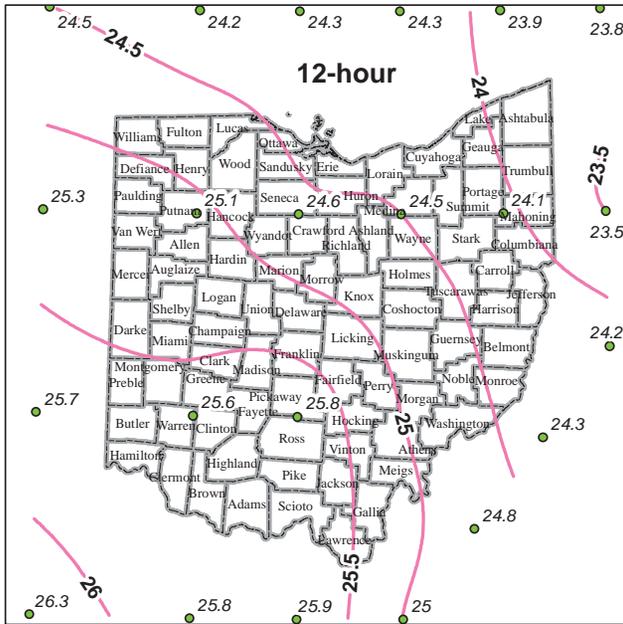


STATE OF OHIO
Department of Natural Resources

1 square mile

All-Season PMP values (inches)

Data obtained from:
 Probable Maximum Precipitation Study
 for the State of Ohio
 Prepared by:
 Applied Weather Associates
 2013



Appendix 5

Application No. OH0060046

Issue Date: September 4, 2014

Effective Date: October 1, 2014

Expiration Date: September 30, 2019

Ohio Environmental Protection Agency
Authorization to Discharge Under the
National Pollutant Discharge Elimination System

In compliance with the provisions of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et. seq., hereinafter referred to as the "Act"), and the Ohio Water Pollution Control Act (Ohio Revised Code Section 6111),

Dayton Power and Light Company
Killen Generating Station

is authorized by the Ohio Environmental Protection Agency, hereinafter referred to as "Ohio EPA," to discharge pollutants including pollutants from storm water associated with industrial activity from the plant complex located at US Route 52, Manchester, Ohio, Adams County and discharging to Ohio River in accordance with the conditions specified in Parts I, II, and III, IV, V and VI of this permit.

This permit is conditioned upon payment of applicable fees as required by Section 3745.11 of the Ohio Revised Code.

This permit and the authorization to discharge shall expire at midnight on the expiration date shown above. In order to receive authorization to discharge beyond the above date of expiration, the permittee shall submit such information and forms as are required by the Ohio EPA no later than 180 days prior to the above date of expiration.

Craig W. Bulter
Director

Total Pages: 55

Part I, A. - INTERIM EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of this permit and lasting 36 months, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 0IB00022001. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Final Outfall - 001 - Initial - 001 - Initial - 001 - Initial

Effluent Characteristic Parameter	Discharge Limitations						Monitoring Requirements			
	Concentration Specified Units		Loading* kg/day				Measuring Frequency	Sampling Type	Monitoring Months	
	Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly			
00045 - Total Precipitation - Inches	-	-	-	-	-	-	-	1/Day	24hr Total	All
00400 - pH - S.U.	9.0	6.5	-	-	-	-	-	1/Week	Grab	All
00530 - Total Suspended Solids - mg/l	41.1	-	-	12.3	2333	-	698	1/Week	Grab	All
00550 - Oil and Grease, Total - mg/l	8.2	-	-	6.2	466	-	353	1/Week	Grab	All
00940 - Chloride, Total - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00945 - Sulfate, (SO4) - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00979 - Cobalt, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00981 - Selenium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00982 - Thallium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00999 - Boron, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01009 - Barium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01074 - Nickel, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01097 - Antimony, Total - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01119 - Copper, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01220 - Chromium, Dissolved Hexavalent - ug/l	31	-	-	-	1.115	-	-	1/Month	Grab	All
50050 - Flow Rate - MGD	-	-	-	-	-	-	-	1/Day	24hr Total Estimate	All
50060 - Chlorine, Total Residual - mg/l	0.038	-	-	-	-	-	-	1/Week	Grab	All
50092 - Mercury, Total (Low Level) - ng/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>						<u>Monitoring Requirements</u>			
	Concentration Specified Units		Loading* kg/day				Measuring Frequency	Sampling Type	Monitoring Months	
Parameter	Maximum	Minimum	Weekly	Monthly	Daily	Weekly				Monthly
70300 - Residue, Total Filterable - mg/l	-	-	-	-	-	-	-	1/Week	Grab	All

Notes for Station Number 0IB00022001:

-Effluent loadings for Total Suspended Solids (TSS) and Oil and Grease (O&G) are based on flow of 15 MGD.

-Effluent loadings for parameters except TSS and O&G are based on average flow of 9.5 MGD.

-There shall be no detectable amounts of the 126 priority pollutants in the cooling tower blowdown water resulting from the use of chemicals added for cooling tower maintenance.

-Total Residual Chlorine - See Part II, Item M.

-Total Low Level Mercury - See Part I.C.1.iv.

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning 36 months after the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 01B00022001. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Final Outfall - 001 - Final

Effluent Characteristic Parameter	Discharge Limitations						Monitoring Requirements			
	Concentration Specified Units		Loading* kg/day			Measuring Frequency	Sampling Type	Monitoring Months		
Maximum	Minimum	Weekly	Monthly	Daily	Weekly				Monthly	
00045 - Total Precipitation - Inches	-	-	-	-	-	-	-	1/Day	24hr Total	All
00400 - pH - S.U.	9.0	6.5	-	-	-	-	-	1/Week	Grab	All
00530 - Total Suspended Solids - mg/l	41.1	-	-	12.3	2333	-	698	1/Week	Grab	All
00550 - Oil and Grease, Total - mg/l	8.2	-	-	6.2	466	-	353	1/Week	Grab	All
00940 - Chloride, Total - mg/l	-	-	-	-	-	-	-	1/Week	Grab	All
00945 - Sulfate, (SO4) - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00979 - Cobalt, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00981 - Selenium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00982 - Thallium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00999 - Boron, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01009 - Barium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01074 - Nickel, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01097 - Antimony, Total - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01119 - Copper, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01220 - Chromium, Dissolved Hexavalent - ug/l	31	-	-	-	1.115	-	-	1/Month	Grab	All
50050 - Flow Rate - MGD	-	-	-	-	-	-	-	1/Day	24hr Total Estimate	All
50060 - Chlorine, Total Residual - mg/l	0.038	-	-	-	-	-	-	1/Week	Grab	All
50092 - Mercury, Total (Low Level) - ng/l	1700	-	-	12.0	0.0966	-	0.000682	1/Quarter	Grab	Quarterly

Effluent Characteristic Parameter	Discharge Limitations							Monitoring Requirements		
	Concentration Specified Units		Loading* kg/day					Measuring Frequency	Sampling Type	Monitoring Months
	Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly			
70300 - Residue, Total Filterable - mg/l	-	-	-	-	-	-	-	1/Week	Grab	All

Notes for Station Number 0IB00022001:

-Effluent loadings for Total Suspended Solids (TSS) and Oil and Grease (O&G) are based on flow of 15 MGD.

-Effluent loadings for parameters except TSS and O&G are based on average flow of 9.5 MGD.

-There shall be no detectable amounts of the 126 priority pollutants in the cooling tower blowdown water resulting from the use of chemicals added for cooling tower maintenance.

-Total Residual Chlorine - See Part II, Item M.

-Total Low Level Mercury - See Part I.C.1.iv.

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

3. During the period beginning on the effective date and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 01B00022601. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Final Outfall - 601 - Final

Effluent Characteristic Parameter	Discharge Limitations							Monitoring Requirements		
	Concentration Specified Units				Loading* kg/day			Measuring Frequency	Sampling Type	Monitoring Months
	Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly			
00056 - Flow Rate - GPD	-	-	-	-	-	-	-	1/Day	24hr Total Estimate	All
00530 - Total Suspended Solids - mg/l	45	-	-	30	-	-	-	1/Month	Grab	All
31616 - Fecal Coliform - #/100 ml	-	-	-	-	-	-	-	1/Month	Grab	All
80082 - CBOD 5 day - mg/l	40	-	-	25	-	-	-	1/Month	Grab	All

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

4. During the period beginning on the effective date and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 0IB00022602. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Final Outfall - 602 - Final

Effluent Characteristic Parameter	Discharge Limitations							Monitoring Requirements		
	Concentration Specified Units				Loading* kg/day			Measuring Frequency	Sampling Type	Monitoring Months
	Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly			
00056 - Flow Rate - GPD	-	-	-	-	-	-	-	1/Month	24hr Total Estimate	All
00400 - pH - S.U.	9.0	6.5	-	-	-	-	-	1/Month	Grab	All
00550 - Oil and Grease, Total - mg/l	-	-	-	-	-	-	-	1/Month	Grab	All
34010 - Toluene - ug/l	-	-	-	-	-	-	-	1/Month	Grab	All
34030 - Benzene - ug/l	-	-	-	-	-	-	-	1/Month	Grab	All
34371 - Ethylbenzene - ug/l	-	-	-	-	-	-	-	1/Month	Grab	All
81551 - Xylene, Total - ug/l	-	-	-	-	-	-	-	1/Month	Grab	All
99988 - Lead, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Month	Grab	All

Notes for Station Number 0IB00022602:

- 24 hr Total Estimated Flow for the day of sampling. Estimated flow should be reasonably accurate. Flows can be estimated by the use of a weir or a flume. Bucket- and - stop watch measurement, integrating timers on pumps, and application of flow versus head curves may also be used for estimating flows.

- The permittee shall submit a separate letter, sent via certified mail, to the Ohio EPA/SEDO/DSW, informing the Ohio EPA whenever any of these pollutants are present, namely Toluene, Benzene and Ethylbenzene in the effluent at concentrations above 10 ug/l for any day. The permittee shall submit a separate letter, sent via certified mail, to the Ohio EPA/SEDO/DSW, informing the Ohio EPA whenever any of these pollutants are present in the effluent at concentrations above 5 ug/l based on taking the arithmetic average (weighted by flow) of all the determinations of daily concentration made during the thirty day period. If monitoring results taken by either the Permittee or the Ohio EPA indicate that any of these pollutants are present in the effluent at concentrations above 10 ug/l for three or more consecutive sampling events, or above 5 ug/l for three or more consecutive thirty day averages, then the effluent limitations of 10 ug/l (Daily Max) and 5 ug/l (30 Day Average) shall thereafter apply.

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

5. During the period beginning on the effective date and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 0IB00022603. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Final Outfall - 603 - Final

Effluent Characteristic Parameter	Discharge Limitations						Monitoring Requirements			
	Concentration Specified Units		Loading* kg/day				Measuring Frequency	Sampling Type	Monitoring Months	
Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly				
00010 - Water Temperature - C	-	-	-	-	-	-	-	1/Month	Grab	All
00095 - Specific Conductance at 25 Degrees C - Umho/cm	-	-	-	-	-	-	-	1/Month	Grab	All
00400 - pH - S.U.	-	-	-	-	-	-	-	1/Month	Grab	All
00410 - Alkalinity, Total (CaCO3) - mg/l	-	-	-	-	-	-	-	1/Month	Grab	All
00515 - Residue, Total Dissolved - mg/l	-	-	-	-	-	-	-	1/Month	Grab	All
00530 - Total Suspended Solids - mg/l	-	-	-	-	-	-	-	1/Month	Grab	All
00940 - Chloride, Total - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00945 - Sulfate, (SO4) - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00951 - Fluoride, Total (F) - mg/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00978 - Arsenic, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00980 - Iron, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00981 - Selenium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
00999 - Boron, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01009 - Barium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01094 - Zinc, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01113 - Cadmium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01114 - Lead, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
01118 - Chromium, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>							<u>Monitoring Requirements</u>		
	Concentration Specified Units		Loading* kg/day					Measuring Frequency	Sampling Type	Monitoring Months
Parameter	Maximum	Minimum	Weekly	Monthly	Daily	Weekly	Monthly			
01119 - Copper, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
11123 - Manganese, Total Recoverable - ug/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly
50050 - Flow Rate - MGD	-	-	-	-	-	-	-	1/Day	24hr Total	All
50092 - Mercury, Total (Low Level) - ng/l	-	-	-	-	-	-	-	1/Quarter	Grab	Quarterly

Notes for Station Number 0IB00022603:

-Total Low Level Mercury - See Part I.C.1.iv.

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

6. These outfalls shall be limited to storm water runoff from sources and areas identified in the NPDES application and the discharge from these outfalls shall be free from industrial or process-related contaminants present due to plant operations with the following exceptions: discharges from fire fighting activities; fire hydrant flushings; potable water sources including waterline flushings; irrigation drainage; lawn watering; routine external building washdown which does not use detergents; pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used; air conditioning condensate; boiler condensate; springs; groundwater; and foundation or footing drains where flows are not contaminated by industrial activity. If any storm water is from industrial activity, the requirements of Parts IV, V and VI of this permit shall apply to those discharges.

- 0IB00022003
- 0IB00022004

Part I, A. - FINAL EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

7. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee is authorized to discharge in accordance with the following limitations and monitoring requirements from outfall 0IB00022605. See Part II, OTHER REQUIREMENTS, for locations of effluent sampling.

Table - Internal Monitoring Station - 605 - Final

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>							<u>Monitoring Requirements</u>		
	Parameter	Concentration Specified Units		Loading* kg/day			Measuring Frequency	Sampling Type	Monitoring Months	
Maximum		Minimum	Weekly	Monthly	Daily	Weekly				Monthly
01042 - Copper, Total (Cu) - ug/l	1000	-	-	1000	-	-	-	When Disch.	Grab	All
01045 - Iron, Total (Fe) - ug/l	1000	-	-	1000	-	-	-	When Disch.	Grab	All

Notes for station 0IB00022605:

* Sampling location must be prior to mixing with other waste streams.

* Flow is intermittent dependent upon boiler cleaning frequency.

Part I, B. - SLUDGE MONITORING REQUIREMENTS

1. Sludge Monitoring. During the period beginning on the effective date of this permit and lasting until the expiration date, the permittee shall monitor the treatment works' final sludge at Station Number 01B00022588, and report to the Ohio EPA in accordance with the following table. See Part II, OTHER REQUIREMENTS, for location of sludge sampling.

Table - Sludge Monitoring - 588 - Final

Effluent Characteristic Parameter	Discharge Limitations						Monitoring Requirements			
	Concentration Specified Units		Loading* kg/day				Measuring Frequency	Sampling Type	Monitoring Months	
	Maximum	Minimum	Weekly	Monthly	Daily	Weekly				Monthly
51129 - Sludge Fee Weight - dry tons	-	-	-	-	-	-	-	1/Year	Total	December

Notes for Station Number 01B00022588:

- Monitoring is required when sewage sludge is removed from the permittee's facility for transfer to another NPDES permit holder. The total sludge weight or sludge volume transferred to another NPDES permit holder for the entire year shall be reported on the December Discharge Monitoring Report (DMR). If no sewage sludge is removed from the Permittee's facility for transfer to another NPDES permit holder during the year, report (AL) in the first column of the first day of the December DMR. A signature is still required.

- Sludge weight is a calculated total for the year. To convert from gallons of liquid sewage sludge to dry tons of sewage sludge: dry tons= gallons x 8.34 (lbs/gallon) x 0.0005 (tons/lb) x decimal fraction total solids.

- See Part II, Items I, J, K, and L.

SCHEDULE OF COMPLIANCE

1. Mercury Variance Application for 0IB00022001

a. A quantification level of 0.5 ng/l shall apply to analytical results reported for mercury. Analytical results are to be reported as described below.

b. Reporting Requirements

All analytical results, even those below the QL shall be reported. Analytical results are to be reported as follows:

- i. Results above the QL: Report the analytical result for mercury.
- ii. Results above the MDL, but below the QL: Report the analytical result, even though it is below the QL.
- iii. Results below the MDL: Analytical results below the method detection limit shall be reported as "below detection" using the reporting code "AA".
- iv. The permittee shall use either EPA Method 1631 or EPA Method 245.7 to monitor the effluent for mercury. Because the quantification levels for these methods are lower than the mercury effluent limits, it is possible to directly evaluate compliance with the limits.

c. Evaluation of Mercury Monitoring Data

i. If, based on an evaluation of mercury data for outfall 0IB00022001 collected using an analytical method specified in Item C.1.b above, the permittee believes that it will be able to consistently comply with the water quality-based effluent limits for mercury included in this NPDES permit, it shall submit a letter to Ohio EPA. The letter shall be submitted not later than 24 months from the effective date of this permit. In the letter, the permittee shall state that it intends to comply with the water quality based effluent limits for mercury included in the NPDES permit. In this case, no modification of the NPDES permit will be necessary to address compliance with mercury effluent limit.

ii. If, based on an evaluation of mercury data for outfall 0IB00022001 collected using an analytical method specified in Item C.1.b, the permittee believes that it will not be able to consistently comply with the water quality-based effluent limits for mercury included in this NPDES permit, it shall submit one of the following to Ohio EPA not later than 24 months from the effective date of this permit:

A) If the permittee believes that it will be able to take actions leading to compliance with the water quality-based effluent limits for mercury included in this NPDES permit, it may submit a request to modify the NPDES permit to include a schedule of compliance and an interim effluent limit for mercury.

B) If the permittee determines that compliance with the water quality-based effluent limits for mercury included in this permit is not possible without the construction of expensive end-of-pipe controls, a variance from the mercury water quality standards is available under paragraph (D)(10) of rule 3745-33-07. If the permittee determines it is eligible, it may submit an application for coverage under this mercury variance. Paragraphs (D)(10)(a) and (b) of rule 3745-33-07 include information on eligibility for coverage and list the information that must be included in the application.

C) If the permittee determines that compliance with the water quality-based effluent limits for mercury included in this permit is not possible, and it is not eligible for coverage under the mercury variance available at paragraph (D)(10) of rule 3745-33-07, it may submit an application for an individual variance from water quality standards. Paragraph (D)(1-3) of rule 3745-33-07 provides information on the applicability and conditions of an individual variance. Paragraph (D)(4) of the rule lists the information that must be included in the application.

iii. Within 28 months of the effective date of this permit, the permit may be modified to include either interim limits and a schedule of compliance or new limits and conditions if a variance is issued.

iv. A guidance document explaining both the mercury variance and the individual variance, instructions for preparing a mercury variance application, and an example of a mercury variance application are available at http://epa.ohio.gov/dsw/permits/technical_assistance.aspx . Copies are available upon request from Ohio EPA, Central Office, Division of Surface Water, NPDES Permit Unit.

v. Letters or applications submitted under this item of the Schedule of Compliance shall be sent to the Ohio EPA, Division of Surface Water, NPDES Permit Unit, P.O. Box 1049, Columbus, OH, 43216-1049.

Part II, OTHER REQUIREMENTS

A. Description of the location of the required sampling stations are as follows:

Sampling Station	Description of Location
0IB00022001. . . .	Discharge from ash sluicing pond. Samples to be collected after the parshall flume, prior to entering the Ohio River. Final effluent (Lat:38 N 40 ' 37 "; Long: 83 W 28 ' 07 ")
0IB00022003. . . .	Storm water runoff from central area of plant. Final effluent (Lat:38 N 41 ' 16"; Long: 83 W 28 ' 56 ")
0IB00022004. . . .	Storm water runoff from northwest area of plant. Final effluent (Lat:38 N 41 ' 38"; Long: 83 W 29 ' 31 ")
0IB00022601. . . .	Discharge from sanitary sewage plant. Samples shall be collected immediately after sanitary treatment plant, prior to mixing with other waste streams.
0IB00022602. . . .	Discharge from phase separate hydrocarbon recovery system used for groundwater treatment. Samples to be collected before discharge to existing fly ash pond.
0IB00022603. . . .	Discharge from FGD system. Samples to be collected before discharge to ash pond.
0IB00022605 boiler cleaning . . . facility, prior . . .	Discharge of Chemical Metal Cleaning Effluent associated with Samples shall be collected at discharge point of associated treatment to mixing with any other waste streams.
0IB00022586	Sewage Sludge disposal by hauling to a sanitary landfill.
0IB00022588 . . .	Sewage Sludge disposal by transfer to another NPDES Permit holder.

B. This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved.

1. Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
2. Controls any pollutant not limited in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

C. All parameters, except flow, need not be monitored on days when the plant is not normally staffed (Saturdays, Sundays, and Holidays). On those days, report "AN" on the monthly report form.

D. In the event that the permittee's operation requires the use of cooling or boiler water treatment additives that are discharged to surface waters of the state, written permission must be obtained from the director of the Ohio EPA prior to use. Discharges of these additives must meet Ohio Water Quality Standards and shall not be harmful or inimical to aquatic life. Reporting and testing requirements to apply for permission to use additives can be obtained from the Ohio EPA, Central Office, Division of Surface Water, Industrial Permits Unit. This information is also available on the DSW website:

http://www.epa.ohio.gov/dsw/policy/policy_index.aspx.

E. Water quality based permit limitations in this permit may be revised based on updated wasteload allocations or use designation rules. This permit may be modified, or revoked and reissued, to include new water quality based effluent limits or other conditions that are necessary to comply with a revised wasteload allocation, or an approved total maximum daily loads (TMDL) report as required under Section 303 (d) of the Clean Water Act.

F. There shall be no detectable amount of any priority pollutant attributable to cooling tower maintenance chemicals in the cooling tower blowdown wastewater.

G. Grab samples shall be collected at such times and locations, and in such fashion, as to be representative of the facility's performance.

H. There shall be no discharge of polychlorinated biphenyl compounds attributable to the permittee's operation.

I. All disposal, use, storage, or treatment of sewage sludge by the Permittee shall comply with Chapter 6111. of the Ohio Revised Code, Chapter 3745-40 of the Ohio Administrative Code, any further requirements specified in this NPDES permit, and any other actions of the Director that pertain to the disposal, use, storage, or treatment of sewage sludge by the Permittee.

Sewage sludge composite samples shall consist of a minimum of six grab samples collected at such times and locations, and in such fashion, as to be representative of the facility's sewage sludge.

J. No later than January 31 of each calendar year, the Permittee shall submit two (2) copies of a report summarizing the sewage sludge disposal, use, storage, or treatment activities of the Permittee during the previous calendar year. One copy of the report shall be sent to the Ohio EPA, Division of Surface Water, P.O. Box 1049, Columbus, Ohio 43216-1049, and one copy of the report shall be sent to the Southeast Ohio EPA District Office. The report shall be submitted on Ohio EPA Form 4229.

K. Each day when sewage sludge is removed from the wastewater treatment plant for use or disposal, a representative sample of sewage sludge shall be collected and analyzed for percent total solids. This value of percent total solids shall be used to calculate the total Sewage Sludge Weight (Discharge Monitoring Report code 70316) and/or total Sewage Sludge Fee Weight (Discharge Monitoring Report code 51129) removed from the treatment plant on that day. The results of the daily monitoring, and the weight calculations, shall be maintained on site for a minimum of five years. The test methodology used shall be from the latest edition, Part 2540 G of Standard Methods for the Examination of Water and Wastewater American Public Health Association, American Water Works Association, and Water Environment Federation. To convert from gallons of liquid sewage sludge to dry tons of sewage sludge: dry tons = gallons x 8.34 (lbs/gallon) x 0.0005 (tons/lb) x decimal fraction total solids.

L. The Permittee is authorized to dispose of sewage sludge in a sanitary landfill in emergency situations only. Station 586 for disposal in a sanitary landfill is included in the authorized list of station(s) in Part II, Item A of this permit, however, effluent tables are not included in Part 1.B. If this station must be used in an emergency situation, the Permittee must report the total amount of sludge taken to a landfill on the Permittee's Annual Sludge Report. The electronic Discharge Monitoring Report (eDMR) should not be used to report under this paragraph.

M. The parameters below have had effluent limitations established that are below the Ohio EPA Quantification Level (OEPA QL) for the approved analytical procedure promulgated at 40 CFR 136. OEPA QLs may be expressed as Practical Quantification Levels (PQL) or Minimum Levels (ML).

Compliance with an effluent limit that is below the OEPA QL is determined in accordance with ORC Section 6111.13 and OAC Rule 3745-33-07(C). For maximum effluent limits, any value reported below the OEPA QL shall be considered in compliance with the effluent limit. For average effluent limits, compliance shall be determined by taking the arithmetic mean of values reported for a specified averaging period, using zero (0) for any value reported at a concentration less than the OEPA QL, and comparing that mean to the appropriate average effluent limit. An arithmetic mean that is less than or equal to the average effluent limit shall be considered in compliance with that limit.

The permittee must utilize the lowest available detection method currently approved under 40 CFR Part 136 for monitoring these parameters.

REPORTING:

All analytical results, even those below the OEPA QL (listed below), shall be reported. Analytical results are to be reported as follows:

1. Results above the QL: Report the analytical result for the parameter of concern.
2. Results above the MDL, but below the QL: Report the analytical result, even though it is below the QL.
3. Results below the MDL: Analytical results below the method detection limit shall be reported as "below detection" using the reporting code "AA".

The following table of quantification levels will be used to determine compliance with NPDES permit limits:

Parameter	PQL	ML
Chlorine, tot. res.	0.050 mg/l	--

This permit may be modified, or, alternatively, revoked and reissued, to include more stringent effluent limits or conditions if information generated as a result of the conditions of this permit indicate the presence of these pollutants in the discharge at levels above the water quality based effluent limit (WQBEL).

4. Records as required by Ohio Administrative Code 3745-7-09 shall be accessible onsite for twenty-four hour inspection, records shall be kept up to date, contain a minimum of the previous three months of data at all times, and be maintained for at least three years.

N. Classification of Wastewater Treatment Works

1. On the effective date of this permit, the classification for the sanitary sewage treatment works regulated under NPDES permit 0IB00022*GD is Class A.

2. Minimum Staffing Requirements

The permittee shall ensure that the operator of record is physically present at the treatment works in accordance with the minimum staffing requirements included in paragraph (C)(1) of rule 3745-7-04 of the Ohio Administrative Code.

O. Section 316(b) Requirements

Under rules which were promulgated July 9, 2004 under Section 316(b) of the federal Clean Water Act (33 U.S.C. section 1326), the permittee was required to collect and/or compile the following information pertaining to the facility's cooling water intake structure(s):

- source water physical data [40 CFR 122.21(r)(2)];
- cooling water intake structure data [40 CFR 122.21(r)(3)];
- cooling water system data [40 CFR 122.21(r)(5)]; and
- rates of impingement and/or entrainment of fish and shellfish at the facility's cooling water intake structure(s) based upon sampling conducted at the facility.

All of this information listed above shall be submitted with the permittee's next NPDES permit renewal application unless federal rules are promulgated which require the submittal of this information at an earlier date.

This permit may be modified to comply with newly promulgated federal rules regarding Clean Water Act Section 316(b).

P. Outfall Signage

The permittee shall maintain a permanent marker on the stream bank at each outfall that is regulated under this NPDES permit. If a marker does not currently exist, the permittee shall install one within 4 months of the effective date of this permit. This includes final outfalls, bypasses, and combined sewer overflows. The marker shall consist at a minimum of the name of the establishment to which the permit was issued, the Ohio EPA permit number, and the outfall number and a contact telephone number. The information shall be printed in letters not less than two inches in height. The marker shall be a minimum of 2 feet by 2 feet and shall be a minimum of 3 feet above ground level. The sign shall not be obstructed such that persons in boats or persons swimming on the river or someone fishing or walking along the shore cannot read the sign. Vegetation shall be periodically removed to keep the sign visible. If the outfall is normally submerged the sign shall indicate that. If the outfall is a combined sewer outfall, the sign shall indicate that untreated human sewage may be discharged from the outfall during wet weather and that harmful bacteria may be present in the water. When an existing marker is replaced or reset, the new marker shall comply with the requirements of this section.

PART III - GENERAL CONDITIONS

1. DEFINITIONS

"Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

"Average weekly" discharge limitation means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week. Each of the following 7-day periods is defined as a calendar week: Week 1 is Days 1 - 7 of the month; Week 2 is Days 8 - 14; Week 3 is Days 15 - 21; and Week 4 is Days 22 - 28. If the "daily discharge" on days 29, 30 or 31 exceeds the "average weekly" discharge limitation, Ohio EPA may elect to evaluate the last 7 days of the month as Week 4 instead of Days 22 - 28. Compliance with fecal coliform bacteria or E coli bacteria limitations shall be determined using the geometric mean.

"Average monthly" discharge limitation means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month. Compliance with fecal coliform bacteria or E coli bacteria limitations shall be determined using the geometric mean.

"85 percent removal" means the arithmetic mean of the values for effluent samples collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period.

"Absolute Limitations" Compliance with limitations having descriptions of "shall not be less than," "not greater than," "shall not exceed," "minimum," or "maximum" shall be determined from any single value for effluent samples and/or measurements collected.

"Net concentration" shall mean the difference between the concentration of a given substance in a sample taken of the discharge and the concentration of the same substances in a sample taken at the intake which supplies water to the given process. For the purpose of this definition, samples that are taken to determine the net concentration shall always be 24-hour composite samples made up of at least six increments taken at regular intervals throughout the plant day.

"Net Load" shall mean the difference between the load of a given substance as calculated from a sample taken of the discharge and the load of the same substance in a sample taken at the intake which supplies water to given process. For purposes of this definition, samples that are taken to determine the net loading shall always be 24-hour composite samples made up of at least six increments taken at regular intervals throughout the plant day.

"MGD" means million gallons per day.

"mg/l" means milligrams per liter.

"ug/l" means micrograms per liter.

"ng/l" means nanograms per liter.

"S.U." means standard pH unit.

"kg/day" means kilograms per day.

"Reporting Code" is a five digit number used by the Ohio EPA in processing reported data. The reporting code does not imply the type of analysis used nor the sampling techniques employed.

"Quarterly (1/Quarter) sampling frequency" means the sampling shall be done in the months of March, June, August, and December, unless specifically identified otherwise in the Effluent Limitations and Monitoring Requirements table.

"Yearly (1/Year) sampling frequency" means the sampling shall be done in the month of September, unless specifically identified otherwise in the effluent limitations and monitoring requirements table.

"Semi-annual (2/Year) sampling frequency" means the sampling shall be done during the months of June and December, unless specifically identified otherwise.

"Winter" shall be considered to be the period from November 1 through April 30.

"Bypass" means the intentional diversion of waste streams from any portion of the treatment facility.

"Summer" shall be considered to be the period from May 1 through October 31.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Sewage sludge" means a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works as defined in section 6111.01 of the Revised Code. "Sewage sludge" includes, but is not limited to, scum or solids removed in primary, secondary, or advanced wastewater treatment processes. "Sewage sludge" does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator, grit and screenings generated during preliminary treatment of domestic sewage in a treatment works, animal manure, residue generated during treatment of animal manure, or domestic septage.

"Sewage sludge weight" means the weight of sewage sludge, in dry U.S. tons, including admixtures such as liming materials or bulking agents. Monitoring frequencies for sewage sludge parameters are based on the reported sludge weight generated in a calendar year (use the most recent calendar year data when the NPDES permit is up for renewal).

"Sewage sludge fee weight" means the weight of sewage sludge, in dry U.S. tons, excluding admixtures such as liming materials or bulking agents. Annual sewage sludge fees, as per section 3745.11(Y) of the Ohio Revised Code, are based on the reported sludge fee weight for the most recent calendar year.

2. GENERAL EFFLUENT LIMITATIONS

The effluent shall, at all times, be free of substances:

- A. In amounts that will settle to form putrescent, or otherwise objectionable, sludge deposits; or that will adversely affect aquatic life or water fowl;
- B. Of an oily, greasy, or surface-active nature, and of other floating debris, in amounts that will form noticeable accumulations of scum, foam or sheen;
- C. In amounts that will alter the natural color or odor of the receiving water to such degree as to create a nuisance;
- D. In amounts that either singly or in combination with other substances are toxic to human, animal, or aquatic life;
- E. In amounts that are conducive to the growth of aquatic weeds or algae to the extent that such growths become inimical to more desirable forms of aquatic life, or create conditions that are unsightly, or constitute a nuisance in any other fashion;
- F. In amounts that will impair designated instream or downstream water uses.

3. FACILITY OPERATION AND QUALITY CONTROL

All wastewater treatment works shall be operated in a manner consistent with the following:

- A. At all times, the permittee shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with conditions of the permit.
- B. The permittee shall effectively monitor the operation and efficiency of treatment and control facilities and the quantity and quality of the treated discharge.
- C. Maintenance of wastewater treatment works that results in degradation of effluent quality shall be scheduled during non-critical water quality periods and shall be carried out in a manner approved by Ohio EPA as specified in the Paragraph in the PART III entitled, "UNAUTHORIZED DISCHARGES".

4. REPORTING

A. Monitoring data required by this permit shall be submitted monthly on Ohio EPA 4500 Discharge Monitoring Report (DMR) forms using the electronic DMR (e-DMR) internet application. e-DMR allows permitted facilities to enter, sign, and submit DMRs on the internet. e-DMR information is found on the following web page:

<http://www.epa.ohio.gov/dsw/edmr/eDMR.aspx>

Alternatively, if you are unable to use e-DMR due to a demonstrated hardship, monitoring data may be submitted on paper DMR forms provided by Ohio EPA. Monitoring data shall be typed on the forms. Please contact Ohio EPA, Division of Surface Water at (614) 644-2050 if you wish to receive paper DMR forms.

B. DMRs shall be signed by a facility's Responsible Official or a Delegated Responsible Official (i.e. a person delegated by the Responsible Official). The Responsible Official of a facility is defined as:

1. For corporations - a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions for the corporation; or the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long-term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. For partnerships - a general partner;
3. For a sole proprietorship - the proprietor; or,
4. For a municipality, state or other public facility - a principal executive officer, a ranking elected official or other duly authorized employee.

For e-DMR, the person signing and submitting the DMR will need to obtain an eBusiness Center account and Personal Identification Number (PIN). Additionally, Delegated Responsible Officials must be delegated by the Responsible Official, either on-line using the eBusiness Center's delegation function, or on a paper delegation form provided by Ohio EPA. For more information on the PIN and delegation processes, please view the following web page:

<http://epa.ohio.gov/dsw/edmr/eDMR.aspx>

C. DMRs submitted using e-DMR shall be submitted to Ohio EPA by the 20th day of the month following the month-of-interest. DMRs submitted on paper must include the original signed DMR form and shall be mailed to Ohio EPA at the following address so that they are received no later than the 15th day of the month following the month-of-interest:

Ohio Environmental Protection Agency
Lazarus Government Center
Division of Surface Water - PCU
P.O. Box 1049
Columbus, Ohio 43216-1049

D. Regardless of the submission method, a paper copy of the submitted Ohio EPA 4500 DMR shall be maintained onsite for records retention purposes (see Section 7. RECORDS RETENTION). For e-DMR users, view and print the DMR from the Submission Report Information page after each original or revised DMR is submitted. For submittals on paper, make a copy of the completed paper form after it is signed by a Responsible Official or a Delegated Responsible Official.

E. If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified in Section 5. SAMPLING AND ANALYTICAL METHODS, the results of such monitoring shall be included in the calculation and reporting of the values required in the reports specified above.

F. Analyses of pollutants not required by this permit, except as noted in the preceding paragraph, shall not be reported to the Ohio EPA, but records shall be retained as specified in Section 7. RECORDS RETENTION.

5. SAMPLING AND ANALYTICAL METHOD

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored flow. Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136, "Test Procedures For The Analysis of Pollutants" unless other test procedures have been specified in this permit. The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements.

6. RECORDING OF RESULTS

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

- A. The exact place and date of sampling; (time of sampling not required on EPA 4500)
- B. The person(s) who performed the sampling or measurements;
- C. The date the analyses were performed on those samples;
- D. The person(s) who performed the analyses;
- E. The analytical techniques or methods used; and
- F. The results of all analyses and measurements.

7. RECORDS RETENTION

The permittee shall retain all of the following records for the wastewater treatment works for a minimum of three years except those records that pertain to sewage sludge disposal, use, storage, or treatment, which shall be kept for a minimum of five years, including:

- A. All sampling and analytical records (including internal sampling data not reported);
- B. All original recordings for any continuous monitoring instrumentation;
- C. All instrumentation, calibration and maintenance records;
- D. All plant operation and maintenance records;
- E. All reports required by this permit; and
- F. Records of all data used to complete the application for this permit for a period of at least three years, or five years for sewage sludge, from the date of the sample, measurement, report, or application.

These periods will be extended during the course of any unresolved litigation, or when requested by the Regional Administrator or the Ohio EPA. The three year period, or five year period for sewage sludge, for retention of records shall start from the date of sample, measurement, report, or application.

8. AVAILABILITY OF REPORTS

Except for data determined by the Ohio EPA to be entitled to confidential status, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the appropriate district offices of the Ohio EPA. Both the Clean Water Act and Section 6111.05 Ohio Revised Code state that effluent data and receiving water quality data shall not be considered confidential.

9. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking, and reissuing, or terminating the permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

10. RIGHT OF ENTRY

The permittee shall allow the Director or an authorized representative upon presentation of credentials and other documents as may be required by law to:

- A. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit.
- B. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit.
- C. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit.
- D. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

11. UNAUTHORIZED DISCHARGES

A. Bypass Not Exceeding Limitations - The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs 11.B and 11.C.

B. Notice

1. Anticipated Bypass - If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

2. Unanticipated Bypass - The permittee shall submit notice of an unanticipated bypass as required in paragraph 12.B (24 hour notice).

C. Prohibition of Bypass

1. Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c. The permittee submitted notices as required under paragraph 11.B.

2. The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 11.C.1.

12. NONCOMPLIANCE NOTIFICATION

A. Exceedance of a Daily Maximum Discharge Limit

1. The permittee shall report noncompliance that is the result of any violation of a daily maximum discharge limit for any of the pollutants listed by the Director in the permit by e-mail or telephone within twenty-four (24) hours of discovery.

The permittee may report to the appropriate Ohio EPA district office e-mail account as follows (this method is preferred):

Southeast District Office: sedo24hournpdes@epa.state.oh.us
Southwest District Office: swdo24hournpdes@epa.state.oh.us
Northwest District Office: nwdo24hournpdes@epa.state.oh.us
Northeast District Office: nedo24hournpdes@epa.state.oh.us
Central District Office: cdo24hournpdes@epa.state.oh.us
Central Office: co24hournpdes@epa.state.oh.us

The permittee shall attach a noncompliance report to the e-mail. A noncompliance report form is available on the following web site under the Monitoring and Reporting - Non-Compliance Notification section:

<http://epa.ohio.gov/dsw/permits/individuals.aspx>

Or, the permittee may report to the appropriate Ohio EPA district office by telephone toll-free between 8:00 AM and 5:00 PM as follows:

Southeast District Office: (800) 686-7330
Southwest District Office: (800) 686-8930
Northwest District Office: (800) 686-6930
Northeast District Office: (800) 686-6330
Central District Office: (800) 686-2330
Central Office: (614) 644-2001

The permittee shall include the following information in the telephone noncompliance report:

- a. The name of the permittee, and a contact name and telephone number;
- b. The limit(s) that has been exceeded;
- c. The extent of the exceedance(s);
- d. The cause of the exceedance(s);
- e. The period of the exceedance(s) including exact dates and times;
- f. If uncorrected, the anticipated time the exceedance(s) is expected to continue; and,
- g. Steps taken to reduce, eliminate or prevent occurrence of the exceedance(s).

B. Other Permit Violations

1. The permittee shall report noncompliance that is the result of any unanticipated bypass resulting in an exceedance of any effluent limit in the permit or any upset resulting in an exceedance of any effluent limit in the permit by e-mail or telephone within twenty-four (24) hours of discovery.

The permittee may report to the appropriate Ohio EPA district office e-mail account as follows (this method is preferred):

Southeast District Office: sedo24hournpdes@epa.state.oh.us
Southwest District Office: swdo24hournpdes@epa.state.oh.us
Northwest District Office: nwdo24hournpdes@epa.state.oh.us
Northeast District Office: nedo24hournpdes@epa.state.oh.us
Central District Office: cdo24hournpdes@epa.state.oh.us
Central Office: co24hournpdes@epa.state.oh.us

The permittee shall attach a noncompliance report to the e-mail. A noncompliance report form is available on the following web site:

<http://www.epa.ohio.gov/dsw/permits/permits.aspx>

Or, the permittee may report to the appropriate Ohio EPA district office by telephone toll-free between 8:00 AM and 5:00 PM as follows:

Southeast District Office: (800) 686-7330
Southwest District Office: (800) 686-8930
Northwest District Office: (800) 686-6930
Northeast District Office: (800) 686-6330
Central District Office: (800) 686-2330
Central Office: (614) 644-2001

The permittee shall include the following information in the telephone noncompliance report:

- a. The name of the permittee, and a contact name and telephone number;
- b. The time(s) at which the discharge occurred, and was discovered;
- c. The approximate amount and the characteristics of the discharge;
- d. The stream(s) affected by the discharge;
- e. The circumstances which created the discharge;
- f. The name and telephone number of the person(s) who have knowledge of these circumstances;
- g. What remedial steps are being taken; and,
- h. The name and telephone number of the person(s) responsible for such remedial steps.

2. The permittee shall report noncompliance that is the result of any spill or discharge which may endanger human health or the environment within thirty (30) minutes of discovery by calling the 24-Hour Emergency Hotline toll-free at (800) 282-9378. The permittee shall also report the spill or discharge by e-mail or telephone within twenty-four (24) hours of discovery in accordance with B.1 above.

C. When the telephone option is used for the noncompliance reports required by A and B, the permittee shall submit to the appropriate Ohio EPA district office a confirmation letter and a completed noncompliance report within five (5) days of the discovery of the noncompliance. This follow up report is not necessary for the e-mail option which already includes a completed noncompliance report.

D. If the permittee is unable to meet any date for achieving an event, as specified in a schedule of compliance in their permit, the permittee shall submit a written report to the appropriate Ohio EPA district office within fourteen (14) days of becoming aware of such a situation. The report shall include the following:

1. The compliance event which has been or will be violated;
2. The cause of the violation;
3. The remedial action being taken;
4. The probable date by which compliance will occur; and,
5. The probability of complying with subsequent and final events as scheduled.

E. The permittee shall report all other instances of permit noncompliance not reported under paragraphs A or B of this section on their monthly DMR submission. The DMR shall contain comments that include the information listed in paragraphs A or B as appropriate.

F. If the permittee becomes aware that it failed to submit an application, or submitted incorrect information in an application or in any report to the director, it shall promptly submit such facts or information.

13. RESERVED

14. DUTY TO MITIGATE

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

15. AUTHORIZED DISCHARGES

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant identified in this permit more frequently than, or at a level in excess of, that authorized by this permit shall constitute a violation of the terms and conditions of this permit. Such violations may result in the imposition of civil and/or criminal penalties as provided for in Section 309 of the Act and Ohio Revised Code Sections 6111.09 and 6111.99.

16. DISCHARGE CHANGES

The following changes must be reported to the appropriate Ohio EPA district office as soon as practicable:

A. For all treatment works, any significant change in character of the discharge which the permittee knows or has reason to believe has occurred or will occur which would constitute cause for modification or revocation and reissuance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Notification of permit changes or anticipated noncompliance does not stay any permit condition.

B. For publicly owned treatment works:

1. Any proposed plant modification, addition, and/or expansion that will change the capacity or efficiency of the plant;
2. The addition of any new significant industrial discharge; and
3. Changes in the quantity or quality of the wastes from existing tributary industrial discharges which will result in significant new or increased discharges of pollutants.

C. For non-publicly owned treatment works, any proposed facility expansions, production increases, or process modifications, which will result in new, different, or increased discharges of pollutants.

Following this notice, modifications to the permit may be made to reflect any necessary changes in permit conditions, including any necessary effluent limitations for any pollutants not identified and limited herein. A determination will also be made as to whether a National Environmental Policy Act (NEPA) review will be required. Sections 6111.44 and 6111.45, Ohio Revised Code, require that plans for treatment works or improvements to such works be approved by the Director of the Ohio EPA prior to initiation of construction.

D. In addition to the reporting requirements under 40 CFR 122.41(i) and per 40 CFR 122.42(a), all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

1. That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis of any toxic pollutant which is not limited in the permit. If that discharge will exceed the highest of the "notification levels" specified in 40 CFR Sections 122.42(a)(1)(i) through 122.42(a)(1)(iv).
2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the "notification levels" specified in 122.42(a)(2)(i) through 122.42(a)(2)(iv).

17. TOXIC POLLUTANTS

The permittee shall comply with effluent standards or prohibitions established under Section 307 (a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement. Following establishment of such standards or prohibitions, the Director shall modify this permit and so notify the permittee.

18. PERMIT MODIFICATION OR REVOCATION

A. After notice and opportunity for a hearing, this permit may be modified or revoked, by the Ohio EPA, in whole or in part during its term for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this permit;
2. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
3. Change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

B. Pursuant to rule 3745-33-04, Ohio Administrative Code, the permittee may at any time apply to the Ohio EPA for modification of any part of this permit. The filing of a request by the permittee for a permit modification or revocation does not stay any permit condition. The application for modification should be received by the appropriate Ohio EPA district office at least ninety days before the date on which it is desired that the modification become effective. The application shall be made only on forms approved by the Ohio EPA.

19. TRANSFER OF OWNERSHIP OR CONTROL

This permit may be transferred or assigned and a new owner or successor can be authorized to discharge from this facility, provided the following requirements are met:

A. The permittee shall notify the succeeding owner or successor of the existence of this permit by a letter, a copy of which shall be forwarded to the appropriate Ohio EPA district office. The copy of that letter will serve as the permittee's notice to the Director of the proposed transfer. The copy of that letter shall be received by the appropriate Ohio EPA district office sixty (60) days prior to the proposed date of transfer;

B. A written agreement containing a specific date for transfer of permit responsibility and coverage between the current and new permittee (including acknowledgement that the existing permittee is liable for violations up to that date, and that the new permittee is liable for violations from that date on) shall be submitted to the appropriate Ohio EPA district office within sixty days after receipt by the district office of the copy of the letter from the permittee to the succeeding owner;

At anytime during the sixty (60) day period between notification of the proposed transfer and the effective date of the transfer, the Director may prevent the transfer if he concludes that such transfer will jeopardize compliance with the terms and conditions of the permit. If the Director does not prevent transfer, he will modify the permit to reflect the new owner.

20. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act.

21. SOLIDS DISPOSAL

Collected grit and screenings, and other solids other than sewage sludge, shall be disposed of in such a manner as to prevent entry of those wastes into waters of the state, and in accordance with all applicable laws and rules.

22. CONSTRUCTION AFFECTING NAVIGABLE WATERS

This permit does not authorize or approve the construction of any onshore or offshore physical structures or facilities or the undertaking of any work in any navigable waters.

23. CIVIL AND CRIMINAL LIABILITY

Except as exempted in the permit conditions on UNAUTHORIZED DISCHARGES or UPSETS, nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

24. STATE LAWS AND REGULATIONS

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authority preserved by Section 510 of the Clean Water Act.

25. PROPERTY RIGHTS

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.

26. UPSET

The provisions of 40 CFR Section 122.41(n), relating to "Upset," are specifically incorporated herein by reference in their entirety. For definition of "upset," see Part III, Paragraph 1, DEFINITIONS.

27. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

28. SIGNATORY REQUIREMENTS

All applications submitted to the Director shall be signed and certified in accordance with the requirements of 40 CFR 122.22.

All reports submitted to the Director shall be signed and certified in accordance with the requirements of 40 CFR Section 122.22.

29. OTHER INFORMATION

A. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

B. ORC 6111.99 provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than \$25,000 per violation.

C. ORC 6111.99 states that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$25,000 per violation.

D. ORC 6111.99 provides that any person who violates Sections 6111.04, 6111.042, 6111.05, or division (A) of Section 6111.07 of the Revised Code shall be fined not more than \$25,000 or imprisoned not more than one year, or both.

30. NEED TO HALT OR REDUCE ACTIVITY

40 CFR 122.41(c) states that it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with conditions of this permit.

31. APPLICABLE FEDERAL RULES

All references to 40 CFR in this permit mean the version of 40 CFR which is effective as of the effective date of this permit.

32. AVAILABILITY OF PUBLIC SEWERS

Notwithstanding the issuance or non-issuance of an NPDES permit to a semi-public disposal system, whenever the sewage system of a publicly owned treatment works becomes available and accessible, the permittee operating any semi-public disposal system shall abandon the semi-public disposal system and connect it into the publicly owned treatment works.

Part IV. Storm Water Control Measures and Pollution Prevention Programs

In Part IV and in Part VI, the term “minimize” means reduce and/or eliminate to the extent achievable using control measures (including BMPs) that are technologically available and economically practicable and achievable in light of best industry practice.

A. Control Measures.

You shall select, design, install, and implement control measures (including BMPs) to address the selection and design considerations in Part IV.B, and meet the control measures/BMPs in Part IV.C and any applicable numeric effluent limits in Part I. The selection, design, installation, and implementation of these control measures shall be in accordance with good engineering practices and manufacturer’s specifications. Note that you may deviate from such manufacturer’s specifications where you provide justification for such deviation and include documentation of your rationale in the part of your SWPPP that describes your control measures, consistent with Part IV.J.3. If you find that your control measures are not achieving their intended effect of minimizing pollutant discharges, you shall modify these control measures as expeditiously as practicable. Regulated storm water discharges from your facility include storm water run-on that commingles with storm water discharges associated with industrial activity at your facility.

B. Control Measure Selection and Design Considerations.

You shall consider the following when selecting and designing control measures:

1. Preventing storm water from coming into contact with polluting materials is generally more effective, and less costly, than trying to remove pollutants from storm water;
2. Using control measures in combination is more effective than using control measures in isolation for minimizing pollutants in your storm water discharge;
3. Assessing the type and quantity of pollutants, including their potential to impact receiving water quality, is critical to designing effective control measures that will achieve the limits in this permit;
4. Minimizing impervious areas at your facility and infiltrating runoff onsite (including bioretention cells, green roofs, and pervious pavement, among other approaches) can reduce runoff and improve groundwater recharge and stream base flows in local streams, although care shall be taken to avoid ground water contamination;
5. Attenuating flow using open vegetated swales and natural depressions can reduce in-stream impacts of erosive flows;
6. Conserving and/or restoring of riparian buffers will help protect streams from storm water runoff and improve water quality; and
7. Using treatment interceptors (e.g., swirl separators and sand filters) may be appropriate in some instances to minimize the discharge of pollutants.

C. Control Measures/ BMPs

1. Minimize Exposure. You shall minimize the exposure of manufacturing, processing, and material storage areas (including loading and unloading, storage, disposal, cleaning, maintenance, and fueling operations) to rain, snow, snowmelt, and runoff by either locating these industrial materials and activities inside or protecting them with storm resistant coverings (although significant enlargement of impervious surface area is not recommended). In minimizing exposure, you should pay particular attention to the following:

- a. Use grading, berming, or curbing to prevent runoff of contaminated flows and divert run-on away from these areas;
 - b. Locate materials, equipment, and activities so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas);
 - c. Clean up spills and leaks promptly using dry methods (e.g., absorbents) to prevent the discharge of pollutants;
 - d. Use drip pans and absorbents under or around leaky vehicles and equipment or store indoors where feasible;
 - e. Use spill/overflow protection equipment;
 - f. Drain fluids from equipment and vehicles prior to on-site storage or disposal;
 - g. Perform all cleaning operations indoors, under cover, or in bermed areas that prevent runoff and run-on and also that capture any overspray; and
 - h. Ensure that all washwater drains to a proper collection system (i.e., not the storm water drainage system).
2. Good Housekeeping. You shall keep clean all exposed areas that are potential sources of pollutants, using such measures as sweeping at regular intervals, keeping materials orderly and labeled, and storing materials in appropriate containers.
3. Maintenance. You shall regularly inspect, test, maintain, and repair all industrial equipment and systems to avoid situations that may result in leaks, spills, and other releases of pollutants in storm water discharged to receiving waters. You shall maintain all control measures that are used to achieve the control measures/ BMPs required by this permit in effective operating condition. Nonstructural control measures shall also be diligently maintained (e.g., spill response supplies available, personnel appropriately trained). If you find that your control measures need to be replaced or repaired, you shall make the necessary repairs or modifications as expeditiously as practicable.
4. Spill Prevention and Response Procedures. You shall minimize the potential for leaks, spills and other releases that may be exposed to storm water and develop plans for effective response to such spills if or when they occur. At a minimum, you shall implement:
- a. Procedures for plainly labeling containers (e.g., "Used Oil," "Spent Solvents," "Fertilizers and Pesticides," etc.) that could be susceptible to spillage or leakage to encourage proper handling and facilitate rapid response if spills or leaks occur;
 - b. Preventative measures such as barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
 - c. Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases. Employees who may cause, detect, or respond to a spill or leak shall be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of your storm water pollution prevention team (Part V.D.1); and
 - d. Where a leak, spill or other release containing a hazardous substance or oil in an amount equal to or in excess of a RQ established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period, you shall notify the Ohio EPA in accordance with the requirements of Part III Item 12 of this permit.
5. Erosion and Sediment Controls. You shall stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants. Among other actions you shall take to meet this limit, you shall place flow velocity dissipation devices at discharge locations and within outfall channels where

necessary to reduce erosion and/or settle out pollutants. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with the ODNR Division of Soil and Water Conservation's Rainwater and Land Development manual (<http://www.dnr.state.oh.us/tabid/9186/Default.aspx>), U.S. EPA's internet-based resources relating to BMPs for erosion and sedimentation, including the sector-specific *Industrial Storm Water Fact Sheet Series*, (www.epa.gov/npdes/stormwater/msgp), *National Menu of Storm Water BMPs* (www.epa.gov/npdes/stormwater/menuofbmps), and *National Management Measures to Control Nonpoint Source Pollution from Urban Areas* (www.epa.gov/owow/nps/urbanmm/index.html).

6. Management of Runoff. You shall divert, infiltrate, reuse, contain, or otherwise reduce storm water runoff, to minimize pollutants in your discharges. In selecting, designing, installing, and implementing appropriate control measures, you are encouraged to consult with the ODNR Division of Soil and Water Conservation's Rainwater and Land Development manual (<http://www.dnr.state.oh.us/tabid/9186/Default.aspx>), U.S. EPA's internet-based resources relating to runoff management, including the sector-specific *Industrial Storm Water Fact Sheet Series*, (www.epa.gov/npdes/stormwater/msgp), *National Menu of Storm Water BMPs* (www.epa.gov/npdes/stormwater/menuofbmps), and *National Management Measures to Control Nonpoint Source Pollution from Urban Areas* (www.epa.gov/owow/nps/urbanmm/index.html).
7. Salt Storage Piles or Piles Containing Salt. You shall enclose or cover storage piles of salt, or piles containing salt, used for deicing or other commercial or industrial purposes, including maintenance of paved surfaces. You shall implement appropriate measures (e.g., good housekeeping, diversions, containment) to minimize exposure resulting from adding to or removing materials from the pile.
8. Sector Specific Control Measures/ BMPs. You shall achieve any additional control measures/BMPs stipulated in the relevant sector-specific section(s) of Part IV.K. of this permit.
9. Employee Training. You shall train all employees who work in areas where industrial materials or activities are exposed to storm water, or who are responsible for implementing activities necessary to meet the conditions of this permit (e.g., inspectors, maintenance personnel), including all members of your Pollution Prevention Team. Training shall cover both the specific control measures used to achieve the conditions in this Part, and monitoring, inspection, planning, reporting, and documentation requirements in other parts of this permit. Ohio EPA requires that training be conducted at least annually (or more often if employee turnover is high).
10. Non-Storm Water Discharges. You shall eliminate non-storm water discharges not authorized by an NPDES permit. The following are the non-storm water discharges authorized under this permit:
 - a. Discharges from fire-fighting activities (not planned exercises);
 - b. Fire hydrant flushings;
 - c. Potable water, including water line flushings;
 - d. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
 - e. Irrigation drainage;
 - f. Landscape watering provided all pesticides, herbicides; and fertilizer have been applied in accordance with the approved labeling;
 - g. Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred (unless all spilled material has been removed);
 - h. Routine external building washdown that does not use detergents;
 - i. Uncontaminated ground water or spring water;
 - j. Foundation or footing drains where flows are not contaminated with process materials; and

- k. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of your facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown or drains).
11. Waste, Garbage and Floatable Debris. You shall ensure that waste, garbage, and floatable debris are not discharged to receiving waters by keeping exposed areas free of such materials or by intercepting them before they are discharged.
 12. Dust Generation and Vehicle Tracking of Industrial Materials. You shall minimize generation of dust and off-site tracking of raw, final, or waste materials.

D. Corrective Actions

1. Conditions Requiring Review and Revision to Eliminate Problem. If any of the following conditions occur, you shall review and revise the selection, design, installation, and implementation of your control measures to ensure that the condition is eliminated and will not be repeated in the future:
 - a. An unauthorized release or discharge (e.g., spill, leak, or discharge of non-storm water not authorized by this or another NPDES permit) occurs at your facility;
 - b. A discharge violates a numeric effluent limit;
 - c. You become aware, or Ohio EPA determines, that your control measures are not stringent enough for the discharge to meet applicable water quality standards;
 - d. An inspection or evaluation of your facility by an Ohio EPA official or local MS4 operator determines that modifications to the control measures are necessary to meet the control measures/BMPs in this permit; or
 - e. You find in your routine facility inspection, quarterly visual assessment, or comprehensive site inspection that your control measures are not being properly operated and maintained.
2. Conditions Requiring Review to Determine if Modifications Are Necessary. If any of the following conditions occur, you shall review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the Part IV.A conditions in this permit:
 - a. Construction or a change in design, operation, or maintenance at your facility significantly changes the nature of pollutants discharged in storm water from your facility, or significantly increases the quantity of pollutants discharged; or
 - b. Sampling results exceeds an applicable benchmark.
3. Corrective Action Deadlines. You shall document your discovery of any of the conditions listed in Part IV.D.1 and Part IV.D.2 within 24 hours of making such discovery. Subsequently, within 30 days of such discovery, you shall document any corrective action(s) to be taken to eliminate or further investigate the deficiency, or if no corrective action is needed, the basis for that determination. Specific documentation required within 24 hours and 30 days is detailed in Part IV.D.4. If you determine that changes are necessary following your review, any modifications to your control measures shall be made before the next storm event if possible, or as soon as practicable following that storm event. These time intervals are not grace periods, but are schedules considered reasonable for documenting your findings and for making repairs and improvements. They are included in this permit to ensure that the conditions prompting the need for these repairs and improvements are not allowed to persist indefinitely.
4. Corrective Action Report. Within 24 hours of discovery of any condition listed in Part IV.D.1 and Part IV.D.2, you shall document the following information (i.e., questions 3-5 of the Corrective

Actions section in the Annual Reporting Form, available at http://www.epa.state.oh.us/portals/35/permits/IndustrialStormWater_Final_GP_AppI_dec11.pdf):

- Identification of the condition triggering the need for corrective action review;
- Description of the problem identified; and
- Date the problem was identified.

Within 30 days of discovery of any condition listed in Part IV.D.1 and Part IV.D.2, you shall document the following information (i.e., questions 7-11 of the Corrective Actions section in the Annual Reporting Form):

- Summary of corrective action taken or to be taken (or, for triggering events identified in Part IV.D.2 where you determine that corrective action is not necessary, the basis for this determination);
- Notice of whether SWPPP modifications are required as a result of this discovery or corrective action;
- Date corrective action initiated; and
- Date corrective action completed or expected to be completed.

You shall include this documentation in an annual report as required in Part V. B.2 and retain onsite with your SWPPP.

5. **Effect of Corrective Action.** If the event triggering the review is a permit violation (e.g., non-compliance with an effluent limit), correcting it does not remove the original violation. Additionally, failing to take corrective action in accordance with this section is an additional permit violation. Ohio EPA will consider the appropriateness and promptness of corrective action in determining enforcement responses to permit violations.
6. **Substantially Identical Outfalls.** If the event triggering corrective action is linked to an outfall that represents other substantially identical outfalls, your review shall assess the need for corrective action for each outfall represented by the outfall that triggered the review. Any necessary changes to control measures that affect these other outfalls shall also be made before the next storm event if possible, or as soon as practicable following that storm event.

E. Inspections

Beginning on the effective date of this permit, you shall conduct the inspections in Part IV.E.1, Part IV.E.2, and Part IV.E.3 at your facility.

1. **Routine Facility Inspections.** Conduct routine facility inspections of all areas of the facility where industrial materials or activities are exposed to storm water, and of all storm water control measures used to comply with Part IV. Items A-C conditions contained in this permit. Routine facility inspections shall be conducted at least quarterly (i.e., once each calendar quarter) although in many instances, more frequent inspection (e.g., monthly) may be appropriate for some types of equipment, processes, and control measures or areas of the facility with significant activities and materials exposed to storm water. Perform these inspections during periods when the facility is in operation. You shall specify the relevant inspection schedules in your SWPPP document as required in Part IV. Items A-C. These routine inspections shall be performed by qualified personnel (for definition see VI - Definitions) with at least one member of your storm water pollution prevention team participating. At least once each calendar year, the routine facility inspection shall be conducted during a period when a storm water discharge is occurring.

You shall document the findings of each routine facility inspection performed and maintain this documentation onsite with your SWPPP. You are not required to submit your routine facility

inspection findings to Ohio EPA, unless specifically requested to do so. At a minimum, your documentation of each routine facility inspection shall include:

- a. The inspection date and time;
- b. The name(s) and signature(s) of the inspector(s);
- c. Weather information and a description of any discharges occurring at the time of the inspection;
- d. Any previously unidentified discharges of pollutants from the site;
- e. Any control measures needing maintenance or repairs;
- f. Any failed control measures that need replacement;
- g. Any incidents of noncompliance observed; and
- h. Any additional control measures needed to comply with the permit requirements.

Any corrective action required as a result of a routine facility inspection shall be performed consistent with Part IV.D of this permit.

2. Quarterly Visual Assessment of Storm Water Discharges. Once each calendar quarter for the entire permit term, you shall collect a storm water sample from each outfall that requires sampling under this permit and conduct a visual assessment of each of these samples. These samples are not required to be collected consistent with 40 CFR Part 136 procedures but should be collected in such a manner that the samples are representative of the storm water discharge. The visual assessment shall be made:

- Of a sample in a clean, clear glass, or plastic container, and examined in a well-lit area;
- On samples collected within the first 30 minutes of an actual discharge from a storm event. If it is not possible to collect the sample within the first 30 minutes of discharge, the sample shall be collected as soon as practicable after the first 30 minutes and you shall document why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples shall be taken during a period with a measurable discharge from your site; and
- For storm events, on discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if you document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. If it is not possible to collect the sample on discharges that occur at least 72 hours (3 days) from the previous discharge, the sample shall be collected as close to this storm interval as practicable and you shall document why it was not possible to take samples from a 72 hour (3 day) storm interval.
- Areas Subject to Snow: In areas subject to snow, at least one quarterly visual assessment shall capture snowmelt discharge.
- For the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of storm water pollution.

You shall document the results of your visual assessments and maintain this documentation onsite with your SWPPP. You are not required to submit your visual assessment findings to Ohio EPA, unless specifically requested to do so. At a minimum, your documentation of the visual assessment shall include:

- Sample location(s);
- Sample collection date and time, and visual assessment date and time for each sample;
- Personnel collecting the sample and performing visual assessment, and their signatures;
- Nature of the discharge (i.e., runoff or snowmelt);
- Results of observations of the storm water discharge;
- Probable sources of any observed storm water contamination; and

- If applicable, why it was not possible to take samples within the first 30 minutes and/or from a 72 hour (3 day) storm interval.

Any corrective action required as a result of a quarterly visual assessment shall be performed consistent with Part IV.D of this permit.

The following are exceptions to quarterly visual assessments:

- Adverse Weather Conditions: When adverse weather conditions prevent the collection of samples during the quarter, you shall take a substitute sample during the next qualifying storm event. Documentation of the rationale for no visual assessment for the quarter shall be included with your SWPPP records. Adverse conditions are those that are dangerous or create inaccessibility for personnel, such as local flooding, high winds, or electrical storms, or situations that otherwise make sampling impractical, such as drought or extended frozen conditions.
 - Inactive and unstaffed sites: The requirement for a quarterly visual assessment does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to storm water. To invoke this exception, you shall maintain a statement in your SWPPP indicating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to precipitation, in accordance with the substantive requirements in 40 CFR 122.26(g)(4)(iii). The statement shall be signed and certified in accordance with Part III.28 of this permit. If circumstances change and industrial materials or activities become exposed to storm water or your facility becomes active and/or staffed, this exception no longer applies and you shall immediately resume quarterly visual assessments. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to storm water, then you shall include the same signed and certified statement as above and retain it with your records.
3. Comprehensive Site Inspections. You shall conduct annual comprehensive site inspections while you are covered under this permit. The annual period to conduct the comprehensive site inspections begins on the date Ohio EPA has granted your authorization to discharge under this permit. Should your coverage be administratively continued after the expiration date of this permit, you shall continue to perform these inspections annually until you are no longer covered. Comprehensive site inspections shall be conducted by qualified personnel with at least one member of your storm water pollution prevention team participating in the comprehensive site inspections. Your comprehensive site inspections shall cover all areas of the facility affected by the requirements in this permit, including the areas identified in the SWPPP as potential pollutant sources (see Part IV.J.2) where industrial materials or activities are exposed to storm water, any areas where control measures are used to comply with the conditions in Part IV. Items A-C, and areas where spills and leaks have occurred in the past 3 years. The inspections shall also include a review of monitoring data collected in accordance with Part V. A. Inspectors shall consider the results of the past year's visual and analytical monitoring when planning and conducting inspections. Inspectors shall examine the following:
- Industrial materials, residue, or trash that may have or could come into contact with storm water;
 - Leaks or spills from industrial equipment, drums, tanks, and other containers;
 - Offsite tracking of industrial or waste materials, or sediment where vehicles enter or exit the site;

- Tracking or blowing of raw, final, or waste materials from areas of no exposure to exposed areas; and
- Control measures needing replacement, maintenance, or repair.

Storm water control measures required by this permit shall be observed to ensure that they are functioning correctly. If discharge locations are inaccessible, nearby downstream locations shall be inspected. Your annual comprehensive site inspection may also be used as one of the routine inspections, as long as all components of both types of inspections are included.

You shall document the findings of each comprehensive site inspection and maintain this documentation onsite with your SWPPP. In addition, you shall include this documentation in an annual report as required in Part V.B.2. At a minimum, your documentation of the comprehensive site inspection shall include (see the Annual Reporting Form at http://www.epa.state.oh.us/portals/35/permits/IndustrialStormWater_Final_GP_AppI_dec11.pdf):

- The date of the inspection;
- The name(s) and title(s) of the personnel making the inspection;
- Findings from the examination of areas of your facility identified in Part IV.E.3;
- All observations relating to the implementation of your control measures including:
 - Previously unidentified discharges from the site;
 - Previously unidentified pollutants in existing discharges;
 - Evidence of, or the potential for, pollutants entering the drainage system;
 - Evidence of pollutants discharging to receiving waters at all facility outfall(s), and the condition of and around the outfall, including flow dissipation measures to prevent scouring, and
 - Additional control measures needed to address any conditions requiring corrective action identified during the inspection.
- Any required revisions to the SWPPP resulting from the inspection;
- Any incidents of noncompliance observed or a certification stating the facility is in compliance with this permit (if there is no noncompliance); and
- A statement signed and certified in accordance with Part III.28 of the permit.

Any corrective action required as a result of the comprehensive site inspection shall be performed consistent with Part IV.D of this permit.

F. SWPPP

A SWPPP shall be developed to address each outfall that discharges to waters of the state that contains storm water associated with industrial activity. SWPPPs shall be prepared in accordance with good engineering practices. The SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges associated with industrial activity from the facility. The SWPPP shall describe and ensure the implementation of practices which are to be used to reduce the pollutants in storm water discharges associated with industrial activity at the facility and to assure compliance with the terms and conditions of this permit. Facilities must implement the provisions of the SWPPP required under this part as a condition of this permit.

The SWPPP does not contain effluent limitations; the limitations are contained in Parts I and IV Items A-C of this permit. The SWPPP is intended to document the selection, design, and installation of control measures. As distinct from the SWPPP, the documentation requirements are intended to document the implementation (including inspection, maintenance, monitoring, and corrective action) of the permit requirements.

G. Deadlines for SWPPP Preparation and Compliance.

1. The plan for a storm water discharge associated with industrial activity:
 - a. Shall be prepared within six months of the effective date of this permit (and updated based on facility or materials handling changes as specified in Part IV, Item I);
 - b. Shall provide for implementation and compliance with the terms of the plan within twelve months of the effective date of this permit.
2. Upon showing of good cause, the Director may establish a later date for preparing and compliance with a plan for a storm water discharge associated with industrial activity.

H. Signature and Plan Review.

1. The plan shall be signed and dated in accordance with Part III, Item 28, and be retained on-site at the facility which generates the storm water discharge.
2. The permittee shall make plans immediately available upon request to the Ohio EPA Director, or authorized representative, or Regional Administrator of U.S. EPA, a local agency approving storm water management plans, or in the case of a storm water discharge associated with industrial activity which discharges through a MS4, to the operator of the municipal system.
3. The Director may notify the permittee at any time that the plan does not meet one or more of the minimum requirements of this Part. Within 30 days of such notification from the Director, the permittee shall make the required changes to the plan and shall submit to the Director a written certification that the requested changes have been made.
4. All SWPPPs required under this permit are considered reports that shall be available to the public under Section 308(b) of the Act. CBI may be withheld from the public, but may not be withheld from those staff cleared for CBI review within Ohio EPA. An interested party wishing a copy of a discharger's SWPPP will have to contact the Ohio EPA to obtain a copy.

I. Keeping SWPPP Current

The permittee shall modify the plan whenever necessary to address any of the triggering conditions for corrective action in Part IV.D and to ensure that they do not reoccur, or to reflect changes implemented when a review following the triggering conditions in Part IV.D.2 indicates that changes to your control measures are necessary to meet the control measures/BMPs in this permit. Changes to your SWPPP document shall be made in accordance with the corrective action deadlines in Part IV.D.3 and Part IV.D.4.

Amendments to the plan may be reviewed by Ohio EPA in the same manner as Part IV.H above.

J. Contents of SWPPP. The plan shall include, at a minimum, the following items:

1. Pollution Prevention Team. You shall identify the staff members (by name or title) that comprise the facility's storm water pollution prevention team as well as their individual responsibilities. Your storm water pollution prevention team is responsible for assisting the facility manager in developing and revising the facility's SWPPP as well as maintaining control measures and taking corrective

actions where required. Each member of the storm water pollution prevention team shall have ready access to either an electronic or paper copy of applicable portions of this permit and your SWPPP.

2. Description of Potential Pollutant Sources. You shall document at your facility where industrial materials or activities are exposed to storm water and from which allowable non-storm water discharges are released. Industrial materials or activities, include, but are not limited to: material handling equipment or activities; industrial machinery; raw materials; industrial production and processes; and intermediate products, by-products, final product or waste product. For each area identified, the description shall include, at a minimum:
 - a. Site Description. Your SWPPP shall include:
 - i. A description of the industrial activities at your facility;
 - ii. A general location map (e.g. USGS quadrangle map) with enough detail to identify the location of your facility and all receiving waters for your storm water discharges.
 - iii. A site map showing
 - The size of the property in acres;
 - The location and extent of significant structures and impervious surfaces;
 - Directions of storm water flow (use arrows);
 - Locations of all existing structural control measures;
 - Locations of all receiving waters in the immediate vicinity of your facility;
 - Locations of all storm water conveyances including ditches, pipes and swales;
 - Locations of potential pollutant sources identified under Part IV J. 2.b;
 - Locations where significant spills or leaks identified under Part IV J. 2.b. have occurred;
 - Locations of all storm water monitoring points;
 - Locations of storm water inlets and outfalls, with a unique identification code for each outfall (e.g. Outfall 001, Outfall 002, etc), indicating any outfalls that are considered substantially identical to another outfall, and an approximate outline of the areas draining to each outfall;
 - MS4s, where your storm water discharges to them;
 - Locations and descriptions of all non-storm water discharges identified under Part IV. C. 10;
 - Locations of the following activities where such activities are exposed to precipitation
 - Fueling stations;
 - Vehicle and equipment maintenance and/or cleaning areas;
 - Loading/unloading areas;
 - Immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility;
 - Transfer areas for substances in bulk;
 - Machinery; and
 - Locations and sources of run-on to your site from adjacent property that contains significant quantities of pollutants.
 - b. Inventory of Exposed Materials. This includes a list of industrial activities exposed to storm water (e.g., material storage; equipment fueling, maintenance, and cleaning; cutting steel beams). This also includes a list of the pollutant(s) or pollutant constituents (e.g, crankcase oil, zinc, sulfuric acid, and cleaning solvents) associated with each identified activity. The pollutant list shall include all significant materials that have been handled, treated, stored, or

- disposed, and that have been exposed to storm water in the three years prior to the data you prepare or amend your SWPPP.
- c. **Spills and Leaks.** You shall document where potential spills and leaks could occur that could contribute pollutants to storm water discharges, and the corresponding outfall(s) that would be affected by such spills and leaks. You shall document all significant spills and leaks of oil or toxic or hazardous pollutants that actually occurred at exposed areas, or that drained to a storm water conveyance, in the three years prior to the date you prepare or amend your SWPPP. Note that significant spills and leaks include, but are not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under CWA Section 311 (see 40 CFR 110.6 and 40 CFR 117.21) or Section 102 of the CERCLA, 42 USC Section 9602. This permit does not relieve you of the reporting requirements of 40 CFR 110, 40 CFR 117, and 40 CFR 302 relating to spills or other releases of oil or hazardous substances.
 - d. **Sampling Data.** A summary of existing discharge sampling data describing pollutants in storm water discharges from the facility.
 - e. **Non-Storm Water Discharges.** You shall document that you have evaluated for the presence of non-storm water discharges and that all unauthorized discharges have been eliminated. Documentation of your evaluation shall include: 1) The date of any evaluation; 2) A description of the evaluation criteria used; 3) A list of the outfalls or onsite drainage points that were directly observed during the evaluation; 4) The different types of non-storm water discharge(s) and source locations; and 5) The action(s) taken, such as a list of control measures used to eliminate unauthorized discharge(s), if any were identified. For example, a floor drain was sealed, a sink drain was re-routed to sanitary, or an NPDES permit application was submitted for an unauthorized cooling water discharge.
 - f. **Salt Storage.** You shall document the location of any storage piles containing salt used for deicing or other commercial or industrial purposes.
3. **Description of Control Measures.** You shall document the location and type of control measures you have installed and implemented at your site to achieve the control measures/BMPs in Part IV.C, and where applicable, in Part IV.K. You shall describe how you addressed the control measure selection and design considerations in Part IV.B. This documentation shall describe how the control measures at your site address both the pollutant sources identified in Part IV.J.2 and any storm water run-on that commingles with any discharges covered under this permit.
4. **Schedules and Procedures.**
- a. **Pertaining to Control Measures used to Comply with the Control Measures/BMPs.** The following shall be documented in your SWPPP:
 - i. **Good Housekeeping (See Part IV.C.2)** – A schedule for regular pickup and disposal of waste materials, along with routine inspections for leaks and conditions of drums, tanks and containers.
 - ii. **Maintenance (See Part IV.C.3)** – Preventative maintenance procedures, including regular inspections, testing, maintenance, and repair of all industrial equipment and systems, and control measures, to avoid situations that may result in leaks, spills, and other releases, and any back-up practices in place should a runoff event occur while a control measure is off-line;

- iii. Spill Prevention and Response Procedures (See Part IV.C.4) – Procedures for preventing and responding to spills and leaks. You may reference the existence of other plans for SPCC developed for the facility under Section 311 of the CWA or BMP programs otherwise required by an NPDES permit for the facility, provided that you keep a copy of that other plan onsite and make it available for review consistent with Part V.B.4; and
 - iv. Employee Training (See Part IV.C.9) – A schedule for all types of necessary training.
- b. Pertaining to Monitoring and Inspection. Where applicable, you shall document in your SWPPP your procedures for conducting analytical storm water monitoring. You shall document in your SWPPP your procedures for performing, as appropriate, the three types of inspections specified by this permit, including: 1) Routine facility inspections (See Part IV.E.1), 2) Quarterly visual assessment of storm water discharges (See Part IV.E.2), and 3) Comprehensive site inspections (See Part IV.E.3).
5. Documentation Requirements. You are required to keep inspection, monitoring, and certification records with your SWPPP that together keep your records complete and up-to-date, and demonstrate your full compliance with the conditions of this permit.

K. Sector-Specific Requirements

You shall comply with the following sector-specific requirements associated with your primary industrial activity and any co-located industrial activities, as defined in Part VI. The sector-specific requirements apply to those areas of your facility where those sector-specific activities occur. These sector-specific requirements are in addition to any requirements specified elsewhere in this permit.

1. Limitations on Coverage.
 - a. *Prohibition of Non-Storm Water Discharges.* Non-storm water discharges subject to effluent limitations guidelines are not covered by this permit.
 - b. *Prohibition of Storm Water Discharges.* Storm water discharges from the following are not covered by this permit:
 - i. ancillary facilities (e.g., fleet centers and substations) that are not contiguous to a stream electric power generating facility;
 - ii. gas turbine facilities (providing the facility is not a dual-fuel facility that includes a steam boiler), and combined-cycle facilities where no supplemental fuel oil is burned (and the facility is not a dual-fuel facility that includes a steam boiler); and
 - iii. cogeneration (combined heat and power) facilities utilizing a gas turbine.
2. Additional Control Measures/BMPs. The following good housekeeping measures are required in addition to Part IV.C.2:
 - a. *Fugitive Dust Emissions.* Minimize fugitive dust emissions from coal handling areas. To minimize the tracking of coal dust offsite, consider procedures such as installing specially designed tires or washing vehicles in a designated area before they leave the site and controlling the wash water.
 - b. *Delivery Vehicles.* Minimize contamination of storm water runoff from delivery vehicles arriving at the plant site. Consider procedures to inspect delivery vehicles arriving at the plant site and ensure overall integrity of the body or container and procedures to deal with leakage or spillage from vehicles or containers.
 - c. *Fuel Oil Unloading Areas.* Minimize contamination of precipitation or surface runoff from fuel oil unloading areas. Consider using containment curbs in unloading areas, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and using spill and overflow protection devices (e.g., drip pans, drip diapers, or other containment devices placed

beneath fuel oil connectors to contain potential spillage during deliveries or from leaks at the connectors).

d. *Chemical Loading and Unloading.* Minimize contamination of precipitation or surface runoff from chemical loading and unloading areas. Consider using containment curbs at chemical loading and unloading areas to contain spills, having personnel familiar with spill prevention and response procedures present during deliveries to ensure that any leaks or spills are immediately contained and cleaned up, and loading and unloading in covered areas and storing chemicals indoors.

e. *Miscellaneous Loading and Unloading Areas.* Minimize contamination of precipitation or surface runoff from loading and unloading areas. Consider covering the loading area; grading, berming, or curbing around the loading area to divert run-on; locating the loading and unloading equipment and vehicles so that leaks are contained in existing containment and flow diversion systems; or equivalent procedures.

f. *Liquid Storage Tanks.* Minimize contamination of surface runoff from above-ground liquid storage tanks. Consider protective guards around tanks, containment curbs, spill and overflow protection, dry cleanup methods, or equivalent measures.

g. *Large Bulk Fuel Storage Tanks.* Minimize contamination of surface runoff from large bulk fuel storage tanks. Consider containment berms (or their equivalent). You shall also comply with applicable State and Federal laws, including SPCC Plan requirements.

h. *Spill Reduction Measures.* Minimize the potential for an oil or chemical spill, or reference the appropriate part of your SPCC plan. Visually inspect as part of your routine facility inspection the structural integrity of all above-ground tanks, pipelines, pumps, and related equipment that may be exposed to storm water, and make any necessary repairs immediately.

i. *Oil-Bearing Equipment in Switchyards.* Minimize contamination of surface runoff from oil-bearing equipment in switchyard areas. Consider using level grades and gravel surfaces to retard flows and limit the spread of spills, or collecting runoff in perimeter ditches.

j. *Residue-Hauling Vehicles.* Inspect all residue-hauling vehicles for proper covering over the load, adequate gate sealing, and overall integrity of the container body. Repair vehicles without load covering or adequate gate sealing, or with leaking containers or beds.

k. *Ash Loading Areas.* Reduce or control the tracking of ash and residue from ash loading areas. Clear the ash building floor and immediately adjacent roadways of spillage, debris, and excess water before departure of each loaded vehicle.

l. *Areas Adjacent to Disposal Ponds or Landfills.* Minimize contamination of surface runoff from areas adjacent to disposal ponds or landfills. Reduce ash residue that may be tracked on to access roads traveled by residue handling vehicles, and reduce ash residue on exit roads leading into and out of residue handling areas.

m. *Landfills, Scrap yards, Surface Impoundments, Open Dumps, General Refuse Sites.* Minimize the potential for contamination of runoff from these areas.

3. Additional SWPPP Requirements.

a. *Drainage Area Site Map.* (See also Part IV.J.2.a.) Document in your SWPPP the locations of any of the following activities or sources that may be exposed to precipitation or surface runoff: storage tanks, scrap yards, and general refuse areas; short- and long-term storage of general materials (including but not limited to supplies, construction materials, paint equipment, oils, fuels, used and unused solvents, cleaning materials, paint, water treatment chemicals, fertilizer, and pesticides); landfills and construction sites; and stock pile areas (e.g., coal or limestone piles).

b. *Documentation of Good Housekeeping Measures.* You shall document in your SWPPP the good housekeeping measures implemented to meet the effluent limits in Part IV.K.2.

4. Additional Inspection Requirements.

a. *Comprehensive Site Compliance Inspection.* (See also Part IV.E.3.) As part of your inspection, inspect the following areas monthly: coal handling areas, loading or unloading areas, switchyards, fueling areas, bulk storage areas, ash handling areas, areas adjacent to disposal ponds and landfills, maintenance areas, liquid storage tanks, and long term and short term material storage areas.

Part V. Monitoring and Reporting Requirements

A. Reporting and Recordkeeping

1. Reporting Benchmark Monitoring Data to Ohio EPA. Benchmark monitoring data shall be submitted to Ohio EPA in accordance with Part III Item 4. of this permit.
2. Annual Report. You shall complete an annual report that includes the findings from your Part IV.E.3 comprehensive site inspection and any corrective action documentation as required in Part IV.D.4. If corrective action is not yet completed at the time of completion of this annual report, you shall describe the status of any outstanding corrective action(s). In addition to the information required in Part IV.D.4 (Corrective Action Report) and Part IV.E.3 (Comprehensive Site Inspection Documentation), you shall include the following information with your annual report:
 - a. Facility name
 - b. Ohio EPA Facility permit number
 - c. Facility physical address
 - d. Contact person name, title, and phone number

You shall complete this report using the Annual Reporting Form provided by Ohio EPA at the following: http://www.epa.gov/npdes/pubs/msgp2008_appendixi.pdf. You shall keep the annual report with your SWPPP.

B. Storm Water Monitoring Requirements

1. Monitored Outfalls. Monitoring requirements begin on the effective date of this permit. Monitoring shall be performed once per quarter for the first year and once per year for the remainder of the permit for all parameters except mercury (see Part V.B.4). Applicable benchmark monitoring requirements apply to each storm water outfall authorized by this permit, except as otherwise exempt from monitoring as a “substantially identical outfall.”
 - a. Outfalls 004 is considered substantially identical to Outfall 003. As such, sampling at Outfall 003 will be considered representative of these other outfalls, and no sampling at the other outfalls will be required.
2. Measurable Storm Event. All required monitoring shall be performed on a storm event that results in an actual discharge from your site (“measurable storm event”) that follows the preceding measurable storm event by at least 72 hours (3 days). The 72-hour (3-day) storm interval does not apply if you are able to document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period. In the case of snowmelt, the monitoring shall be performed at a time when a measurable discharge occurs at your site.

For each monitoring event, except snowmelt monitoring, you shall identify the date and duration (in hours) of the rainfall event, rainfall total (in inches) for that rainfall event, and time (in days) since the previous measurable storm event. For snowmelt monitoring, you shall identify the date of the sampling event.

3. Sample Type. You shall take a minimum of one grab sample from a discharge resulting from a measurable storm event as described in Part V.A.2. Samples shall be collected within the first 30 minutes of a measurable storm event. If it is not possible to collect the sample within the first 30

minutes of a measurable storm event, the sample shall be collected as soon as practicable after the first 30 minutes and documentation shall be kept with the SWPPP explaining why it was not possible to take samples within the first 30 minutes. In the case of snowmelt, samples shall be taken during a period with a measurable discharge.

4. **Benchmark Monitoring.** This permit stipulates pollutant benchmark concentrations that are applicable to your discharge.

<i>Outfall</i>	<i>Parameter</i>	<i>Concentration</i>
003^a 004	Total Suspended Solids	100 mg/L
	Oil & Grease	10 mg/L
	Zinc	230 µg/L

^a = Bolded outfalls are representative of non-bolded outfalls; sampling takes place at the bolded outfalls but the benchmarks apply to all outfalls.

The benchmark concentration for total suspended solids is derived from applicable federal effluent guidelines. The benchmark concentrations for the other parameters are derived from the effluent limits necessary to protect water quality.

The benchmark concentrations are not effluent limitations; a benchmark exceedance, therefore, is not a permit violation. Benchmark monitoring data are for your use to determine the overall effectiveness of your control measures and to assist you in knowing when additional corrective action(s) may be necessary to comply with the control measures/BMPs in Part IV. Items A-C.

- a. Based on the average of your annual monitoring results, if the monitoring values for any parameter exceeds the benchmark, you shall perform the following within one year of exceeding the benchmark:
- i. In accordance with Part IV.D.2, review the selection, design, installation, and implementation of your control measures to determine if modifications are necessary to meet the Part IV. Items A-C control measures/BMPs of this permit; or
 - ii. Make a determination that no further pollutant reductions are technologically available and economically practicable and achievable in light of best industry practice to meet the control measures/BMPs in Part IV. Items A-C of this permit. You shall also document your rationale for concluding that no further pollutant reductions are achievable, and retain all records related to this documentation with your SWPPP. You shall also notify Ohio EPA of this determination in your next benchmark monitoring report.

In accordance with Part IV.D.2, you shall review your control measures and perform any required corrective action immediately or document why no corrective action is required.

- b. If you determine that exceedance of the benchmark is attributable solely to the presence of that pollutant in the natural background, you are not required to perform corrective action provided that:
- i. The concentration of your benchmark monitoring result is less than or equal to the concentration of that pollutant in the natural background;
 - ii. You document and maintain with your SWPPP your supporting rationale for concluding that benchmark exceedances are in fact attributable solely to natural background levels. You shall include in your supporting rationale any data

previously collected by you or others (including literature studies) that describe the levels of natural background pollutants in your storm water discharge.

Natural background pollutants include those substances that are naturally occurring in soils or groundwater. Natural background pollutants do not include legacy pollutants from earlier activity on your site, or pollutants in run-on from neighboring sources which are not naturally occurring.

- c. *Exception for Inactive and Unstaffed Sites.* The requirement for benchmark monitoring does not apply at a facility that is inactive and unstaffed, as long as there are no industrial materials or activities exposed to storm water. To invoke this exception, you shall do the following:
- i. Maintain a statement onsite with your SWPPP stating that the site is inactive and unstaffed, and that there are no industrial materials or activities exposed to storm water in accordance with the substantive requirements in 40 CFR 122.26(g) and sign and certify the statement in accordance with Part IV.E.2.
 - ii. If circumstances change and your facility becomes active and/or staffed, this exception no longer applies and you shall immediately begin complying with the applicable benchmark monitoring requirements under Part V.B; and
 - iii. If you are not qualified for this exception at the time you are authorized under this permit, but during the permit term you become qualified because your facility is inactive and unstaffed, and there are no industrial materials or activities that are exposed to storm water, then you shall notify the appropriate district office of Ohio EPA of this change in your next benchmark monitoring report. You may discontinue benchmark monitoring once you have notified Ohio EPA, and prepared and signed the certification statement described above concerning your facility's qualification for this special exception.

Part VI. Definitions and Acronyms

Action Area – all areas to be affected directly or indirectly by the storm water discharges, allowable non-storm water discharges, and storm water discharge-related activities, and not merely the immediate area involved in these discharges and activities.

BMPs – schedules of activities, practices (and prohibitions of practices), structures, vegetation, maintenance procedures, and other management practices to prevent or reduce the discharge of pollutants to surface waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. See 40 CFR 122.2.

Co-located Industrial Activities – Any industrial activities, excluding your primary industrial activity(ies), located on-site that are defined by the storm water regulations at 122.26(b)(14)(i)-(ix) and (xi). An activity at a facility is not considered co-located if the activity, when considered separately, does not meet the description of a category of industrial activity covered by the storm water regulations or identified by the SIC code list in Appendix D of the NPDES multi-sector general permit.

Control Measure – refers to any BMP or other method (including effluent limitations) used to prevent or reduce the discharge of pollutants to surface waters of the State.

Director – the Director of the Ohio EPA.

Discharge – when used without qualification, means the "discharge of a pollutant." See 40 CFR 122.2.

Discharge of a pollutant – any addition of any “pollutant” or combination of pollutants to “surface waters of the State” from any “point source,” or any addition of any pollutant or combination of pollutants to the waters of the “contiguous zone” or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This includes additions of pollutants into surface waters of the State from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. See 40 CFR 122.2.

Discharge-related activities – activities that cause, contribute to, or result in storm water and allowable non-storm water point source discharges, and measures such as the siting, construction and operation of BMPs to control, reduce, or prevent pollution in the discharges.

Drought-stricken area – a period of below average water content in streams, reservoirs, ground-water aquifers, lakes and soils.

U.S. EPA Approved or Established TMDLs – “U.S. EPA Approved TMDLs” are those that are developed by a State and approved by U.S. EPA. “U.S. EPA Established TMDLs” are those that are developed by U.S. EPA.

Existing Discharger – an operator applying for coverage under this permit for discharges authorized previously under an NPDES general or individual permit.

Facility or Activity – any NPDES “point source” (including land or appurtenances thereto) that is subject to regulation under the NPDES program. See 40 CFR 122.2.

Federal Facility – any buildings, installations, structures, land, public works, equipment, aircraft, vessels, and other vehicles and property, owned by, or constructed or manufactured for the purpose of leasing to, the federal government.

Illicit Discharge – is defined at 40 CFR 122.26(b)(2) and refers to any discharge to a municipal separate storm sewer that is not entirely composed of storm water, except discharges authorized under an NPDES permit (other than the NPDES permit for discharges from the MS4) and discharges resulting from firefighting activities.

Impaired Water (or “Water Quality Impaired Water” or “Water Quality Limited Segment”) – A water is impaired for purposes of this permit if it has been identified by a State or U.S. EPA pursuant to Section 303(d) of the CWA as not meeting applicable State WQSs (these waters are called “water quality limited segments” under 40 CFR 30.2(j)). Impaired waters include both waters with approved or established TMDLs, and those for which a TMDL has not yet been approved or established.

Industrial Activity – the 10 categories of industrial activities included in the definition of “storm water discharges associated with industrial activity” as defined in 40 CFR 122.26(b)(14)(i)-(ix) and (xi).

Industrial Storm Water – storm water runoff from industrial activity.

Municipal Separate Storm Sewer – a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

- (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State;
- (ii) Designed or used for collecting or conveying storm water;
- (iii) Which is not a combined sewer; and
- (iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. See 40 CFR 122.26(b)(4) and (b)(7).

New Discharger – a facility from which there is a discharge, that did not commence the discharge at a particular site prior to August 13, 1979, which is not a new source, and which has never received a finally effective NPDES permit for discharges at that site. See 40 CFR 122.2.

New Source – any building, structure, facility, or installation from which there is or may be a “discharge of pollutants,” the construction of which commenced:

- after promulgation of standards of performance under section 306 of the CWA which are applicable to such source, or
- after proposal of standards of performance in accordance with section 306 of the CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal. See 40 CFR 122.2.

NSPS – technology-based standards for facilities that qualify as new sources under 40 CFR 122.2 and 40 CFR 122.29.

No exposure – all industrial materials or activities are protected by a storm-resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. See 40 CFR 122.26(g).

Operator – any entity with a storm water discharge associated with industrial activity that meets either of the following two criteria:

- (i) The entity has operational control over industrial activities, including the ability to modify those activities; or
- (ii) The entity has day-to-day operational control of activities at a facility necessary to ensure compliance with the permit (e.g., the entity is authorized to direct workers at a facility to carry out activities required by the permit).

Person – an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof. See 40 CFR 122.2.

Point source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff. See 40 CFR 122.2.

Pollutant – dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal and agricultural waste discharged into water. See 40 CFR 122.2.

Pollutant of concern – A pollutant which causes or contributes to a violation of a WQS, including a pollutant which is identified as causing an impairment in a state's 303(d) list.

Primary industrial activity – includes any activities performed on-site which are (1) identified by the facility's primary SIC code; or (2) included in the narrative descriptions of 122.26(b)(14)(i), (iv), (v), or (vii), and (ix). [For co-located activities covered by multiple SIC codes, it is recommended that the primary industrial determination be based on the value of receipts or revenues or, if such information is not available for a particular facility, the number of employees or production rate for each process may be compared. The operation that generates the most revenue or employs the most personnel is the operation in which the facility is primarily engaged. In situations where the vast majority of on-site activity falls within one SIC code, that activity may be the primary industrial activity.] Narrative descriptions in 40 CFR 122.26(b)(14) identified above include: (i) activities subject to storm water effluent limitations guidelines, NSPS, or toxic pollutant effluent standards; (iv) hazardous waste treatment storage, or disposal facilities including those that are operating under interim status or a permit under subtitle C of the RCRA; (v) landfills, land application sites and open dumps that receive or have received industrial wastes; (vii) steam electric power generating facilities; and (ix) sewage treatment works with a design flow of 1.0 MGD or more.

Qualified Personnel – Qualified personnel are those who possess the knowledge and skills to assess conditions and activities that could impact storm water quality at your facility, and who can also evaluate the effectiveness of control measures.

RQ Release – a release of a hazardous substance at or above the established legal threshold that requires emergency notification. Refer to 40 CFR Parts 110, 117, and 302 for complete definitions and reportable quantities for which notification is required.

Runoff coefficient – the fraction of total rainfall that will appear at the conveyance as runoff. See 40 CFR 122.26(b)(11).

Semi-Arid Climate – areas where annual rainfall averages from 10 to 20 inches.

Significant materials – includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of Title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with storm water discharges. See 40 CFR 122.26(b)(12).

Special Aquatic Sites – sites identified in 40 CFR 230 Subpart E. These are geographic areas, large or small, possessing special ecological characteristics of productivity, habitat, wildlife protection, or other important and easily disrupted ecological values. These areas are generally recognized as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem of a region.

Storm Water – storm water runoff, snow melt runoff, and surface runoff and drainage. See 40 CFR 122.26(b)(13).

Storm Water Discharges Associated with Construction Activity – a discharge of pollutants in storm water runoff from areas where soil disturbing activities (e.g., clearing, grading, or excavating), construction materials, or equipment storage or maintenance (e.g., fill piles, borrow areas, concrete truck washout, fueling), or other industrial storm water directly related to the construction process (e.g., concrete or asphalt batch plants) are located. See 40 CFR 122.26(b)(14)(x) and 40 CFR 122.26(b)(15).

Storm Water Discharges Associated with Industrial Activity – the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under Part 122. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial

facilities include those that are federally, State, or municipally owned or operated that meet the description of the facilities listed in 40 CFR 122.26(b)(14).

Surface Waters of the State - Means all streams, lakes, ponds, marshes, watercourses, waterways, springs, irrigation systems, drainage systems, and all other bodies or accumulations of surface water, natural or artificial, which are situated wholly or partly within, or border upon, this state, or are within its jurisdiction, except those private waters which do not combine or effect a junction with natural surface waters.

TMDLs – A TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet WQSs, and an allocation of that amount to the pollutant's sources. A TMDL includes wasteload allocations for point source discharges; load allocations for nonpoint sources and/or natural background, and shall include a margin of safety and account for seasonal variations. (See section 303(d) of the CWA and 40 CFR 130.2 and 130.7).

Water Quality Impaired – See ‘Impaired Water’.

WQSs – A WQS defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria necessary to protect the uses. States and U.S. EPA adopt WQSs to protect public health or welfare, enhance the quality of water and serve the purposes of the CWA (See CWA sections 101(a)2 and 303(c)). WQSs also include an antidegradation policy. See Public Utility District No. 1 of Jefferson County et al v. Washington Department of Ecology et al, 511 US 701, 705 (1994).

“You” and “Your” – as used in this permit are intended to refer to the permittee, the operator, or the discharger as the context indicates and that party’s facility or responsibilities. The use of “you” and “your” refers to a particular facility and not to all facilities operated by a particular entity. For example, “you shall submit” means the permittee shall submit something for that particular facility. Likewise, “all your discharges” would refer only to discharges at that one facility.

ABBREVIATIONS AND ACRONYMS

BMP – Best Management Practice

CBI - Confidential Business Information

CERCLA – Comprehensive Environmental Response, Compensation and Liability Act

CFR – Code of Federal Regulations

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 *et seq*)

MGD – Million Gallons per Day

MS4 – Municipal Separate Storm Sewer System

NPDES – National Pollutant Discharge Elimination System

NSPS – New Source Performance Standards

ODNR – Ohio Department of Nature Resources

POTW – Publicly Owned Treatment Works

RCRA – Resource Conservation and Recovery Act

RQ – Reportable Quantity

SARA – Superfund Amendments and Reauthorization Act

SIC – Standard Industrial Classification

SPCC – Spill Prevention, Control, and Countermeasures

SWPPP – Storm Water Pollution Prevention Plan

TMDL – Total Maximum Daily Load

U.S.C – United States Code
U.S. EPA – U. S. Environmental Protection Agency
USGS – United States Geological Survey
WQS – Water Quality Standard