STEVEN L. BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LEONARD K. PETERS
SECRETARY

FACT SHEET

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT TO DISCHARGE TREATED WASTEWATER INTO WATERS OF THE COMMONWEALTH

KPDES No.: KY0100331 **Permit Writer:** Mahmoud Sartipi **Date:** December 18, 2009
AI No.: 37952

1. **SYNOPSIS OF APPLICATION**

a. Name and Address of Applicant

Demolition Disposal Services, Inc.
2393 Alumni Drive, Suite 100
Lexington, Kentucky 40517

b. Facility Location

DDSI Construction/Demolition Debris Landfill
0.75 miles east of Route 859
0.5 miles south of Avon, Fayette County, Kentucky

c. Description of Applicant's Operation

Construction/Demolition Debris Landfill

d. Production Capacity of Facility

Not applicable

e. Description of Existing Pollution Abatement Facilities

001 and 002 - Storm water runoffs are treated in sediment basin prior to discharge.
003 - Site produced treated leachate is treated by stabilization and sedimentation prior to discharge.

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f. Permitting Action

Reissuance of a minor permit to an existing Construction/Demolition Debris landfill (SIC 4953).

2. **RECEIVING WATER**

a. Name/Mile Point

Outfall 001 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38º 03′ 34′′ and Longitude of 84º 18′ 15″
Outfall 002 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38º 03′ 38′′ and Longitude of 84º 18′ 34″
Outfall 003 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38º 03′ 31′′ and Longitude of 84º 18′ 17″

b. Stream Segment Use Classification

Pursuant to 401 KAR 10:026, Section 5, unnamed tributary of North Elkhorn Creek carries the following classifications: Warmwater Aquatic Habitat, Primary/Secondary Contact Recreation, and Domestic Water Supply.

c. Stream Segment Categorization

Pursuant to 401 KAR 10:030, Section 1 unnamed tributary of North Elkhorn Creek is categorized as a High Quality Waters.

d. Stream Low Flow Condition

The 7-day, 10-year low flow and harmonic mean conditions of unnamed tributary of North Elkhorn Creek are 0.0 and 0.2 cfs, respectively.

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3. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge – Outfall 001 – Storm water runoff

Effluent Characteristics	Reported Discharge Monthly Average	Reported Discharge Daily Maximum	Proposed Limits Monthly Average	Proposed Limits Daily Maximum	Applicable Water Quality Criteria and/or Effluent Guidelines
Flow (MGD)	0.008	0.022	Report	Report	401 KAR 5:065, Section 2(8)
Precipitation (inches)	NA	NA	Report	Report	401 KAR 5:065, Section 2(8)
Chlorides (mg/l)	11.73	26	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sulfate (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Organic Carbon	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sodium (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Specific Conductance (umho/cm)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Antimony (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Arsenic (mg/l)	0.04	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Beryllium (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Cadmium (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Chromium (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Copper (mg/l)	0.0125	0.02	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Lead (mg/l)	0.0052	0.0059	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Nickel (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Selenium (mg/l)	0.005	0.005	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Silver (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Thallium (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Zinc (mg/l)	0.04	0.12	NA	Report	401 KAR 5:065, Section 2(8)
Hardness (AS mg/l of $CaCO_3$)	358	640	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Iron (mg/l)	2.56	8	NA	Report	401 KAR 5:031, Section 2(8)
Total Suspended Solids (mg/l)	50.25	160	NA	100	401 KAR 5:080, Section 1(2)(C)2
pH (standard units)	7.35	7.96	6.0 (min)	9.0 (max)	401 KAR 10:031, Section 4(1)(b)

The abbreviation NA means Not Applicable.

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4. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 001 - Storm water runoff

b. Effluent Characteristics

Flow, Precipitation, TSS, Antimony(TR), Arsenic(TR), Beryllium(TR), Cadmium(TR), Chromium(TR), Copper(TR), Iron(TR), Lead(TR), Nickel(TR), Selenium(TR), Silver(TR), Thallium(TR), Zinc(TR), Hardness and pH.

c. Pertinent Factors

None

d. Monitoring Requirements

Flow monitoring shall be conducted once per month.

Total Suspended Solids, Precipitation, Iron (TR), Chlorides, and pH shall be monitored once per month by grab sample. Antimony (TR), Arsenic (TR), Beryllium (TR), Cadmium (TR), Chromium (TR), Copper (TR), Lead (TR), Nickel (TR), Selenium (TR), Silver (TR), Thallium (TR), and Zinc (TR) shall be monitored once per quarter by grab sample.

e. Justification of Conditions

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Flow, Precipitation, Antimony (TR), Arsenic (TR), Beryllium (TR), Cadmium (TR), Chromium (TR), Copper (TR), Iron (TR), Lead (TR), Nickel (TR), Thallium (TR), Selenium (TR), Silver (TR), Zinc (TR) and Hardness
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Suspended Solids
The limits and requirements for this parameter are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Practicable Control Technology Currently Available" (BPT) and "Best Available Technology Economically Achievable" (BAT) requirements for these types of discharges.

pH
The limits for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4(1)(b).

Chloride, Sulfate, Sodium, Total Organic Carbon, Specific Conductance
The removal of these parameters from the permit is consistent with 401 KAR 5:080, Section 1(2)(c)2. A review of the DMR data for the previous permit indicated that reasonable potential did not exist for these parameters to be limited or monitored in the permit. Therefore, it is the "Best Professional Judgment" (BPJ) of the Division of Water that these parameters be removed from the permit.

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5. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge – Outfall 002 – Storm water runoff

Effluent Characteristics	Reported Discharge Monthly Average	Reported Discharge Daily Maximum	Proposed Limits Monthly Average	Proposed Limits Daily Maximum	Applicable Water Quality Criteria and/or Effluent Guidelines
Flow (MGD)	0.004	0.007	Report	Report	401 KAR 5:065, Section 2(8)
Precipitation (inches)	NA	NA	Report	Report	401 KAR 5:065, Section 2(8)
Chlorides (mg/l)	5	7	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sulfate (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Organic Carbon	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sodium (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Specific Conductance (umho/cm)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Antimony (mg/l)	0.03	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Arsenic (mg/l)	0.03	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Beryllium (mg/l)	0.006	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Cadmium (mg/l)	0.005	0.005	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Chromium (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Copper (mg/l)	0.008	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Lead (mg/l)	0.028	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Nickel (mg/l)	0.015	0.02	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Selenium (mg/l)	0.028	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Silver (mg/l)	0.01	0.01	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Thallium (mg/l)	0.03	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Zinc (mg/l)	0.035	0.05	NA	Report	401 KAR 5:065, Section 2(8)
Hardness (AS mg/l of $CaCO_3$)	234	270	NA	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Iron (mg/l)	0.47	0.59	NA	Report	401 KAR 5:031, Section 2(8)
Total Suspended Solids (mg/l)	11.9	19.3	NA	100	401 KAR 5:080, Section 1(2)(C)2
pH (standard units)	7.78	7.96	6.0 (min)	9.0 (max)	401 KAR 10:031, Section 4(1)(b)

The abbreviation NA means Not Applicable.

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6. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 002 – Storm water runoff

b. Effluent Characteristics

Flow, Precipitation, TSS, Antimony(TR), Arsenic(TR), Beryllium(TR), Cadmium(TR), Chromium(TR), Copper(TR), Iron(TR), Lead(TR), Nickel(TR), Selenium(TR), Silver(TR), Thallium(TR), Zinc(TR), Hardness and pH.

c. Pertinent Factors

None

d. Monitoring Requirements

Flow monitoring shall be conducted once per month.

Total Suspended Solids, Precipitation, Iron (TR) and pH shall be monitored once per month by grab sample. Antimony (TR), Arsenic (TR), Beryllium (TR), Cadmium (TR), Chromium (TR), Copper (TR), Lead (TR), Nickel (TR), Selenium (TR), Silver (TR), Thallium (TR), and Zinc (TR) shall be monitored once per quarter by grab sample.

e. Justification of Conditions

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Flow, Precipitation, Antimony (TR), Arsenic (TR), Beryllium (TR), Cadmium (TR), Chromium (TR), Copper (TR), Iron (TR), Lead (TR), Nickel (TR), Thallium (TR), Selenium (TR), Silver (TR), Zinc (TR) and Hardness
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Suspended Solids
The limits and requirements for this parameter are consistent with the requirements of 401 KAR 5:080, Section 1(2)(c)2. These limits are representative of the Division of Water's "Best Professional Judgment" (BPJ) determination of the "Best Practicable Control Technology Currently Available" (BPT) and "Best Available Technology Economically Achievable" (BAT) requirements for these types of discharges.

pH
The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4(1)(b).

Chlorides, Sodium, Sulfate, Total Organic Carbon and Specific Conductance
The removal of these parameters from the permit is consistent with 401 KAR 5:080, Section 1(2)(c)2. A review of the DMR data for the previous permit indicated that reasonable potential did not exist for these parameters to be limited or monitored in the permit. Therefore, it is the "Best Professional Judgment" (BPJ) of the Division of Water that these parameters be removed from the permit.

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7. REPORTED DISCHARGE AND PROPOSED LIMITS

Description of Discharge – Outfall 003 – Site produced treated leachate

Effluent Characteristics	Reported Discharge Monthly Average	Reported Discharge Daily Maximum	Proposed Limits Monthly Average	Proposed Limits Daily Maximum	Applicable Water Quality Criteria and/or Effluent Guidelines
Flow (MGD)	0.8	2.3	Report	Report	401 KAR 5:065, Section 2(8)
Precipitation (inches)	NA	NA	Report	Report	401 KAR 5:065, Section 2(8)
Chlorides (mg/l)	102	280	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sulfate (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Organic Carbon	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Sodium (mg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Specific Conductance (umho/cm)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Arsenic (mg/l)	0.023	0.05	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Chromium (mg/l)	0.01	0.01	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Lead (mg/l)	0.0044	0.005	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Nickel (mg/l)	0.01	0.02	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Silver (mg/l)	0.01	0.01	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Zinc (mg/l)	0.025	0.05	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Recoverable Iron (mg/l)	0.36	0.91	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Total Purgeables (µg/l)	NA	NA	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
Cyanide, Free (µg/l)	4.33	5	Removing from permit		401 KAR 5:080, Section 1(2)(C)2
Dissolved Oxygen (minimum)	8.4	9.62	Removing from permit		401 KAR 5:080, Section 1(2)(C)2
$CBOD_5$ (mg/l)	8.7	20	Removing from permit		401 KAR 5:080, Section 1(2)(c)2
BOD_5 (mg/l)	NA	NA	37	140	401 KAR 5:065, Section 5(3)
Total Suspended Solids (mg/l)	17	43	27	88	401 KAR 5:065, Section 5(3)
Ammonia (as mg/l N)	1.04	2.1	4.9	10	401 KAR 5:065, Section 5(3)
Total Zinc (mg/l)	NA	NA	0.11	0.20	401 KAR 5:065, Section 5(3)
Alpha-Terpineol (mg/l)	NA	NA	0.016	0.033	401 KAR 5:065, Section 5(3)
Benzoic Acid (mg/l)	NA	NA	0.071	0.12	401 KAR 5:065, Section 5(3)
p-Cresol (mg/l)	NA	NA	0.014	0.025	401 KAR 5:065, Section 5(3)
Phenol (mg/l)	NA	NA	0.015	0.026	401 KAR 5:065, Section 5(3)
Acute Toxicity	NA	NA	N/A	1.0 TU_a	401 KAR 10:031, Section 6 401 KAR 5:065, Section 2(12)
Total Recoverable Cadmium (µg/l)	23	100	0.756	8.731	401 KAR 10:031, Section 6
Total Recoverable Copper (µg/l)	57	134	30.5	51.68	401 KAR 10:031, Section 6
Total Recoverable Selenium (µg/l)	14	50	5	20	401 KAR 10:031, Section 6
Total Recoverable Antimony (mg/l)	0.017	0.05	Report	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Beryllium (mg/l)	0.009	0.01	Report	Report	401 KAR 5:065, Section 2(8)
Total Recoverable Thallium (mg/l)	0.02	0.05	Report	Report	401 KAR 5:065, Section 2(8)
Hardness (AS mg/l of $CaCO_3$)	466	670	NA	Report	401 KAR 5:065, Section 2(8)
pH (standard units)	7.57	8.24	6.0 (min)	9.0 (max)	401 KAR 10:031, Section 4(1)(b)

The abbreviation NA means Not Applicable.

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8. METHODOLOGY USED IN DETERMINING LIMITATIONS

a. Serial Number

Outfall 003 - Site produced treated leachate

b. Effluent Characteristics

Flow, Precipitation, BOD_5, TSS, Ammonia, Total Zinc, Alpha Terpineol, Benzoic Acid, p-Cresol, Phenol, Acute Toxicity, Cadmium (TR), Copper (TR), Selenium (TR), Antimony (TR), Beryllium (TR), Thallium, Hardness and pH.

c. Pertinent Factors

None

d. Monitoring Requirements

Instantaneous flow measurements shall be collected once per Discharge.

Precipitation, Total Suspended Solids, BOD_5, Ammonia, Alpha-Terpineol, Benzoic Acid, Phenol, P-Cresol, Zinc (Total), Acute Toxicity, Cadmium (TR), Copper (TR), Selenium (TR), Antimony (TR), Beryllium (TR), Thallium, Hardness and pH shall be monitored once per Discharge by grab sample.

e. Justification of Conditions

The Kentucky regulations cited below have been duly promulgated pursuant to the requirements of Chapter 224 of the Kentucky Revised Statutes.

Flow, Precipitation, Antimony (TR), Beryllium (TR), Thallium and Hardness
The monitoring requirements for these parameters are consistent with the requirements of 401 KAR 5:065, Section 2(8).

Total Suspended Solids, BOD_5, Ammonia, Alpha-Terpineol, Benzoic Acid, Phenol, P-Cresol, Zinc, and pH
Limitations for these parameters are consistent with the requirements of 401 KAR 5:065, Section 5(3). These limits are representative of the "Best Practicable Technology Currently Available" (BPT) for an existing landfill point source category, pursuant to 40 CFR Part 445.21.

pH, Cadmium (TR), Copper (TR) and Selenium (TR)
The limits for these parameters are consistent with the requirements of 401 KAR 10:031, Section 4 and 401 KAR 10:031, Section 6.

Acute Toxicity
The limits and requirements for this parameter are consistent with the requirements of 401 KAR 10:031, Section 4 and 401 KAR 5:065, Section 2(12).

Total Organic Carbon, Sodium, Sulfate, Specific Conductance, Iron (TR), Arsenic (TR), Total Purgeables, $CBOD_5$, Chromium (TR), Nickel (TR), Zinc (TR), Lead (TR), Silver (TR), Dissolved Oxygen, Cyanide Free and Chlorides
The removal of these parameters from the permit is consistent with 401 KAR 5:080, Section 1(2)(c)2. A review of the DMR data for the previous permit indicated that reasonable potential did not exist for these parameters to be limited or monitored in the permit. Therefore, it is the "Best Professional Judgment" (BPJ) of the Division of Water that these parameters be removed from the permit.

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9. **ANTIDEGRADATION**

The conditions of 401 KAR 10:029, Section 1 has been satisfied by this permit action. Since this permit action involves reissuance of an existing permit, and does not propose an expanded discharge, a review under 401 KAR 10:030 Section 1 is not applicable.

10. **PROPOSED COMPLIANCE SCHEDULE FOR ATTAINING EFFLUENT LIMITATIONS**

The permittee will comply with all effluent limitations by the effective date of the permit.

11. **PROPOSED SPECIAL CONDITIONS WHICH WILL HAVE A SIGNIFICANT IMPACT ON THE DISCHARGE**

Best Management Practices (BMP) Plan
Pursuant to 401 KAR 5:065, Section 2(10), a BMP requirement shall be included: to control or abate the discharge of pollutants from ancillary areas containing toxic or hazardous substances or those substances which could result in an environmental emergency; where numeric effluent limitations are infeasible; or to carry out the purposes and intent of KRS 224. The facility has several areas where support activities occur which have a potential of the discharge of such substances through storm water runoff or spillage. Some of these areas will drain to present wastewater treatment plants, others will not.

Outfall Signage
The permittee shall post a permanent marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and shall be posted as near as possible to the actual sampling location.

12. **PERMIT DURATION**

Five (5) years. This facility is in the Kentucky River Basin Management Unit as per the Kentucky Watershed Management Framework.

13. **PERMIT INFORMATION**

The application, draft permit, fact sheet, public notice, comments received and additional information is available from the Division of Water at 200 Fair Oaks Lane, Frankfort, Kentucky 40601.

14. **REFERENCES AND CITED DOCUMENTS**
All material and documents referenced or cited in this fact sheet are parts of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the person listed below.

15. **CONTACT**

For further information on the draft permit or comment process, contact the individual identified on the Public Notice or the Permit Writer – Mahmoud Sartipi at (502) 564-8158, extension 4954, or email mahmoud.sartipi@ky.gov.

16. **PUBLIC NOTICE INFORMATION**

Please refer to the attached Public Notice for details regarding the procedures for a final decision, deadline for comments and other information required by 401 KAR 5:075, Section 4(2)(e).

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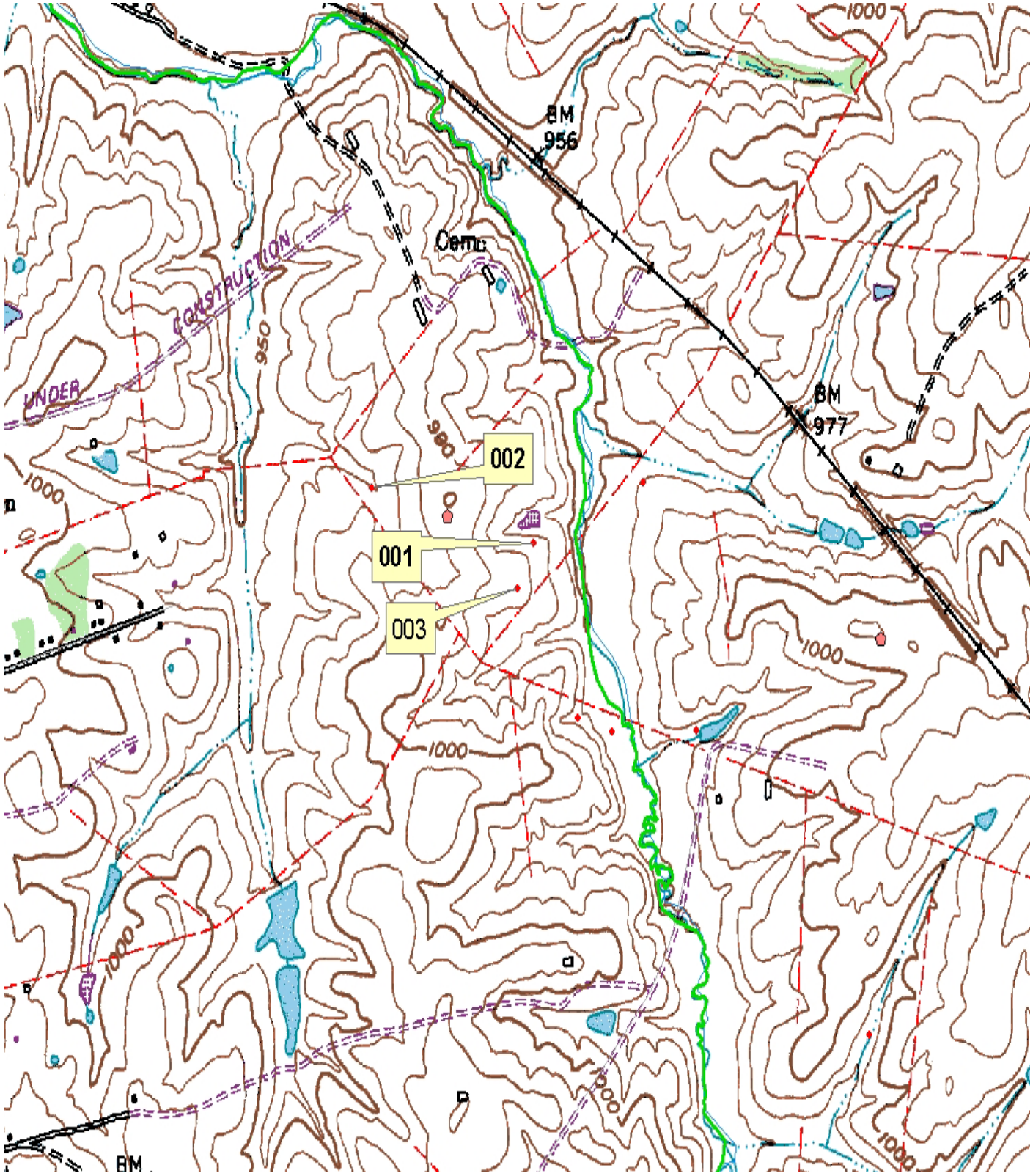
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STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Permit Writer	Mahmoud Sartipi	
Date Entered	10/8/2009	
Facility Name	Demolition Disposal Services	
KPDES Number	KY0100331	
Outfall Number	001	
Case	Reissuance	
Status:		
Is this an existing facility – Enter "E"		
Is this an existing facility with an increase in pollutant load – Enter "I"		
Is this a new facility – Enter "N"		
Is this a regional facility with an approved up-to-date 201 plan – Enter "R"		
Has the permittee made a successful alternatives analysis/socioeconomic demonstration – Enter "A"	E	
Receiving Water Name	UT to North Elkhorn Creek	
Discharge Mile Point	8.7	
Public Water Supply Name	Georgetown Municipal Water & Sewer Service	
Intake Water Name	Georgetown Municipal Water & Sewer Service	
Intake Mile Point	50.9	
Total Effluent Flow (Q_T)	0.022	MGD
Receiving Water 7Q10 (Q_{RW7Q10})	0	cfs
Receiving Water Harmonic Mean (Q_{RWHM})	0.2	cfs
Receiving Water pH	7.5	SU
Receiving Water Temperature	20.00	^oC
Intake Water 7Q10 (Q_{IW7Q10})	1.5	cfs
Intake Water Harmonic Mean (Q_{IWHM})	8	cfs
Effluent Hardness	357	(as mg/l CaCO3)
Receiving Water Hardness	100	(as mg/l CaCO3)
Zone of Initial Dilution (ZID)	1	
Mixing Zone (MZ)	0	
Acute to Chronic Ratio (ACR)	0.1	
Impaired	NO	
Permittee agrees to accept no mixing zone for bioaccumulative or persistent pollutants prior to 09/08/2014	Yes	

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Calculation Methodology

Definitions

Acute to Chronic Ratio	ACR	Total Effluent Flow	Q_T
Aquatic Life Acute Criteria	C_A	Receiving Water 7Q10	Q_{RW7Q10}
Aquatic Life Chronic Criteria	C_C	Receiving Water Harmonic Mean	Q_{RWHM}
Human Health Criteria - Fish Only	C_{HHFO}	Intake Water 7Q10	Q_{IW7Q10}
Human Health Criteria - Fish & Water	C_{HHFW}	Intake Water Harmonic Mean	Q_{IWHM}
End of Pipe Effluent Limit	C_T	Zone of Initial Dilution	ZID
Instream Background Concentration	C_U	Mixing Zone	MZ
Toxicity Units - Acute	TU_a	Toxicity Units - Chronic	TU_c
Effluent Hardness	H_T	Receiving Water Hardness	H_{RW}

Aquatic Life - Chemical Specific

Acute

NO ZID given $C_T = C_A$

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Human Health - Chemical Specific

Fish Only: Mixing Zone / Complete Mix

Carcinogen / Non-Carcinogen $C_T = \{C_{HHFO}[Q_T + (MZ)(Q_{RWHM})] - C_U(MZ)(Q_{RWHM})\}/Q_T$

Fish & Water Only: Mixing Zone / Applicable at point of withdrawal

Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IWHM})] - C_U(Q_{IWHM})\}/Q_T$

Non-Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IW7Q10})] - C_U(Q_{IW7Q10})\}/Q_T$

Aquatic Life - Whole Effluent Toxicity

Acute (Units TU_a)

NO ZID given CT = CA

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix (Units TUc)

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Conversion of TU_c to TU_a : $TU_c \times ACR = TU_a$

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Metal Aquatic Criteria

Pollutant	Acute Criteria	Chronic Criteria
Total Recoverable Cadmium	$e^{(1.0166 (\ln Hardness) - 3.924)}$	$e^{(0.7409 (\ln Hardness) - 4.719)}$
Chromium III	$e^{(0.8190 (\ln Hardness) + 3.7256)}$	$e^{(0.8190 (\ln Hardness) + 0.6848)}$
Total Recoverable Copper	$e^{(0.9422 (\ln Hardness) - 1.700)}$	$e^{(0.8545 (\ln Hardness) - 1.702)}$
Total Recoverable Lead	$e^{(1.273 (\ln Hardness) - 1.460)}$	$e^{(1.273 (\ln Hardness) - 4.705)}$
Total Recoverable Nickel	$e^{(0.8460 (\ln Hardness) + 2.255)}$	$e^{(0.8460(\ln Hardness) + 0.0584)}$
Total Recoverable Silver	$e^{(1.72 (\ln Hardness) - 6.59)}$	
Total Recoverable Zinc	$e^{(0.8473 (\ln Hardness) + 0.884)}$	$e^{(0.8473 (\ln Hardness) + 0.884)}$

Hardness (as mg/l $CaCO_3$)

Zone Initial Dilution (ZID) $H_{RW} + [H_T + H_{RW}]/ZID$

Mixing Zone $[(Q_{RW7Q10})(MZ)(H_{RW}) + (Q_T)(H_T)]/[(QRW7Q10)(MZ)+(QT)]$

Total Ammonia Criteria

Chronic - applies state wide - unionzed criteria of 0.05 mg/l $[0.05*(1+10^{(pka-pH)})]/1.2$ pka=(0.0902+(2730/(273.1+T)) T = Temperature ^oC

Acute - applies to the Ohio River (ORSANCO Criteria) $[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$

Bioaccumulative or Persistent

For new facilities after September 8, 2004 mixing zones shall not be granted for bioaccumulative or persistent pollutants of concern.

Mixing zones for bioaccumulative or persistent pollutants of concerned assigned prior to September 8, 2004 shall expire no later than September 8, 2014, unless the permittee agrees to expiration of the mixing zone prior to that date.

Therefore, the application of the more stringent criteria of Human Health Fish & Water Consumption, Human Health Fish Only Consumption, and Aquatic Life Chronic shall apply as end-of-pipe effluent limitations.

Antidegradation

If a new facility or an existing facility that will have a pollutant load increase, the effluent limits are halved unless the receiving stream is impaired or the permittee has demonstrated a negative socioeconomic or cost benefit analysis.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Reasonable Potential Analysis

In establishing water quality based effluent conditions the Division of Water must determine if the pollutant concentrations in the discharge will cause, have the reasonable potential to cause, or contribute to an excursion of any water standard. The process by which the Division of Water makes this determination is known as a Reasonable Potential Analysis.

A Reasonable Potential Analysis is performed by first calculating the expected effluent limitations for those pollutants with water quality criteria. The calculated limits are then compared to the concentrations reported on the KPDES permit application and/or a summarization of the values reported on the Discharge Monitoring Report (DMRs) submitted during the term of the permit. This comparison is made by dividing the reported value by the calculated effluent limitation and converting to a percentage. The following criteria are used in determining how the pollutant will be addressed in the permit.

New Permits or New Pollutants on Permit Renewals

If the reported concentration is less than 70% of the calculated effluent limit then no monitoring or limitations will be required.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is less than 12 then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is equal or greater than 12 then an effluent limitation will be required.

Permit Renewals - Existing Pollutants

If the reported concentration is less than 70% of the calculated effluent limit then and the source of the reported concentration was the DMRs for that facility and there were more than 12 DMRs utilized to determine the reported concentrations then the pollutant will be removed from the permit.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% then an effluent limitation will be required.

In all cases, the Division of Water still may exercise its Best Professional Judgment in the implementation of the results.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Chloride	16887006	11.750000	26.000000	600.000000	1,200.000000	1.96%	2.17%	DMR	4	Remove	Remove	Chronic	Acute
Total Residual Chlorine		0.000000	0.000000	0.011000	0.019000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Color		0.000000	0.000000	3.378409	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Fluoride		0.000000	0.000000	90.090909	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Nitrate-Nitrite (as N)	14797558	0.000000	0.000000	450.454545	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Alpha		0.000000	0.000000	NA	15.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Beta		0.000000	0.000000	NA	50.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Radium		0.000000	0.000000	NA	5.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Sulfate (as SO4)		0.000000	0.000000	11,261.363636	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Surfactants		0.000000	0.000000	22.522727	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Barium	7440393	0.000000	0.000000	45.045455	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Iron	7439896	2.560000	8.000000	1.000000	4.000000	256.00%	200.00%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Antimony	7440360	0.010000	0.010000	0.252255	NA	3.96%	0.00%	DMR	4	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Arsenic	7440382	0.040000	0.050000	0.150000	0.340000	26.67%	14.71%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Beryllium	7440417	0.010000	0.010000	0.180182	NA	5.55%	0.00%	DMR	4	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Cadmium	7440439	0.010000	0.010000	0.000695	0.007778	1439.34%	128.57%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Chromium	7440439	0.010000	0.010000	4.504545	NA	0.22%	0.00%	DMR	4	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Copper	7440508	0.012500	0.020000	0.027675	0.046433	45.17%	43.07%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Lead	7439921	0.005200	0.005900	0.016076	0.412550	32.35%	1.43%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Mercury	7439976	0.000000	0.000000	0.000051	0.001700	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Total Recoverable Nickel	7440020	0.010000	0.010000	0.153081	1.376865	6.53%	0.73%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Selenium	7782492	0.005000	0.005000	0.005000	0.020000	100.00%	25.00%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Silver	7440224	0.010000	0.010000	NA	0.033774	0.00%	29.61%	DMR	4	Monitoring	Monitoring	NA	Acute
Total Recoverable Thallium	7440280	0.010000	0.010000	0.006300	NA	158.73%	0.00%	DMR	4	Monitoring	Monitoring	HH Fish	NA
Total Recoverable Zinc	7440666	0.040000	0.120000	0.352202	0.352202	11.36%	34.07%	DMR	4	Monitoring	Monitoring	Chronic	Acute
Free Cyanide	57125	0.000000	0.000000	0.005200	0.022000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
2,3,7,8 Tetrachlorodibenzo P Dioxin	1746016	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrolein	107028	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrylonitrile	107131	0.000000	0.000000	0.000250	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzene	71432	0.000000	0.000000	0.051000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bromoform	75252	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Carbon Tetrachloride	56235	0.000000	0.000000	0.001600	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorobenzene	108907	0.000000	0.000000	21.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorodibromomethane	124481	0.000000	0.000000	0.013000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloroform	67663	0.000000	0.000000	0.470000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dichlorobromomethane	75274	0.000000	0.000000	0.017000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloroethane	107062	0.000000	0.000000	0.037000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1-Dichloroethylene	75354	0.000000	0.000000	0.003200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloropropane	78875	0.000000	0.000000	0.011795	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,3-Dichloropropene	542756	0.000000	0.000000	0.450455	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Ethylbenzene	100414	0.000000	0.000000	29.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methyl Bromide	74839	0.000000	0.000000	1.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methylene Chloride	75092	0.000000	0.000000	0.590000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,2,2-Tetrachloroethane	79345	0.000000	0.000000	0.004000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Tetrachloroethylene	127184	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toluene	108883	0.000000	0.000000	200.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Trans-Dichloroethylene	156605	0.000000	0.000000	140.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,1-Trichloroethane	71556	0.000000	0.000000	9.009091	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,2-Trichloroethane	79005	0.000000	0.000000	0.016000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Trichloroethylene	79016	0.000000	0.000000	0.030000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Vinyl Chloride	75014	0.000000	0.000000	0.471818	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2-Chlorophenol	95578	0.000000	0.000000	0.150000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dichlorophenol	120832	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dimethylphenol	105679	0.000000	0.000000	0.850000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrophenol	51285	0.000000	0.000000	3.108136	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Pentachlorophenol	87865	0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phenol	108952	0.000000	0.000000	945.954545	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,6-Trichlorophenol	88062	0.000000	0.000000	0.002400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acenaphthene	83329	0.000000	0.000000	0.990000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Anthracene	120127	0.000000	0.000000	40.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzidine	92875	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)anthracene	56553	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)pyrene	50328	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(k)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroisopropyl)ether	108601	0.000000	0.000000	63.063636	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Bis(2-ethylhexyl)phthalate	117817	0.000000	0.000000	0.002200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Butylbenzyl phthalate	85687	0.000000	0.000000	1.900000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chloronaphthalene	91587	0.000000	0.000000	1.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chrysene	218019	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dibenzo(a,h)anthracene	53703	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichlorobenzene	95501	0.000000	0.000000	17.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichlorobenzene	541731	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,4-Dichlorobenzene	106467	0.000000	0.000000	2.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
3,3-Dichlorobenzidine	91941	0.000000	0.000000	0.000028	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Diethyl phthalate	84662	0.000000	0.000000	44.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dimethyl phthalate	131113	0.000000	0.000000	1,100.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Di-n-butyl phthalate	84742	0.000000	0.000000	4.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrotoluene	121142	0.000000	0.000000	0.003400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Diphenylhydrazine	122667	0.000000	0.000000	0.000200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluoranthene	206440	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluorene	86737	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobenzene	118741	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobutadiene	87683	0.000000	0.000000	0.018000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorocyclopentadiene	77474	0.000000	0.000000	10.810909	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Hexachloroethane	67721	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ideno(1,2,3-cd)pyrene	193395	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Isophorone	78591	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Nitrobenzene	98953	0.000000	0.000000	0.690000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodimethylamine	62759	0.000000	0.000000	0.000163	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodi-n-Propylamine	621647	0.000000	0.000000	0.000510	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiphenylamine	86306	0.000000	0.000000	0.006000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pyrene	129000	0.000000	0.000000	4.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2,4-Trichlorobenzene	120821	0.000000	0.000000	0.940000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Aldrin	309002	0.000000	0.000000	0.000000	0.003000	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
alpha-BHC	319846	0.000000	0.000000	0.000005	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Beta-BHC	319857	0.000000	0.000000	0.000017	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
gamma-BHC (Lindane)	58899	0.000000	0.000000	0.000063	0.000950	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Chlordane	57749	0.000000	0.000000	0.000001	0.002400	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDT	50293	0.000000	0.000000	0.000000	0.001100	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDE	72559	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
4,4'-DDD	72548	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dieldrin	60571	0.000000	0.000000	0.000000	0.000240	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Alpha-Endosulfan	959988	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Beta-Endosulfan	33213659	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endosulfan sulfate	1031078	0.000000	0.000000	0.089000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Endrin	72208	0.000000	0.000000	0.000036	0.000086	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endrin aldehyde	7421934	0.000000	0.000000	0.000300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Heptachlor	76448	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Heptachlor epoxide	1024573	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Polychlorinated Biphenyls (PCBs)		0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toxaphene	8001352	0.000000	0.000000	0.000000	0.000730	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
1,2,4,5-Tetrachlorobenzene	95943	0.000000	0.000000	0.001100	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-methyl-4,6-dinitrophenol	534521	0.000000	0.000000	0.280000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-D	94757	0.000000	0.000000	16.513636	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-TP (Silvex)	93721	0.000000	0.000000	0.450455	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-trichlorophenol	95954	0.000000	0.000000	3.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Asbestos	1332214	0.000000	0.000000	1,651,363.636364	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzo(b)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroethyl)ether	111444	0.000000	0.000000	0.000530	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(chloromethyl)ether	542881	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloropyrifos	2921882	0.000000	0.000000	0.000041	0.000083	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (III)	16065831	0.000000	0.000000	0.244366	5.112611	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (VI)	18540299	0.000000	0.000000	0.011000	0.016000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Demeton	8065483	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Dinitrophenols	25550587	0.000000	0.000000	3.108136	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Guthion	86500	0.000000	0.000000	0.000010	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Hexachlorocyclo-hexane-Technical	319868	0.000000	0.000000	0.000041	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hydrogen Sulfide, Undissociated	7783064	0.000000	0.000000	0.002000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Malathion	121755	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Methoxychlor	72435	0.000000	0.000000	0.000030	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Mirex	2385855	0.000000	0.000000	0.000001	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Nitrosamines, Other		0.000000	0.000000	0.000036	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 001

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodibutylamine	924163	0.000000	0.000000	0.000220	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiethylamine	55185	0.000000	0.000000	0.000189	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosopyrrolidine	930552	0.000000	0.000000	0.003775	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Parathion	56382	0.000000	0.000000	0.000013	0.000065	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Pentachlorobenzene	608935	0.000000	0.000000	0.001500	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phthalate esters		0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Total Dissolved Solids		0.000000	0.000000	33,784.090909	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Tritium		0.000000	0.000000	NA	20,000.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Strontium-90		0.000000	0.000000	NA	8.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Uranium		0.000000	0.000000	NA	0.030000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Ammonia		0.000000	0.000000	3.360911	19.890204	0.00%	0.00%	No Data	0	None	None	Chronic	Acute

Hardness	Chronic	Acute
Metal limitations are developed using the mixed hardness of the effluent and receiving waters	357.00	357.00

Toxicity

Type of Test	Maximum	Units	Justification	Percent Effluent
Chronic	1.00	TUc	Chronic	100.00%

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Permit Writer	Mahmoud Sartipi	
Date Entered	10/8/2009	
Facility Name	Demolition Disposal Services	
KPDES Number	KY0100331	
Outfall Number	002	
Case	Reissuance	
Status:		
Is this an existing facility – Enter "E"		
Is this an existing facility with an increase in pollutant load – Enter "I"		
Is this a new facility – Enter "N"		
Is this a regional facility with an approved up-to-date 201 plan – Enter "R"		
Has the permittee made a successful alternatives analysis/socioeconomic demonstration – Enter "A"	E	
Receiving Water Name	UT to North Elkhorn Creek	
Discharge Mile Point	8.7	
Public Water Supply Name	Georgetown Municipal Water & Sewer Service	
Intake Water Name	Georgetown Municipal Water & Sewer Service	
Intake Mile Point	50.9	
Total Effluent Flow (Q_T)	0.004	MGD
Receiving Water 7Q10 (Q_{RW7Q10})	0	cfs
Receiving Water Harmonic Mean (Q_{RWHM})	0.2	cfs
Receiving Water pH	7.5	SU
Receiving Water Temperature	20.00	^oC
Intake Water 7Q10 (Q_{IW7Q10})	1.5	cfs
Intake Water Harmonic Mean (Q_{IWHM})	8	cfs
Effluent Hardness	357	(as mg/l CaCO3)
Receiving Water Hardness	100	(as mg/l CaCO3)
Zone of Initial Dilution (ZID)	1	
Mixing Zone (MZ)	0	
Acute to Chronic Ratio (ACR)	0.1	
Impaired	NO	
Permittee agrees to accept no mixing zone for bioaccumulative or persistent pollutants prior to 09/08/2014	Yes	

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Calculation Methodology

Definitions

Acute to Chronic Ratio	ACR	Total Effluent Flow	Q_T
Aquatic Life Acute Criteria	C_A	Receiving Water 7Q10	Q_{RW7Q10}
Aquatic Life Chronic Criteria	C_C	Receiving Water Harmonic Mean	Q_{RWHM}
Human Health Criteria - Fish Only	C_{HHFO}	Intake Water 7Q10	Q_{IW7Q10}
Human Health Criteria - Fish & Water	C_{HHFW}	Intake Water Harmonic Mean	Q_{IWHM}
End of Pipe Effluent Limit	C_T	Zone of Initial Dilution	ZID
Instream Background Concentration	C_U	Mixing Zone	MZ
Toxicity Units - Acute	TU_a	Toxicity Units - Chronic	TU_c
Effluent Hardness	H_T	Receiving Water Hardness	H_{RW}

Aquatic Life - Chemical Specific

Acute

NO ZID given $C_T = C_A$

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Human Health - Chemical Specific

Fish Only: Mixing Zone / Complete Mix

Carcinogen / Non-Carcinogen $C_T = \{C_{HHFO}[Q_T + (MZ)(Q_{RWHM})] - C_U(MZ)(Q_{RWHM})\}/Q_T$

Fish & Water Only: Mixing Zone / Applicable at point of withdrawal

Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IWHM})] - C_U(Q_{IWHM})\}/Q_T$

Non-Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IW7Q10})] - C_U(Q_{IW7Q10})\}/Q_T$

Aquatic Life - Whole Effluent Toxicity

Acute (Units TU_a)

NO ZID given CT = CA

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix (Units TUc)

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Conversion of TU_c to TU_a : $TU_c \times ACR = TU_a$

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Metal Aquatic Criteria

Pollutant	Acute Criteria	Chronic Criteria
Total Recoverable Cadmium	$e^{(1.0166 (\ln Hardness) - 3.924)}$	$e^{(0.7409 (\ln Hardness) - 4.719)}$
Chromium III	$e^{(0.8190 (\ln Hardness) + 3.7256)}$	$e^{(0.8190 (\ln Hardness) + 0.6848)}$
Total Recoverable Copper	$e^{(0.9422 (\ln Hardness) - 1.700)}$	$e^{(0.8545 (\ln Hardness) - 1.702)}$
Total Recoverable Lead	$e^{(1.273 (\ln Hardness) - 1.460)}$	$e^{(1.273 (\ln Hardness) - 4.705)}$
Total Recoverable Nickel	$e^{(0.8460 (\ln Hardness) + 2.255)}$	$e^{(0.8460(\ln Hardness) + 0.0584)}$
Total Recoverable Silver	$e^{(1.72 (\ln Hardness) - 6.59)}$	
Total Recoverable Zinc	$e^{(0.8473 (\ln Hardness) + 0.884)}$	$e^{(0.8473 (\ln Hardness) + 0.884)}$

Hardness (as mg/l $CaCO_3$)

Zone Initial Dilution (ZID) $H_{RW} + [H_T + H_{RW}]/ZID$

Mixing Zone $[(Q_{RW7Q10})(MZ)(H_{RW}) + (Q_T)(H_T)]/[(QRW7Q10)(MZ)+(QT)]$

Total Ammonia Criteria

Chronic - applies state wide - unionzed criteria of 0.05 mg/l $[0.05*(1+10^{(pka-pH)})]/1.2$ pka=(0.0902+(2730/(273.1+T)) T = Temperature ^oC

Acute - applies to the Ohio River (ORSANCO Criteria) $[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$

Bioaccumulative or Persistent

For new facilities after September 8, 2004 mixing zones shall not be granted for bioaccumulative or persistent pollutants of concern.

Mixing zones for bioaccumulative or persistent pollutants of concerned assigned prior to September 8, 2004 shall expire no later than September 8, 2014, unless the permittee agrees to expiration of the mixing zone prior to that date.

Therefore, the application of the more stringent criteria of Human Health Fish & Water Consumption, Human Health Fish Only Consumption, and Aquatic Life Chronic shall apply as end-of-pipe effluent limitations.

Antidegradation

If a new facility or an existing facility that will have a pollutant load increase, the effluent limits are halved unless the receiving stream is impaired or the permittee has demonstrated a negative socioeconomic or cost benefit analysis.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Reasonable Potential Analysis

In establishing water quality based effluent conditions the Division of Water must determine if the pollutant concentrations in the discharge will cause, have the reasonable potential to cause, or contribute to an excursion of any water standard. The process by which the Division of Water makes this determination is known as a Reasonable Potential Analysis.

A Reasonable Potential Analysis is performed by first calculating the expected effluent limitations for those pollutants with water quality criteria. The calculated limits are then compared to the concentrations reported on the KPDES permit application and/or a summarization of the values reported on the Discharge Monitoring Report (DMRs) submitted during the term of the permit. This comparison is made by dividing the reported value by the calculated effluent limitation and converting to a percentage. The following criteria are used in determining how the pollutant will be addressed in the permit.

New Permits or New Pollutants on Permit Renewals

If the reported concentration is less than 70% of the calculated effluent limit then no monitoring or limitations will be required.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is less than 12 then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is equal or greater than 12 then an effluent limitation will be required.

Permit Renewals - Existing Pollutants

If the reported concentration is less than 70% of the calculated effluent limit then and the source of the reported concentration was the DMRs for that facility and there were more than 12 DMRs utilized to determine the reported concentrations then the pollutant will be removed from the permit.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% then an effluent limitation will be required.

In all cases, the Division of Water still may exercise its Best Professional Judgment in the implementation of the results.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Chloride	16887006	5.040000	7.000000	600.000000	1,200.000000	0.84%	0.58%	DMR	3	Remove	Remove	Chronic	Acute
Total Residual Chlorine		0.000000	0.000000	0.011000	0.019000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Color		0.000000	0.000000	18.243750	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Fluoride		0.000000	0.000000	486.500000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Nitrate-Nitrite (as N)	14797558	0.000000	0.000000	2,432.500000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Alpha		0.000000	0.000000	NA	15.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Beta		0.000000	0.000000	NA	50.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Radium		0.000000	0.000000	NA	5.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Sulfate (as SO4)		0.000000	0.000000	60,812.500000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Surfactants		0.000000	0.000000	121.625000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Barium	7440393	0.000000	0.000000	243.250000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Iron	7439896	0.468000	0.591000	1.000000	4.000000	46.80%	14.78%	DMR	3	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Antimony	7440360	0.030000	0.050000	0.640000	NA	4.69%	0.00%	DMR	2	Monitoring	Monitoring	HH Fish	NA
Total Recoverable Arsenic	7440382	0.030000	0.050000	0.150000	0.340000	20.00%	14.71%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Beryllium	7440417	0.006000	0.010000	0.973000	NA	0.62%	0.00%	DMR	2	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Cadmium	7440439	0.005000	0.005000	0.000695	0.007778	719.67%	64.28%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Chromium	7440439	0.010000	0.010000	24.325000	NA	0.04%	0.00%	DMR	2	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Copper	7440508	0.008000	0.010000	0.027675	0.046433	28.91%	21.54%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Lead	7439921	0.028000	0.050000	0.016076	0.412550	174.17%	12.12%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Mercury	7439976	0.000000	0.000000	0.000051	0.001700	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Total Recoverable Nickel	7440020	0.015000	0.020000	0.153081	1.376865	9.80%	1.45%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Selenium	7782492	0.028000	0.050000	0.005000	0.020000	560.00%	250.00%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Total Recoverable Silver	7440224	0.010000	0.010000	NA	0.033774	0.00%	29.61%	DMR	2	Monitoring	Monitoring	NA	Acute
Total Recoverable Thallium	7440280	0.030000	0.050000	0.006300	NA	476.19%	0.00%	DMR	2	Monitoring	Monitoring	HH Fish	NA
Total Recoverable Zinc	7440666	0.035000	0.050000	0.352202	0.352202	9.94%	14.20%	DMR	2	Monitoring	Monitoring	Chronic	Acute
Free Cyanide	57125	0.000000	0.000000	0.005200	0.022000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
2,3,7,8 Tetrachlorodibenzo P Dioxin	1746016	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrolein	107028	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrylonitrile	107131	0.000000	0.000000	0.000250	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzene	71432	0.000000	0.000000	0.051000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bromoform	75252	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Carbon Tetrachloride	56235	0.000000	0.000000	0.001600	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorobenzene	108907	0.000000	0.000000	21.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorodibromomethane	124481	0.000000	0.000000	0.013000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloroform	67663	0.000000	0.000000	0.470000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dichlorobromomethane	75274	0.000000	0.000000	0.017000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloroethane	107062	0.000000	0.000000	0.037000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1-Dichloroethylene	75354	0.000000	0.000000	0.003200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichloropropane	78875	0.000000	0.000000	0.015000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichloropropene	542756	0.000000	0.000000	1.700000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ethylbenzene	100414	0.000000	0.000000	29.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methyl Bromide	74839	0.000000	0.000000	1.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Methylene Chloride	75092	0.000000	0.000000	0.590000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,2,2-Tetrachloroethane	79345	0.000000	0.000000	0.004000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Tetrachloroethylene	127184	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toluene	108883	0.000000	0.000000	200.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Trans-Dichloroethylene	156605	0.000000	0.000000	140.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,1,1-Trichloroethane	71556	0.000000	0.000000	48.650000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,2-Trichloroethane	79005	0.000000	0.000000	0.016000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Trichloroethylene	79016	0.000000	0.000000	0.030000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Vinyl Chloride	75014	0.000000	0.000000	0.530000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chlorophenol	95578	0.000000	0.000000	0.150000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dichlorophenol	120832	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dimethylphenol	105679	0.000000	0.000000	0.850000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrophenol	51285	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pentachlorophenol	87865	0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phenol	108952	0.000000	0.000000	1,700.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4,6-Trichlorophenol	88062	0.000000	0.000000	0.002400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acenaphthene	83329	0.000000	0.000000	0.990000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Anthracene	120127	0.000000	0.000000	40.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzidine	92875	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)anthracene	56553	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)pyrene	50328	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(k)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroisopropyl)ether	108601	0.000000	0.000000	65.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-ethylhexyl)phthalate	117817	0.000000	0.000000	0.002200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Butylbenzyl phthalate	85687	0.000000	0.000000	1.900000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chloronaphthalene	91587	0.000000	0.000000	1.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chrysene	218019	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dibenzo(a,h)anthracene	53703	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichlorobenzene	95501	0.000000	0.000000	17.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,3-Dichlorobenzene	541731	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,4-Dichlorobenzene	106467	0.000000	0.000000	2.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
3,3-Dichlorobenzidine	91941	0.000000	0.000000	0.000028	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Diethyl phthalate	84662	0.000000	0.000000	44.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dimethyl phthalate	131113	0.000000	0.000000	1,100.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Di-n-butyl phthalate	84742	0.000000	0.000000	4.500000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dinitrotoluene	121142	0.000000	0.000000	0.003400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Diphenylhydrazine	122667	0.000000	0.000000	0.000200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluoranthene	206440	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluorene	86737	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobenzene	118741	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobutadiene	87683	0.000000	0.000000	0.018000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorocyclopentadiene	77474	0.000000	0.000000	17.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachloroethane	67721	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ideno(1,2,3-cd)pyrene	193395	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Isophorone	78591	0.000000	0.000000	0.960000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Nitrobenzene	98953	0.000000	0.000000	0.690000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodimethylamine	62759	0.000000	0.000000	0.000892	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodi-n-Propylamine	621647	0.000000	0.000000	0.000510	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiphenylamine	86306	0.000000	0.000000	0.006000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pyrene	129000	0.000000	0.000000	4.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2,4-Trichlorobenzene	120821	0.000000	0.000000	0.940000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Aldrin	309002	0.000000	0.000000	0.000000	0.003000	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
alpha-BHC	319846	0.000000	0.000000	0.000005	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Beta-BHC	319857	0.000000	0.000000	0.000017	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
gamma-BHC (Lindane)	58899	0.000000	0.000000	0.000063	0.000950	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Chlordane	57749	0.000000	0.000000	0.000001	0.002400	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDT	50293	0.000000	0.000000	0.000000	0.001100	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDE	72559	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
4,4'-DDD	72548	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dieldrin	60571	0.000000	0.000000	0.000000	0.000240	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Alpha-Endosulfan	959988	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Beta-Endosulfan	33213659	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endosulfan sulfate	1031078	0.000000	0.000000	0.089000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Endrin	72208	0.000000	0.000000	0.000036	0.000086	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endrin aldehyde	7421934	0.000000	0.000000	0.000300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Heptachlor	76448	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Heptachlor epoxide	1024573	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Polychlorinated Biphenyls (PCBs)		0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toxaphene	8001352	0.000000	0.000000	0.000000	0.000730	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
1,2,4,5-Tetrachlorobenzene	95943	0.000000	0.000000	0.001100	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-methyl-4,6-dinitrophenol	534521	0.000000	0.000000	0.280000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-D	94757	0.000000	0.000000	90.510000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-TP (Silvex)	93721	0.000000	0.000000	2.432500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-trichlorophenol	95954	0.000000	0.000000	3.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Asbestos	1332214	0.000000	0.000000	9,051,000.000000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzo(b)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroethyl)ether	111444	0.000000	0.000000	0.000530	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(chloromethyl)ether	542881	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloropyrifos	2921882	0.000000	0.000000	0.000041	0.000083	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (III)	16065831	0.000000	0.000000	0.244366	5.112611	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (VI)	18540299	0.000000	0.000000	0.011000	0.016000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Demeton	8065483	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Dinitrophenols	25550587	0.000000	0.000000	5.300000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Guthion	86500	0.000000	0.000000	0.000010	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Hexachlorocyclo-hexane-Technical	319868	0.000000	0.000000	0.000041	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hydrogen Sulfide, Undissociated	7783064	0.000000	0.000000	0.002000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Malathion	121755	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Methoxychlor	72435	0.000000	0.000000	0.000030	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Mirex	2385855	0.000000	0.000000	0.000001	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Nitrosamines, Other		0.000000	0.000000	0.000195	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 002

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodibutylamine	924163	0.000000	0.000000	0.000220	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
N-Nitrosodiethylamine	55185	0.000000	0.000000	0.001034	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosopyrrolidine	930552	0.000000	0.000000	0.020688	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Parathion	56382	0.000000	0.000000	0.000013	0.000065	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Pentachlorobenzene	608935	0.000000	0.000000	0.001500	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phthalate esters		0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Total Dissolved Solids		0.000000	0.000000	182,437.500000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Tritium		0.000000	0.000000	NA	20,000.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Strontium-90		0.000000	0.000000	NA	8.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Uranium		0.000000	0.000000	NA	0.030000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Ammonia		0.000000	0.000000	3.360911	19.890204	0.00%	0.00%	No Data	0	None	None	Chronic	Acute

Hardness	Chronic	Acute
Metal limitations are developed using the mixed hardness of the effluent and receiving waters	357.00	357.00

Toxicity

Type of Test	Maximum	Units	Justification	Percent Effluent
Chronic	1.00	TUc	Chronic	100.00%

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Permit Writer	Mahmoud Sartipi	
Date Entered	10/8/2009	
Facility Name	Demolition Disposal Services	
KPDES Number	KY0100331	
Outfall Number	003	
Case	Reissuance	
Status:		
Is this an existing facility – Enter "E"		
Is this an existing facility with an increase in pollutant load – Enter "I"		
Is this a new facility – Enter "N"		
Is this a regional facility with an approved up-to-date 201 plan – Enter "R"		
Has the permittee made a successful alternatives analysis/socioeconomic demonstration – Enter "A"	E	
Receiving Water Name	UT to North Elkhorn Creek	
Discharge Mile Point	8.7	
Public Water Supply Name	Georgetown Municipal Water & Sewer Service	
Intake Water Name	Georgetown Municipal Water & Sewer Service	
Intake Mile Point	50.9	
Total Effluent Flow (Q_T)	0.8	MGD
Receiving Water 7Q10 (Q_{RW7Q10})	0	cfs
Receiving Water Harmonic Mean (Q_{RWHM})	0.2	cfs
Receiving Water pH	7.5	SU
Receiving Water Temperature	20.00	^oC
Intake Water 7Q10 (Q_{IW7Q10})	1.5	cfs
Intake Water Harmonic Mean (Q_{IWHM})	8	cfs
Effluent Hardness	466	(as mg/l CaCO3)
Receiving Water Hardness	100	(as mg/l CaCO3)
Zone of Initial Dilution (ZID)	1	
Mixing Zone (MZ)	0	
Acute to Chronic Ratio (ACR)	0.1	
Impaired	NO	
Permittee agrees to accept no mixing zone for bioaccumulative or persistent pollutants prior to 09/08/2014	Yes	

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Calculation Methodology

Definitions

Acute to Chronic Ratio	ACR	Total Effluent Flow	Q_T
Aquatic Life Acute Criteria	C_A	Receiving Water 7Q10	Q_{RW7Q10}
Aquatic Life Chronic Criteria	C_C	Receiving Water Harmonic Mean	Q_{RWHM}
Human Health Criteria - Fish Only	C_{HHFO}	Intake Water 7Q10	Q_{IW7Q10}
Human Health Criteria - Fish & Water	C_{HHFW}	Intake Water Harmonic Mean	Q_{IWHM}
End of Pipe Effluent Limit	C_T	Zone of Initial Dilution	ZID
Instream Background Concentration	C_U	Mixing Zone	MZ
Toxicity Units - Acute	TU_a	Toxicity Units - Chronic	TU_c
Effluent Hardness	H_T	Receiving Water Hardness	H_{RW}

Aquatic Life - Chemical Specific

Acute

NO ZID given $C_T = C_A$

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Human Health - Chemical Specific

Fish Only: Mixing Zone / Complete Mix

Carcinogen / Non-Carcinogen $C_T = \{C_{HHFO}[Q_T + (MZ)(Q_{RWHM})] - C_U(MZ)(Q_{RWHM})\}/Q_T$

Fish & Water Only: Mixing Zone / Applicable at point of withdrawal

Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IWHM})] - C_U(Q_{IWHM})\}/Q_T$

Non-Carcinogen $C_T = \{C_{HHFW}[Q_T + (Q_{IW7Q10})] - C_U(Q_{IW7Q10})\}/Q_T$

Aquatic Life - Whole Effluent Toxicity

Acute (Units TU_a)

NO ZID given CT = CA

ZID given $C_T = (C_A - C_U) \times (ZID)$

Chronic Mixing Zone / Complete Mix (Units TUc)

$C_T = \{C_C[Q_T + (MZ)(Q_{RW7Q10})] - [C_U(MZ)(Q_{RW7Q10})]\}/Q_T$

Conversion of TU_c to TU_a : $TU_c \times ACR = TU_a$

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Metal Aquatic Criteria

Pollutant	Acute Criteria	Chronic Criteria
Total Recoverable Cadmium	$e^{(1.0166 (\ln Hardness) - 3.924)}$	$e^{(0.7409 (\ln Hardness) - 4.719)}$
Chromium III	$e^{(0.8190 (\ln Hardness) + 3.7256)}$	$e^{(0.8190 (\ln Hardness) + 0.6848)}$
Total Recoverable Copper	$e^{(0.9422 (\ln Hardness) - 1.700)}$	$e^{(0.8545 (\ln Hardness) - 1.702)}$
Total Recoverable Lead	$e^{(1.273 (\ln Hardness) - 1.460)}$	$e^{(1.273 (\ln Hardness) - 4.705)}$
Total Recoverable Nickel	$e^{(0.8460 (\ln Hardness) + 2.255)}$	$e^{(0.8460(\ln Hardness) + 0.0584)}$
Total Recoverable Silver	$e^{(1.72 (\ln Hardness) - 6.59)}$	
Total Recoverable Zinc	$e^{(0.8473 (\ln Hardness) + 0.884)}$	$e^{(0.8473 (\ln Hardness) + 0.884)}$

Hardness (as mg/l $CaCO_3$)

Zone Initial Dilution (ZID) $H_{RW} + [H_T + H_{RW}]/ZID$

Mixing Zone $[(Q_{RW7Q10})(MZ)(H_{RW}) + (Q_T)(H_T)]/[(QRW7Q10)(MZ)+(QT)]$

Total Ammonia Criteria

Chronic - applies state wide - unionzed criteria of 0.05 mg/l $[0.05*(1+10^{(pka-pH)})]/1.2$ pka=(0.0902+(2730/(273.1+T)) T = Temperature ^oC

Acute - applies to the Ohio River (ORSANCO Criteria) $[0.411/(1+10^{(7.204-pH)})]+[58.4/(1+10^{(pH-7.204)})]$

Bioaccumulative or Persistent

For new facilities after September 8, 2004 mixing zones shall not be granted for bioaccumulative or persistent pollutants of concern.

Mixing zones for bioaccumulative or persistent pollutants of concerned assigned prior to September 8, 2004 shall expire no later than September 8, 2014, unless the permittee agrees to expiration of the mixing zone prior to that date.

Therefore, the application of the more stringent criteria of Human Health Fish & Water Consumption, Human Health Fish Only Consumption, and Aquatic Life Chronic shall apply as end-of-pipe effluent limitations.

Antidegradation

If a new facility or an existing facility that will have a pollutant load increase, the effluent limits are halved unless the receiving stream is impaired or the permittee has demonstrated a negative socioeconomic or cost benefit analysis.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Reasonable Potential Analysis

In establishing water quality based effluent conditions the Division of Water must determine if the pollutant concentrations in the discharge will cause, have the reasonable potential to cause, or contribute to an excursion of any water standard. The process by which the Division of Water makes this determination is known as a Reasonable Potential Analysis.

A Reasonable Potential Analysis is performed by first calculating the expected effluent limitations for those pollutants with water quality criteria. The calculated limits are then compared to the concentrations reported on the KPDES permit application and/or a summarization of the values reported on the Discharge Monitoring Report (DMRs) submitted during the term of the permit. This comparison is made by dividing the reported value by the calculated effluent limitation and converting to a percentage. The following criteria are used in determining how the pollutant will be addressed in the permit.

New Permits or New Pollutants on Permit Renewals

If the reported concentration is less than 70% of the calculated effluent limit then no monitoring or limitations will be required.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is less than 12 then monitoring will be required.

If the reported concentration is equal to or greater than 90% and the number of analysis reported on the KPDES permit application is equal or greater than 12 then an effluent limitation will be required.

Permit Renewals - Existing Pollutants

If the reported concentration is less than 70% of the calculated effluent limit then and the source of the reported concentration was the DMRs for that facility and there were more than 12 DMRs utilized to determine the reported concentrations then the pollutant will be removed from the permit.

If the reported concentration is equal to or greater than 70% but less than 90% of the calculated effluent limit then monitoring will be required.

If the reported concentration is equal to or greater than 90% then an effluent limitation will be required.

In all cases, the Division of Water still may exercise its Best Professional Judgment in the implementation of the results.

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Chloride	16887006	102.000000	280.000000	552.812500	1,200.000000	18.45%	23.33%	DMR	6	Remove	Remove	HH DWS	Acute
Total Residual Chlorine		0.000000	0.000000	0.011000	0.019000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Color		0.000000	0.000000	0.165844	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Fluoride		0.000000	0.000000	4.422500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Nitrate-Nitrite (as N)	14797558	0.000000	0.000000	22.112500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Alpha		0.000000	0.000000	NA	15.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Beta		0.000000	0.000000	NA	50.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Radium		0.000000	0.000000	NA	5.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Sulfate (as SO4)		0.000000	0.000000	552.812500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Surfactants		0.000000	0.000000	1.105625	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Barium	7440393	0.000000	0.000000	2.211250	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Total Recoverable Iron	7439896	0.360000	0.910000	1.000000	4.000000	36.00%	22.75%	DMR	6	Remove	Remove	Chronic	Acute
Total Recoverable Antimony	7440360	0.017000	0.050000	0.012383	NA	137.28%	0.00%	DMR	6	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Arsenic	7440382	0.023330	0.050000	0.074600	0.340000	31.27%	14.71%	DMR	6	Remove	Remove	HH DWS	Acute
Total Recoverable Beryllium	7440417	0.009000	0.010000	0.008845	NA	101.75%	0.00%	DMR	6	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Cadmium	7440439	0.023000	0.100000	0.000756	0.008731	3042.97%	1145.29%	DMR	6	Limit	Limit	Chronic	Acute
Total Recoverable Chromium	7440439	0.010000	0.010000	0.221125	NA	4.52%	0.00%	DMR	6	Remove	Remove	HH DWS	NA
Total Recoverable Copper	7440508	0.057000	0.134000	0.030499	0.051684	186.89%	259.27%	DMR	6	Limit	Limit	Chronic	Acute
Total Recoverable Lead	7439921	0.004367	0.005000	0.018581	0.476818	23.50%	1.05%	DMR	6	Remove	Remove	Chronic	Acute
Total Recoverable Mercury	7439976	0.000000	0.000000	0.000051	0.001700	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Total Recoverable Nickel	7440020	0.012000	0.020000	0.168541	1.515922	7.12%	1.32%	DMR	6	Remove	Remove	Chronic	Acute
Total Recoverable Selenium	7782492	0.013600	0.050000	0.005000	0.020000	272.00%	250.00%	DMR	6	Limit	Limit	Chronic	Acute
Total Recoverable Silver	7440224	0.010000	0.010000	NA	0.041072	0.00%	24.35%	DMR	6	Remove	Remove	NA	Acute
Total Recoverable Thallium	7440280	0.020000	0.050000	0.003759	NA	532.04%	0.00%	DMR	6	Monitoring	Monitoring	HH DWS	NA
Total Recoverable Zinc	7440666	0.025000	0.050000	0.387830	0.387830	6.45%	12.89%	DMR	6	Remove	Remove	Chronic	Acute
Free Cyanide	57125	0.000000	0.000000	0.005200	0.022000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
2,3,7,8 Tetrachlorodibenzo P Dioxin	1746016	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrolein	107028	0.000000	0.000000	0.290000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acrylonitrile	107131	0.000000	0.000000	0.000250	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzene	71432	0.000000	0.000000	0.016412	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Bromoform	75252	0.000000	0.000000	0.032078	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Carbon Tetrachloride	56235	0.000000	0.000000	0.001600	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chlorobenzene	108907	0.000000	0.000000	1.503650	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Chlorodibromomethane	124481	0.000000	0.000000	0.002984	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Chloroform	67663	0.000000	0.000000	0.042522	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Dichlorobromomethane	75274	0.000000	0.000000	0.004103	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,2-Dichloroethane	107062	0.000000	0.000000	0.002835	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1-Dichloroethylene	75354	0.000000	0.000000	0.000425	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,2-Dichloropropane	78875	0.000000	0.000000	0.000373	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,3-Dichloropropene	542756	0.000000	0.000000	0.022113	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Ethylbenzene	100414	0.000000	0.000000	6.854875	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Methyl Bromide	74839	0.000000	0.000000	0.103929	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Methylene Chloride	75092	0.000000	0.000000	0.034316	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,2,2-Tetrachloroethane	79345	0.000000	0.000000	0.001268	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
Tetrachloroethylene	127184	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toluene	108883	0.000000	0.000000	15.036500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,2-Trans-Dichloroethylene	156605	0.000000	0.000000	5.222000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,1-Trichloroethane	71556	0.000000	0.000000	0.442250	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,1,2-Trichloroethane	79005	0.000000	0.000000	0.004401	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Trichloroethylene	79016	0.000000	0.000000	0.018650	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Vinyl Chloride	75014	0.000000	0.000000	0.014920	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2-Chlorophenol	95578	0.000000	0.000000	0.150000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2,4-Dichlorophenol	120832	0.000000	0.000000	0.170266	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4-Dimethylphenol	105679	0.000000	0.000000	0.840275	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4-Dinitrophenol	51285	0.000000	0.000000	0.152576	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Pentachlorophenol	87865	0.000000	0.000000	0.002014	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Phenol	108952	0.000000	0.000000	46.436250	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,6-Trichlorophenol	88062	0.000000	0.000000	0.002400	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Acenaphthene	83329	0.000000	0.000000	0.990000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Anthracene	120127	0.000000	0.000000	18.353375	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzidine	92875	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)anthracene	56553	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(a)pyrene	50328	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Benzo(k)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroisopropyl)ether	108601	0.000000	0.000000	3.095750	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Bis(2-ethylhexyl)phthalate	117817	0.000000	0.000000	0.002200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Butylbenzyl phthalate	85687	0.000000	0.000000	1.900000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-Chloronaphthalene	91587	0.000000	0.000000	1.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chrysene	218019	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dibenzo(a,h)anthracene	53703	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
1,2-Dichlorobenzene	95501	0.000000	0.000000	5.970375	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,3-Dichlorobenzene	541731	0.000000	0.000000	0.707600	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,4-Dichlorobenzene	106467	0.000000	0.000000	0.884500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
3,3-Dichlorobenzidine	91941	0.000000	0.000000	0.000028	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Diethyl phthalate	84662	0.000000	0.000000	37.591250	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Dimethyl phthalate	131113	0.000000	0.000000	597.037500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Di-n-butyl phthalate	84742	0.000000	0.000000	4.422500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4-Dinitrotoluene	121142	0.000000	0.000000	0.000821	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,2-Diphenylhydrazine	122667	0.000000	0.000000	0.000200	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluoranthene	206440	0.000000	0.000000	0.140000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Fluorene	86737	0.000000	0.000000	2.432375	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Hexachlorobenzene	118741	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hexachlorobutadiene	87683	0.000000	0.000000	0.003282	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Hexachlorocyclopentadiene	77474	0.000000	0.000000	0.530700	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Hexachloroethane	67721	0.000000	0.000000	0.003300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Ideno(1,2,3-cd)pyrene	193395	0.000000	0.000000	0.000008	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Isophorone	78591	0.000000	0.000000	0.077394	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Nitrobenzene	98953	0.000000	0.000000	0.037591	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodimethylamine	62759	0.000000	0.000000	0.000005	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodi-n-Propylamine	621647	0.000000	0.000000	0.000037	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodiphenylamine	86306	0.000000	0.000000	0.006000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Pyrene	129000	0.000000	0.000000	1.835338	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
1,2,4-Trichlorobenzene	120821	0.000000	0.000000	0.574925	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Aldrin	309002	0.000000	0.000000	0.000000	0.003000	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
alpha-BHC	319846	0.000000	0.000000	0.000005	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Beta-BHC	319857	0.000000	0.000000	0.000017	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
gamma-BHC (Lindane)	58899	0.000000	0.000000	0.000063	0.000950	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Chlordane	57749	0.000000	0.000000	0.000001	0.002400	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDT	50293	0.000000	0.000000	0.000000	0.001100	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
4,4'-DDE	72559	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
4,4'-DDD	72548	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Dieldrin	60571	0.000000	0.000000	0.000000	0.000240	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Alpha-Endosulfan	959988	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Beta-Endosulfan	33213659	0.000000	0.000000	0.000056	0.000220	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endosulfan sulfate	1031078	0.000000	0.000000	0.089000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Endrin	72208	0.000000	0.000000	0.000036	0.000086	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Endrin aldehyde	7421934	0.000000	0.000000	0.000300	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Heptachlor	76448	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Heptachlor epoxide	1024573	0.000000	0.000000	0.000000	0.000520	0.00%	0.00%	No Data	0	None	None	HH Fish	Acute
Polychlorinated Biphenyls (PCBs)		0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Toxaphene	8001352	0.000000	0.000000	0.000000	0.000730	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
1,2,4,5-Tetrachlorobenzene	95943	0.000000	0.000000	0.001100	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
2-methyl-4,6-dinitrophenol	534521	0.000000	0.000000	0.028746	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4-D	94757	0.000000	0.000000	0.522200	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-TP (Silvex)	93721	0.000000	0.000000	0.022113	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
2,4,5-trichlorophenol	95954	0.000000	0.000000	3.600000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Asbestos	1332214	0.000000	0.000000	52,220.000000	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Benzo(b)fluoranthene	205992	0.000000	0.000000	0.000018	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Bis(2-chloroethyl)ether	111444	0.000000	0.000000	0.000224	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Bis(chloromethyl)ether	542881	0.000000	0.000000	0.000000	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Chloropyrifos	2921882	0.000000	0.000000	0.000041	0.000083	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (III)	16065831	0.000000	0.000000	0.268221	5.611703	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Chromium (VI)	18540299	0.000000	0.000000	0.011000	0.016000	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Demeton	8065483	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Dinitrophenols	25550587	0.000000	0.000000	0.152576	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Guthion	86500	0.000000	0.000000	0.000010	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Hexachlorocyclo-hexane-Technical	319868	0.000000	0.000000	0.000041	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Hydrogen Sulfide, Undissociated	7783064	0.000000	0.000000	0.002000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Malathion	121755	0.000000	0.000000	0.000100	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Methoxychlor	72435	0.000000	0.000000	0.000030	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Mirex	2385855	0.000000	0.000000	0.000001	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Nitrosamines, Other		0.000000	0.000000	0.000002	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA

STEADY STATE TOXICS WASTELOAD ALLOCATION MODEL (SSTWAM2004) – REASONABLE POTENTIAL ANALYSIS – OUTFALL 003

Parameter	CAS Number	Reported Discharge (mg/l)		Calculated Effluent Limitations (mg/l)		Reasonable Potential		Data Source	No. of Samples	Effluent Requirement		Justification	
		Average	Maximum	Average	Maximum	Average	Maximum			Average	Maximum	Average	Maximum
N-Nitrosodibutylamine	924163	0.000000	0.000000	0.000047	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosodiethylamine	55185	0.000000	0.000000	0.000006	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
N-Nitrosopyrrolidine	930552	0.000000	0.000000	0.000119	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Parathion	56382	0.000000	0.000000	0.000013	0.000065	0.00%	0.00%	No Data	0	None	None	Chronic	Acute
Pentachlorobenzene	608935	0.000000	0.000000	0.001500	NA	0.00%	0.00%	No Data	0	None	None	HH Fish	NA
Phthalate esters		0.000000	0.000000	0.003000	NA	0.00%	0.00%	No Data	0	None	None	Chronic	NA
Total Dissolved Solids		0.000000	0.000000	1,658.437500	NA	0.00%	0.00%	No Data	0	None	None	HH DWS	NA
Tritium		0.000000	0.000000	NA	20,000.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Strontium-90		0.000000	0.000000	NA	8.000000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Uranium		0.000000	0.000000	NA	0.030000	0.00%	0.00%	No Data	0	None	None	NA	Acute
Total Ammonia		0.000000	0.000000	3.360911	19.890204	0.00%	0.00%	No Data	0	None	None	Chronic	Acute

Hardness	Chronic	Acute
Metal limitations are developed using the mixed hardness of the effluent and receiving waters	400.00	400.00

Toxicity

Type of Test	Maximum	Units	Justification	Percent Effluent
Chronic	1.00	TUc	Chronic	100.00%

KPDES

KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

PERMIT

PERMIT NO.: KY0100331
AI NO.: 37952

AUTHORIZATION TO DISCHARGE UNDER THE KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM

Pursuant to Authority in KRS 224,

Demolition Disposal Services, Inc.
2393 Alumni Drive, Suite 100
Lexington, Kentucky 40517

is authorized to discharge from a facility located at

DDSI Construction/Demolition Debris Landfill
0.75 miles east of Route 859
0.5 miles south of Avon, Fayette County, Kentucky

to receiving waters named

Outfall 001 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38° 03′ 34′′ and Longitude of 84° 18′ 15″
Outfall 002 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38° 03′ 38′′ and Longitude of 84° 18′ 34″
Outfall 003 discharges to unnamed tributary of North Elkhorn Creek at Latitude of 38° 03′ 31′′ and Longitude of 84° 18′ 17″

in accordance with effluent limitations, monitoring requirements and other conditions set forth in Parts I, II, III, IV, and V hereof. The permit consists of this cover sheet, and Part I 2 pages, Part II 1 pages, Part III 3 pages, Part IV 3 pages, and Part V 3 pages.

This permit shall become effective on.

This permit and the authorization to discharge shall expire at midnight,
.

Date Signed

Sandra L. Gruzesky, Director
Division of Water

DRAFT

PART I A1 - EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 001 and 002 – Storm water runoffs from covered areas of Construction/Demolition Debris landfill.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day)		Other Units(Specify)		MONITORING REQUIREMENTS	
	Monthly Avg.	Daily Max.	Monthly Avg.	Daily Max.	Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	N/A	N/A	1/Month	Instantaneous
Precipitation (inches)	N/A	N/A	N/A	Report	1/Month	Grab
Total Suspended Solids (mg/l)	N/A	N/A	N/A	100	1/Month	Grab
Total Recoverable Iron	N/A	N/A	N/A	Report	1/Month	Grab
Total Recoverable Antimony (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Arsenic (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Beryllium (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Cadmium (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Chromium (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Copper (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Lead (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Nickel (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Selenium (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Silver (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Thallium (µg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Total Recoverable Zinc (mg/l)	N/A	N/A	N/A	Report 1/	1/Quarter	Grab
Hardness (mg/l)	N/A	N/A	N/A	Report	1/Quarter	Grab

- The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Month by grab sample.
- There shall be no discharge of floating solids, visible foam, or sheen in other than trace amounts.
- Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters.
- The abbreviation N/A means Not Applicable.

1/ The laboratory sheets reporting the results of each parameter shall be submitted with the Discharge Monitoring Reports (DMRs).
2/ The results of those parameters analyzable using EPA Method 624. See Pages I-7 for the list of parameters.

THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF LEACHATE FROM OUTFALLS 001 AND 002

DRAFT

PART I A2 - EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the term of this permit, the permittee is authorized to discharge from Outfall serial number: 003 – Site produced leachate.

Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTICS	DISCHARGE LIMITATIONS (lbs/day) Monthly Avg.	Daily Max.	Other Units(Specify) Monthly Avg.	Daily Max.	MONITORING REQUIREMENTS Measurement Frequency	Sample Type
Flow (MGD)	Report	Report	N/A	N/A	1/Discharge	Instantaneous
Precipitation (inches)	N/A	N/A	Report	Report	1/Discharge	Grab
Total Suspended Solids	N/A	N/A	27 mg/l	88 mg/l	1/Discharge	Grab
BOD_5	N/A	N/A	37 mg/l	140 mg/l	1/Discharge	Grab
Alpha-Terpineol	N/A	N/A	0.016 mg/l	0.033 mg/l	1/Discharge	Grab
Ammonia (as N)	N/A	N/A	4.9 mg/l	10 mg/l	1/Discharge	Grab
Benzoic acid	N/A	N/A	0.071 mg/l	0.12 mg/l	1/Discharge	Grab
P-Cresol	N/A	N/A	0.014 mg/l	0.025 mg/l	1/Discharge	Grab
Phenol	N/A	N/A	0.015 mg/l	0.026 mg/l	1/Discharge	Grab
Total Zinc	N/A	N/A	0.11 mg/l	0.20 mg/l	1/Discharge	Grab
Acute Toxicity	N/A	N/A	N/A	1.0 TUa	1/Discharge	Grab
Total Recoverable Cadmium (µg/l)	N/A	N/A	0.756	8.731 1/	1/Discharge	Grab
Total Recoverable Copper (µg/l)	N/A	N/A	30.5	51.68 1/	1/Discharge	Grab
Total Recoverable Selenium (µg/l)	N/A	N/A	5	20 1/	1/Discharge	Grab
Total Recoverable Antimony (µg/l)	N/A	N/A	N/A	Report 1/	1/Discharge	Grab
Total Recoverable Thallium (µg/l)	N/A	N/A	N/A	Report 1/	1/Discharge	Grab
Total Recoverable Beryllium (µg/l)	N/A	N/A	N/A	Report 1/	1/Discharge	Grab
Hardness (as mg/l $CaCo_3$)	N/A	N/A	N/A	Report	1/Discharge	Grab

- The pH of the effluent shall not be less than 6.0 standard units nor greater than 9.0 standard units and shall be monitored 1/Discharge by grab sample.
- There shall be no discharge of floating solids, visible foam, or sheen in other than trace amounts.
- Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: nearest accessible point prior to discharge to or mixing with the receiving waters.
- The abbreviation N/A means Not Applicable.

1/ The laboratory sheets reporting the results of each parameter shall be submitted with the Discharge Monitoring Reports (DMRs).

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PART I B - SCHEDULE OF COMPLIANCE

The permittee shall achieve compliance with all requirements on the effective date of this permit.

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PART II - STANDARD CONDITIONS FOR KPDES PERMIT

This permit has been issued under the provisions of KRS Chapter 224 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal, and local agencies.

It is the responsibility of the permittee to demonstrate compliance with permit parameter limitations by utilization of sufficiently sensitive analytical methods.

The permittee is also advised that all KPDES permit conditions in KPDES Regulation 401 KAR 5:065, Section 1 will apply to all discharges authorized by this permit.

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PART III - OTHER REQUIREMENTS

A. Reporting of Monitoring Results

Monitoring results obtained during each monitoring period must be reported on a preprinted Discharge Monitoring Report (DMR) Form that will be mailed to you. The completed DMR for each monitoring period must be sent to the Division of Water at the address listed below (with a copy to the appropriate Regional Office) postmarked no later than the 28th day of the month following the monitoring period for which monitoring results were obtained.

Division of Water
Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, Kentucky 40601
ATTN: Supervisor

Division of Water
Surface Water Permits Branch
Permit Support Section
200 Fair Oaks Lane
Frankfort, Kentucky 40601

B. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under 401 KAR 5:050 through 5:086, 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 KRS Chapter 224 when applicable.

C. Outfall Signage

The permittee shall post a permanent marker at all discharge locations and/or monitoring points. The marker shall be at least 2 feet by 2 feet in size and a minimum of 3 feet above ground level with the Permittee Name and KPDES permit and outfall numbers in 2 inch letters. For internal monitoring points the marker shall be of sufficient size to include the outfall number in 2 inch letters and shall be posted as near as possible to the actual sampling location.

D. Required Detected Limits For Selected Pollutants

The following MDLs are required to demonstrate compliance of the listed pollutant with water quality based limitations.

Pollutant	MDL (µg/l)	Pollutant	MDL(µg/l)
Total Recoverable Beryllium	1.0	Total Recoverable Selenium	1.0
Total Recoverable Antimony	10.0	Total Recoverable Arsenic	1.0
Total Recoverable Thallium	1.0	Total Recoverable Lead	1.0
Total Recoverable Nickel	10.0	Total Recoverable Copper	1.0
Total Recoverable Cadmium	0.1	Total Recoverable Chromium	10.0
Total Recoverable Zinc	10.0		

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PART IV - BIOMONITORING - ACUTE CONCERNS - PRECIPITATION DEPENDANT DISCHARGES

In accordance with Part I of this permit, the permittee shall initiate, within 30 days of the effective date of this permit, or continue the series of tests described below, to evaluate wastewater toxicity of the discharge from Outfall 003.

TEST REQUIREMENTS

The permittee shall perform a 48-hour static non-renewal toxicity test with water flea (Ceriodaphnia dubia) and a 48-hour static non-renewal toxicity test with fathead minnow (Pimephales promelas). Tests shall be conducted on each of two grab samples collected over the period of discharge,(i.e., discrete sample #1 taken at commencement of discharge, sample #2 taken approximately 12 hours later, sooner if discharge is expected to cease). Testing of the effluent shall be initiated within 36 hours of each sample collection. Tests shall be conducted using at least 5 effluent concentrations: 6.25%, 12.50%, 25.00%, 50.00% and 100.00%. Selection of the effluent concentrations is subject to revision by the Division. Control testing using synthetic water shall be conducted concurrently with effluent testing. The toxicity test will be deemed reasonable and good only if control survival is 90% or greater in test organisms in synthetic water. Any test that does not meet the control acceptability criteria shall be invalid and repeated as soon as practicable within the permit required monitoring period (e.g., within the month or quarter). Noncompliance with the toxicity limit will be demonstrated if the LC_{50} of either species test of either sample is less than 100% effluent.

Tests shall be conducted on both species at the frequency specified in PART I of this permit.

If after at least six consecutive tests it can be determined that Ceriodaphnia dubia or the fathead minnow is more sensitive and all test have passed, a request for testing with only most sensitive species can be submitted to the Division. Upon approval, the most sensitive species may be chosen as representative and all subsequent compliance tests may be conducted using only that species unless directed at any time by the Division to change or revert to both.

REPORTING REQUIREMENTS

Results of all toxicity tests conducted with any species shall be reported according to the most recent format provided by the Division of Water. Notification of failed test shall be made to the Division's Surface Water Permitting Branch within five days of test completion. Test reports shall be submitted to the Division's Surface Water Permitting Branch within thirty days of completion of the test.

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PART IV - BIOMONITORING - ACUTE CONCERNS - PRECIPITATION DEPENDANT DISCHARGES

ACUTE TOXICITY

Due to the discharge being precipitation dependant, if noncompliance with the toxicity limit occurs in an initial test, (i.e., the LC_{50} for either species in either grab sample is less than 100% effluent), the permittee must perform a series of two follow-up tests using new grab samples collected approximately 12 hours apart and within 10 days of completing the initial failed test if discharge of effluent is occurring; follow-up sampling & testing may be extended as necessary to obtain the grab during a discharging period. The follow-up tests shall include both species unless approved for only the most sensitive species by the Division. Results of the follow-up testing will be used to evaluate the persistence of the toxic event and the possible need for a Toxicity Reduction Evaluation (TRE).

If the follow-up testing demonstrates noncompliance with the toxicity limit, or any one of the next two routine samples are noncompliant, or any of the samples show a significant noncompliance with the acute limit, (i.e., $\geq$1.2 times the permitted TU_a limit), the permittee will be required to perform a TRE. The permittee shall provide written notification to the Division of Water within five days of determining a TRE is needed.

Should toxicity prove not to be persistent during the additional testing, but reoccur within 12 months of the initial failure at a significant noncompliance with the acute limit, then a TRE shall be required.

TOXICITY REDUCTION EVALUATION (TRE)

Having determined that a TRE is required, the permittee shall initiate and/or continue at least monthly testing with both species until such time as a specific TRE plan is approved by the Division. A TRE plan shall be developed by the permittee and submitted to the Division within thirty days of determining a TRE is required. The plan shall be developed in accordance with the most recent EPA and Division guidance. Questions regarding this process may be submitted to the Division's Surface Water Permitting Branch.

The TRE plan shall include Toxic Identification Evaluation (TIE) procedures, treatability studies, and evaluations of: chemical usage including changes in types, handling and suppliers; operational and process procedures; housekeeping and maintenance activities; and raw materials. The TRE plan will establish an implementation schedule to begin immediately upon approval by the Division, to have duration of at least six months. The implementation schedule shall include quarterly progress reports being submitted to the Division's Surface Water Permitting Branch, due the last day of the month following each calendar quarter.

Upon completion of the TRE, the permittee shall submit a final report detailing the findings of the TRE and actions taken or to be taken to prevent the reoccurrence of toxicity. This final report shall include: the toxicant(s), if any are identified; treatment options; operational changes; and the proposed resolutions including an implementation schedule not to exceed 180 days.

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PART IV - BIOMONITORING - ACUTE CONCERNS - PRECIPITATION DEPENDANT DISCHARGES

Should the permittee determine the toxicant(s) and/or a workable treatment prior to the planned conclusion of the TRE, the permittee will notify the Division's Surface Water Permitting Branch within five days of making that determination and take appropriate actions to implement the solution within 180 days of that notification.

TEST METHODS

All test organisms, procedures, and quality assurance criteria used shall be in accordance with Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012 (5th edition), the most recently published edition of this publication, or as approved in advance by the Division of Water.

Toxicity testing for compliance to KPDES discharge limits shall be performed by a laboratory approved by the Division of Water to conduct the required toxicity tests. Within each toxicity report to the Division of Water, the permittee must demonstrate successful performance of reference toxicant testing by the laboratory that conducts their effluent toxicity tests. Within 30 days prior to initiating an effluent toxicity test, a reference toxicant test must be completed for the method used; alternatively, the reference toxicant test may be run concurrent with the effluent toxicity test. In addition, for each test method, at least 5 acceptable reference toxicant tests must be completed by the laboratory prior to performing the effluent toxicity test. A control chart including the most recent reference toxicant test endpoints for effluent test method (minimum of 5, up to 20 if available) shall be part of the report.

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PART V - BEST MANAGEMENT PRACTICES

SECTION A. GENERAL CONDITIONS

1. Applicability

These conditions apply to all permittees who use, manufacture, store, handle, or discharge any pollutant listed as: (1) toxic under Section 307(a)(1) of the Clean Water Act; (2) oil, as defined in Section 311(a)(1) of the Act; (3) any pollutant listed as hazardous under Section 311 of the Act; or (4) is defined as a pollutant pursuant to KRS 224.01-010(35) and who have ancillary manufacturing operations which could result in (1) the release of a hazardous substance, pollutant, or contaminant, or (2) an environmental emergency, as defined in KRS 224.01-400, as amended, or any regulation promulgated pursuant thereto (hereinafter, the "BMP pollutants"). These operations include material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas.

2. BMP Plan

The permittee shall develop and implement a Best Management Practices (BMP) plan consistent with 401 KAR 5:065, Section 2(10) pursuant to KRS 224.70-110, which prevents or minimizes the potential for the release of "BMP pollutants" from ancillary activities through plant site runoff; spillage or leaks, sludge or waste disposal; or drainage from raw material storage. A Best Management Practices (BMP) plan will be prepared by the permittee unless the permittee can demonstrate through the submission of a BMP outline that the elements and intent of the BMP have been fulfilled through the use of existing plans such as the Spill Prevention Control and Countermeasure (SPCC) plans, contingency plans, and other applicable documents.

3. Implementation

If this is the first time for the BMP requirement, then the plan shall be developed and submitted to the Division of Water within 90 days of the effective date of the permit. Implementation shall be within 180 days of that submission. For permit renewals the plan in effect at the time of permit reissuance shall remain in effect. Modifications to the plan as a result of ineffectiveness or plan changes to the facility shall be submitted to the Division of Water and implemented as soon as possible.

4. General Requirements

The BMP plan shall:

a. Be documented in narrative form, and shall include any necessary plot plans, drawings, or maps.

b. Establish specific objectives for the control of toxic and hazardous pollutants.

   (1) Each facility component or system shall be examined for its potential for causing a release of "BMP pollutants" due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

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(2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g., precipitation), or other circumstances which could result in a release of "BMP pollutants," the plan should include a prediction of the direction, rate of flow, and total quantity of the pollutants which could be released from the facility as result of each condition or circumstance.

c. Establish specific Best Management Practices to meet the objectives identified under paragraph b of this section, addressing each component or system capable of causing a release of "BMP pollutants."

d. Include any special conditions established in part b of this section.

e. Be reviewed by plant engineering staff and the plant manager.

5. Specific Requirements

The plan shall be consistent with the general guidance contained in the publication entitled "NPDES Best Management Practices Guidance Document," and shall include the following baseline BMPs as a minimum.

a. BMP Committee
b. Reporting of BMP Incidents
c. Risk Identification and Assessment
d. Employee Training
e. Inspections and Records
f. Preventive Maintenance
g. Good Housekeeping
h. Materials Compatibility
i. Security
j. Materials Inventory

6. SPCC Plans

The BMP plan may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under Section 311 of the Act and 40 CFR Part 151, and may incorporate any part of such plans into the BMP plan by reference.

7. Hazardous Waste Management

The permittee shall assure the proper management of solid and hazardous waste in accordance with the regulations promulgated under the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1978 (RCRA) (40 U.S.C. 6901 et seq.) Management practices required under RCRA regulations shall be referenced in the BMP plan.

8. Documentation

The permittee shall maintain a description of the BMP plan at the facility and shall make the plan available upon request to NREPC personnel. Initial copies and modifications thereof shall be sent to the following addresses when required by Section 3:

Division of Water
Frankfort Regional Office
643 Teton Trail, Suite B
Frankfort, Kentucky 40601
ATTN: Supervisor

Division of Water
Surface Water Permits Branch
Operational Permits Section
200 Fair Oaks Lane
Frankfort, Kentucky 40601

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9. BMP Plan Modification

The permittee shall amend the BMP plan whenever there is a change in the facility or change in the operation of the facility which materially increases the potential for the ancillary activities to result in the release of "BMP pollutants."

10. Modification for Ineffectiveness

If the BMP plan proves to be ineffective in achieving the general objective of preventing the release of "BMP pollutants," then the specific objectives and requirements under paragraphs b and c of Section 4, the permit, and/or the BMP plan shall be subject to modification to incorporate revised BMP requirements. If at any time following the issuance of this permit the BMP plan is found to be inadequate pursuant to a state or federal site inspection or plan review, the plan shall be modified to incorporate such changes necessary to resolve the concerns.

SECTION B. SPECIFIC CONDITIONS

N/A

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