STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
KNOXVILLE ENVIRONMENTAL FIELD OFFICE – MINING SECTION
3711 MIDDLEBROOK PIKE
KNOXVILLE, TENNESSEE 37921-6538
PHONE (865) 594-6035 STATEWIDE 1-888-891-8332 FAX (865) 594-6105

April 30, 2024

Johnny Asher, Managing Member
Hurricane Creek Mining, LLC
3380 Cedar Fork Road
Tazewell, TN 3878970716

RE: Issuance of NPDES Permit TN0070716
Hurricane Creek Mining, LLC
Mine 2
Claiborne County

Dear Mr. Asher:

In accordance with the provisions of the *Water Quality Control Act of 1977,* Tennessee Code Annotated (T.C.A.) § 69-3-101 et seq., the enclosed permit is hereby issued. The continuance and/or reissuance of this NPDES permit are contingent upon compliance with the terms and conditions of the permit.

Please be advised that a petition for permit appeal may be filed pursuant to T.C.A. § 69-3-105 (i) by the permit applicant or by any aggrieved person who participated in the public comment period or gave testimony at a formal public hearing whose appeal is based upon any of the issues that were provided to the commissioner in writing during the public comment period or in testimony at a formal public hearing on the permit application. Additionally, for those permits for which the Department gives public notice of a draft permit, any permit applicant or aggrieved person may base a permit appeal on any material change to conditions in the final permit from those in the draft, unless the material change has been subject to additional opportunity for public comment. Any petition for permit appeal under this subsection (i) shall be filed with the technical secretary of the Board of Water Quality, Oil and Gas within thirty (30) days after public notice of the commissioner's decision to issue or deny the permit. A copy of the filing should also be sent to TDEC's Office of General Counsel. The mailing addresses follow:

April Grippo
Acting Technical Secretary
Board of Water Quality, Oil and Gas
William R. Snodgrass TN Tower
312 Rosa L. Parks Avenue, 12th Floor
Nashville, TN 37243-1102

Jenny Howard, General Counsel
Office of General Counsel
William R. Snodgrass TN Tower
312 Rosa L. Parks Avenue, 2nd Floor
Nashville, TN 37243-1102

TDEC will accept appeals submitted electronically. If you wish to file an appeal, you may do so by e-mailing the appeal and any attachments to TDEC.Appeals@tn.gov. If you file an appeal electronically, you do not have to send a paper copy. Electronic filing is encouraged, but not required.

A copy of the supporting plans stamped "APPROVED" has been provided. The approved plans must be kept on site during the hours of operation. If changes to the mining plan or procedure which affect wastewater treatment or runoff control are necessary, they must be approved in writing by this Division prior to the initiation of those changes. Failure of your company's strict adherence to these plans could jeopardize the continuation of your permit.

If you have questions concerning this correspondence, contact Dennis Conger at (865) 606-1746.

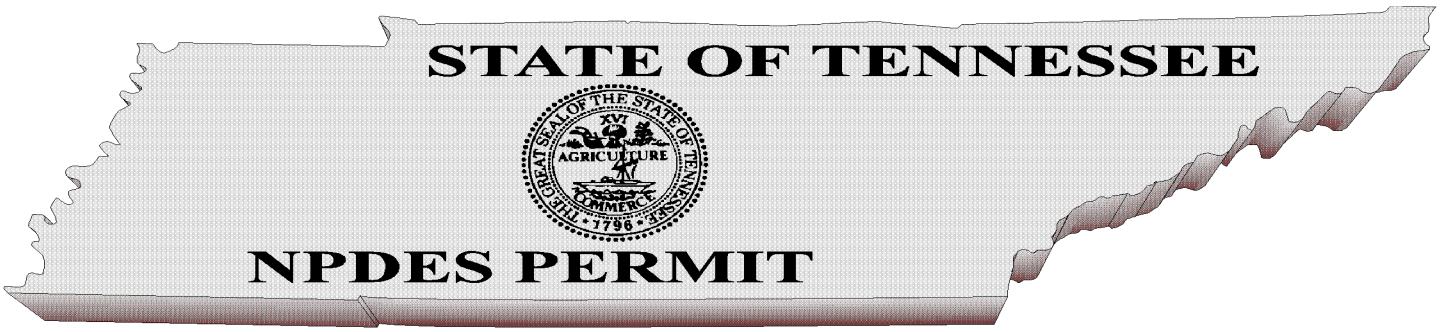
Sincerely,

for Bryan W. Epperson
Director
Division of Mineral & Geologic Resources

BWE:DPL:DKC:DRM

Enclosures

cc: NPDES Permit File
Email: Tim Messer, Howard Engineering
Jason Taylor, OSMRE



NPDES Permit TN0070716
New
SMCRA Permit 3341

Authorization to discharge under the
National Pollutant Discharge Elimination System

Issued By

Tennessee Department of Environment and Conservation
Division of Mineral & Geologic Resources
3711 Middlebrook Pike
Knoxville, Tennessee 37921-6538

Under authority of the *Tennessee Water Quality Control Act of 1977* (*T.C.A. 69-3-101 et seq.*) and the delegation of authority from the United States Environmental Protection Agency under the *Federal Water Pollution Control Act*, as amended by the *Clean Water Act of 1977* (*33 U.S.C. 1251, et seq.*)

Discharger: **Hurricane Creek Mining, LLC**
Mine 2

is authorized to discharge treated mine wastewater and storm water from a facility located in Claiborne County at latitude **36.53833**, longitude **-83.84667** and consisting of **657.9 acres**

to receiving waters as identified below:

Monitoring Point	Type of Monitoring Point	Receiving Stream
All Outfalls (28)	Wastewater (See Part I. A)	See Outfall Location Data

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on: **May 1, 2024**

This permit shall expire on: **April 30, 2029**

Issuance date: **April 30, 2024**

for Bryan W. Epperson
Director

Outfall Location Data

Pursuant to 40 CFR 122.21(g)(1), the permit applicant is required to provide a physical location of all existing and proposed outfalls. The below outfall locations were provided by the applicant. A complete description of the outfalls and the nature of discharges from this facility may be found within the permit application. The application is available on the TDEC dataviewer at:

https://dataviewers.tdec.tn.gov/dataviewers/f?p=2005:34051:12535247346635:::34051:P34051_PERMIT_NUMBER:TN0070716

Pond Name	NPDES ID	Latitude	Longitude	Receiving Water
SS-20	S20	36.548071	83.820713	Unnamed Trib. of Tackett Creek
SS-21	S21	36.543059	83.828918	Unnamed Trib. of Tackett Creek
SS-2	S02	36.536361	83.82925	Unnamed Trib. of Tackett Creek
SS-1	S01	36.533639	83.833167	Unnamed Trib. of Tackett Creek
Pond 1	B01	36.540028	83.845444	Unnamed Trib. of Valley Creek
Pond 2	B02	36.543972	83.844472	Unnamed Trib. of Valley Creek
Pond 3	B03	36.548639	83.849806	Unnamed Trib. of Valley Creek
Pond 4	B04	36.548917	83.847889	Unnamed Trib. of Hurricane Creek
Pond 5	B05	36.550028	83.846278	Unnamed Trib. of Hurricane Creek
Pond 6	B06	36.549861	83.841889	Unnamed Trib. of Hurricane Creek
Pond 7	B07	36.550333	83.840722	Unnamed Trib. of Hurricane Creek
Pond 8	B08	36.553194	83.837389	Unnamed Trib. of Hurricane Creek
Pond 9	B09	36.555889	83.837889	Unnamed Trib. of Hurricane Creek
Pond 10	B10	36.559694	83.839389	Unnamed Trib. of Hurricane Creek
Pond 11	B11	36.565028	83.841444	Unnamed Trib. of Hurricane Creek
Pond 12	B12	36.566444	83.841833	Unnamed Trib. of Hurricane Creek
Pond 13	B13	36.564806	83.841778	Unnamed Trib. of Hurricane Creek
Pond 14	B14	36.564667	83.849583	Unnamed Trib. of Hurricane Creek
Pond 15	B15	36.563667	83.849583	Unnamed Trib. of Hurricane Creek
Pond 16	B16	36.564667	83.851889	Unnamed Trib. of Pigeon Roost Br.
Pond 17	B17	36.567944	83.851528	Unnamed Trib. of Pigeon Roost Br.
Pond 18	B18	36.5685	83.856778	Unnamed Trib. of Pigeon Roost Br.
Pond 19	B19	36.568721	83.854728	Unnamed Trib. of Pigeon Roost Br.
Pond 28	B28	36.539833	83.842611	Unnamed Trib. of Spruce Lick Br.
Pond 29	B29	36.539667	83.842611	Unnamed Trib. of Spruce Lick Br.
Pond 30	B30	36.539333	83.839194	Unnamed Trib. of Spruce Lick Br.
Pond 31	B31	36.541223	83.832122	Unnamed Trib. of Tackett Creek
Pond 32	B32	36.543397	83.829762	Unnamed Trib. of Tackett Creek

TDEC Data and Map Viewers:

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PART I

PART II

RATIONALE

Part I

A. WASTEWATER LIMITATIONS AND MONITORING REQUIREMENTS

(Surface Mine Non-Controlled Drainage)

1. During the period beginning with the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge treated wastewater from all point sources associated with the mining and related facilities indicated on the approved area maps. This permit covers mine wastewater discharges originating from each point source associated with the mining and related facilities on the approved area maps.

   Such wastewater shall be limited and monitored by the permittee as specified below.

   a) Effluent Limitations and Monitoring Requirements

WASTEWATER LIMITATIONS[1]					
All OUTFALLS					
Parameter	**Daily Minimum**	**Daily Maximum**	**Monthly Average**	**Monitoring Frequency**	**Sample Type**
Iron, Total	N/A	6.0 mg/L	3.0 mg/L	Twice per Month	Grab
Manganese, Total	N/A	4.0 mg/L	2.0 mg/L	Twice per Month	Grab
Selenium	N/A	20.0 μg/L	3.1 μg/L	Twice per Month	Grab
Total Suspended Solids[2]	N/A	70 mg/L	35 mg/L	Twice per Month	Grab
Settleable Solids	N/A	0.5 ml/L	0.5 ml/L	Twice per Month	Grab
Specific Conductance	N/A	Report (μS/cm)	Report (μS/cm)	Twice per Month	Measure
Sulfates	N/A	Report (mg/L)	Report (mg/L)	Twice per Month	Grab
Flow	N/A	Report (GPM)	Report (GPM)	Twice per Month	Estimate
pH	6.0 SU	9.0 SU	N/A	Twice per Month	Grab

[1] The permittee may request a reclamation area permit that requires less monitoring. The discharge(s) must originate from surface runoff only. Appropriate information such as a letter of request and documentation of the SMCRA Phase I bond release must be submitted to the Division of Mineral & Geologic Resources, Mining Section.

[2] Total Maximum Daily Load (TMDL) Compliance

The discharge of Total Suspended Solids (TSS) from any facility that enters into a water body with an existing and approved Total Maximum Daily Load (TMDL) for sediment/siltation shall comply with the Waste Load Allocations (WLA) established in the TMDL. An approved TMDL establishes Waste Load Allocations (WLA) for specific types of discharges to reduce loading within the applicable watersheds. When a facility discharges to waterbodies that have a TMDL the Division will utilize pollutant loading data calculated from discharge monitoring reports submitted through NetDMR to ensure compliance with the WLA. Loading data for individual facilities may also be obtained by visiting www.echo.epa.gov.

b) Alternate Storm Limitations

Alternate storm limitations, as described in 40 CFR 434.63 and in Appendix A of 40 CFR Part 434 may apply to outfalls in this permit for different precipitation events. **PLEASE NOTE:** The permittee must monitor all of the wastewater parameters listed in Part I, A.1.(a) of the NPDES permit during all precipitation events. If the mine operator is pumping mine wastewater to any treatment structure, the alternate storm limitations would not apply for the discharges associated with pumping unless the discharge was a result of a 10-year/24-hour or greater precipitation event.

The following table indicates the alternate mine wastewater limits that will apply to discharges for various precipitation events from Outfalls:

All Outfalls	**No Precipitation**	**Discharge Caused by Precipitation**	**1yr/24hr Event**	**2yr/24hr Event**	**10yr/24hr Event**
Non-controlled Surface Mine Drainage (except steep slope and mountaintop removal)	TSS, pH, Iron, Manganese	Iron, SS, pH	Iron, SS, pH	SS, pH	pH

In order to claim the alternate storm exemptions, the permittee must do the following:

1) Notify the Division within 24-hours of knowledge of the limit exceedance.
2) Provide documentation that the discharge or increase in discharge was a result of a precipitation event of a certain magnitude. This can be in the form of one or more of the following:

- precipitation data

- weir flow measurements
- dated photographs
- or equivalent proof of record

The information in item two must be submitted with the Discharge Monitoring Reports (DMRs).

c) Special Condition Analysis Requirements

A sample for this analysis will be required as a renewal permit application monitoring requirement for this NPDES permit. You are required to complete and submit Item V of NPDES application Form 2C. You do not have to complete portions of Item V requiring tests that you have already conducted and reported under the discharge monitoring requirements of your NPDES permit. See 40 CFR Part 122.21(k)(5)(vi).

(i) EPA Form 2C, Table A. and 40 CFR Part 122.21(k)(5)(i) require that you sample and analyze at least once for the parameters: Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD), Total Organic Carbon (TOC), Ammonia, and Temperature. (See Note)

Note: The permittee may request a waiver from testing and reporting of these parameters. They do not provide information essential to NPDES permit issuance. See 40 CFR Part 122.21(k)(5)(i).

(ii) EPA Form 2C, Table C. and 40 CFR Part 122.21 (k)(5)(ii) require that you mark believed present or believed absent in your wastewater discharge for all parameters in Appendix D to Part 122, Table IV. If believed present, the parameter must be analyzed and the results reported. Iron and manganese must be marked present, the wastewater analyzed and the results reported.

(iii) EPA Form 2C, Table B. Section 1. Toxic Metals, Cyanide, and Total Phenols and 40 CFR Part 122.21 (k)(5)(iii)(A) require that you test and report analysis for the listed parameters in Appendix D to Part 122, Table III.

Antimony	Nickel	Copper
Arsenic	Selenium	Lead
Beryllium	Silver	Mercury
Cadmium	Thallium	Cyanide
Chromium	Zinc	Phenols, Total

(iv) Coal mining facilities are exempt from testing the list of organic compounds found in Form 2C and Appendix D to Part 122, Table II. See 40 CFR Part 122.21 (k)(5)(iii)(B).

If a review of your submitted data indicates a need to add or change permit effluent limitations or permit conditions to protect the classified uses of the receiving stream(s), your permit will be modified, revoked and re-issued or both to accomplish those changes. See 40 CFR 122.62.

2. There shall be no distinctly visible floating scum, oil, or other matter contained in the wastewater discharge. The wastewater discharge must not cause an objectionable color contrast in the receiving stream.

3. The wastewater discharge shall result in no other materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

4. Sludge or any other material removed by any treatment works shall be disposed of in a manner which prevents its entrance into or pollution of any surface or subsurface waters. Additionally, the disposal of such sludge or other material shall be in compliance with the Tennessee Solid Waste Disposal Act, TCA 68-211 and the Tennessee Hazardous Waste Management Act, TCA 68-212.

5. Batch, Siphon, or Pump Discharges

   Batch, siphon, or pump discharge(s) of any treated mine wastewater from approved treatment structures shall comply with effluent standards set forth herein and shall be directed to a splashpad or the pond's spillway constructed of non-erosive material. These discharge(s) shall be sampled according to the following monitoring schedule:

   a. A minimum of two samples shall be collected. One sample shall be collected within one hour from the beginning of the discharge and the second sample shall be taken within one hour prior to cessation of the discharge.

   b. Each batch, siphon, or pump discharge lasting more than four hours shall be sampled once in addition to the schedule established in 5 (a) above. The additional sample shall be taken midway of the total time of discharge.

   c. Duration of the discharge shall be noted on the Discharge Monitoring Report.

   d. Discharges lasting more than twenty-four hours shall be considered as a separate discharge monitoring cycle. Monitoring procedures stipulated above shall be reinstated.

   Data from the sampled discharge shall be submitted with the Discharge Monitoring Report (DMR) along with any other discharge data collected for the monitoring period. This data may be submitted in lieu of data from the next scheduled sampling day of the month. Siphon or pumpage of water from wastewater treatment structures is a prohibited bypass if the sampling procedures as stated herein (Part I) are not followed.

6. Gravity Discharges from Wastewater Treatment Systems and/or Facilities

   Representative samples shall be taken according to the sampling frequencies established in Part I. A. 1 unless otherwise approved by the Division following a specific written request by the permittee.

   Twice per month samples shall be taken as follows:

   1) One sample of the first discharge during the first half of the month and
   2) One sample of the first discharge during the second half of the month.

   Quarterly samples shall be taken within each quarter, as defined in Part I. H. 1. d.

   Annual samples shall be taken anytime within the calendar year unless otherwise specified.

B. WHOLE EFFUENT TOXICITY TEST REQUIREMENTS

This facility has appropriate effluent limitations to prevent the facility from causing or contributing to an excursion above any State water quality standard. Additionally, a Comprehensive Biological Monitoring Plan (CBMP) has been incorporated into the permit to monitor potential effects of discharges on aquatic life. Therefore, Whole Effluent Toxicity (WET) limits are not incorporated into this permit.

C. BIOLOGICAL ASSESSMENT REQUIREMENTS

The permittee shall submit and monitor biology at the frequency and stations designated in a Comprehensive Biological Monitoring Plan (CBMP) to assess biological integrity of the receiving streams. The CBMP must be submitted to the Department and approved prior to the commencement of mining related activities. The CBMP may include biological monitoring for more than one NPDES permit. The Department may approve revision of the CBMP without modifying the NPDES permit. Biological surveys must use the Department's *Quality System Standard Operating Procedure (QSSOP) for Macroinvertebrate Stream Surveys* (Most current revision). Semi-quantitative riffle kicks are to be collected in the stream reaches specified. The sample results shall be submitted to the Division within 90 days of collection. Any revisions to the CBMP must be submitted to the Department and approved prior to implementation. If a receiving stream fails to meet the general water quality criteria for biological integrity the permittee shall further evaluate the discharges and determine if they are a potential source of impairment.

D. SURFACE WATER MONITORING REQUIREMENTS

Surface water monitoring may be required by the SMCRA permit. If required, surface water monitoring data may be obtained from the Office of Surface Mining.

E. GROUNDWATER MONITORING REQUIREMENTS

Groundwater monitoring may be required by the SMCRA permit. If required, groundwater monitoring data may be obtained from the Office of Surface Mining.

F. STORM WATER REPORTING LEVELS AND MONITORING REQUIREMENTS

Storm water discharges associated with access and haul roads and other discharges composed entirely of storm water that are not treated in the mine wastewater system shall be monitored by the permittee as specified below until the site has been closed and stabilized according to plans approved by the Division. Additionally, conditions stipulated in Part III B., Termination of Monitoring, shall be met.

NOTE: Part I B. entitled, "Storm Water Reporting Levels and Monitoring Requirements," is not applicable if all storm water discharges associated with access and haul roads and/or other areas of the permit requiring storm water coverage are routed to and adequately treated by approved wastewater treatment structures. Sufficient documentation (i.e. narrative, drainage maps, etc.) of such treatment shall be provided to the Division before this exemption is valid.

STORM WATER DISCHARGES				
ALL DESIGNATED STORM WATER MONITORING POINTS				
Parameter	**Benchmark Minimum**	**Benchmark Maximum**	**Monitoring Frequency**	**Sample Type**
Total Suspended Solids	N/A	150 mg/L	Annually	Grab
pH	6.0 SU	9.0 SU	Annually	Grab
Flow	Report (GPM)	Report (GPM)	Annually	Estimate
Oil and Grease*	N/A	15 mg/L	Annually	Grab
***NOTE: If the storm water discharge is from an area not associated with an access road or haul road or is not a source for vehicular traffic, monitoring for Oil and Grease is not required.**				

1. Samples shall be collected from discharges resulting from a storm event that is greater than 0.1 inch in magnitude and that occurs at least seventy-two (72) hours after any previous storm event of 0.1 inch or greater.

2. Grab samples shall be collected as soon as practicable during a storm event discharge.

3. In addition to the information contained in Part I, Section E (3), the monitoring report form shall include:

   a. The exact location from which the sample was taken, i.e., culvert, sump, etc.

b. The duration (in hours), starting and ending times, and magnitude (in inches) of the storm event sampled.

G. WASTEWATER TREATMENT FACILITIES CONSTRUCTION SCHEDULE

1. Full compliance and operational levels shall be attained from the effective date of this permit.

2. All pollution control equipment required to meet the conditions of this permit shall be installed, be in operational condition, and shall be "started-up" prior to discharge.

3. Prior to receiving drainage from disturbance of the permitted mine area, wastewater treatment structures and/or treatment facilities shall be constructed according to approved plans and certified after construction by a Tennessee Registered Professional Engineer. Such certifications shall be submitted to and approved by the Division.

H. REPORTING OF MONITORING RESULTS

1. Monitoring Requirements

   a. Wastewater Discharges

      1) Monitoring results for wastewater discharges shall be recorded monthly and submitted quarterly.

         The first Discharge Monitoring Report (DMR) is due on: **July 15, 2024**

      2) Each subsequent DMR shall be due no later than 15 days after completion of each quarterly reporting period.

      3) DMRs shall be submitted for each outfall number listed on the permit. If a wastewater treatment structure(s) listed on the permit has not been constructed, this shall be noted on the DMR as "not constructed."

   b. Storm Water Discharges

      Monitoring results for storm water discharges shall be recorded and submitted annually. The Report is due no later than 15 days after completion of the quarterly reporting period in which the sample was taken.

   c. Groundwater Monitoring Results

      Monitoring results shall be recorded and submitted according to the monitoring frequency and schedule stipulated in the SMCRA permit issued by the Federal Office of Surface Mining (OSM).

d. Definition of "Quarter" for Reporting Purposes

For the purpose of this permit, a "quarter" is defined as any of the following three-month periods: January 1 through March 31; April 1 through June 30; July 1 through September 30; and October 1 through December 31.

2. Submittal of Monitoring Reports

The permittee must use the NetDMR electronic reporting tool for electronic submissions of DMR data. Electronic submissions must start by the date listed in the "Monitoring Requirements" section above. The permittee must electronically submit compliance monitoring data and reports no later than the 15th of the month following the completion of each quarterly reporting period. The permittee must sign and certify all electronic submissions in accordance with the requirements of Section 3 ("Signature Requirements for DMR Forms").

3. Signature Requirements for DMR Forms

Discharge Monitoring Reports (DMRs) shall be signed and certified by a principal corporate officer of at least the level of vice-president, a general partner or proprietor, or his duly authorized representative. Such authorization shall be submitted in writing, signed by the permittee, and shall explain the duties and responsibilities of the authorized representative.

4. Mailing Address

Any communication regarding compliance with the conditions of this permit shall be sent to:

Tennessee Department of Environment and Conservation
Division of Mineral & Geologic Resources
3711 Middlebrook Pike
Knoxville, TN 37921-6538
ATTENTION: Mining Compliance
Telephone (865) 594-6035 Fax (865) 594-6105

5. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified herein, the results of such monitoring shall be included in the calculation and reporting of the values required on the Discharge Monitoring Report (DMR). Such increased frequency shall also be indicated.

6. Falsifying Reports

   Knowingly making any false statement on any report required by this permit may result in the imposition of criminal penalties as provided for in Section 309 of The Federal Clean Water Act of 1977, as amended, and in Section 69-3-115(c) of The Tennessee Water Quality Control Act of 1977, as amended.

7. Reporting Less Than Detection

   For the purpose of evaluating compliance with the permit limits established herein, where certain limits are below the Method Detection Limits (MDLs) for any given effluent characteristics, the results of analyses below the MDL shall be reported as Below Detection Level (BDL). In instances where an effluent limit is less than the MDL, the most sensitive test method must be used (40 CFR Part 136.3). If the samples are below the MDL, then report "BDL" or "NODI =B" on the DMRs.

I. MONITORING PROCEDURES

1. Representative Sampling

   Samples and measurements taken in compliance with the monitoring requirements specified above shall be representative of the volume and nature of the monitored discharge and shall be taken at the following location(s): nearest accessible point after final treatment but prior to actual discharge(s) to or mixing with the receiving waters.

2. Test Procedures

   a. Test procedures for the analysis of pollutants shall conform to regulations published pursuant to Section 304(h) of *The Federal Clean Water Act of 1977*, as amended, under which such procedures may be required.

   b. Unless otherwise noted in the permit, all pollutant parameters shall be determined according to methods prescribed in Title 40, CFR, Part 136*,* as amended, promulgated pursuant to Section 304 (h) of *The Federal Clean Water Act of 1977*, as amended. Sufficiently sensitive test procedures are required and must comply with *40 CFR 122.44 (i) (1) (iv).*

3. Recording of Results

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

   a. The date, exact place, and time of sampling or measurements;

   b. The individual(s) who performed the sampling or measurements;

c. The date(s) analyses were performed;

d. The individual(s) who performed the analyses;

e. The analytical techniques or methods used; and

f. The results of such analyses.

4. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation, shall be retained for a minimum of three years, or longer, if requested by the Division of Mineral & Geologic Resources or the Division of Water Resources, and be readily available to the Division's representative for review.

PART II

A. GENERAL PROVISIONS

1. Duty to Reapply

The permittee is not authorized to discharge after the expiration date of this permit. In order to receive authorization to discharge beyond the expiration date, the permittee shall submit such information and forms as are required to the Director no later than 180 days prior to the expiration date.

2. Right of Entry

The permittee shall allow the Director, the Regional Administrator of the U.S. Environmental Protection Agency, or their authorized representatives, upon the presentation of credentials to:

a. Enter upon the permittee's premises where an effluent source is located or where records are required to be kept under the terms and conditions of this permit, and copy these records;

b. Inspect any monitoring equipment or method or any collection, treatment, pollution management, or discharge facilities required under this permit and;

c. Sample any discharge of pollutants.

3. Availability of Reports

   Except for data determined to be confidential under Section 308 of *The Federal Clean Water Act of 1977*, as amended, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the Division of Mineral & Geologic Resources or the Division of Water Resources. As required by the Federal Act, effluent data shall not be considered confidential.

4. Proper Operation and Maintenance

   a. The permittee shall at all times properly operate and maintain all facilities and systems (and related appurtenances) for collection and treatment installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Proper operation and maintenance also includes adequate laboratory and process controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

   b. Dilution water shall not be added to comply with effluent requirements.

5. Property Rights

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

6. Severability

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

7. Other Information

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

8. Best Management Practices (BMPs)

   The permittee shall utilize Best Management Practices to prevent or minimize erosion and the contribution of suspended solids and sediment to surface waters and/or adjacent

properties. Such practice(s) shall be implemented to reduce the impacts caused by disturbances created by the installation of culverts, the construction of haulroads, access roads, spoil storage, stockpile areas, and other related activities.

Best Management Practices (BMPs) include, but are not limited to, rapid grading, mulching, and revegetation of disturbed areas, straw bales, sediment traps and swells, vegetative buffer zones, erosion control structures, and rock check dams. BMPs are used in conjunction with effluent limitation guidelines as supplemental or auxiliary erosion control measures and are not to be considered as substitutes for monitoring requirements of point source discharges. BMPs are required as non-numeric effluent limitations pursuant to *40 CFR 122.44 (k)*. The permit application and site drainage map shall constitute the BMP plan.

Additional information regarding acceptable practices may be found in the ***Tennessee Erosion and Sediment Control Handbook*, most recent edition**, which is available from the Division at https://tnepsc.org/handbook.asp.

B. CHANGES AFFECTING THE PERMIT

1. Planned Changes

   The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

   a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

   b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to requirements under 40 CFR 122.42 (a) (1).

2. Permit Modification, Revocation, or Termination

   a. This permit may be modified, revoked and reissued, or terminated for cause as described in 40 CFR 122.62 and 122.64.

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

   c. If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established for any toxic pollutant under Section 307(a) of *The Federal Clean Water Act of 1977*, as

amended, the Director shall modify or revoke and reissue the permit to conform to the prohibition or to the effluent standard, providing that the effluent standard is more stringent than the limitation in the permit on the toxic pollutant. The permittee shall comply with these effluent standards or prohibitions within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified or revoked and reissued to incorporate the requirement.

3. Transfer of Ownership

Individual permits are not transferable to any person except after notice to the commissioner, as specified below.

a. The permittee notifies the Commissioner of the proposed transfer at least 30 days in advance of the proposed transfer date;

b. The notice includes a written agreement between the existing and new permittee containing a specified date for transfer of the permit responsibility, coverage, and liability between them;

c. The permittee must provide the following information to the commissioner in their formal notice of intent to transfer ownership:

(1) The permit number of the subject permit;
(2) The effective date of the proposed transfer;
(3) The name and address of the transferor;
(4) The name and address of the transferee;
(5) The names of the responsible parties for both the transferor and transferee;
(6) A statement that the transferee assumes responsibility for the subject permit;
(7) A statement that the transferor relinquishes responsibility for the subject permit;
(8) The signatures of the responsible parties for both the transferor and transferee pursuant to the signatory requirements of this part; and
(9) A statement regarding any proposed modifications to the facility, its operations, or any other changes, which might affect the permit, limits and conditions contained in the permit.

d. The Commissioner, within 30 days, does not notify the existing permittee and the proposed new permittee of his intent to modify, revoke and reissue, or terminate the permit and to require that a new application be filed rather than agreeing to the transfer of the permit.

NOTE: To expedite and facilitate the permit transfer process and provide the required information, the Division has prepared two documents, “Notice of Transfer: National Pollutant Discharge Elimination System Permit” and “NPDES Permit Application Addresses Transfer of Ownership.” These documents may be obtained by contacting the Division at telephone number **(865) 594-5460**.

4. Change of Mailing Address

   The permittee shall promptly provide to the Director written notice of any change of mailing address. In the absence of such notice, the original address of the permittee will be assumed to be correct.

C. NON-COMPLIANCE

1. Effect of Non-Compliance

   All discharges shall be consistent with the terms and conditions of this permit. Any permit non-compliance constitutes a violation of applicable state and federal laws and is grounds for enforcement action, permit termination, permit modification, or denial of permit reissuance.

2. Reporting of Non-Compliance

   a. 24-Hour Reporting

      In the case of any non-compliance which could cause a threat to the public drinking water supplies, or any other discharge which could constitute a threat to human health or the environment, a required notice of non-compliance shall be provided to the Division of Mineral & Geologic Resources within 24 hours from the time the permittee becomes aware of the circumstances.

      Telephone No. (865) 594-6035
      Fax No. (865) 594-6105
      Email: TDEC.Mining@tn.gov

      Additionally, written submission shall be provided within five days of the time the permittee becomes aware of the circumstances unless the Director on a case-by-case basis waives this requirement. The permittee shall provide the Director with the following information:

      (1) A description of the discharge and cause of non-compliance;

      (2) The period of non-compliance, including exact dates and times, or, if not corrected, the anticipated time non-compliance is expected to continue; and

      (3) The steps being taken to monitor, reduce, eliminate, and prevent recurrence of the non-complying discharge.

      This written notice shall not be considered as excusing or justifying the failure to comply with the effluent limitations. This non-compliance shall also be reported on

the Discharge Monitoring Report (DMR). The details may be incorporated by reference to the written five day notification.

b. Scheduled Reporting

For instances of non-compliance which are not reported under subparagraph 2(a) above, the permittee shall report the non-compliance on the Discharge Monitoring Report (DMR). The report shall contain all information concerning the steps taken, or planned, to monitor, reduce, eliminate, and prevent recurrence of the violation and the anticipated time the violation is expected to continue.

3. Bypassing

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

b. Bypass is prohibited and the Director may take enforcement action against a permittee for bypass, unless the following three conditions are met:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There are no feasible alternatives to bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(3) The permittee submits notice of an unanticipated bypass to the Division of Mineral & Geologic Resources within 24 hours of becoming aware of the bypass (if this information is provided orally, a written submission shall be provided within five days). When the need for the bypass is foreseeable, prior notification shall be submitted for approval to the Director, if possible, at least 10 days before the date of the bypass.

c. The Director may prohibit bypass in consideration of the adverse effect of the proposed bypass or if the proposed bypass does not meet the conditions set forth in subparagraphs 3(b)(1) and (2).

d. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure

efficient operation. These bypasses are not subject to the provisions of subparagraph b. above.

4. Upset

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

   b. Conditions necessary for the demonstration of an upset. An upset shall constitute an affirmative defense to an action brought for non-compliance with such technology-based permit effluent limitations if the permittee demonstrates, through properly signed, contemporaneous operating logs, or other relevant evidence that:

      (1) An upset occurred and that the permittee can identify the cause(s) of the upset;

      (2) At the time the permitted facility was being operated in a prudent and workman-like manner and in compliance with proper operation and maintenance procedures;

      (3) The permittee submitted information required under "Reporting of Non-Compliance" within 24 hours of becoming aware of the upset (if this information is provided orally, a written submission shall be provided within five days); and

      (4) The permittee complied with any remedial measures required under "Adverse Impact."

   c. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

5. Adverse Impact

   The permittee shall take all reasonable steps to minimize any adverse impact to the waters of Tennessee resulting from non-compliance with this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge. In an enforcement action, it shall not be a defense for the permittee that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. LIABILITIES

1. Civil and Criminal Liability

   Except as provided in permit conditions for "Bypassing," nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for non-compliance. Notwithstanding this permit, the permittee shall remain liable for any damages sustained by the state of Tennessee including, but not limited to, fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of wastewater to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the permittee to conduct its wastewater treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

2. Liability under State Law

   Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or *The Federal Clean Water Act of 1977*, as amended.

3. Liability to Obtain Required Permits

   It is a violation of this permit to fail to obtain a permit or permit coverage for any activity that requires a permit under *The Tennessee Water Quality Control Act of 1977.*

PART III

A. GENERAL REQUIREMENTS

1. Prior to the creation of any disturbed area or point source discharge within the projected area of operation, and prior to changes, corrections, modifications, or adjustments in the location of any point source discharge, an Engineering Plan shall be submitted to and approved by the Division of Mineral & Geologic Resources.

2. No mining activity shall be conducted within the projected area of operation unless the detailed Engineering Plan for the specific area of operation or disturbance has been approved in advance. The Engineering Plan shall include those documents, maps, drawings, and other materials as required by the Division.

B. TERMINATION OF MONITORING

Monitoring of a discharge may be terminated when all of the following have been satisfactorily completed:

1. Sufficient data has been accumulated to show to the satisfaction of the Director that the untreated discharge from an area where mining is completed shall meet limitations established by the Division as stated herein [Part I, A (1), Page 1]. Other factors such as watershed or background characteristics may be taken into consideration if sufficient data and documentation are provided to the Division by the permittee.

2. The site has been closed and stabilized to the satisfaction of the Division.

3. After a 30-day public notice, there is no adverse public comment to uphold termination.

C. EXAMPLES OF DISCHARGES COVERED BY THIS PERMIT

Examples of discharges which are covered by *The Federal Clean Water Act of 1977*, as amended, and this permit include, but are not limited to, the following:

1. Pumped or gravity drainage from the permitted area including, but not limited to, the mine, overburden storage and stockpile areas; and other adjacent areas which are associated with or incidental to the extraction of a natural resource or related activities.

2. Discharges from sediment control structures and/or treatment facilities.

D. DURATION AND REISSUANCE OF PERMITS (RULE 0400-40-05-.11 [3])

The Commissioner or his duly authorized representative (i.e. State Director) shall review the permit and other available information to insure:

1. That the permittee is in compliance with or has substantially complied with all terms, conditions, requirements, and schedules of compliance of the expired permit;

2. That the Commissioner has up-to-date information on the permittee's production levels, permittee's waste treatment practices, nature, contents, and frequency of permittee's discharge, either pursuant to monitoring records and reports submitted to the Commissioner by the permittee; and,

3. That the discharge is consistent with applicable effluent standards and limitations, water quality standards, and other legally applicable requirements including any additions to, or revisions or modifications of such effluent standards and limitations, water quality standards, or other legally applicable requirements during the term of the permit.

E. REOPENER CLAUSE

In accordance with 40 CFR Part 124.5(a) permits may be reopened and modified, revoked and reissued, or terminated either at the request of any interested person (including the permittee) or upon the Director's initiative. However, permits may only be modified, revoked and reissued, or terminated for the reasons specified in 40 CFR parts 122.62 or 122.64. All requests shall be in writing and shall contain facts or reasons supporting the request. Permits reopened under this clause will follow the process specified in 40 CFR Part 124.5.

F. TOXIC POLLUTANTS

The permittee shall notify the Division of Mineral & Geologic Resources as soon as it knows or has reason to believe:

1. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant (listed in 40 CFR, Part 122, Appendix D, Table II and III) which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

    a. One hundred micrograms per liter (100 μg/L);

    b. Two hundred micrograms per liter (200 μg/L) for acrolein and acrylonitrile; five hundred micrograms per liter (500 μg/L) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/L) for antimony;

    c. Five times the maximum concentration value reported for that pollutant in the permit application; in accordance with 122.21(g)(7); or

    d. The level established by the Director in accordance with 122.44(f).

2. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

    a. Five hundred micrograms per liter (500 μg/L);

    b. One milligram per liter (1 mg/L) for antimony;

    c. Ten times the maximum concentration value reported for that pollutant in the permit application in accordance with 122.21(g)(7); or

    d. The level established by the Director in accordance with 122.44(f).

3. They have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application under 122.21(g)(9).

G. ANTIDEGRADATION STATEMENT

Pursuant to the *Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03-.06*, titled "Tennessee Antidegradation Statement," and in consideration of the Department's directive in attaining the greatest degree of effluent reduction achievable in municipal, industrial, and other wastes, the permittee shall further be required, pursuant to the terms and conditions of this permit, to comply with the effluent limitations and schedules of compliance required to implement applicable water quality standards, to comply with a State Water Quality Plan or other state or federal laws or regulations, or where practicable, to comply with a standard permitting no discharge of pollutants.

H. DEFINITIONS

1. *"Access Road/Haul Road"* is any road constructed, maintained, or used by the operator of a mining facility primarily for the purpose of transporting raw materials, equipment, manufactured products, waste material, or by-products, and is located within the affected area.

2. *"Batch discharge"* for the purpose of this permit means the controlled release through a pipe (valve) of a known quantity and quality of treated wastewater that has been pumped to a treatment system after such water has been physically and/or chemically treated to meet permit limits.

3. *"Best Management Practices (BMPs)"* means a practice or a combination or series of practices designed to prevent or minimize the amount of pollution generated by non-point sources, such as haul roads, access roads, spoil storage and stockpile areas, site preparation, installation of culverts, and other related activities.

4. *"Bypass"* means the intentional diversion of wastes from any portion of a treatment facility.

5. *"Calendar Day"* is defined as any 24-hour period.

6. *"Clean Water Act" or "Act"* means the *Federal Clean Water Act of 1977* (formerly referred to as *The Federal Water Pollution Control Act* or *The Federal Water Pollution Control Act Amendments of 1972*), as amended.

7. *"Coal Preparation Plant"* means a facility where coal is subjected to cleaning, concentrating, or other processing or preparation in order to separate coal from its impurities and then is loaded for transit to a consuming facility.

8. *"Coal Preparation Plant Associated Areas"* means the coal preparation plant yards, immediate access roads, coal refuse piles and coal storage piles and facilities.

9. *"Commissioner"* means the Commissioner of the Tennessee Department of Environment and Conservation or the Commissioner's duly authorized representative.

10. *"Composite sample"* means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

11. *"Controlled surface mine drainage"* means any surface mine drainage that is pumped or siphoned from the active mining area.

12. *"Daily Maximum Concentration"* is a limitation on the average concentrations in milligrams per liter, of the discharge during any calendar day.

    (a) When a proportional-to-flow composite sampling device is used, the daily concentration is the concentration of that 24-hour composite.

    (b) When other sampling means are used, the daily concentration is the arithmetic mean of the concentrations of equal volume samples collected during any calendar day or sampling period.

13. *"Director"* means the Regional Administrator or the State Director, as the context requires or an authorized representative.

14. *"Discharge of a Pollutant"* means: "(a) Any addition of any 'pollutant' or combination of pollutants to 'waters of the United States' from any 'point source,' or (b) ... This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man..."(see 40 CFR 122.2).

15. *"Division"* means the Division of Mineral & Geologic Resources.

16. *"Grab Sample"* means an individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes.

17. *"Industrial Waste"* means any liquid, solid, gaseous substance, or combination thereof, or form of energy including heat, resulting from any process of industry, manufacture, trade, or business or from the development of any natural resource.

18. "*Maximum for any 1 day*" means a limitation of the total concentration by volume in milliliters per liter (ml/l) or concentration by weight in milligrams per liter (mg/l) of any pollutant in the discharge during any time of a calendar day.

19. *"Mine"* shall mean an area of land, surface or underground, actively mined for the production of a natural resource. Such areas shall also include any adjacent land, the uses of which is incidental to any such activities; all lands affected by the construction of new roads or the improvement or use of existing roads, except maintained public roads, to gain access to the site of such activities and for haulage; excavations, workings, impoundments, dams, dumps, stockpiles, overburden piles, holes or depressions, repair areas, storage areas, and other areas upon which are sited structures, or other property or materials on the surface, resulting from or incidental to such activities.

20. *"Monthly Average Concentration"* is a limitation on the discharge concentration in milligrams per liter, as the arithmetic mean of all daily concentrations determined in an one-month period.

21. *"National Pollutant Discharge Elimination System (NPDES)"* means the Federal Environmental Protection Agency's (EPA) national program for issuing, modifying, revoking and reissuing, terminating, monitoring, and enforcing water quality permits. The term includes an "approved state program."

22. *"Pollutant"* for the purpose of this permit means industrial waste.

23. *"Reclamation Area"* means the surface area of a coal mine which has been returned to required contour and on which revegetation (specifically, seeding or planting) work has commenced. 40 CFR Part 434.11 (k) (1).

24. *"Regional Administrator"* means the Administrator for the Environmental Protection Agency or his authorized representative.

25. *"Storm Water Discharges Associated with Access Roads and Haul Roads"* means the discharge from any conveyance which is used for collecting and conveying storm water from immediate access roads and haulroads. This term does not apply to discharges from public roads or discharges routed to and adequately treated by approved wastewater treatment structures.

26. *"TBEL"* means Technology Based Effluent Limit that requires a minimum level of treatment of pollutants based on best available treatment technologies. TBELs are derived by using national effluent limitation guidelines from EPA and/or applicable state guidelines or best professional judgment in the absence of these guidelines.

27. *"Tennessee Water Quality Control Act of 1977,"* as amended, TCA 69-3-101 et seq., is the act that sets forth the guidelines and procedures for the abatement and prevention of pollution to the waters of the state. The act enables the state of Tennessee to qualify for full participation in the NPDES permit program.

28. The term *"10-year, 24-hour precipitation event"* means the maximum 24-hour precipitation event with a probable recurrence interval of once in ten years as defined

by the National Weather Service and Technical Paper No. 40, "Rainfall Frequency Atlas of the U.S.," May 1961, and subsequent amendments or equivalent regional or rainfall probability information developed therefrom.

29. The terms *"treatment facility"* and *"treatment system"* mean all structures which contain, convey, and as necessary, chemically or physically treat coal mine drainage, coal preparation plant process wastewater, or drainage from coal preparation plant associated areas, which remove pollutants regulated by the Division from such waters. This includes all pipes, channels, ponds, basins, tanks, and all other equipment serving such structures.

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

31. *"Waters"* means any and all water, public and private, on or beneath the surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownership which do not combine or effect a junction with natural surface or underground waters. The term "waters" also includes tributary streams, drainways, and conveyances that enter or drain into any and all water, public or private, on or beneath surface of the ground, which are contained within, flow through, or border upon Tennessee or any portion thereof except those bodies of water confined to and retained within the limits of private property in single ownerships which do not combine or effect a junction with natural surface or underground waters.

32. *"WQBEL"* Water Quality Based Effluent Limitation and is used when the technology based effluent limitations (TBELs) are not sufficiently stringent to meet water quality standards. WQBELs are derived by using all available water quality data (i.e. numeric, narrative, aquatic life, watershed and background data).

RATIONALE

Surface Mine Non-Controlled Drainage

Hurricane Creek Mining, LLC
NPDES PERMIT TN0070716
SMCRA Permit 3341
Clairfield, Claiborne County, Tennessee

Permit Writer: Dan Murray

September 25, 2023

I. DISCHARGER

Hurricane Creek Mining, LLC
3380 Cedar Fork Road
Tazewell, TN 38789

Contact: Johnny Asher, Managing Member

Facility Location: Valley Creek Road
Clairfield, TN 37715

Nature of Business: **Bituminous Coal Surface Mining**

SIC Code(s): **1221 (Surface)**

Industrial Classification: Primary

Discharger Rating: Minor

II. PERMIT STATUS

NPDES Permit TN0070716 effective: May 1, 2024

NPDES Permit TN0070716 expires: April 30, 2029

Permitting action: New

Application for NPDES permit renewal to be received by: November 1, 2028

III. FACILITY DISCHARGES AND RECEIVING WATERS

This facility proposes to discharge treated mine wastewater and storm water from 28 Outfalls into unnamed tributaries to Tackett Creek, Valley Creek, Hurricane Creek, Pigeon Roost Branch and Spruce Lick Branch in Claiborne County, Tennessee. The classified uses for these streams are fish and aquatic life, livestock watering and wildlife, recreation, and irrigation. See *Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-04.*

IV. APPLICATION TYPE AND BACKGROUND INFORMATION

This mine area was originally permitted by another company as the Sterling and Strays Surface Mine. Mining of this area was not completed, and the disturbed area is reclaimed. Hurricane Creek Mining, LLC proposes to mine approximately 657.9 acres that was not mined by the previous permittee. The applicant proposes to contour/box cut re-mine and auger mine the existing pre-SMCRA highwall and bench.

V. REASONABLE POTENTIAL ANALYSIS OF TOXIC METALS, CYANIDE, AND TOTAL PHENOLS

EPA Form 2C, Table B. Section 1., and 40 CFR §122.21(g)(7) require permittees of coal mining facilities to submit analysis of their effluent for an extended list of parameters at least once during a permit cycle. Parameters having detectable concentrations must undergo a Reasonable Potential Analysis (RPA) to consider whether discharges from the facility could cause a violation of the General Water Quality Criteria. If the RPA indicates that comparable test results are less than any applicable water quality criteria, a violation of the criteria for that parameter should not occur. If the RPA indicates that a discharge has the reasonable potential to cause or contribute to an in-stream excursion of a water quality criterion, then the permit must contain effluent limits for that pollutant. See 40 CFR §122.44(d).

This is a new facility and none of the outfalls are constructed. The Division is using the Reasonable Potential Analysis (RPA) from Sterling and Strays, NPDES TN0069281 Outfall B23 (collected and analyzed in 2020) as a surrogate for the proposed discharges. Hardness and total suspended solids were not available for when the sample was collected. The RPA was run using high and low estimates for hardness (25 & 400µg/L) and TSS (10 & 70µg/L). Chromium, selenium, and zinc were determined to be present in the existing sample for NPDES TN0069281. The RPA for Outfall B23 indicates that an exceedance of the criteria should not occur for chromium and zinc. Selenium exhibited reasonable potential for discharges to lentic waters to exceed a criterion continuous concentration (CCC). Conversely, selenium discharges to lotic waters exhibiting no reasonable potential to violate a numeric water quality criterion. Selenium is bioaccumulative and Outfall B23 is reclaimed and no longer discharges. Therefore, the Division has implemented effluent limitations for the proposed outfalls to protect the receiving stream. See attached Water Quality Based Effluent Calculations. No later than two years after the commencement of

discharge from the facility, the permittee is required to complete and submit Item V of NPDES application Form 2C for each constructed outfall.

VI. APPLICABLE EFFLUENT LIMITATIONS GUIDELINES

Effluent limitations applicable to these wastewater discharges are described in 40 CFR 434.35 SubPart C. **New Source Performance Standards (NSPS)** include provisions applicable to discharges from an active surface mine.

NSPS Effluent Limitations

Pollutant or pollutant property	Monthly Average	Maximum for Any 1 Day
Iron, total	3.0 mg/L	6.0 mg/L
Manganese, total	2.0 mg/L	4.0 mg/L
TSS	35.0 mg/L	70.0 mg/L
pH	6.0-9.0 standard units at all times.	

Effluent limitations may apply to these wastewater discharges that are not NSPS.

Additional Effluent Limitations

Pollutant or pollutant property	Monthly Average	Maximum for Any 1 Day
Settleable Solids	N/A	0.5 ml/L
Specific Conductance (μS/cm)	Report	Report
Selenium	3.1 μg/L	20.0 μg/L
Sulfates (mg/l)	Report	Report
Flow (GPM)	Report	Report

The Settleable Solids effluent limitation of 0.5 ml/L is established as an instantaneous maximum in the permit based on Best Professional Judgment (BPJ). This limit is maximum value that is not intended to be exceeded and is not averaged. EPA studies and other research data indicate that the 0.5 ml/l limit for Settleable Solids (SS) is achievable and is an effective and appropriate measure of sediment control both for active mines during precipitation events and for reclamation areas. See EPA "Development Document for Final Effluent Limitations Guidelines and New Source Performance Standards for the Coal Mining Point Source Category" Effluent Guidelines Division, Office of Water, U. S. Environmental Protection Agency, EPA 440/1-82/057, Washington D. C., October, 1982.

Selenium has been incorporated into this permit as a water quality based effluent limitation based on the surrogate RPA and Best Professional Judgment (BPJ). Selenium may be removed as an effluent limitation for some or all discharges when the permit is renewed based on site specific special condition analysis and updated RPA for each outfall.

Based on the BPJ of the Division specific conductance and sulfates are included on coal mining related permits as a reporting limit. These parameters have been found to be useful in identifying changes in the chemical components and characteristics of discharged effluents and evaluating the effectiveness of the mine wastewater treatment systems.

Flow measurements are used to determine the volume or quantity of wastewater that is discharged from each outfall. See 40 CFR 122. Measurement of flow volume provides operating and performance data on the wastewater treatment system, helps in evaluating impacts on the receiving stream, and provides data to determine long term trends in treatment capacity and effectiveness.

VII. ALTERNATE EFFLUENT LIMITATIONS FOR PRECIPITATION EVENTS

Discharges from wastewater treatment systems resulting from precipitation events are eligible for alternate monitoring requirements. These requirements are described in 40 CFR 434.63 and in Appendix A of 40 CFR Part 434.

The following table indicates the alternate wastewater limits that will apply to discharges for various precipitation events:

All Outfalls	**No Precipitation**	**Discharge Caused by Precipitation**	**1yr/24hr Event**	**2yr/24hr Event**	**10yr/24hr Event**
Non-controlled Surface Mine Drainage (except steep slope and mountaintop removal)	TSS, pH, Iron, Manganese	Iron, SS, pH	Iron, SS, pH	SS, pH	pH

VIII. PREVIOUS PERMIT LIMITS AND MONITORING REQUIREMENTS

This is a new Surface Mine Non-Controlled Drainage and has no previous permit limits or monitoring requirements.

IX. NEW PERMIT LIMITS AND MONITORING REQUIREMENTS

NEW WASTEWATER LIMITATIONS					
All OUTFALLS					
Parameter	**Daily Minimum**	**Daily Maximum**	**Monthly Average**	**Monitoring Frequency**	**Sample Type**
Iron, Total	N/A	6.0 mg/L	3.0 mg/L	Twice per Month	Grab
Manganese, Total	N/A	4.0 mg/L	2.0 mg/L	Twice per Month	Grab
Selenium	N/A	20.0 μg/L	3.1 μg/L	Twice per Month	Grab
Total Suspended Solids[2]	N/A	70 mg/L	35 mg/L	Twice per Month	Grab
Settleable Solids	N/A	0.5 ml/L	0.5 ml/L	Twice per Month	Grab
Specific Conductance	N/A	Report (μS/cm)	Report (μS/cm)	Twice per Month	Measure
Sulfates	N/A	Report (mg/L)	Report (mg/L)	Twice per Month	Grab
Flow	N/A	Report (GPM)	Report (GPM)	Twice per Month	Estimate
pH	6.0 SU	9.0 SU	N/A	Twice per Month	Grab

A. TMDL Compliance and Monitoring

The Division has established a Total Maximum Daily Load (TMDL) for Siltation In The Clear Fork of the Cumberland River Watershed (HUC 05130101) March 12, 2009, and for E. Coli in the Clear Fork of the Cumberland River Watershed (HUC 05130101) August 23, 2007. These TMDLs have been reviewed and approved by EPA. E. coli is not a pollutant of concern for coal mining related discharges. The TMDL for siltation establishes waste load allocations (WLA) for coal facilities within the affected watersheds to limit and reduce pollutant loading. The waste load allocation will be implemented following the procedures specified in the TMDL.

When appropriate the Division will utilize pollutant loading data calculated from discharge monitoring reports submitted through NetDMR and the EPA ECHO Facility Search Database to ensure compliance with the WLA. Loading data for individual facilities may be obtained by visiting www.echo.epa.gov.

B. Whole Effluent Toxicity Test Monitoring

This facility has appropriate effluent limitations to prevent the facility from causing or contributing to an excursion above any State water quality standard. Additionally, a Comprehensive Biological Monitoring Plan (CBMP) has been incorporated into the permit to monitor potential effects of discharges on aquatic life. Therefore, Whole Effluent Toxicity (WET) limits are not incorporated into this permit.

C. Biological Monitoring

The Division may require biological monitoring when a proposed discharge is to receiving streams that are Exceptional Tennessee Waters (ETW), listed as impaired, or have demonstrated the reasonable potential to violate an instream water quality standard. After reviewing the submitted plans, supporting documentation as well as Division records and databases it has been determined that biological monitoring is required to evaluate receiving waters for compliance with water quality standards for biological integrity.

The permittee has been required to submit a Comprehensive Biological Monitoring Plan (CBMP). Biological monitoring will be sampled at the locations and frequencies indicated in the approved CBMP. The CBMP serves as an adaptive management plan which allows changes to the to the station locations and frequency of biological monitoring at the permittee's or Division's request, without modification of the NPDES permit, to evaluate compliance with water quality standards within specified receiving streams and associated waterbodies based on the locations and extent of permitted activities.

Biological surveys must use the Department's *Quality System Standard Operating Procedure (QSSOP) for Macroinvertebrate Stream Surveys* (Most current revision). Semi-quantitative riffle kicks are to be collected in the stream reaches specified. The results of the will be submitted to the Division within 90 days of the collection of the samples.

X. MONITORING, INSPECTION, AND COMPLIANCE INFORMATION

A. Outfall Effluent Monitoring

This is a new facility; no discharges have been reported on NetDMR for any of the proposed Outfalls.

B. Whole Effluent Toxicity Test Monitoring

Whole Effluent Toxicity (WET) test monitoring is not required as a condition of this permit.

C. TMDL Compliance and Monitoring

The Division has established a Total Maximum Daily Load (TMDL) for the siltation. EPA approved the TMDL on March 12, 2009. The TMDL established waste load allocations for coal facilities within the affected watersheds. The waste load allocation for the Hurricane Creek Mining, Mine 2 is 50,086 lbs./year from its discharges within the Clear Fork twelve-digit HUC051301010601**.** All outfalls with sediment discharges limited by the TMDL are indicated in the following table.

NPDES ID	Latitude	Longitude	Receiving Water
B01	36.540028	83.845444	Unnamed Trib. of Valley Creek
B02	36.543972	83.844472	Unnamed Trib. of Valley Creek
B03	36.548639	83.849806	Unnamed Trib. of Valley Creek
B04	36.548917	83.847889	Unnamed Trib. of Hurricane Creek
B05	36.550028	83.846278	Unnamed Trib. of Hurricane Creek
B06	36.549861	83.841889	Unnamed Trib. of Hurricane Creek
B07	36.550333	83.840722	Unnamed Trib. of Hurricane Creek
B08	36.553194	83.837389	Unnamed Trib. of Hurricane Creek
B09	36.555889	83.837889	Unnamed Trib. of Hurricane Creek
B10	36.559694	83.839389	Unnamed Trib. of Hurricane Creek
B11	36.565028	83.841444	Unnamed Trib. of Hurricane Creek
B12	36.566444	83.841833	Unnamed Trib. of Hurricane Creek
B13	36.564806	83.841778	Unnamed Trib. of Hurricane Creek
B14	36.564667	83.849583	Unnamed Trib. of Hurricane Creek
B15	36.563667	83.849583	Unnamed Trib. of Hurricane Creek
B16	36.564667	83.851889	Unnamed Trib. of Pigeon Roost Br.
B17	36.567944	83.851528	Unnamed Trib. of Pigeon Roost Br.
B18	36.5685	83.856778	Unnamed Trib. of Pigeon Roost Br.
B19	36.568721	83.854728	Unnamed Trib. of Pigeon Roost Br.

For TSS the Division utilizes pollutant loading data calculated from discharge monitoring reports submitted through NetDMR to ensure compliance with the WLA. Loading data for individual facilities may also be obtained by visiting www.echo.epa.gov.

D. Biological Assessment Monitoring

Biological monitoring results indicate that the receiving streams at the CMBP stations met the Department's water quality standards for biological integrity between 2010 and 2022 as specified in Chapter 0400-40-03-.03(3)(m). Three stations did not meet during 2022-2023 sampling events. Station SLICK001.8CL on Spruce Lick Branch has a small watershed size and several small impoundments upstream of the sample location that can result in variable biological results due to rapid changes in the ambient environmental conditions. Stations TACKE014.6CL and TACKE017.1CL on Tackett Creek have recent timber harvesting (2021-2022) in the vicinity of the sample locations

that have exhibited recent declines in TMI scores. All referenced biological monitoring events occurred prior to the mining activities proposed in this application.

Station ID	Drainage Area(mi.^{2})	Date	TMI Score
BURRE000.1CL	3.52	29-DEC-2022	38
HURRI000.4CL	1.64	29-DEC-2022	40
SLICK001.8CL	0.59	28-DEC-2022	24
TACKE014.6CL	4.63	28-JUN-2023	26
TACKE017.1CL	1.65	28-JUN-2023	28
VALLE002.3CL	5.3	29-DEC-2022	38
VALLE003.4CL	0.76	29-DEC-2022	34

XI. MONITORING REQUIREMENTS FOR WASTEWATER DISCHARGES

EPA regulations require that monitoring and sampling frequencies be sufficient to yield data that are representative of the monitored activity including, if appropriate, continuous monitoring. See *40 CFR 122.* The monitoring frequencies established in this permit are based on Best Professional Judgement (BPJ) of the Division. We believe these monitoring frequency levels are protective of water quality and will provide sufficiently representative data of the monitored activity.

The nature and effect of the discharge and its impact on the receiving waters will be the basis for any change or modification in monitoring frequency. Impacts on the receiving waters will include any impairment of the stream use classifications. The *Rules of the Tennessee Department of Environment and Conservation, Chapter 0400-40-03, Criteria for Water Uses (3) Fish and Aquatic Life* specify these classified uses.

XII. STORM WATER DISCHARGES

Access Roads and Haul Roads and Other Areas or Sources for Storm Water

Limitations on Coverage

Most storm water runoff at mining facilities enters the mine treatment system (i.e., sediment control ponds). The combined runoff is considered mine wastewater/process wastewater and must meet the applicable effluent limitations for the discharge of treated mine wastewater. Applicable effluent limitations guidelines also cover runoff associated with access roads and haul roads that are constructed of mine waste materials and/or where mine wastewater is used for dust suppression.

The storm water provision applies only to discharges composed entirely of storm water runoff that is not directed to and/or controlled by existing or proposed treatment structures/systems for mine wastewater. Sufficient documentation (i.e., application plans, maps, addendums, etc.) of such treatment must be provided to the Division before the exemption is valid. Storm water is defined as storm water runoff, snow melt runoff, and surface runoff and drainage. *40 CFR 122.26.*

Background

In the *Water Quality Control Act of 1987*, Congress established controls on storm water discharges and authorized EPA to promulgate NPDES permit application rules for storm water discharges associated with industrial activities. These rules cover active and inactive mining operations within the meaning of storm water discharges associated with industrial activities. *40 CFR 122.26.*

The definition of storm water discharges associated with industrial activities also covers access roads and haul roads. These areas are likely sources for pollutants associated with raw materials, intermediate products, and finished products that are transported to and from the facility. These roads will also be sources for pollutants such as oil and grease from vehicles and machinery using these roads. *55 FR 48065, November 16, 1990.* These provisions also cover other areas or sources on the NPDES permit boundary that include discharges composed entirely of storm water. *40 CFR 122.26.*

In accordance with EPA and state regulations, the Division has added these provisions to the NPDES to cover monitoring and reporting requirements for storm water discharges associated with access roads and haul roads and other areas or sources on the permit that include discharges composed entirely of storm water. These requirements are as follows:

STORM WATER DISCHARGES				
ALL DESIGNATED STORM WATER MONITORING POINTS				
Parameter	**Benchmark Minimum**	**Benchmark Maximum**	**Monitoring Frequency**	**Sample Type**
Total Suspended Solids	N/A	150 mg/L	Annually	Grab
pH	6.0 SU	9.0 SU	Annually	Grab
Flow	Report (GPM)	Report (GPM)	Annually	Estimate
Oil and Grease*	N/A	15 mg/L	Annually	Grab
***NOTE: If the storm water discharge is from an area not associated with an access road or haul road or is not a source for vehicular traffic, monitoring for Oil and Grease is not required.**				

The permittee shall monitor at least once a year the designated storm water outfalls (or demonstrated representative outfalls) associated with access roads and haul roads and/or any other area requiring storm water coverage. The sample shall be collected during any period (quarter) of the calendar year, as long as the samples are representative of the quantity and quality of the storm water runoff being discharged from the facility. The once per year monitoring requirement is based on *40 CFR 122.44, TNR050000, Sector AD, 5.1.1* and Best Professional Judgment (BPJ) of the Division.

Sources for the parameter reporting levels for storm water discharges include *Sector AD of the Tennessee Storm Water Multi-Sector General Permit (TMSP), TNR050000* and Best Professional Judgment (BPJ) of the Division. Sector AD includes reporting levels for pH,

Oil and Grease, and Total Suspended Solids, the pollutants of primary concern relating to mine access roads and mine haul roads.

NOTE: The storm water provision does not apply to discharges (and associated mine drainage) from coal mining facilities subject to the effluent limitations guidelines contained in *40 CFR 434*. Discharges of storm water that combine with mine drainage regulated under *40 CFR 434* must comply with the applicable effluent guidelines. The Division may apply the EPA guidelines to drainage from access roads and haul roads that are constructed of mine waste materials and/or where mine wastewater (if the wastewater is regulated under *40 CFR 434*) is used for dust suppression. This determination shall be made on a case-by-case basis.

XIII. STATE OF TENNESSEE ANTIDEGRADATION POLICY

Tennessee's Antidegradation Statement is found in Rule 0400-40-03-.06. It is the purpose of Tennessee's standards to fully protect existing uses of all surface waters as established under the Act.

The proposed discharges are associated with the waterbody segments identified by the Division as segment ID# TN05130101015_0600, TN05130101015_0610, TN05130101015_0611, TN05130101015_0820, and TN05130101015_0855. These waterbody segments are identified by the Department as having available parameters.

This permit issuance involves a new or increased discharge of pollutants that is not a new domestic wastewater discharge. The application asserts the proposed activity will not cause measurable degradation of parameters that are unavailable and will only cause *de minimis* degradation of parameters that are available.

Because Hurricane Creek, Spruce Lick Branch, and Tackett Creek are ETWs, if the Department makes a final determination that the discharge will cause more than *de minimis* degradation, it will issue a notice of its determination of whether the proposed degradation is necessary to accommodate important economic or social development in the area, and the additional procedures of Rule 0400-40-03-.06(4)(d) will apply.

The Department made a final determination, after completion of the comment period, that the proposed new or increased discharge will not cause measurable degradation of parameters that are unavailable and/or will only cause *de minimis* degradation of parameters that are available. Accordingly, no further antidegradation review is required. This determination presumes proper operation and maintenance of the facility and compliance with all applicable effluent limitations and waste load allocations assigned under the Approved TMDL.

XIV. PUBLIC PARTICIPATION OPPORTUNITIES

Applicant and Existing Permittee Responsibilities

Applicants for new or increased discharges shall notify the public of the application by posting a sign near the point of entrance to the facility and within view of a public road. A new or increased discharge is a new discharge of pollutants to waters of the state or an increase in the authorized loading of a pollutant above (1) numeric effluent limitations established in a NPDES permit for that discharge, or (2) if no such limitations exist, the actual discharges of that pollutant.

The sign shall be of such size that is clearly visible from the public road. The sign must be maintained for at least thirty (30) days following submittal of the application to the Division. The sign posting for new and increased discharges is a requirement of Rule 0400-40-05-.06.

How to Comment:

Comments may be submitted to the address below until the expiration date listed on the Division's public notice announcing the proposed permit activity.

State of Tennessee
Department of Environment and Conservation
Division of Mineral & Geologic Resources
3711 Middlebrook Pike
Knoxville, Tennessee 37921-6538
Telephone (865) 594-6035 Fax (865) 594-6105
Attn: Public Notice Coordinator
E-mail Dennis.Conger@tn.gov

How to Request a Public Hearing

Interested persons may request in writing that the Director of the Division of Mineral & Geologic Resources hold a public hearing on any application. The request must be filed within the comment period and must indicate the interest of the party filing it and the reasons why such a hearing is warranted. When there is significant public interest for a hearing, a hearing will be conducted according to *Rule 0400-40-05-.06 (12)* of the Division of Mineral & Geologic Resources. Public hearings will be announced through another public notice.

How the Department Will Proceed

The Director of the Division of Mineral & Geologic Resources will determine the final permit action after considering comments submitted during the comment period, the hearing record, if any, and the requirements of the Federal and State acts and regulations.

To Obtain Permit Application Details and Additional Information

Copies of the application, draft permit, and supporting documentation are available on the TDEC public dataviewer at the following link: https://dataviewers.tdec.tn.gov/dataviewers/f?p=2005:34051:14834393509273:::34051:P34051_PERMIT_NUMBER:TN0070716 . The dataviewer may also be accessed by scanning the QR code below. Information may also be obtained by contacting the Mining Section at 865-594-6035, TDEC.Mining@tn.gov, or in person at the TDEC Knoxville Environmental Field Office. Please contact Kara Blevins at 865-594-5460 or Kara.Blevins@tn.gov to arrange an in-person file review.

XV. PERMIT DURATION

The proposed limitations meet the requirements of *Section 301(b)(2)(A), (C), (D), (E), and (F) of the Clean Water Act* as amended. The permit will be issued for a five (5) year term.

303(d) Permitting Checklist

1. Indicate the status of this discharge. ☐ Existing ☒ New ☐ New of Existing Site

2. Indicate the NPDES permit number, if assigned. TN0070716

3. List the receiving stream and discharge point(s) in stream miles. 28 Outfalls into unnamed tributaries to Tackett Creek, Valley Creek, Hurricane Creek, Pigeon Roost Branch and Spruce Lick Branch

4. List the HUC and watershed name. HUC5130101 Clear Fork Cumberland River

5. Is the receiving stream on the State of Tennessee's 303(d) list? ☐ Yes ☒ No

If the answer to 5 above is "no", then stop. Sign and date the bottom of the form. Route to the NPDES permit file and/or the Planning limits file.

6. List the known causes of impairment. _____

7. Does this discharge represent an increase in pollutants that have caused the stream to be included in the 303(d) list? ☐ Yes ☐ No

If the answer to 7 above is "no", complete 8 and 9 below. Sign and date the form. Route to the NPDES permit file. If the answer to 7 above is "yes", go on to number 10 below.

8. Explain why the proposed discharge is not expected to cause an increase in the pollutants listed in the 303(d) report or known causes of impairment listed in (6).

_____

9. Identify the source of the information in 8 above (i.e. permit file, application, literature).

_____

10. If oxygen-demanding substances are involved, does D.O. modeling indicate further degradation?
☐ Yes ☐ No ☐ N/A Attach modeling results, if applicable.

11. If nutrients are involved, is effluent data available? ☐ Yes ☐ No ☐ N/A Attach data, if applicable.

If effluent nutrient data is not available, indicate the expected effluent concentrations and the source of that information (i.e. data from similar facilities, literature).

_____

12. If metals or toxics are involved, does the WLA calculation indicate a measurable instream increase? (Use the RDLs from the Water Quality Standards to determine)

☐ Yes ☐ No ☐ N/A Attach the WLA calculation, if applicable.

13. For each parameter identified in 10 and/or 13, indicate and justify the permit condition (limit, compliance schedule, monitoring, TMDL, etc.) selected. Use additional sheets as necessary

PARAMETER	PERMIT CONDITION	RATIONALE

14. Signature of person completing this form: David R Murray Date: 09/20/2023

15. Signature of reviewer: Date: 10/9/2023

Clear Fork of the Cumberland River Watershed (05130101)

This is based on Mining Section feedback on 4/25/2013. Adjusted reclamation sites to 10 mg/l.

12/22/08

SubWS	Permit No.	Permit Status	Facility	SubWS Area [acres]	Subwatershed Target Unit Load [lbs/ac/yr]	Subwatershed Target Load [lbs/yr]	Avg. Annual Precip. [in/yr]	Site DA [acres]	MAvg TSS Limit [mg/l]	DMax TSS Limit [mg/l]	Pct. Site Area Disch. To Subwatershed [%]	Adjusted Site DA to Subwatershed [acres]	TSS Load Total [a] [lbs/yr]	Existing Mines Pct. Of Target (Calc.) [%]	Existing Mines Pct. Of Target (Use)	Pct. of Target Used for WLA [%]	WLA [lbs/yr]	Area for Calcs [b] [acres]
Mining				8,995	276.1	2,483,519.5												
0201	TN0070716		Hurricane Creek Mining LLC - Mine 2				56.1	0.00	10		0	0	0.0					
			Subwatershed									**0.0**	**0.0**	**0.0**	**8.0**	**10.0**	**248,352.0**	**0**
0503				32,221	276.1	8,896,218.1												
	TN0070408	A	Davis Creek Energy, LLC-Area #6				53.4	204.60	35	70	100	204.6	21,662.8					
			Subwatershed									**204.6**	**21,662.8**	**0.2**	**3.5**	**5.5**	**489,292.0**	**322**
0601				23,090	276.1	6,375,149.0												
	TN0070716	A	Hurricane Creek Mining LLC - Mine 2				54.3	657.58	35	70	71	465.21	50,086.1					
	TN0072877	A	DRC Coal LLC-Leach Mtn 6c/6d				54.3	248.10	35	70	33	81.87	8,814.7					
	TN0053759	A	Kopper-Glo Fuel, Inc.-Marion Tipple				54.3	32.62	35	70	100	32.62	3,512.0					
	TN0069809	A	Kopper-Glo Fuel, Inc.-Clear Fork Surface Mine				54.3	205.94	35	70	100	205.94	22,172.2					
	TN0079812	A	Kopper Glo Fuel, Inc.-Straight Ck. Surface Mine				54.3	251.52	35	70	100	251.52	27,079.5					
	TN0069736	A	Kopper Glo Mining LLC - Cooper Ridge Surface Mine				54.3	424.10	35	70	100	424.10	45,660.0					
	TN0070157	A	Kopper Glo Mining LLC - Cooper Ridge Surface Mine				54.3	48.40	35	70	100	48.40	5,210.9					
	TN0069671	A	Kopper Glo Fuel, Inc.- Cooper Ridge Deep Mine				54.3	61.30	35	70	100	61.30	6,599.8					
			Subwatershed									**1570.96**	**169,135.1**	**2.7**	**6.7**	**8.7**	**554,638.0**	**2,040**
				34,365	276.1	9,488,176.5												
0605	TN0042722	A	DAVEX - Tipple & Processing Plant				54.7	8.80	35	70	100	8.8	954.4					
	TN0076376	R	National Coal,LLC Mine #7				54.7	2,129.20	10		80	1703.36	52,783.0					
			Subwatershed									**1,712.2**	**53,737.4**	**0.6**	**2.1**	**4.1**	**389,015.2**	**3,343**

Notes:

a. Estimated 25% of annual precipitation results in runoff.

b. Esimated area used for MS4& NPS load calculations is equal to: {[calculated percent of target load (existing mines)]/ [percent of target used for WLA calculations]} x (area of existing mines)

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays **PERMIT #: TN0069281** **DATE: 8/23/2023** **CALC BY: DRM**

non-regulated stream worksheet (7Q10)

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	**0.00**	**0.14**	**10**	**25**	**100**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent	
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			limited	
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	case	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l	**PARAMETER**
Copper (a,b)	0.150	2.739	3.640	0.348	7.881	10.472	**7.88**	**10.47**	N/A	N/A	N/A	**N/A**	N/A	N/A	**80.0**	**Copper (a,b)**
Chromium III		23.813	183.066	0.202	117.733	905.082	**117.73**	**905.08**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium III**
Chromium VI		11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium VI**
Chromium, Total	1.000	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	**60.0**	**Chromium, Total**
Nickel (a,b)	0.500	16.096	144.918	0.432	37.231	335.209	**37.23**	**335.21**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	0.050	0.253	0.492	0.252	1.002	1.947	**1.00**	**1.95**	N/A	N/A	5.0	**N/A**	N/A	5.00	**5.0**	**Cadmium (a,b)**
Lead (a,b)	0.050	0.541	13.882	0.184	2.942	75.487	**2.94**	**75.49**	N/A	N/A	5.0	**N/A**	N/A	5.00	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.200	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	0.200	N/A	0.296	1.000	N/A	0.296	**N/A**	**0.30**	N/A	N/A	N/A	**N/A**	N/A	N/A	**5.0**	**Silver (a,b,e)**
Zinc (a,b)	8.000	36.498	36.202	0.288	126.733	125.705	**126.73**	**125.71**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**200.0**	**Zinc (a,b)**
Cyanide (d)	1.100	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	**230.0**	**Cyanide (d)**
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	**15.0**	**Toluene**
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	**3.0**	**Benzene**
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	**4.0**	**Ethylbenzene**
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	**15.0**	**Carbon Tetrachloride**
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	**85.0**	**Chloroform**
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	**25.0**	**Tetrachloroethylene**
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	**50.0**	**Methylene Chloride**
Total Phenols	5.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	**50.0**	**Total Phenols**
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**1.0**	**Naphthalene**
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	**N/A**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

Revions Date	Revision Description
September 30, 2019	Updated Cadimum for 2019 F&A WQS update

2019 WQC

WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays
PERMIT: TN0069281
DATE: 8/23/2023

Stream (7Q10)	Stream (30Q5)	Waste Flow	Ttl. Susp. Solids	Hardness (as CaCO3)	Margin of Safety
[MGD]	[MGD]	[MGD]	[mg/l]	[mg/l]	[%]
0.00	**0.00**	**0.14**	**10**	**25**	**100**

	1	2	3	5		6	7		8	9	10	11	12	13	14	15	
	Stream	Dectection Levels		Fish/Aqua. Life Water Quality Criteria			Calculated Effluent Concentration			Human Health Water Quality Criteria (30Q5)						Avg. daily effluent	
	Bckgrnd.	Scan	WQC RDL							In-Stream Criteria			Calculated Effluent Concentration				
	Conc.	MDL	*EPA MDL	Chronic		Acute	Chronic		Acute	Organisms	Water/Org	DWS	Organisms	Water/Org	DWS		
PARAMETER	[µg/l]	[µg/l]	[µg/l]	[µg/l]		[µg/l]	[µg/l]		[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	ug/l	**PARAMETER**
ANTIMONY	0.1	3.8	3.0							640.0	5.6	6.0	640.0	5.6	6.0	3.8	ANTIMONY
ARSENIC	0.05	1.0	1.0	150.0		340.0	150.0		340.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	ARSENIC
BERYLLIUM	0.05	2.0	1.0									4.0			4.0	2.0	BERYLLIUM
SELENIUM (f)	1.7	5.0	2.0	1.5	3.1	20.0	1.5	3.1	20.0	4200.0	170.0	50.0	4200.0	170.0	50.0	5.0	SELENIUM
THALLIUM	0.05	5.0	*							0.47	0.24	2.0	0.5	0.2	2.0	5.0	THALLIUM
ACROLEIN	0.0	50.0	1.0	3.000		3.000	3.0		3.0	9.0	6.0		9.0	6.0		50.0	ACROLEIN
ACRYLONITRILE	0.0	50.0	1.0							2.5	0.51		2.5	0.5		50.0	ACRYLONITRILE
BENZENE	0.0	1.0	1.0							510.0	22.0	5.0	510.0	22.0	5.0	1.0	BENZENE
BROMOFORM	0.0	1.0	1.0							1400.0	43.0		1400.0	43.0		1.0	BROMOFORM
CARBON TETRACHLORIDE	0.0	1.0	1.0							16.0	2.3	5.0	16.0	2.3	5.0	1.0	CARBON TETRACHLORIDE
CHLOROBENZENE	0.0	1.0	*							1600.0	130.0	100.0	1600.0	130.0	100.0	1.0	CLOROBENZENE
CHLORODIBROMO-METHANE	0.0	1.0	*							130.0	4.0		130.0	4.0		1.0	CHLORODIBROMO-METHANE
CHLOROETHANE	0.0	1.0	*													1.0	CHLOROETHANE
2-CHLORO-ETHYLVINYL ETHER	0.0	1.0	*													1.0	2-CHLORO-ETHYLVINYL ETHER
CHLOROFORM	0.0	5.0	0.5							4700.0	57.0		4700.0	57.0		5.0	CHLOROFORM
DICHLOROBROMO-METHANE	0.0	1.0	1.0							170.0	5.5		170.0	5.5		1.0	DICHLOROBROMO-METHANE
1,1-DICHLOROETHANE	0.0	1.0	1.0							NA	NA	NA	NA	NA	NA	1.0	1,1-DICHLOROETHANE
1,2-DICHLOROETHANE	0.0	1.0	1.0							370.0	3.8	5.0	370.0	3.8	5.0	1.0	1,2-DICHLOROETHANE
TRANS 1,2-DICHLORO-ETHYLENE	0.0	1.0	*							10000	140.0	100.0	10000.0	140.0	100.0	1.0	TRANS 1,2-DICHLORO-ETHYLENE
1,1-DICHLOROETHYLENE	0.0	1.0	1.0							7100.0	300.0	7.0	7100.0	300.0	7.0	1.0	1,1-DICHLOROETHYLENE
1,2-DICHLOROPROPANE	0.0	1.0	*							150.0	5.0	5.0	150.0	5.0	5.0	1.0	1,2-DICHLOROPROPANE
1,3-DICHLORO-PROPYLENE	0.0	1.0	1.0							210.0	3.4		210.0	3.4		1.0	1,3-DICHLORO-PROPYLENE
ETHYLBENZENE	0.0	1.0	1.0							2100	530.0	700.0	2100.0	530.0	700.0	1.0	ETHYLBENZENE
METHYL BROMIDE	0.0	1.0	*							1500.0	47.0		1500.0	47.0		1.0	METHYL BROMIDE
METHYL CHLORIDE	0.0	1.0	1.0													1.0	METHYL CHLORIDE
METHYLENE CHLORIDE	0.0	5.0	1.0							5900.0	46.0	5.0	5900.0	46.0	5.0	5.0	METHYLENE CHLORIDE
1,1,2,2-TETRACHLORO-ETHANE	0.0	1.0	0.5							40.0	1.7		40.0	1.7		1.0	1,1,2,2-TETRACHLORO-ETHANE
TETRACHLORO-ETHYLENE	0.0	1.0	0.5							33.0	6.9	5.0	33.0	6.9	5.0	1.0	TETRACHLORO-ETHYLENE
TOLUENE	0.0	1.0	1.0							15000	1300.0	1000.0	15000.0	1300.0	1000.0	1.0	TOLUENE
1,1,1-TRICHLOROETHANE	0.0	1.0	1.0									200.0			200.0	1.0	1,1,1-TRICHLOROETHANE
1,1,2-TRICHLOROETHANE	0.0	1.0	0.2							160.0	5.9	5.0	160.0	5.9	5.0	1.0	1,1,2-TRICHLOROETHANE
TRICHLORETHYLENE	0.0	1.0	1.0							300.0	25.0	5.0	300.0	25.0	5.0	1.0	TRICHLORETHYLENE
VINYL CHLORIDE	0.0	1.0	2.0							24.0	0.25	2.0	24.0	0.3	2.0	1.0	VINYL CHLORIDE
P-CHLORO-M-CRESOL	0.0	10.0	*													10.0	P-CHLORO-M-CRESOL
2-CHLOROPHENOL	0.0	10.0	*							150.0	81.0		150.0	81.0		10.0	2-CHLOROPHENOL
2,4-DICHLOROPHENOL	0.0	10.0	*							290.0	77.0		290.0	77.0		10.0	2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL	0.0	10.0	*							850.0	380.0		850.0	380.0		10.0	2,4-DIMETHYLPHENOL
4,6-DINITRO-O-CRESOL	0.0	10.0	24.0							280.0	13.0		280.0	13.0		10.0	4,6-DINITRO-O-CRESOL
2,4-DINITROPHENOL	0.0	10.0	42.0							5300.0	69.0		5300.0	69.0		10.0	2,4-DINITROPHENOL
2-NITROPHENOL	0.0	10.0	*													10.0	2-NITROPHENOL
4-NITROPHENOL	0.0	10.0	*													10.0	4-NITROPHENOL
PENTACHLOROPHENOL	0.0	10.0	5.0	15		19	15.0		19.0	30.0	2.7	1.0	30.0	2.7	1.0	10.0	PENTACHLOROPHENOL
PHENOL	5.0	10.0	*							860000	10000.0		860000.0	10000.0		10.0	PHENOL
2,4,6-TRICHLOROPHENOL	0.0	10.0	2.7							24.0	14.0		24.0	14.0		10.0	2,4,6-TRICHLOROPHENOL
ACENAPHTHENE	0.0	10.0	*							990.0	670.0		990.0	670.0		10.0	ACENAPHTHENE
ACENAPHTHYLENE	0.0	10.0	2.3													10.0	ACENAPHTHYLENE
ANTHRACENE	0.0	10.0	0.7							40000	8300.0		40000.0	8300.0		10.0	ANTHRACENE
BENZIDINE	0.0	50.0	*							0.0020	0.0009		0.002	0.0		50.0	BENZIDINE
BENZO(A)ANTHRACENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	BENZO(A)ANTHRACENE
BENZO(A)PYRENE	0.0	10.0	0.3							0.18	0.038	0.2	0.2	0.0	0.2	10.0	BENZO(A)PYRENE
3,4 BENZO-FLUORANTHENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	3,4 BENZO-FLUORANTHENE
BENZO(GHI)PERYLENE	0.0	10.0	*													10.0	BENZO(GHI)PERYLENE
BENZO(K)FLUORANTHENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	BENZO(K)FLUORANTHENE
BIS (2-CHLOROETHOXY) METHANE	0.0	10.0	*													10.0	BIS (2-CHLOROETHOXY) METHANE
BIS (2-CHLOROETHYL)-ETHER	0.0	10.0	1.0							5.3	0.30		5.3	0.3		10.0	BIS (2-CHLOROETHYL)-ETHER
BIS (2-CHLOROISO-PROPYL) ETHER	0.0	10.0	*							65000	1400.0		65000.0	1400.0		10.0	BIS (2-CHLOROISO-PROPYL) ETHER
BIS (2-ETHYLHEXYL) PHTHALATE	0.0	10.0	2.5							22.0	12.0	6.0	22.0	12.0	6.0	10.0	BIS (2-ETHYLHEXYL) PHTHALATE

4-BROMOPHENYL PHENYL ETHER	0.0	10.0	*												10.0	4-BROMOPHENYL PHENYL ETHER
BUTYL BENZYL PHTHALATE	0.0	10.0	*					1900.0	1500.0		1900.0	1500.0		10.0	BUTYL BENZYL PHTHALATE
2-CHLORONAPHTHALENE	0.0	10.0	*					1600.0	1000.0		1600.0	1000.0		10.0	2-CHLORONAPHTHALENE
4-CHLORPHENYL PHENYL ETHER	0.0	10.0	*											10.0	4-CHLORPHENYL PHENYL ETHER
CHRYSENE	0.0	10.0	2.5					0.18	0.038		0.2	0.0		10.0	CHRYSENE
DI-N-BUTYL PHTHALATE	0.0	10.0	2.5					4500.0	2000.0		4500.0	2000.0		10.0	DI-N-BUTYL PHTHALATE
DI-N-OCTYL PHTHALATE	0.0	10.0	*											10.0	DI-N-OCTYL PHTHALATE
DIBENZO(A,H) ANTHRACENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	DIBENZO(A,H) ANTHRACENE
1,2-DICHLOROBENZENE	0.0	1.0	2.0					1300.0	420.0		1300.0	420.0		1.0	1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE	0.0	5.0	2.0					960.0	320.0		960.0	320.0		5.0	1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE	0.0	5.0	2.0					190.0	63.0		190.0	63.0		5.0	1,4-DICHLOROBENZENE
3,3-DICHLOROBENZIDINE	0.0	10.0	*					0.28	0.2		0.3	0.2		10.0	3,3-DICHLOROBENZIDINE
DIETHYL PHTHALATE	0.0	10.0	1.9					44000	17000.0		44000.0	17000.0		10.0	DIETHYL PHTHALATE
DIMETHYL PHTHALATE	0.0	10.0	1.6					1100000	270000.0		1100000.0	270000.0		10.0	DIMETHYL PHTHALATE
Di-n-butyl phthalate (84-74-2) (g)	0.0	10.0						4500	2000.0		4500.0	2000.0		10.0	Di-n-butyl phthalate (84-74-2)
2,4-DINITROTOLUENE	0.0	10.0	1.0					34.0	1.1		34.0	1.1		10.0	2,4-DINITROTOLUENE
2,6-DINITROTOLUENE	0.0	10.0	*											10.0	2,6-DINITROTOLUENE
Di-n-octyl phthalate (117-84-0) (g)	0.0	10.0												10.0	Di-n-octyl phthalate (117-84-0)
1,2 DIPHENYLHYDRAZINE	0.0	10.0	*					2.0	0.4		2.0	0.4		10.0	1,2 DIPHENYLHYDRAZINE
FLUORANTHENE	0.0	10.0	2.2					140.0	130.0		140.0	130.0		10.0	FLUORANTHENE
FLUORENE	0.0	10.0	0.3					5300.0	1100.0		5300.0	1100.0		10.0	FLUORENE
HEXACHLOROBENZENE	0.0	10.0	1.9					0.0029	0.0028	1.0	0.003	0.0	1.0	10.0	HEXACHLOROBENZENE
HEXACHLOROBUTADIENE	0.0	10.0	5.0					180.0	4.4		180.0	4.4		10.0	HEXACHLOROBUTADIENE
HEXACHLOROCYCLO-PENTADIENE	0.0	10.0	*					1100.0	40.0	50.0	1100.0	40.0	50.0	10.0	HEXACHLOROCYCLO-PENTADIENE
HEXACHLOROETHANE	0.0	10.0	0.5					33.0	14.0		33.0	14.0		10.0	HEXACHLOROETHANE
INDENO(1,2,3-CD)PYRENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	INDENO(1,2,3-CD)PYRENE
ISOPHORONE	0.0	10.0	*					9600	350.0		9600.0	350.0		10.0	ISOPHORONE
NAPHTHALENE	0.0	10.0	*											10.0	NAPHTHALENE
NITROBENZENE	0.0	10.0	10.0					690.0	17.0		690.0	17.0		10.0	NITROBENZENE
N-NITROSODI-N-PROPYLAMINE	0.0	10.0	*					5.1	0.050		5.1	0.1		10.0	N-NITROSODI-N-PROPYLAMINE
N-NITROSODI- METHYLAMINE	0.0	10.0	*					30.0	0.0069		30.0	0.0		10.0	N-NITROSODI- METHYLAMINE
N-NITROSODI-PHENYLAMINE	0.0	10.0	*					60.0	33.0		60.0	33.0		10.0	N-NITROSODI-PHENYLAMINE
PHENANTHRENE	0.0	10.0	0.7											10.0	PHENANTHRENE
PYRENE	0.0	10.0	0.3					4000.0	830.0		4000.0	830.0		10.0	PYRENE
1,2,4-TRICHLOROBENZENE	0.0		*					70.0	35.0	70.0	70.0	35.0	70.0		1,2,4-TRICHLOROBENZENE

a. Columns 7-8, and 12-14 are the effluent concentrations allowable to prevent exceedence of water quality criteria.
b. Potential to exceed criteria exists if the measured quantity in column 15 exceeds, or could exceed, the calculated allowable concentrations in columns 7-8, and 12-14.
c. Additional testing is required if the detection level used in the scan is higher than the state RDL and/or the MDL of the approved EPA scan method and industry is known to have that pollutant.
d. All background concentrations for these volatile organic, acid-extractable, and base-neutral compounds are assumed zero in the absence of supporting monitoring data.
e. Other metals for which data were provided on the application are evaluated on the Metals & Toxics spreadsheet.
f. The Water Quality Criteria CCC Value for Selenium is 1.5 µg/l (lentic - Still water aquatic ecosystems such as ponds, lakes, or reservoirs **) and 3.1 µg/l (lotic -** Flowing water aquatic ecosystems such as streams and rivers **).**
g. Form 2C only
f. Reasonable potential does not exist for the following reason(s):

Revions Date	Revision Description
September 30, 2019	Updated Acrolein F&A for 2019 WQS update
September 30, 2019	Updated Selenium for F&A, W&OO and WO for 2019WQS update
September 30, 2019	ACROLEIN W&OO and WO
September 30, 2019	1,1-DICHLOROETHYLENE W&OO and WO
September 30, 2019	PHENOL W&OO and WO
September 30, 2019	Di-n-butyl phthalate (84-74-2) (added , W&OO and WO for 2019WQS update)
September 30, 2019	1,1-DICHLOROETHYLENE 2019 WQS update
September 30, 2019	CHLOROBENZENE DWS for 2019 WQS update

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays **PERMIT #: TN0069281** **DATE: 8/23/2023** **CALC BY: DRM**

non-regulated stream worksheet (7Q10)

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	**0.00**	**0.14**	**70**	**400**	**100**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent	
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			limited	
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	case	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l	**PARAMETER**
Copper (a,b)	0.150	29.279	49.617	0.244	119.786	202.990	**119.79**	**202.99**	N/A	N/A	N/A	**N/A**	N/A	N/A	**80.0**	**Copper (a,b)**
Chromium III		230.670	1773.298	0.181	1272.384	9781.589	**1272.38**	**9781.59**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium III**
Chromium VI		11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium VI**
Chromium, Total	1.000	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	**60.0**	**Chromium, Total**
Nickel (a,b)	0.500	168.035	1512.890	0.249	675.591	6082.613	**675.59**	**6082.61**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	0.050	2.032	6.576	0.303	6.697	21.672	**6.70**	**21.67**	N/A	N/A	5.0	**N/A**	N/A	5.00	**5.0**	**Cadmium (a,b)**
Lead (a,b)	0.050	10.944	280.846	0.132	82.618	2120.121	**82.62**	**2120.12**	N/A	N/A	5.0	**N/A**	N/A	5.00	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.200	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	0.200	N/A	34.911	1.000	N/A	34.911	**N/A**	**34.91**	N/A	N/A	N/A	**N/A**	N/A	N/A	**5.0**	**Silver (a,b,e)**
Zinc (a,b)	8.000	382.401	379.298	0.185	2064.868	2048.115	**2064.87**	**2048.11**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**200.0**	**Zinc (a,b)**
Cyanide (d)	1.100	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	**230.0**	**Cyanide (d)**
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	**15.0**	**Toluene**
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	**3.0**	**Benzene**
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	**4.0**	**Ethylbenzene**
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	**15.0**	**Carbon Tetrachloride**
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	**85.0**	**Chloroform**
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	**25.0**	**Tetrachloroethylene**
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	**50.0**	**Methylene Chloride**
Total Phenols	5.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	**50.0**	**Total Phenols**
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**1.0**	**Naphthalene**
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	**N/A**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

Revions Date	Revision Description
September 30, 2019	Updated Cadimum for 2019 F&A WQS update

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays **PERMIT #: TN0069281** **DATE: 8/23/2023** **CALC BY: DRM**

non-regulated stream worksheet (7Q10)

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	**0.00**	**0.14**	**10**	**400**	**100**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent	
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			limited	
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	case	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l	**PARAMETER**
Copper (a,b)	0.150	29.279	49.617	0.348	84.233	142.742	**84.23**	**142.74**	N/A	N/A	N/A	**N/A**	N/A	N/A	**80.0**	**Copper (a,b)**
Chromium III		230.670	1773.298	0.202	1140.436	8767.224	**1140.44**	**8767.22**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium III**
Chromium VI		11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium VI**
Chromium, Total	1.000	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	**60.0**	**Chromium, Total**
Nickel (a,b)	0.500	168.035	1512.890	0.432	388.682	3499.458	**388.68**	**3499.46**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	0.050	2.032	6.576	0.252	8.048	26.043	**8.05**	**26.04**	N/A	N/A	5.0	**N/A**	N/A	5.00	**5.0**	**Cadmium (a,b)**
Lead (a,b)	0.050	10.944	280.846	0.184	59.511	1527.159	**59.51**	**1527.16**	N/A	N/A	5.0	**N/A**	N/A	5.00	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.200	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	0.200	N/A	34.911	1.000	N/A	34.911	**N/A**	**34.91**	N/A	N/A	N/A	**N/A**	N/A	N/A	**5.0**	**Silver (a,b,e)**
Zinc (a,b)	8.000	382.401	379.298	0.288	1327.829	1317.056	**1327.83**	**1317.06**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**200.0**	**Zinc (a,b)**
Cyanide (d)	1.100	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	**230.0**	**Cyanide (d)**
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	**15.0**	**Toluene**
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	**3.0**	**Benzene**
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	**4.0**	**Ethylbenzene**
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	**15.0**	**Carbon Tetrachloride**
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	**85.0**	**Chloroform**
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	**25.0**	**Tetrachloroethylene**
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	**50.0**	**Methylene Chloride**
Total Phenols	5.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	**50.0**	**Total Phenols**
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**1.0**	**Naphthalene**
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	**N/A**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
d The criteria for this parameter is in the total form.
e Silver limit is daily max if column 8 is most stringent.
f When columns 7 or 8 result in a negative number, use results from columns 5 or 6, respectively.
g When columns 12, 13 or 14 result in a negative number, use results from columns 9, 10 or 11, respectively, as applicable.

* Domestic supply included in river use so pick from columns 7,8,12,13,14,15 or Domestic supply not included in river use so pick from columns 7, 8, 12 or 15.
** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

Revions Date	Revision Description
September 30, 2019	Updated Cadimum for 2019 F&A WQS update

2019 WQC

WATER QUALITY CALCULATIONS FOR METALS AND OTHER TOXIC SUBSTANCES
WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays **PERMIT #: TN0069281** **DATE: 8/23/2023** **CALC BY: DRM**

non-regulated stream worksheet (7Q10)

Stream (7Q10) [MGD]	Stream (30Q5) [MGD]	Waste Flow [MGD]	Ttl. Susp. Solids [mg/l]	Hardness (as CaCO3) [mg/l]	Margin of Safety [%]
0.00	**0.00**	**0.14**	**10**	**400**	**100**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	Stream	Fish/Aqua. Life (F & AL) WQC			F & AL- instream allowable		Calc. Effluent Concentration		Human Health Water Quality Criteria *						effluent	
	Bckgrnd.	lab conditions		Fraction	ambient conditions (Tot)		based on F & AL		In-Stream Criteria			Calc. Effluent Concentration **			limited	
	Conc.	Chronic	Acute	Dissolved	Chronic	Acute	Chronic	Acute	Organisms	Water/Organisms	DWS	Organisms	Water/Organisms	DWS	case	
PARAMETER	[ug/l]	[ug/l]	[ug/l]	[Fraction]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	[ug/l]	ug/l	**PARAMETER**
Copper (a,b)	0.150	29.279	49.617	0.348	84.233	142.742	**84.23**	**142.74**	N/A	N/A	N/A	**N/A**	N/A	N/A	**80.0**	**Copper (a,b)**
Chromium III		230.670	1773.298	0.202	1140.436	8767.224	**1140.44**	**8767.22**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium III**
Chromium VI		11.000	16.000	1.000	11.000	16.000	**11.00**	**16.00**	N/A	N/A	N/A	**N/A**	N/A	N/A		**Chromium VI**
Chromium, Total	1.000	N/A	N/A	N/A	N/A	N/A	**N/A**	**N/A**	N/A	N/A	100.0	**N/A**	N/A	100.00	**60.0**	**Chromium, Total**
Nickel (a,b)	0.500	168.035	1512.890	0.432	388.682	3499.458	**388.68**	**3499.46**	4600.0	610.0	100.0	**4600.00**	610.00	100.00	**180.0**	**Nickel (a,b)**
Cadmium (a,b)	0.050	2.032	6.576	0.252	8.048	26.043	**8.05**	**26.04**	N/A	N/A	5.0	**N/A**	N/A	5.00	**5.0**	**Cadmium (a,b)**
Lead (a,b)	0.050	10.944	280.846	0.184	59.511	1527.159	**59.51**	**1527.16**	N/A	N/A	5.0	**N/A**	N/A	5.00	**45.0**	**Lead (a,b)**
Mercury (T) (c)	0.200	0.770	1.400	1.000	0.770	1.400	**0.77**	**1.40**	0.051	0.05	2.0	**0.05**	0.05	2.00	**0.4**	**Mercury (T) (c)**
Silver (a,b,e)	0.200	N/A	34.911	1.000	N/A	34.911	**N/A**	**34.91**	N/A	N/A	N/A	**N/A**	N/A	N/A	**5.0**	**Silver (a,b,e)**
Zinc (a,b)	8.000	382.401	379.298	0.288	1327.829	1317.056	**1327.83**	**1317.06**	26000.0	7400.0	N/A	**26000.00**	7400.00	N/A	**200.0**	**Zinc (a,b)**
Cyanide (d)	1.100	5.200	22.000	1.000	5.200	22.000	**5.20**	**22.00**	140.0	140.0	200.0	**140.00**	140.00	200.00	**230.0**	**Cyanide (d)**
Toluene	0.000								15000.0	1300.0	1000.0	**15000.00**	1300.00	1000.00	**15.0**	**Toluene**
Benzene	0.000								510.0	22.0	5.0	**510.00**	22.00	5.00	**3.0**	**Benzene**
1,1,1 Trichloroethane	0.000								N/A	N/A	200.0	**N/A**	N/A	200.00	**30.0**	**1,1,1 Trichloroethane**
Ethylbenzene	0.000								2100.0	530.0	700.0	**2100.00**	530.00	700.00	**4.0**	**Ethylbenzene**
Carbon Tetrachloride	0.000								16.0	2.3	5.0	**16.00**	2.30	5.00	**15.0**	**Carbon Tetrachloride**
Chloroform	0.000								4700.0	57.0	N/A	**4700.00**	57.00	N/A	**85.0**	**Chloroform**
Tetrachloroethylene	0.000								33.0	6.9	5.0	**33.00**	6.90	5.00	**25.0**	**Tetrachloroethylene**
Trichloroethylene	0.000								300.0	25.0	5.0	**300.00**	25.00	5.00	**10.0**	**Trichloroethylene**
1,2 trans Dichloroethylene	0.000								10000.0	140.0	100.0	**N/A**	140.00	100.00	**1.5**	**1,2 trans Dichloroethylene**
Methylene Chloride	0.000								5900.0	46.0	5.0	**5900.00**	46.00	N/A	**50.0**	**Methylene Chloride**
Total Phenols	5.000								860000.0	10000.0	N/A	**860000.00**	10000.00	N/A	**50.0**	**Total Phenols**
Naphthalene	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**1.0**	**Naphthalene**
Total Phthalates	0.000								N/A	N/A	N/A	**N/A**	N/A	N/A	**64.5**	**Total Phthalates**
Chlorine (T. Res.)	0.000	11.000	19.000	1.000	11.000	19.000	**11.00**	**19.00**	N/A	N/A	N/A	**N/A**	N/A	N/A	**N/A**	**Chlorine (T. Res.)**

a Denotes metals for which Fish & Aquatic Life Criteria are expressed as a function of total hardness.
b The criteria for this metal is in the dissolved form at lab conditions. The calculated effluent concentration is in the total recoverable form.
c The chronic criteria for mercury is not converted to dissolved, since it is based on fish tissue data rather than toxicity.
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** Water Quality criteria for stream use classifications other than Fish & Aquatic Life are based on the 30Q5 flow.

Revions Date	Revision Description
September 30, 2019	Updated Cadimum for 2019 F&A WQS update

2019 WQC

WATER QUALITY BASED EFFLUENT CALCULATIONS
OUTFALL B23

FACILITY: Sterling & Strays
PERMIT: TN0069281
DATE: 8/23/2023

Stream (7Q10)	Stream (30Q5)	Waste Flow	Ttl. Susp. Solids	Hardness (as CaCO3)	Margin of Safety
[MGD]	[MGD]	[MGD]	[mg/l]	[mg/l]	[%]
0.00	**0.00**	**0.14**	**10**	**400**	**100**

1	2	3	5		6	7		8	9	10	11	12	13	14	15	
Stream	Dectection Levels		Fish/Aqua. Life Water Quality Criteria			Calculated Effluent Concentration			Human Health Water Quality Criteria (30Q5)						Avg. daily effluent	
Bckgrnd.	Scan	WQC RDL							In-Stream Criteria			Calculated Effluent Concentration				
Conc.	MDL	*EPA MDL	Chronic		Acute	Chronic		Acute	Organisms	Water/Org	DWS	Organisms	Water/Org	DWS		
PARAMETER	[µg/l]	[µg/l]	[µg/l]		[µg/l]	[µg/l]		[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	[µg/l]	ug/l	**PARAMETER**
ANTIMONY	0.1	3.8	3.0						640.0	5.6	6.0	640.0	5.6	6.0	3.8	ANTIMONY
ARSENIC	0.05	1.0	1.0	150.0		340.0	150.0		340.0	10.0	10.0	10.0	10.0	10.0	10.0	1.0	ARSENIC
BERYLLIUM	0.05	2.0	1.0								4.0			4.0	2.0	BERYLLIUM
SELENIUM (f)	1.7	5.0	2.0	1.5	3.1	20.0	1.5	3.1	20.0	4200.0	170.0	50.0	4200.0	170.0	50.0	5.0	SELENIUM
THALLIUM	0.05	5.0	*							0.47	0.24	2.0	0.5	0.2	2.0	5.0	THALLIUM
ACROLEIN	0.0	50.0	1.0	3.000		3.000	3.0		3.0	9.0	6.0		9.0	6.0		50.0	ACROLEIN
ACRYLONITRILE	0.0	50.0	1.0							2.5	0.51		2.5	0.5		50.0	ACRYLONITRILE
BENZENE	0.0	1.0	1.0							510.0	22.0	5.0	510.0	22.0	5.0	1.0	BENZENE
BROMOFORM	0.0	1.0	1.0							1400.0	43.0		1400.0	43.0		1.0	BROMOFORM
CARBON TETRACHLORIDE	0.0	1.0	1.0							16.0	2.3	5.0	16.0	2.3	5.0	1.0	CARBON TETRACHLORIDE
CHLOROBENZENE	0.0	1.0	*							1600.0	130.0	100.0	1600.0	130.0	100.0	1.0	CLOROBENZENE
CHLORODIBROMO-METHANE	0.0	1.0	*							130.0	4.0		130.0	4.0		1.0	CHLORODIBROMO-METHANE
CHLOROETHANE	0.0	1.0	*													1.0	CHLOROETHANE
2-CHLORO-ETHYLVINYL ETHER	0.0	1.0	*													1.0	2-CHLORO-ETHYLVINYL ETHER
CHLOROFORM	0.0	5.0	0.5							4700.0	57.0		4700.0	57.0		5.0	CHLOROFORM
DICHLOROBROMO-METHANE	0.0	1.0	1.0							170.0	5.5		170.0	5.5		1.0	DICHLOROBROMO-METHANE
1,1-DICHLOROETHANE	0.0	1.0	1.0							NA	NA	NA	NA	NA	NA	1.0	1,1-DICHLOROETHANE
1,2-DICHLOROETHANE	0.0	1.0	1.0							370.0	3.8	5.0	370.0	3.8	5.0	1.0	1,2-DICHLOROETHANE
TRANS 1,2-DICHLORO-ETHYLENE	0.0	1.0	*							10000	140.0	100.0	10000.0	140.0	100.0	1.0	TRANS 1,2-DICHLORO-ETHYLENE
1,1-DICHLOROETHYLENE	0.0	1.0	1.0							7100.0	300.0	7.0	7100.0	300.0	7.0	1.0	1,1-DICHLOROETHYLENE
1,2-DICHLOROPROPANE	0.0	1.0	*							150.0	5.0	5.0	150.0	5.0	5.0	1.0	1,2-DICHLOROPROPANE
1,3-DICHLORO-PROPYLENE	0.0	1.0	1.0							210.0	3.4		210.0	3.4		1.0	1,3-DICHLORO-PROPYLENE
ETHYLBENZENE	0.0	1.0	1.0							2100	530.0	700.0	2100.0	530.0	700.0	1.0	ETHYLBENZENE
METHYL BROMIDE	0.0	1.0	*							1500.0	47.0		1500.0	47.0		1.0	METHYL BROMIDE
METHYL CHLORIDE	0.0	1.0	1.0													1.0	METHYL CHLORIDE
METHYLENE CHLORIDE	0.0	5.0	1.0							5900.0	46.0	5.0	5900.0	46.0	5.0	5.0	METHYLENE CHLORIDE
1,1,2,2-TETRACHLORO-ETHANE	0.0	1.0	0.5							40.0	1.7		40.0	1.7		1.0	1,1,2,2-TETRACHLORO-ETHANE
TETRACHLORO-ETHYLENE	0.0	1.0	0.5							33.0	6.9	5.0	33.0	6.9	5.0	1.0	TETRACHLORO-ETHYLENE
TOLUENE	0.0	1.0	1.0							15000	1300.0	1000.0	15000.0	1300.0	1000.0	1.0	TOLUENE
1,1,1-TRICHLOROETHANE	0.0	1.0	1.0									200.0			200.0	1.0	1,1,1-TRICHLOROETHANE
1,1,2-TRICHLOROETHANE	0.0	1.0	0.2							160.0	5.9	5.0	160.0	5.9	5.0	1.0	1,1,2-TRICHLOROETHANE
TRICHLORETHYLENE	0.0	1.0	1.0							300.0	25.0	5.0	300.0	25.0	5.0	1.0	TRICHLORETHYLENE
VINYL CHLORIDE	0.0	1.0	2.0							24.0	0.25	2.0	24.0	0.3	2.0	1.0	VINYL CHLORIDE
P-CHLORO-M-CRESOL	0.0	10.0	*													10.0	P-CHLORO-M-CRESOL
2-CHLOROPHENOL	0.0	10.0	*							150.0	81.0		150.0	81.0		10.0	2-CHLOROPHENOL
2,4-DICHLOROPHENOL	0.0	10.0	*							290.0	77.0		290.0	77.0		10.0	2,4-DICHLOROPHENOL
2,4-DIMETHYLPHENOL	0.0	10.0	*							850.0	380.0		850.0	380.0		10.0	2,4-DIMETHYLPHENOL
4,6-DINITRO-O-CRESOL	0.0	10.0	24.0							280.0	13.0		280.0	13.0		10.0	4,6-DINITRO-O-CRESOL
2,4-DINITROPHENOL	0.0	10.0	42.0							5300.0	69.0		5300.0	69.0		10.0	2,4-DINITROPHENOL
2-NITROPHENOL	0.0	10.0	*													10.0	2-NITROPHENOL
4-NITROPHENOL	0.0	10.0	*													10.0	4-NITROPHENOL
PENTACHLOROPHENOL	0.0	10.0	5.0	15		19	15.0		19.0	30.0	2.7	1.0	30.0	2.7	1.0	10.0	PENTACHLOROPHENOL
PHENOL	5.0	10.0	*							860000	10000.0		860000.0	10000.0		10.0	PHENOL
2,4,6-TRICHLOROPHENOL	0.0	10.0	2.7							24.0	14.0		24.0	14.0		10.0	2,4,6-TRICHLOROPHENOL
ACENAPHTHENE	0.0	10.0	*							990.0	670.0		990.0	670.0		10.0	ACENAPHTHENE
ACENAPHTHYLENE	0.0	10.0	2.3													10.0	ACENAPHTHYLENE
ANTHRACENE	0.0	10.0	0.7							40000	8300.0		40000.0	8300.0		10.0	ANTHRACENE
BENZIDINE	0.0	50.0	*							0.0020	0.0009		0.002	0.0		50.0	BENZIDINE
BENZO(A)ANTHRACENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	BENZO(A)ANTHRACENE
BENZO(A)PYRENE	0.0	10.0	0.3							0.18	0.038	0.2	0.2	0.0	0.2	10.0	BENZO(A)PYRENE
3,4 BENZO-FLUORANTHENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	3,4 BENZO-FLUORANTHENE
BENZO(GHI)PERYLENE	0.0	10.0	*													10.0	BENZO(GHI)PERYLENE
BENZO(K)FLUORANTHENE	0.0	10.0	0.3							0.18	0.038		0.2	0.0		10.0	BENZO(K)FLUORANTHENE
BIS (2-CHLOROETHOXY) METHANE	0.0	10.0	*													10.0	BIS (2-CHLOROETHOXY) METHANE
BIS (2-CHLOROETHYL)-ETHER	0.0	10.0	1.0							5.3	0.30		5.3	0.3		10.0	BIS (2-CHLOROETHYL)-ETHER
BIS (2-CHLOROISO-PROPYL) ETHER	0.0	10.0	*							65000	1400.0		65000.0	1400.0		10.0	BIS (2-CHLOROISO-PROPYL) ETHER
BIS (2-ETHYLHEXYL) PHTHALATE	0.0	10.0	2.5							22.0	12.0	6.0	22.0	12.0	6.0	10.0	BIS (2-ETHYLHEXYL) PHTHALATE

4-BROMOPHENYL PHENYL ETHER	0.0	10.0	*												10.0	4-BROMOPHENYL PHENYL ETHER
BUTYL BENZYL PHTHALATE	0.0	10.0	*					1900.0	1500.0		1900.0	1500.0		10.0	BUTYL BENZYL PHTHALATE
2-CHLORONAPHTHALENE	0.0	10.0	*					1600.0	1000.0		1600.0	1000.0		10.0	2-CHLORONAPHTHALENE
4-CHLORPHENYL PHENYL ETHER	0.0	10.0	*											10.0	4-CHLORPHENYL PHENYL ETHER
CHRYSENE	0.0	10.0	2.5					0.18	0.038		0.2	0.0		10.0	CHRYSENE
DI-N-BUTYL PHTHALATE	0.0	10.0	2.5					4500.0	2000.0		4500.0	2000.0		10.0	DI-N-BUTYL PHTHALATE
DI-N-OCTYL PHTHALATE	0.0	10.0	*											10.0	DI-N-OCTYL PHTHALATE
DIBENZO(A,H) ANTHRACENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	DIBENZO(A,H) ANTHRACENE
1,2-DICHLOROBENZENE	0.0	1.0	2.0					1300.0	420.0		1300.0	420.0		1.0	1,2-DICHLOROBENZENE
1,3-DICHLOROBENZENE	0.0	5.0	2.0					960.0	320.0		960.0	320.0		5.0	1,3-DICHLOROBENZENE
1,4-DICHLOROBENZENE	0.0	5.0	2.0					190.0	63.0		190.0	63.0		5.0	1,4-DICHLOROBENZENE
3,3-DICHLOROBENZIDINE	0.0	10.0	*					0.28	0.2		0.3	0.2		10.0	3,3-DICHLOROBENZIDINE
DIETHYL PHTHALATE	0.0	10.0	1.9					44000	17000.0		44000.0	17000.0		10.0	DIETHYL PHTHALATE
DIMETHYL PHTHALATE	0.0	10.0	1.6					1100000	270000.0		1100000.0	270000.0		10.0	DIMETHYL PHTHALATE
Di-n-butyl phthalate (84-74-2) (g)	0.0	10.0						4500	2000.0		4500.0	2000.0		10.0	Di-n-butyl phthalate (84-74-2)
2,4-DINITROTOLUENE	0.0	10.0	1.0					34.0	1.1		34.0	1.1		10.0	2,4-DINITROTOLUENE
2,6-DINITROTOLUENE	0.0	10.0	*											10.0	2,6-DINITROTOLUENE
Di-n-octyl phthalate (117-84-0) (g)	0.0	10.0												10.0	Di-n-octyl phthalate (117-84-0)
1,2 DIPHENYLHYDRAZINE	0.0	10.0	*					2.0	0.4		2.0	0.4		10.0	1,2 DIPHENYLHYDRAZINE
FLUORANTHENE	0.0	10.0	2.2					140.0	130.0		140.0	130.0		10.0	FLUORANTHENE
FLUORENE	0.0	10.0	0.3					5300.0	1100.0		5300.0	1100.0		10.0	FLUORENE
HEXACHLOROBENZENE	0.0	10.0	1.9					0.0029	0.0028	1.0	0.003	0.0	1.0	10.0	HEXACHLOROBENZENE
HEXACHLOROBUTADIENE	0.0	10.0	5.0					180.0	4.4		180.0	4.4		10.0	HEXACHLOROBUTADIENE
HEXACHLOROCYCLO-PENTADIENE	0.0	10.0	*					1100.0	40.0	50.0	1100.0	40.0	50.0	10.0	HEXACHLOROCYCLO-PENTADIENE
HEXACHLOROETHANE	0.0	10.0	0.5					33.0	14.0		33.0	14.0		10.0	HEXACHLOROETHANE
INDENO(1,2,3-CD)PYRENE	0.0	10.0	*					0.18	0.038		0.2	0.0		10.0	INDENO(1,2,3-CD)PYRENE
ISOPHORONE	0.0	10.0	*					9600	350.0		9600.0	350.0		10.0	ISOPHORONE
NAPHTHALENE	0.0	10.0	*											10.0	NAPHTHALENE
NITROBENZENE	0.0	10.0	10.0					690.0	17.0		690.0	17.0		10.0	NITROBENZENE
N-NITROSODI-N-PROPYLAMINE	0.0	10.0	*					5.1	0.050		5.1	0.1		10.0	N-NITROSODI-N-PROPYLAMINE
N-NITROSODI- METHYLAMINE	0.0	10.0	*					30.0	0.0069		30.0	0.0		10.0	N-NITROSODI- METHYLAMINE
N-NITROSODI-PHENYLAMINE	0.0	10.0	*					60.0	33.0		60.0	33.0		10.0	N-NITROSODI-PHENYLAMINE
PHENANTHRENE	0.0	10.0	0.7											10.0	PHENANTHRENE
PYRENE	0.0	10.0	0.3					4000.0	830.0		4000.0	830.0		10.0	PYRENE
1,2,4-TRICHLOROBENZENE	0.0		*					70.0	35.0	70.0	70.0	35.0	70.0		1,2,4-TRICHLOROBENZENE

a. Columns 7-8, and 12-14 are the effluent concentrations allowable to prevent exceedence of water quality criteria.
b. Potential to exceed criteria exists if the measured quantity in column 15 exceeds, or could exceed, the calculated allowable concentrations in columns 7-8, and 12-14.
c. Additional testing is required if the detection level used in the scan is higher than the state RDL and/or the MDL of the approved EPA scan method and industry is known to have that pollutant.
d. All background concentrations for these volatile organic, acid-extractable, and base-neutral compounds are assumed zero in the absence of supporting monitoring data.
e. Other metals for which data were provided on the application are evaluated on the Metals & Toxics spreadsheet.
f. The Water Quality Criteria CCC Value for Selenium is 1.5 µg/l (lentic - Still water aquatic ecosystems such as ponds, lakes, or reservoirs **) and 3.1 µg/l (lotic -** Flowing water aquatic ecosystems such as streams and rivers **).**
g. Form 2C only
f. Reasonable potential does not exist for the following reason(s):

Revions Date	Revision Description
September 30, 2019	Updated Acrolein F&A for 2019 WQS update
September 30, 2019	Updated Selenium for F&A, W&OO and WO for 2019WQS update
September 30, 2019	ACROLEIN W&OO and WO
September 30, 2019	1,1-DICHLOROETHYLENE W&OO and WO
September 30, 2019	PHENOL W&OO and WO
September 30, 2019	Di-n-butyl phthalate (84-74-2) (added , W&OO and WO for 2019WQS update)
September 30, 2019	1,1-DICHLOROETHYLENE 2019 WQS update
September 30, 2019	CHLOROBENZENE DWS for 2019 WQS update