



TRANSPORTATION CABINET

Frankfort, Kentucky 40622
www.transportation.ky.gov/

Steven L. Beshear
Governor

Michael W. Hancock, P.E.
Secretary

November 20, 2013

CALL NO. 109
CONTRACT ID NO. 131218
ADDENDUM # 2

Subject: Hart County, NHPP IM 0652 (089)
Letting November 22, 2013

- (1) Added - Special Notes & Permits - Pages 1-110 of 224
- (2) Revised - Bid Items - Pages 216-224 of 224

Proposal revisions are available at <http://transportation.ky.gov/Construction-Procurement/>.

If you have any questions, please contact us at 502-564-3500.

Sincerely,

A handwritten signature in blue ink that reads "Ryan Griffith".

Ryan Griffith
Acting Director
Division of Construction Procurement

RG:ks
Enclosures



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N O T I C E

**DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
and
KENTUCKY DIVISION OF WATER INDIVIDUAL 401 WQC**

PROJECT: Hart County, Item No. 4-13,14

The Section 404 activities for this project have been permitted under the authority of the Department of the Army Nationwide Permit # 14 and Kentucky Division of Water Individual Permit. Impacts shall be limited to those listed within the attached permits and all conditions shall be followed.

If there is need to cross the stream channel with heavy equipment or conduct work from within the stream channel a working platform/temporary crossing is authorized. This should be constructed with clean rock and sufficient pipe to allow stream flow to continue unimpeded and shall be de-constructed in a responsible manner.

It should be noted that many special conditions exist for this particular crossing of the Green River as it is listed as a Special Use Water by Kentucky Division of Water and conditions must be followed in order to be in compliance with the Permit authorizations.

Once again, in order for this authorization to be valid, the attached conditions must be followed. The contractor shall post a copy of this Approval in a conspicuous location at the project site for the duration of construction and comply with the general conditions as required.

To more readily expedite construction, the contractor may elect to alter the design or perform the work in a manner different from what was originally proposed and specified. Prior to commencing such alternative work, the contractor shall obtain **written** permission from the Division of Construction and the Division of Environmental Analysis. If such changes necessitate further permitting then the contractor will be responsible for applying to the Army Corps of Engineers and the Kentucky Division of Water. A copy of any request to the regulatory agencies to alter this proposal and subsequent responses shall be forwarded to the Division of Environmental Analysis, DA Permit Coordinator, for office records and for informational purposes.



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, LOUISVILLE
CORPS OF ENGINEERS
P.O. BOX 59
LOUISVILLE KY 40201-0059
FAX: (502) 315-6677
<http://www.lrl.usace.army.mil/>

September 17, 2013

Operations Division
Regulatory Branch (South)
ID No. LRL-2013-760-pj1

Mr. Danny Peake
Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40622

Dear Mr. Peake:

This is in response to your request for authorization to widen I-65 to six lanes from Mile Point (MP) 58.7 north of Horse Cave, to MP 64.9 north of Munfordville, in Hart County, Kentucky. The project would include the existing bridges (north - and southbound) over the Green River (MP 61.1) and the Munfordville interchange (MP 64.2). The information supplied by you was reviewed to determine whether a Department of the Army (DA) permit will be required under the provisions of Section 404 of the Clean Water Act.

Your project is considered a discharge of backfill or bedding material for a road crossing. The project is authorized under the provisions of 33 CFR 330 A Nationwide Permit (NWP) No. 14, Linear Transportation Projects, as published in the Federal Register February 21, 2012. Under the provisions of this authorization, you must comply with the enclosed Terms and General Conditions for Nationwide Permit No. 14 and the following Special Conditions:

- a. Due to the project's location in an Outstanding Resource Water, the permittee shall ensure adherence to the proposed plans as approved, as well as the avoidance and minimization measures set out in the Biological Assessment dated July 2013.
- b. Due to the presence of Indiana bat foraging habitat, the permittee shall abide by the September 6, 2012, Programmatic Indiana bat Conservation Memorandum of Agreement between Kentucky Transportation Cabinet, Federal Highways Administration, and the U. S. Fish and Wildlife Service.
- c. The temporary crossing/access pad shall be removed in its entirety and the area shall be restored to preconstruction contours.

You must also comply with the enclosed Water Quality Certification (WQC) Conditions for Nationwide Permit No. 14 dated March 19, 2012, issued by the Kentucky Division of Water. Once you obtain your certification, or if no application was required, you may proceed with the project without further contact or verification from us.

This decision is valid until March 18, 2017. The enclosed Compliance Certification should be signed and returned when the project is completed. If your project is not completed by this date or if your project is modified, you must contact us for another permit determination in accordance with the rules and regulations in effect at that time. Please note that we also perform periodic inspections to ensure compliance with our permit conditions and applicable Federal laws. A copy of this letter is being sent to the KDOW (see enclosure for address).

Attached to this verification that the project is authorized by NWP No. 14 are a preliminary jurisdictional determination (JD), a Notification of Appeal Process (NAP) fact sheet, and Request for Appeal (RFA) form. However, a preliminary JD is not appealable and impacting "waters of the United States" identified in the preliminary JD will result in you waiving the right to request an approved JD at a later date. An approved JD may be requested (which may be appealed), by contacting me for further instruction.

If you have any questions, please contact this office by writing to the above address, ATTN: CELRL-OP-FS, or by calling me at 502-315-6693. All correspondence pertaining to this matter should refer to our ID No. LRL-2013-760-pjl.

Sincerely,



Pam Loeffler
Regulatory Specialist
Regulatory Branch

Enclosures

Terms for Nationwide Permit No. 14
Linear Transportation Projects

Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands. (See general condition 31.) (Sections 10 and 404)

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).



US Army Corps
of Engineers
Louisville District

Nationwide Permit Conditions

The following General Conditions must be followed in order for any authorization by NWP to be valid:

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.
(b) Any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the US.
(c) The permittee understands and agrees that, if future operations by the US require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the US. No claim shall be made against the US on account of any such removal or alteration.
2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.
3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.
4. Migratory Bird Breeding Areas. Activities in waters of the US that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.
5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.
6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.), material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.
8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.
9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).
10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.
11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.
12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and exposed soil and other fills, as well as any work below the ordinary high water mark or high

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.
14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.
15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.
16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, US Forest Service, US Fish and Wildlife Service).
17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.
18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.
(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.
(c) Non-federal permittees must submit a pre-construction notification (PCN) to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete PCN. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from Corps.
(d) As a result of formal or informal consultation with the USFWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the US to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS at <http://www.fws.gov/> or <http://www.fws.gov/ibac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the activity may have the potential to cause effects and notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA is complete.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 8800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 140k of the NHPA (16 U.S.C. 470n-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who,

with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the US are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the US to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) - (14) must be approved by the district engineer before the permittee begins work in waters of the US. Discuss the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the US, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the US are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has

been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or USEPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the US authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the US for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature: "When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the permit conditions, if credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(i)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification (PCN). (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a PCN as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer, or
 - (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).
- (b) Contents of Pre-Construction Notification. The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
- (2) Location of the proposed project;
- (3) A description of the proposed project, the project's purpose, direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the US expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
- (4) The PCN must include a delineation of wetlands, other special aquatic sites, and waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the US. The 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act, and

(7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

(c) Form of PCN Notification. The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination. (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require PCN notification and result in the loss of greater than 1/2-acre of waters of the US, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require PCN notification and will result in the loss of greater than 300 linear feet of intermittent and ephemeral stream bed, and for all NWP 48 activities that require PCN notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (USFWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFWS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the PCN notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each PCN notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of PCN notifications to expedite agency coordination.

Further Information
1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

General Certification--Nationwide Permit # 14
Linear Transportation Projects
Page 2

- Heavy equipment, e.g. bulldozers, backhoes, draglines, etc., if required for this project, should not be used or operated within the stream channel. In those instances in which such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize turbidity and disturbance to substrates and bank or riparian vegetation.
- Any fill shall be of such composition that it will not adversely affect the biological, chemical, or physical properties of the receiving waters and/or cause violations of water quality standards. If rip-rap is utilized, it should be of such weight and size that bank stress or slump conditions will not be created because of its placement.
- If there are water supply intakes located downstream that may be affected by increased turbidity and suspended solids, the permittee shall notify the operator when such work will be done.
- Should evidence of stream pollution or jurisdictional wetland impairment and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the KDOW shall be notified immediately by calling (800) 928-2380.

Non-compliance with the conditions of this general certification or violation of Kentucky state water quality standards may result in civil penalties.

Compliance Certification:

Permit Number: LRL-2013-760-pjl

Name of Permittee: Kentucky Transportation Cabinet

Date of Issuance: September 13, 2013

Upon completion of the activity authorized by this permit and any mitigation required by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers
CELRL-OP-FS
P.O. Box 59
Louisville, Kentucky 40201

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and conditions of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

ADDRESS FOR COORDINATING AGENCY

Ms. Sandra Gruzesky
Director
Kentucky Energy and Environment Cabinet
Division of Water
200 Fair Oaks, 4th Floor
Frankfort, Kentucky 40601

PRELIMINARY JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): August 21, 2013

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:

Mr. Danny Peake, Kentucky Transportation Cabinet, 200 Mero Street, Frankfort, KY 40622

C. DISTRICT OFFICE, FILE NAME, AND NUMBER: CELRL-OP-FS, I-65 Widening over Green River, LRL-2013-760-pjl

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:

(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: KY

County: Hart

City: Munfordville

Center coordinates of site: Latitude and Longitude (NAD 83):

Latitude: 37.251578 North, Longitude: -85.925105 West

Authority: Section 404 Section 10

Name of nearest waterbody: Green River

Identify (estimate) amount of waters in the review area:

Non-wetland waters: linear feet: 270 width (ft) and/or 0.212 acres.

Cowardin Class: Riverine

Stream Flow: Perennial

Wetlands: 0.0 acres.

Cowardin Class: Choose Class

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal: N/A

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

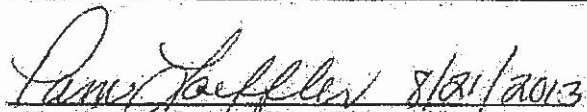
Office (Desk) Determination Date: August 21, 2013


Field Determination Date(s): *Date*

SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply)
- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: *Click here to enter text.*
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: *Click here to enter text.*
- Corps navigable waters' study: Public Notice LRL-2012-5-6, September 19, 2012
- U.S. Geological Survey Hydrologic Atlas: *Click here to enter text.*
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 1:24,000 – KY-Munfordville
- USDA Natural Resources Conservation Service Soil Survey. Citation: *Click here to enter text.*
- National wetlands inventory map(s). Cite name: KY-Munfordville, Wetland Mapping-GIS Database
- State/Local wetland inventory map(s): *Click here to enter text.*
- FEMA/FIRM maps: State GIS FEMA mapping indicates the entire area is within the 100-year floodplain
- 100-year Floodplain Elevation is: *Click here to enter text.*
(National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): LOUIE Geodatabase Raster Catalog – KY-Color-2008-1M
- or Other (Name & Date): *Click here to enter text.*
- Previous determination(s). File no. and date of response letter: *Click here to enter text.*
- Applicable/supporting case law: *Click here to enter text.*
- Applicable/supporting scientific literature: *Click here to enter text.*
- Other information (please specify): *Click here to enter text.*

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.


Signature and date of Regulatory Project
Manager (REQUIRED)


Signature and date of
person requesting preliminary JD
(REQUIRED, unless obtaining
the signature is impracticable)

Applicant: Kentucky Transportation Cabinet		File Number: LRL-2013-760	Date 9/17/2013
Attached is:			See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
	PROFFERED PERMIT (Standard Permit or Letter of permission)		B
	PERMIT DENIAL		C
	APPROVED JURISDICTIONAL DETERMINATION		D
X	PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/CECW/Pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **OBJECT:** If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- **ACCEPT:** If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- **APPEAL:** If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- **ACCEPT:** You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- **APPEAL:** If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.



STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

October 7, 2013

David Waldner, Director
KYTC Division of Environmental Analysis (DEA)
200 Mero Street 5th Floor
Frankfort, KY 40622

Re: Water Quality Certification# 2013-051-1
I-65 Green River Bridge - Hart Co
KYTC Item No. 4-24(4-13, 14)
USACE Public Notice No.: LRL-2013-760
AI No.: 119334
Activity ID: APE20130001
Green River Mile 61.1
Hart County, Kentucky

Dear Mr. Waldner:

Pursuant to Section 401 of the Clean Water Act (CWA), the Commonwealth of Kentucky certifies it has reasonable assurances that applicable water quality standards under Kentucky Administrative Regulations Title 401, Chapter 10, established pursuant to Sections 301, 302, 303, 304, 306, and 307 of the CWA, will not be violated by the above referenced project provided that the U.S. Army Corps of Engineers authorizes the activity under 33 CFR part 330, and the attached conditions are met.

All future correspondence on this project must reference **AI No. 119334**. **The attached document is your official Water Quality Certification; please read it carefully.** If you should have any questions concerning the conditions of this water quality certification, please contact James Bicknell of my staff by calling (502) 564-3410.

Sincerely,

Adam Jackson, Supervisor
Water Quality Certification Section
Kentucky Division of Water

AJ: CB

Attachment

cc: Pam Loeffler, USACE: Louisville District
Lee Andrews, USFWS: Frankfort
Danny Peake, KYTC DEA



KTC Water Quality Certification
I-65 Green River Bridge - Hart Co
Facility Requirements
Permit Number: WQC#2013-051-1
Activity ID No.: APE20130001

ACTV0000000001 (KYTC Item No. 4-24) I-65 Bridge Widening over Green River Mile 61.1:

Submittal/Action Requirements:

Condition No.	Condition
S-1	The Kentucky Transportation Cabinet (KYTC) must submit as-built plans and specifications: Due when construction is complete. The as-built plans and specifications shall address the coffer dam, temporary crossing, pier stabilization, and bridge demolition techniques utilized, locations of temporary and permanently placed materials, established erosion controls used, and Best Management Practices (BMP) maintenance required for the work conducted in and around the Green River, a Kentucky Division of Water (KDOW) designated Outstanding State Resource Water (OSRW). Submitted as-built plans and specifications must include photos, dates, erosion control techniques utilized, and site stabilization actions prior to, during, and after construction. Deviations of the submitted plans resulting in permanent impacts to this particular reach of an OSRW may result in future enforcement actions. [Clean Water Act]
S-2	The KYTC, and/or the contractor awarded this project must submit a plan and implementation schedule: Due prior to any construction activity within the Green River, to the Water Quality Certification (WQC) Section of the KDOW. The submitted plan and implementation schedule must address the specific plans, materials to be used, access roads to be utilized, and preliminary dates for the implementation of the temporary crossing (and its removal), coffer dams (and their removal), and bridge demolition. The KYTC and/or the contractor awarded this project is not authorized to implement work within the portions of the project associated in and surrounding the Green River without prior receipt and approval of the plans and implementation schedule by the WQC Section of the KDOW. [Clean Water Act]
S-3	The KYTC must notify the Division: Due prior to any construction activity. Notify the WQC Section of the KDOW at 502-564-3410 at least two weeks prior to construction. [Clean Water Act]
S-4	The KYTC must notify the Division: Due when construction is complete. Notify the WQC Section of the KDOW at 502-564-3410 no later than two weeks post-construction. [Clean Water Act]

KTC Water Quality Certification
I-65 Green River Bridge - Hart Co
Facility Requirements
Permit Number: WQC#2013-051-1
Activity ID No.: APE20130001

ACTV0000000001 (continued):

Narrative Requirements:

Condition
No. Condition

- T-1 The work approved by this certification shall be limited to:
 - the temporary installation of steel sheet pile coffer dams during the bridge pier portions of work.
 - the placement of clean stone rip-rap to serve as bank stabilization along the existing stream banks and protection around the new and existing bridge piers.
 - the installation of a 30-foot by 200-foot temporary in-river crossing and workpad along the western portion of the project, and adjacent to the southbound lanes of the existing Interstate (Note that the contractor must submit and receive approval to and from the WQC Section of the KDOW for specifics related to this action prior to conducting). [Clean Water Act]
 - T-2 No temporary or permanent in-river work shall be in place or conducted during the fish spawning season (April 15 through June 15) if the temporary or permanent work restricts the normal movement of aquatic organisms travelling up and downstream during this time period. [Clean Water Act]
 - T-3 All work performed under this certification shall adhere to the design and specifications set forth in the WQC Application dated July 5, 2013, the updated plans and specifications received August 6, 2013, September 6, 2013 email correspondence between KYTC and KDOW, and the USACE Nationwide Permit 14 dated September 17, 2013. [Clean Water Act]
 - T-4 The KYTC is responsible for preventing degradation of waters of the Commonwealth from soil erosion. An erosion and sedimentation control plan must be designed, implemented, and maintained in effective operating condition at all times during construction. [Clean Water Act]
 - T-5 The Division of Water reserves the right to modify or revoke this certification should it be determined that the activity is in noncompliance with any condition set forth in this certification. [Clean Water Act]
 - T-6 If construction does not commence within two years of the date of this letter, this certification will become void. A letter requesting a renewal should be submitted. [Clean Water Act]
 - T-7 Other permits may be required from the Division of Water for this project. If this project takes place within the floodplain, a permit may be required from the Surface Water Permits Branch. The contact person is Todd Powers. If this project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a KPDES general storm water permit will be required from the Surface Water Permits Branch. The contact person is Cassie Campbell. Both can be reached at 502-564-3410. [Clean Water Act]
- Dredging work shall not be conducted during the fish spawning season, April 15th through June 15th. [Clean Water Act]
- Check dams are not allowed within the stream channel. [Clean Water Act]

KTCC Water Quality Certification
I-65 Green River Bridge - Hart Co
Facility Requirements
Permit Number: WQC#2013-051-1
Activity ID No.: APE20130001

ACTV0000000001 (continued):

Narrative Requirements:

Condition No.	Condition
T-10	Remove all sediment and erosion control measures after re-vegetation has become well-established. [Clean Water Act]



STEPHEN L.
BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
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www.kentucky.gov

LEONARD K. PETERS
SECRETARY

ATTENTION APPLICANT

If your project involves one or more of the following activities, you may need more than one permit from the Kentucky Division of Water.

*building in a floodplain *road culvert in a stream

*streambank stabilization *stream cleanout

*utility line crossing a stream

*construction sites an acre or more

- If the project will disturb one acre or more of land, or is part of a larger common plan of development or sale that will ultimately disturb one acre or more of land, a Kentucky Pollution Discharge Elimination System (KPDES) stormwater permit shall be required from the Operational Permits Section. This permit requires the creation of an erosion control plan.

Contact Cassie Campbell.

- Projects that involve filling in the floodplain will require a stream construction permit from the Floodplain Management Section.

Contact Todd Powers.

- Projects that involve work IN a stream, such as bank stabilization, road culverts, utility line crossings, and stream alteration will require a stream construction permit and a Water Quality Certification from the Water Quality Certification Section.

Contact Barbara Scott.

All three contacts listed above can be reached at 502/564-3410. A complete listing of environmental programs administered by the Kentucky Department for Environmental Protection is available from Pete Goodmann by calling 502/564-3410.

GENERAL CONDITIONS FOR WATER QUALITY CERTIFICATION

1. The Kentucky Division of Water may require submission of a formal application for an Individual Certification for any project if the project has been determined to likely have a significant adverse effect upon water quality or degrade the waters of the Commonwealth so that existing uses of the water body or downstream waters are precluded.
2. Nationwide permits issued by the U.S. Army Corps of Engineers for projects in Outstanding State Resource Waters, Cold Water Aquatic Habitats, and Exceptional Waters as defined by 401 KAR 10:026 shall require individual water quality certifications.
3. Erosion and sedimentation pollution control plans and Best Management Practices must be designed, installed, and maintained in effective operating condition at all times during construction activities so that violations of state water quality standards do not occur.
4. Sediment and erosion control measures (e.g., check-dams, silt fencing, or hay bales) shall not be placed within surface waters of the Commonwealth, either temporarily or permanently, without prior approval by the Kentucky Division of Water's Water Quality Certification Section. If placement of sediment and erosion control measures in surface waters is unavoidable, placement shall not be conducted in such a manner that may cause instability of streams that are adjacent to, upstream, or downstream of the structures. All sediment and erosion control measures shall be removed and the natural grade restored prior to withdrawal from the site.
5. Measures shall be taken to prevent or control spills of fuels, lubricants, or other toxic materials used in construction from entering the watercourse.
6. To the maximum extent practicable, all in-stream work under this certification shall be performed during low flow.
7. Heavy equipment (e.g. bulldozers, backhoes, draglines, etc.), if required for this project, should not be used or operated within the stream channel. In those instances where such in-stream work is unavoidable, then it shall be performed in such a manner and duration as to minimize re-suspension of sediments and disturbance to the channel, banks, or riparian vegetation.
8. If there are water supply intakes located downstream that may be affected by increased turbidity, the permittee shall notify the operator when work will be performed.
9. Removal of existing riparian vegetation should be restricted to the minimum necessary for project construction.
10. Should stream pollution, wetland impairment, and/or violations of water quality standards occur as a result of this activity (either from a spill or other forms of water pollution), the Kentucky Division of Water shall be notified immediately by calling 800/564-2380.



Kentucky Transportation Cabinet

Highway District 4

And

_____ **(2), Construction**

Kentucky Pollutant Discharge Elimination System

Permit KYR10

Best Management Practices (BMP) plan

Groundwater protection plan

For Highway Construction Activities

For

I-65 Widening from MP 58.7 to MP 65.3

**Project: PCN ## - #####
SYP Item 4-13.0 & 4-14.0**

KyTC BMP Plan for Project PCN ## -

Project information

Note – (1) = Design (2) = Construction (3) = Contractor

1. Owner – Kentucky Transportation Cabinet, District __ (1)
2. Resident Engineer: (2)
3. Contractor name: (2)
Address: (2)

Phone number: (2)
Contact: (2)
Contractors agent responsible for compliance with the KPDES permit requirements (3):
4. Project Control Number (2)
5. Route (Address) (1)
6. Latitude/Longitude Lat 37-15-12-N ; Long 85-55-29 W
7. County (project mid-point) Hart
8. Project start date (date work will begin): (2)
9. Projected completion date: (2)

A. Site description:

1. Nature of Construction Activity (from letting project description) **Major widening to the median side**
2. Order of major soil disturbing activities **(2) and (3)**
3. Projected volume of material to be moved **291,785 Cu. Yd.**
4. Estimate of total project area (acres) **135.0**
5. Estimate of area to be disturbed (acres) **135.0**
6. Post construction runoff coefficient will be included in the project drainage folder. Persons needing information pertaining to the runoff coefficient will contact the resident engineer to request this information.**(1)**
7. Data describing existing soil condition **No information for this item**
8. Data describing existing discharge water quality (if any) **N/A**
9. Receiving water name **Mammoth Cave Drainage Basin**
10. TMDLs and Pollutants of Concern in Receiving Waters: **No TMDLs were involved on this project.**
11. Site map – Project layout sheet plus the erosion control sheets in the project plans that depict Disturbed Drainage Areas (DDAs) and related information. These sheets depict the existing project conditions with areas delineated by DDA (drainage area bounded by watershed breaks and right of way limits), the storm water discharge locations (either as a point discharge or as overland flow) and the areas that drain to each discharge point. These plans define the limits of areas to be disturbed and the location of control measures. Controls will be either site specific as designated by the designer or will be annotated by the contractor and resident engineer before disturbance commences. The project layout sheet shows the surface waters and wetlands.
12. Potential sources of pollutants:

The primary source of pollutants is solids that are mobilized during storm events. Other sources of pollutants include oil/fuel/grease from servicing and operating construction equipment, concrete washout water, sanitary wastes and trash/debris. **(3)**

B. Sediment and Erosion Control Measures:

1. Plans for highway construction projects will include erosion control sheets that depict Disturbed Drainage Areas (DDAs) and related information. These plan sheets will show the existing project conditions with areas delineated by DDA within the right of way limits, the discharge points and the areas that drain to each discharge point. Project managers and designers will analyze the DDAs and identify Best Management Practices (BMPs) that are site specific. The balance of the BMPs for the project will be listed in the bid documents for selection and use by the contractor on the project with approval by the resident engineer.

Projects that do not have DDAs annotated on the erosion control sheets will employ the same concepts for development and managing BMP plans.

2. Following award of the contract, the contractor and resident engineer will annotate the erosion control sheets showing location and type of BMPs for each of the DDAs that will be disturbed at the outset of the project. This annotation will be accompanied by an order of work that reflects the order or sequence of major soil moving activities. The remaining DDAs are to be designated as "Do Not Disturb" until the contractor and resident engineer prepare the plan for BMPs to be employed. The initial BMP's shall be for the first phase (generally Clearing and Grubbing) and shall be modified as needed as the project changes phases. The BMP Plan will be modified to reflect disturbance in additional DDA's as the work progresses. All DDA's will have adequate BMP's in place before being disturbed.
3. As DDAs are prepared for construction, the following will be addressed for the project as a whole or for each DDA as appropriate:
 - Ø Construction Access – This is the first land-disturbing activity. As soon as construction begins, bare areas will be stabilized with gravel and temporary mulch and/or vegetation.
 - Ø At the beginning of the project, all DDAs for the project will be inspected for areas that are a source of storm water pollutants. Areas that are a source of pollutants will receive appropriate cover or BMPs to arrest the introduction of pollutants into storm water. Areas that have not been opened by the contractor will be inspected periodically (once per month) to determine if there is a need to employ BMPs to keep pollutants from entering storm water.

KyTC BMP Plan for Project PCN ### -

- Ø Clearing and Grubbing – The following BMP's will be considered and used where appropriate.
 - Leaving areas undisturbed when possible.
 - Silt basins to provide silt volume for large areas.
 - Silt Traps Type A for small areas.
 - Silt Traps Type C in front of existing and drop inlets which are to be saved
 - Diversion ditches to catch sheet runoff and carry it to basins or traps or to divert it around areas to be disturbed.
 - Brush and/or other barriers to slow and/or divert runoff.
 - Silt fences to catch sheet runoff on short slopes. For longer slopes, multiple rows of silt fence may be considered.
 - Temporary Mulch for areas which are not feasible for the fore mentioned types of protections.
 - Non-standard or innovative methods.
- Ø Cut & Fill and placement of drainage structures - The BMP Plan will be modified to show additional BMP's such as:
 - Silt Traps Type B in ditches and/or drainways as they are completed
 - Silt Traps Type C in front of pipes after they are placed
 - Channel Lining
 - Erosion Control Blanket
 - Temporary mulch and/or seeding for areas where construction activities will be ceased for 21 days or more.
 - Non-standard or innovative methods
- Ø Profile and X-Section in place – The BMP Plan will be modified to show elimination of BMP's which had to be removed and the addition of new BMP's as the roadway was shaped. Probably changes include:
 - Silt Trap Type A, Brush and/or other barriers, Temporary Mulch, and any other BMP which had to be removed for final grading to take place.
 - Additional Silt Traps Type B and Type C to be placed as final drainage patterns are put in place.
 - Additional Channel Lining and/or Erosion Control Blanket.
 - Temporary Mulch for areas where Permanent Seeding and Protection cannot be done within 21 days.
 - Special BMP's such as Karst Policy
- Ø Finish Work (Paving, Seeding, Protect, etc.) – A final BMP Plan will result from modifications during this phase of construction. Probably changes include:
 - Removal of Silt Traps Type B from ditches and drainways if they are protected with other BMP's which are sufficient to control erosion, i.e. Erosion Control Blanket or Permanent Seeding and Protection on moderate grades.

KyTC BMP Plan for Project PCN ## -

- Permanent Seeding and Protection
 - Placing Sod
 - Planting trees and/or shrubs where they are included in the project
- Ø BMP's including Storm Water Management Devices such as velocity dissipation devices and Karst policy BMP's to be installed during construction to control the pollutants in storm water discharges that will occur after construction has been completed are : (1)

C. Other Control Measures

1. No solid materials, including building materials, shall be discharged to waters of the commonwealth, except as authorized by a Section 404 permit.
2. Waste Materials

All waste materials that may leach pollutants (paint and paint containers, caulk tubes, oil/grease containers, liquids of any kind, soluble materials, etc.) will be collected and stored in appropriate covered waste containers. Waste containers shall be removed from the project site on a sufficiently frequent basis as to not allow wastes to become a source of pollution. All personnel will be instructed regarding the correct procedure for waste disposal. Wastes will be disposed in accordance with appropriate regulations. Notices stating these practices will be posted in the office.

3. Hazardous Waste

All hazardous waste materials will be managed and disposed of in the manner specified by local or state regulation. The contractor shall notify the Resident Engineer if there any hazardous wastes being generated at the project site and how these wastes are being managed. Site personnel will be instructed with regard to proper storage and handling of hazardous wastes when required. The Transportation Cabinet will file for generator, registration when appropriate, with the Division of Waste Management and advise the contractor regarding waste management requirements.

4. Spill Prevention

The following material management practices will be used to reduce the risk of spills or other exposure of materials and substances to the weather and/or runoff.

- Ø **Good Housekeeping:**

KyTC BMP Plan for Project PCN ## -

The following good housekeeping practices will be followed onsite during the construction project.

- An effort will be made to store only enough product required to do the job
- All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure
- Products will be kept in their original containers with the original manufacturer's label
- Substances will not be mixed with one another unless recommended by the manufacturer
- Whenever possible, all of the product will be used up before disposing of the container
- Manufacturers' recommendations for proper use and disposal will be followed
- The site contractor will inspect daily to ensure proper use and disposal of materials onsite

Ø **Hazardous Products:**

These practices will be used to reduce the risks associated with any and all hazardous materials.

- Products will be kept in original containers unless they are not resealable
- Original labels and material safety data sheets (MSDS) will be reviewed and retained
- Contractor will follow procedures recommended by the manufacturer when handling hazardous materials
- If surplus product must be disposed of, manufacturers' or state/local recommended methods for proper disposal will be followed

The following product-specific practices will be followed onsite:

Ø **Petroleum Products:**

Vehicles and equipment that are fueled and maintained on site will be monitored for leaks, and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products onsite will be stored in tightly sealed containers, which are clearly labeled and will be protected from exposure to weather.

The contractor shall prepare an Oil Pollution Spill Prevention Control and Countermeasure plan when the project that involves the storage of petroleum products in 55 gallon or larger containers with a total combined storage capacity of 1,320 gallons. This is a requirement of 40 CFR 112.

KyTC BMP Plan for Project PCN ## -

This project (will / will not) (3) have over 1,320 gallons of petroleum products with a total capacity, sum of all containers 55 gallon capacity and larger.

Ø **Fertilizers:**

Fertilizers will be applied at rates prescribed by the contract, standard specifications or as directed by the resident engineer. Once applied, fertilizer will be covered with mulch or blankets or worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

Ø **Paints:**

All containers will be tightly sealed and stored indoors or under roof when not being used. Excess paint or paint wash water will not be discharged to the drainage or storm sewer system but will be properly disposed of according to manufacturers' instructions or state and local regulations.

Ø **Concrete Truck Washout:**

Concrete truck mixers and chutes will not be washed on pavement, near storm drain inlets, or within 75 feet of any ditch, stream, wetland, lake, or sinkhole. Where possible, excess concrete and wash water will be discharged to areas prepared for pouring new concrete, flat areas to be paved that are away from ditches or drainage system features, or other locations that will not drain off site. Where this approach is not possible, a shallow earthen wash basin will be excavated away from ditches to receive the wash water

Ø **Spill Control Practices**

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup:

- Manufacturers' recommended methods for spill cleanup will be clearly posted. All personnel will be made aware of procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area. Equipment and materials will include as appropriate, brooms, dust pans, mops, rags, gloves, oil absorbents, sand, sawdust, and plastic and metal trash containers.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.

KyTC BMP Plan for Project PCN ## -

- Spills of toxic or hazardous material will be reported to the appropriate state/local agency as required by KRS 224 and applicable federal law.
- The spill prevention plan will be adjusted as needed to prevent spills from reoccurring and improve spill response and cleanup.
- Spills of products will be cleaned up promptly. Wastes from spill clean up will be disposed in accordance with appropriate regulations.

D. Other State and Local Plans

This BMP plan shall include any requirements specified in sediment and erosion control plans, storm water management plans or permits that have been approved by other state or local officials. Upon submittal of the NOI, other requirements for surface water protection are incorporated by reference into and are enforceable under this permit (even if they are not specifically included in this BMP plan). This provision does not apply to master or comprehensive plans, non-enforceable guidelines or technical guidance documents that are not identified in a specific plan or permit issued for the construction site by state or local officials. (1)

E. Maintenance

1. The BMP plan shall include a clear description of the maintenance procedures necessary to keep the control measures in good and effective operating condition.
- Maintenance of BMPs during construction shall be a result of weekly and post rain event inspections with action being taken by the contractor to correct deficiencies.
 - Post Construction maintenance will be a function of normal highway maintenance operations. Following final project acceptance by the cabinet, district highway crews will be responsible for identification and correction of deficiencies regarding ground cover and cleaning of storm water BMPs. The project manager shall identify any BMPs that will be for the purpose of post construction storm water management with specific guidance for any non-routine maintenance. (1)

F. Inspections

Inspection and maintenance practices that will be used to maintain erosion and sediment controls:

KyTC BMP Plan for Project PCN ## -

- Ø All erosion prevention and sediment control measures will be inspected at least once each week and following any rain of one-half inch or more.
- Ø Inspections will be conducted by individuals that have received KyTC Grade Level II training or other qualification as prescribed by the cabinet that includes instruction concerning sediment and erosion control.
- Ø Inspection reports will be written, signed, dated, and kept on file.
- Ø Areas at final grade will be seeded and mulched within 14 days.
- Ø Areas that are not at final grade where construction has ceased for a period of 21 days or longer and soil stock piles shall receive temporary mulch no later than 14 days from the last construction activity in that area.
- Ø All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of being reported.
- Ø Built-up sediment will be removed from behind the silt fence before it has reached halfway up the height of the fence.
- Ø Silt fences will be inspected for bypassing, overtopping, undercutting, depth of sediment, tears, and to ensure attachment to secure posts.
- Ø Sediment basins will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 70 percent of the design capacity and at the end of the job.
- Ø Diversion dikes and berms will be inspected and any breaches promptly repaired. Areas that are eroding or scouring will be repaired and re-seeded / mulched as needed.
- Ø Temporary and permanent seeding and mulching will be inspected for bare spots, washouts, and healthy growth. Bare or eroded areas will be repaired as needed.
- Ø All material storage and equipment servicing areas that involve the management of bulk liquids, fuels, and bulk solids will be inspected weekly for conditions that represent a release or possible release of pollutants to the environment.

G. Non – Storm Water discharges

It is expected that non-storm water discharges may occur from the site during the construction period. Examples of non-storm water discharges include:

- Ø Water from water line flushings.
- Ø Water form cleaning concrete trucks and equipment.
- Ø Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).

KyTC BMP Plan for Project PCN ## - #####

- Uncontaminated groundwater and rain water (from dewatering during excavation).

All non-storm water discharges will be directed to the sediment basin or to a filter fence enclosure in a flat vegetated infiltration area or be filtered via another approved commercial product.

H. Groundwater Protection Plan (3)

This plan serves as the groundwater protection plan as required by 401 KAR 5:037.

- Contractors statement: (3)

The following activities, as enumerated by 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan, will or may be conducted as part of this construction project:

_____ 2. (e) land treatment or land disposal of a pollutant;

_____ 2. (f) Storing, ..., or related handling of hazardous waste, solid waste or special waste, ..., in tanks, drums, or other containers, or in piles, (This does not include wastes managed in a container placed for collection and removal of municipal solid waste for disposal off site);

_____ 2. (g) Handling of materials in bulk quantities (equal or greater than 55 gallons or 100 pounds net dry weight transported held in an individual container) that, if released to the environment, would be a pollutant;

_____ 2. (j) Storing or related handling of road oils, dust suppressants,, at a central location;

_____ 2. (k) Application or related handling of road oils, dust suppressants or deicing materials, (does not include use of chloride-based deicing materials applied to roads or parking lots);

_____ 2. (m) Installation, construction, operation, or abandonment of wells, bore holes, or core holes, (this does not include bore holes for the purpose of explosive demolition);

Or, check the following only if there are no qualifying activities

_____ There are no activities for this project as listed in 401 KAR 5:037 Section 2 that require the preparation and implementation of a groundwater protection plan.

KyTC BMP Plan for Project PCN ## - #####

The contractor is responsible for the preparation of a plan that addresses the

401 KAR 5:037 Section 3. (3) Elements of site specific groundwater protection plan:

- (a) General information about this project is covered in the Project information;
- (b) Activities that require a groundwater protection plan have been identified above;
- (c) Practices that will protect groundwater from pollution are addressed in section C. Other control measures.
- (d) Implementation schedule – all practices required to prevent pollution of groundwater are to be in place prior to conducting the activity;
- (e) Training is required as a part of the ground water protection plan. All employees of the contractor, sub-contractor and resident engineer personnel will be trained to understand the nature and requirements of this plan as they pertain to their job function(s). Training will be accomplished within one week of employment and annually thereafter. A record of training will be maintained by the contractor with a copy provide to the resident engineer.
- (f) Areas of the project and groundwater plan activities will be inspected as part of the weekly sediment and erosion control inspections
- (g) Certification (see signature page.)

KyTC BMP Plan for Project PCN ## - #####

Contractor and Resident Engineer Plan certification

The contractor that is responsible for implementing this BMP plan is identified in the Project Information section of this plan.

The following certification applies to all parties that are signatory to this BMP plan:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Further, this plan complies with the requirements of 401 KAR 5:037. By this certification, the undersigned state that the individuals signing the plan have reviewed the terms of the plan and will implement its provisions as they pertain to ground water protection.

Resident Engineer and Contractor Certification:

(2) Resident Engineer signature

Signed _____ title _____, _____
Typed or printed name² signature

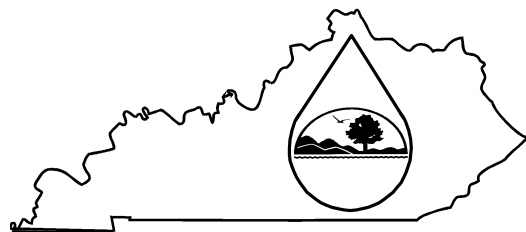
(3) Signed _____ title _____, _____
Typed or printed name¹ signature

1. Contractors Note: to be signed by a person who is the owner, a responsible corporate officer, a general partner or the proprietor or a person designated to have the authority to sign reports by such a person in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601. Reference the Project Control Number (PCN) and KPDES number when one has been issued.

2. KyTC note: to be signed by the Chief District Engineer or a person designated to have the authority to sign reports by such a person (usually the resident engineer) in accordance with 401 KAR 5:060 Section 9. This delegation shall be in writing to: Manager, KPDES Branch, Division of Water, 14 Reilly Road, Frankfort Kentucky 40601 Reference the Project Control Number (PCN) and KPDES number when one has been issued.

KYTC
KPDES FORM NOI-SW

NHPP-IM-0652 (089)


**Kentucky Pollutant Discharge Elimination System
(KPDES)**
**Notice of Intent (NOI)
for Storm Water Discharges
Associated with Industrial Activity Under the
KPDES General Permit**

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a KPDES permit issued for storm water discharges associated with industrial activity. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit.

ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM (See Instructions on back)

I. Facility Operator Information

Name:	KYTC District 4	Phone:	2707665066
Address:	634 East Dixie Highway	Status of Owner/Operator:	F
City, State, Zip Code:	Elizabethtown, KY 42701		

II. Facility/Site Location Information

Name:	PCN ##-####, for SYP 04-13.00 & 4-14.0		
Address:	I-65		
City, State, Zip Code:	Elizabethtown, KY 42701		
County:	Hart		
Site Latitude: (degrees/minutes/seconds)	37-15-15 N	Site Longitude: (degrees/minutes/seconds)	85-55-29 W

III. Site Activity Information

MS4 Operator Name:	Roads with drainage systems						
Receiving Water Body:	Mammoth Cave Drainage Basin						
Are there existing quantitative data?	Yes <input type="checkbox"/> If Yes, submit with this form. No <input checked="" type="checkbox"/>						
SIC or Designated Activity Code Primary	1611	2nd	1622	3rd		4 th	
If this facility is a member of a Group Application, enter Group Application Number:							
If you have other existing KPDES Permits, enter Permit Numbers:							

IV. Additional Information Required FOR CONSTRUCTION ACTIVITIES ONLY

Project Start Date:		Completion Date:	
Estimated Area to be disturbed (in acres):	135.0		
Is the Storm Water Pollution Prevention Plan in Compliance with State and/or Local Sediment and Erosion Plans?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		

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

Printed or Typed Name:	Steve Waddle SHE		
Signature:		Date:	

Kentucky Pollutant Discharge Elimination System (KPDES)

Instructions

Notice of Intent (NOI) for Storm Water Discharges Associated with Industrial Activity
To Be Covered Under The KPDES General Permit**WHO MUST FILE A NOTICE OF INTENT (NOI) FORM**

Federal law at 40 CFR Part 122 prohibits point source discharges of stormwater associated with industrial activity to a water body of the Commonwealth of Kentucky without a Kentucky Pollutant Discharge Elimination System (KPDES) permit. The operator of an industrial activity that has such a storm water discharge must submit a NOI to obtain coverage under the KPDES Storm Water General Permit. If you have questions about whether you need a permit under the KPDES Storm Water program, or if you need information as to whether a particular program is administered by the state agency, call the **Storm Water Contact, Industrial Section, Kentucky Division of Water at (502) 564-3410.**

WHERE TO FILE NOI FORM

NOIs must be sent to the following address:

**Section Supervisor
Inventory & Data Management Section
KPDES Branch, Division of Water
Frankfort Office Park
14 Reilly Road
Frankfort, KY 40601**

COMPLETING THE FORM

Type or print legibly in the appropriate areas only. If you have any questions regarding the completion of this form call the **Storm Water Contact, Industrial Section, at (502) 564-3410.**

SECTION I - FACILITY OPERATOR INFORMATION

Give the legal name of the person, firm, public organization, or any other entity that operates the facility or site described in this application. The name of the operator may or may not be the same as the name of the facility. The responsible party is the legal entity that controls the facility's operation, rather than the plant or site manager. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Enter the appropriate letter to indicate the legal status of the operator of the facility.

F = Federal M = Public (other than federal or state)
S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION

Enter the facility's or site's official or legal name and complete street address, including city, state, and ZIP code.

SECTION III - SITE ACTIVITY INFORMATION

If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4. (A MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, borough, county, parish, district, association, or other public body which is designed or used for collecting or conveying storm water.)

If the facility discharges storm water directly to receiving water(s), enter the name of the receiving water.

Indicate whether or not the owner or operator of the facility has existing quantitative data that represent the characteristics and concentration of pollutants in storm water discharges. If data is available submit with this form.

List, in descending order of significance, up to four 4-digit standard industrial classification (SIC) codes that best describe the principal products or services provided at the facility or site identified in Section II of this application.

If the facility listed in Section II has participated in Part 1 of an approved storm water group application and a group number has been assigned, enter the group application number in the space provided.

If there are other KPDES permits presently issued for the facility or site listed in Section II, list the permit numbers.

SECTION IV - ADDITIONAL INFORMATION REQUIRED FOR CONSTRUCTION ACTIVITIES ONLY

Construction activities must complete Section IV in addition of Sections I through III. Only construction activities need to complete Section IV.

Enter the project start date and the estimated completion date for the entire development plan.

Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre).

Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION V - CERTIFICATION

Federal statutes provide for severe penalties for submitting false information on this application form. Federal regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.



STEVEN L. BESHEAR
GOVERNOR

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

LEONARD K. PETERS
SECRETARY

October 28, 2013

Mr. David M. Waldner
200 Mero Street
Frankfort, Kentucky 40622

Re: I65 Hart County
KPDES No.: KY0111252
AI No.:81158
Hart County, Kentucky

Dear Mr. Waldner:

Enclosed is the Kentucky Pollutant Discharge Elimination System (KPDES) permit for the above-referenced facility. This action constitutes a final permit issuance under 401 KAR 5:075, pursuant to KRS 224.16-050.

This permit will become effective on the date indicated in the attached permit provided that no request for adjudication is granted. All provisions of the permit will be effective and enforceable in accordance with 401 KAR 5:075, unless stayed by the Hearing Officer under Sections 11 and 13.

Any demand for a hearing on the permit shall be filed in accordance with the procedures specified in KRS 224.10-420, 224.10-440, 224.10-470 and any regulations promulgated thereto. Any person aggrieved by the issuance of a permit final decision may demand a hearing, pursuant to KRS 224.10-420(2), within thirty (30) days from the date of the issuance of this letter. Two (2) copies of request for hearing should be submitted in writing to the Energy and Environment Cabinet, Office of Administrative Hearings, 35-36 Fountain Place, Frankfort, Kentucky 40601 and the Commonwealth of Kentucky, Energy and Environment Cabinet, Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601. For your record keeping purposes, it is recommended that these requests be sent by certified mail. The written request must conform to the appropriate statutes referenced above.

If you have any questions regarding the KPDES decision, please contact the Operational Permits Section, Surface Water Permits Branch, at (502) 564-3410.

Further information on procedures and legal matters pertaining to the hearing request may be obtained by contacting the Office of Administrative Hearings at (502) 564-7312.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter T. Goodmann".

Peter T. Goodmann, Acting Director
Division of Water

PTG:TJB:tjb
Enclosure
c: Division of Water

KPDES



PERMIT NO.: KY0111252

AI NO.: 81158

**AUTHORIZATION TO DISCHARGE UNDER THE
KENTUCKY POLLUTANT DISCHARGE ELIMINATION SYSTEM**

Pursuant to Authority in KRS 224,

Kentucky Transportation Cabinet
200 Mero Street
Frankfort, Kentucky 40622

is authorized to discharge from a facility located at

I-65 between Horse Cave and Munfordville, Kentucky
Hart County, Kentucky

to receiving waters named

Green River and sinkholes within Garvin, Gorin Mill, McKorkle and Munfordville West basins between latitude 37°12'54"N / longitude 85°54'01"W and latitude 37°18'00"N / longitude 85°56'09"W.

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

This permit shall become effective on November 1, 2013.

This permit and the authorization to discharge shall expire at midnight, October 31, 2018.

October 28, 2013

Date Signed

A handwritten signature in black ink, appearing to read "Sandra L. Gruzesky".

**Sandra L. Gruzesky, Director
Division of Water**

**DEPARTMENT FOR ENVIRONMENTAL PROTECTION
Division of Water, 200 Fair Oaks Lane, Frankfort, Kentucky 40601**

1. PERMIT REQUIREMENTS

1.1. Outfall Locations

The following table lists the outfalls authorized by this permit, the latitude and longitude of each and the DOW assigned KPDES outfall number.

MONITORING LOCATIONS				
No.	Type	Latitude (N)	Longitude (W)	Description of Outfall
001	Direct	37.215036N	85.935928W	Storm water runoff from the I-65 construction project
002	Direct	37.223182N	85.933583W	Storm water runoff from the I-65 construction project
003	Direct	37.229014N	85.930565W	Storm water runoff from the I-65 construction project
004	Direct	37.232161N	85.929624W	Storm water runoff from the I-65 construction project
005	Direct	37.234717N	85.928739W	Storm water runoff from the I-65 construction project
006	Direct	37.236402N	85.930080W	Storm water runoff from the I-65 construction project
007	Direct	37.241478N	85.929118W	Storm water runoff from the I-65 construction project
008	Direct	37.242573N	85.927978W	Storm water runoff from the I-65 construction project
009	Direct	37.243150N	85.927366W	Storm water runoff from the I-65 construction project
010	Direct	37.247791N	85.926795W	Storm water runoff from the I-65 construction project
011	Direct	37.250204N	85.924770W	Storm water runoff from the I-65 construction project
012	Direct	37.250968N	85.924893W	Storm water runoff from the I-65 construction project
013	Direct	37.252659N	85.925397W	Storm water runoff from the I-65 construction project
014	Direct	37.252433N	85.924566W	Storm water runoff from the I-65 construction project
015	Direct	37.257676N	85.924169W	Storm water runoff from the I-65 construction project
016	Direct	37.260443N	85.923482W	Storm water runoff from the I-65 construction project
017	Direct	37.263607N	85.920848W	Storm water runoff from the I-65 construction project
018	Direct	37.266808N	85.920221W	Storm water runoff from the I-65 construction project
019	Direct	37.266830N	85.919116W	Storm water runoff from the I-65 construction project
020	Direct	37.268170N	85.918193W	Storm water runoff from the I-65 construction project
021	Direct	37.268443N	85.917989W	Storm water runoff from the I-65 construction project
022	Direct	37.270962N	85.915747W	Storm water runoff from the I-65 construction project
023	Direct	37.272234N	85.914556W	Storm water runoff from the I-65 construction project
024	Direct	37.273344N	85.913483W	Storm water runoff from the I-65 construction project
025	Direct	37.273570N	85.913284W	Storm water runoff from the I-65 construction project
026	Direct	37.275965N	85.911643W	Storm water runoff from the I-65 construction project
027	Direct	37.278108N	85.911579W	Storm water runoff from the I-65 construction project
028	Direct	37.279330N	85.911026W	Storm water runoff from the I-65 construction project

MONITORING LOCATIONS				
No.	Type	Latitude (N)	Longitude (W)	Description of Outfall
029	Direct	37.283828N	85.907614W	Storm water runoff from the I-65 construction project
030	Direct	37.285010N	85.906922W	Storm water runoff from the I-65 construction project
031	Direct	37.285321N	85.906745W	Storm water runoff from the I-65 construction project
032	Direct	37.286354N	85.906053W	Storm water runoff from the I-65 construction project
033	Direct	37.286145N	85.907330W	Storm water runoff from the I-65 construction project
034	Direct	37.290059N	85.905066W	Storm water runoff from the I-65 construction project
035	Direct	37.294506N	85.903087W	Storm water runoff from the I-65 construction project
036	Direct	37.293810N	85.901290W	Storm water runoff from the I-65 construction project
037	Direct	37.296507N	85.900780W	Storm water runoff from the I-65 construction project
038	Direct	37.298543N	85.902046W	Storm water runoff from the I-65 construction project
039	Direct	37.300032N	85.902089W	Storm water runoff from the I-65 construction project
040	Direct	37.300117N	85.901365W	Storm water runoff from the I-65 construction project
041	Direct	37.292214N	85.905018W	Storm water runoff from the I-65 construction project
042	Direct	37.291702N	85.904127W	Storm water runoff from the I-65 construction project
043	Direct	37.289086N	85.902067W	Storm water runoff from the I-65 construction project
050	Direct	37.219718N	85.934490W	Storm water runoff from the I-65 construction project
051	Direct	37.230431N	85.930316W	Storm water runoff from the I-65 construction project
052	Direct	37.292380N	85.900394W	Storm water runoff from the I-65 construction project
053	Direct	37.295171N	85.902700W	Storm water runoff from the I-65 construction project

1.2. Discharge Requirements

1.2.1. Erosion and Sediment Controls

Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the controls shall: (1) control storm water volume and velocity within the site to minimize soil erosion; (2) control storm water discharges, including both peak flow rates and total storm water volume to minimize erosion at outlets and to minimize downstream channel and stream bank erosion; (3) minimize the amount of soil exposed during construction activity; (4) minimize the disturbance of steep slopes; (5) minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting storm water runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site; (6) provide and maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible; and (7) minimize soil compaction and, unless infeasible, preserve topsoil.

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1.2.2. Soil Stabilization

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.

1.2.3. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

1.2.4. Pollution Prevention Measures

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures shall: (1) minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge; (2) minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to storm water; and (3) minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

1.2.5. Prohibited Discharges

The following discharges are prohibited: (1) wastewater from washout of concrete, unless managed by an appropriate control; (2) wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials; (3) fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and (4) soaps or solvents used in vehicle and equipment washing.

1.2.6. Surface Outlets

When discharging from basins and impoundments, utilize outlet structures that withdraw water from the surface, unless infeasible.

1.3. Standard Effluent Requirements

The discharges to waters of the Commonwealth shall not produce floating solids, visible foam or a visible sheen on the surface of the receiving waters.

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2. STANDARD CONDITIONS

2.1. Schedule of Compliance

The permittee shall attain compliance with all requirements of this permit on the effective date of this permit unless otherwise stated.

2.2. Standard Conditions for KPDES Permit

2.2.1. Other Permits

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

2.2.2. Sufficiently Sensitive Analytical Methods

Analytical methods utilized to demonstrate compliance with the effluent limitations established in this permit shall be sufficiently sensitive to detect pollutant levels at or below the required effluent limit, i.e. the Method Detection Limit (MDL) shall be at or below the effluent limit. In that instance where an EPA-approved method does not exist that has an MDL at or below the established effluent limitation, the permit shall: (1) use the method specified in the permit; or (2) use the EPA-approved method with an MDL that is nearest to the established effluent limit.

2.2.3. Conditions Applicable to All Permits

The following conditions apply to all KPDES permits.

2.2.3.1. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of KRS Chapter 224 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Any person who violates applicable statutes or who fails to perform any duty imposed, or who violates any determination, permit, administrative regulation, or order of the cabinet promulgated pursuant thereto shall be liable for a civil penalty as provided at KRS 224.99.010.

2.2.3.2. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit. The permittee must submit a timely and complete application in accordance with 40 CFR 122.21.

2.2.3.3. Need to Halt or Reduce Activity Not a Defense

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

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2.2.3.4. **Duty to Mitigate**

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

2.2.3.5. **Proper Operation and Maintenance**

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

2.2.3.6. **Permit Actions**

This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

2.2.3.7. **Property Rights**

This permit does not convey any property rights of any sort, or any exclusive privilege.

2.2.3.8. **Duty to Provide Information**

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating 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.

2.2.3.9. **Inspection and Entry**

The permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

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

2.2.3.10. **Monitoring and Records**

- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

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(2) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five (5) years (or longer as required by 401 KAR 5:065 Section 2(10) [40 CFR 503]), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

(3) Records of monitoring information shall include:

- (i) The date, exact place, and time of sampling or measurements;
- (ii) The individual(s) who performed the sampling or measurements;
- (iii) The date(s) analyses were performed;
- (iv) The individual(s) who performed the analyses;
- (v) The analytical techniques or methods used; and
- (vi) The results of such analyses.

(4) Monitoring must be conducted according to test procedures approved under 401 KAR 5:065 Section 2(8) [40 CFR 136] unless another method is required under 401 KAR 5:065 Section 2(9) or (10) [40 CFR subchapters N or O].

(5) KRS 224.99-010 provides that any person who knowingly violates KRS 224.70-110 or other enumerated statutes, or who knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall be guilty of a Class D felony and, upon conviction, shall be punished by a fine of not more than \$25,000, or by imprisonment for not more than one (1) year, or both. Each day upon which a violation occurs shall constitute a separate violation.

2.2.3.11. Signatory Requirement

(1) All applications, reports, or information submitted to the Director shall be signed and certified pursuant to 401 KAR 5:060, Section 4 [40 CFR 122.22].

(2) KRS 224.99-010 provides that any person who knowingly provides false information in any document filed or required to be maintained under KRS Chapter 224 shall be guilty of a Class D felony and upon conviction thereof, shall be punished by a fine not to exceed twenty-five thousand dollars (\$25,000), or by imprisonment, or by fine and imprisonment, for each separate violation. Each day upon which a violation occurs shall constitute a separate violation.

2.2.3.12. Reporting Requirements

2.2.3.12.1. 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:

- (i) The alteration or addition to a permitted facility may meet one (1) of the criteria for determining whether a facility is a new source in KRS 224.16-050 [40 CFR 122.29(b)]; or
- (ii) 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 notification requirements under KRS 224.16-050 [40 CFR 122.42(a)(1)].

(iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

2.2.3.12.2. Anticipated Noncompliance

The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2.2.3.12.3. Transfers

This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under KRS 224 [CWA; see 40 CFR 122.61; in some cases, modification or revocation and reissuance is mandatory].

2.2.3.12.4. Monitoring Reports

This permit does not require monitoring.

2.2.3.12.5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date.

2.2.3.12.6. Twenty Four Hour Reporting

(i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within twenty-four (24) hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit. (See §122.41(g)).

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within twenty-four (24) hours.

(iii) The Director may waive the written report on a case-by-case basis for reports under paragraph (i)(6)(ii) of this section if the oral report has been received within twenty-four (24) hours.

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2.2.3.12.7. Other Noncompliance

The permittee shall report all instances of noncompliance not reported under Sections 2.2.3.12.1, 2.2.3.12.4, 2.2.3.12.5, and 2.2.3.12.6, at the time monitoring reports are submitted. The reports shall contain the information listed in Section 2.2.3.12.6.

2.2.3.12.8. Other Information

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

2.2.3.13. Bypass

2.2.3.13.1. Definitions

- (i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
- (ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes 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.

2.2.3.13.2. Bypass Not Exceeding Limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Section 2.2.3.13.1.

2.2.3.13.3. Notice

- (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.
- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Section 2.2.3.12.6.

2.2.3.13.4. Prohibition of Bypass

- (i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
 - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (C) The permittee submitted notices as required under Section 2.2.3.13.3.
- (ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three (3) conditions listed above in Section 2.2.3.13.3.

2.2.3.13.5. Upset

2.2.3.13.5.1. Definition

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

2.2.3.13.5.2. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Section 2.2.3.13.5.3 are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

2.2.3.13.5.3. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

- (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
- (ii) The permitted facility was at the time being properly operated; and
- (iii) The permittee submitted notice of the upset as required in Section 2.2.3.12.6; and
- (iv) The permittee complied with any remedial measures required under Section 2.2.3.4.

2.2.3.13.5.4. Burden of Proof

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

2.2.4. Additional Conditions Applicable to Existing Manufacturing, Commercial, Mining and Silvicultural Discharges

The permittee shall notify the Director as soon as they know or have reason to believe that toxic pollutants not limited in the permit have been or shall be discharge in excess of the highest of the following notification levels:

POLLUTANT	ROUTINE/FREQUENT BASIS	NON-ROUTINE/INFREQUENT BASIS
Any Toxic Pollutant	100 µg/l or level established by the Director	500 µg/l or level established by the Director
Acrolein	200 µg/l	500 µg/l or level established by the Director
Acrylonitrile	200 µg/l	500 µg/l or level established by the Director
2,4-dinitrophenol	500 µg/l	500 µg/l or level established by the Director
2-methyl-4,6-dinitrophenol	500 µg/l	500 µg/l or level established by the Director
Antimony	1 mg/l	1 mg/l
Pollutant reported in permit application	Five (5) times the maximum concentration value	Ten (10) times the maximum concentration value

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2.3. Reporting of Monitoring Results

This permit does not require reporting of monitoring results.

2.4. Reopener Clause

This permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

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

This permit may be reopened to implement the findings of a reasonable potential analysis performed by the Division of Water.

This permit shall be reopened if Division of Water determines surface waters are aesthetically or otherwise degraded by substances that:

- (a) Settle to form objectionable deposits;
- (b) Float as debris, scum, oil, or other matter to form a nuisance;
- (c) Produce objectionable color, odor, taste, or turbidity;
- (d) Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;
- (e) Produce undesirable aquatic life or result in the dominance of nuisance species; or
- (f) Cause fish flesh tainting.

The permit as modified or reissued under this paragraph shall also contain any other requirements of KRS Chapter 224 when applicable.

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3. SPECIAL CONDITIONS

3.1. Storm Water Pollution Prevention Plan (SWPPP)

The permittee shall develop a Storm Water Pollution Prevention Plan (SWPPP) and implement the SWPPP at the commencement of construction disturbance. The SWPPP shall include erosion prevention measures, sediment control measures and other site management practices necessary to prevent the discharge of sediment and other pollutants into waters of the Commonwealth that would result in those waters being degraded or non-supportive of their designed uses. Sediment control measures and other site management practices must be properly selected based on site-specific conditions and shall be installed and maintained to effectively minimize discharges from storm events up to and including a 2-year, 24-hour event. The SWPPP shall be consistent with the requirements of 40 CFR 450.

The permittee shall utilize the Kentucky 2008 Standards Specifications for Road and Bridge Construction document as a means of establishing sediment control measures, erosion control measures and other site management practices. In addition, the permittee shall implement the enhanced Best Management Practices (BMPs) contained in the supplemental data document.

The permittee shall utilize KTC Design Memorandum Number 12-05. Should karst features develop or be discovered during construction, activities shall cease until the SWPPP can be modified to provide adequate erosion prevention and sediment control measures.

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4. STATE CONDITIONS

4.1. Outfall Signage

This permit does not require any outfall signage.

4.2. Stabilization Requirements

Final stabilization practices shall replace any temporary stabilization practices on those portions of the site where construction activities have been suspended for more than 180 days. In such cases, final stabilization practices shall be initiated as soon as practical but no later than fourteen (14) days after the 180th day of suspended activity.

4.3. Buffer Zone

Where possible, the permittee shall maintain a 50-foot minimum buffer zone between any disturbance and all edges of the receiving water.

4.4. Discharge and Monitoring Point Accessibility

As previously stated in Section 2.2.3.9, the permittee shall allow authorized agency representatives to inspect the facility and collect samples to determine compliance. In order for such monitoring to be conducted either by the permittee or authorized agency personnel all monitoring and discharge points required by this permit shall be readily and safely accessible in all weather conditions.

5. ABBREVIATIONS, ACRONYMS AND DEFINITIONS

Abbreviation or Acronym	Full Phrase	Definition
MGD	Million Gallons Per Day	A measure of flow
cfs	cubic feet per second	A measure of flow
SU	Standard Units	A measure of pH
mg/l	milligrams per liter	A measure of pollutant concentration (1000 milligrams = 1 gram)
µg/l	micrograms per liter	A measure of pollutant concentration (1000 micrograms = 1 milligram)
°F	Degrees Fahrenheit	A measure of temperature
°C	Degrees Centigrade or Celsius	A measure of temperature
N/A	Not Applicable	
lbs/day	pounds per day	A measure of pollutant loading
Grab	Grab Sample	A sample taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.
24-Hr Composite	24-hour Composite Sample	Sample composed of discrete equal volume aliquots (100 ml minimum) collected every 15 minutes over a 24-hour period and aggregated by an automated sampling device. The aggregate sample will reflect the average water quality of the compositing or sample period.



STEVEN L. BESHEAR
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LEONARD K. PETERS
SECRETARY

FACT SHEET

I-65 Between Horse Cave and Munfordville, Kentucky

KPDES No.: KY0111252

AI No.: 81158

Date: October 28, 2013

Public Notice Information

Public Notice Start Date: September 18, 2013

Comment Due Date: October 18, 2013

Information concerning the public notice process may be obtained on the Division of Water's Public Notice Webpage at the following address:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30

Comments may be filed electronically at the following e-mail address: DOWPublicNotice@ky.gov

Or by sending written comments to:

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

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DEFINITIONS, ABBREVIATIONS, AND ACRONYMS

401(a) Certification - A requirement of CWA section 401(a) that all federally issued permits be certified by the state in which the discharge occurs. The state certifies that the proposed permit will comply with state water quality standards and other state requirements.

Acute criteria - The highest instream concentration of a toxic substance or an effluent to which an organism can be exposed for one (1) hour without causing an unacceptable harmful effect.

Acute effect - The effect of a stimulus severe enough to rapidly induce an effect; in aquatic toxicity tests, an effect generally observed in 96 hours or less is typically considered acute. When referring to aquatic toxicology or human health, an acute effect is not always measured in terms of lethality.

Acute toxicity - Lethality or other harmful effect sustained by either an indigenous aquatic organism or a representative indicator organism used in a toxicity test, due to a short-term exposure, of ninety-six (96) hours or less, to a specific toxic substance or mixture of toxic substances.

Acute toxicity unit - The reciprocal of the effluent dilution that causes the acute effect, or LC₅₀, by the end of the acute exposure period.

Acute-chronic ratio - The ratio of the acute toxicity, expressed as an LC₅₀, of an effluent or a toxic substance, to its chronic toxicity. It is used as a factor to estimate chronic toxicity from acute toxicity data.

Administrator - means the Administrator of the United States Environmental Protection Agency, or an authorized representative

Adversely affect or adversely change - Means to alter or change the community structure or function, to reduce the number or proportion of sensitive species, or to increase the number or proportion of pollution tolerant aquatic species so that aquatic life use support or aquatic habitat is impaired.

Anti-backsliding - In general, a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit.

Antidegradation - A policy developed and adopted as part of a state's water quality standards that ensures protection of existing uses and maintains the existing level of water quality where that water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This policy also includes special protection of water designated as Outstanding National Resource Waters.

Applicable standards and limitations - means all standards and limitations to which a discharge or a related activity is subject pursuant to KRS Chapter 224 and 401 KAR Chapters 4 through 11, including effluent limitations, water quality standards, standards of performance, or toxic effluent standards.

Application - means the document submitted by an applicant to the cabinet that provides information used by the cabinet in the issuance of a permit or approval.

Average monthly discharge limitation - The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during that month divided by the number of daily discharges measured during that month.

Balanced indigenous community - means a biotic community typically characterized by diversity, the capacity to sustain itself through cyclic seasonal changes, presence of necessary food chain species, and a lack of domination by pollution tolerant species. The community may include historically nonnative species introduced in connection with a program of wildlife management and species whose presence or abundance results from substantial, irreversible environmental modification. Normally such a community does not include species whose presence or abundance is attributable to the introduction of pollutants that will be eliminated by compliance of all sources with 401 KAR 5:065, and may not include species whose presence or abundance is attributable to alternative effluent limitations imposed pursuant to 401 KAR 5:055.

Best Available Technology Economically Achievable (BAT) - Technology standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters. BAT limitations in effluent guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Best Conventional Pollutant Control Technology (BCT) - Technology-based standard for the discharge from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, oil and grease. The BCT is established in light of a two-part cost reasonableness test, which compares the cost

for an industry to reduce its pollutant discharge with the cost to a POTW for similar levels of reduction of a pollutant loading. The second test examines the cost-effectiveness of additional industrial treatment beyond BPT. EPA must find limits which are reasonable under both tests before establishing them as BCT.

Best Management Practice (BMP) - means: (a) For agriculture operations, as defined by KRS 224.71-100(3); or (b) For all other purposes: 1. Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the commonwealth; and 2. Treatment requirements, operating procedures, practices to control site run-off, pollution of surface water and groundwater from nonpoint sources, spillage or leaks, sludge or waste disposal, or drainage from raw material storage

Best Practicable Control Technology Currently Available (BPT) - The first level of technology standards established by the CWA to control pollutants discharged to waters of the U.S. BPT limitations in effluent guidelines are generally based on the average of the best existing performance by plants within an industrial category or subcategory.

Best Professional Judgment (BPJ) - The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

Bioassay - A test used to evaluate the relative potency of a chemical or a mixture of chemicals by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism.

Biochemical Oxygen Demand (BOD) - A measurement of the amount of oxygen used by the decomposition of organic material, over a specified time (usually 5 days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

Bypass - means the intentional diversion of sewage or waste-streams from a portion of a facility or industrial user's treatment facility.

Calendar day - means for the purpose of this permit, any 24-hour period.

Carbonaceous Biochemical Oxygen Demand (CBOD) - means the biochemical oxygen demand of carbonaceous sources. This differs from BOD in that BOD measures both nitrogenous and carbonaceous sources, whereas CBOD excludes nitrogenous sources (e.g., nitrifying bacteria) from determination through the addition of a nitrification inhibitor.

Certified operator - means an individual who holds an active certified operator's certificate issued in accordance with 401 KAR 11:050.

Chronic criteria - means the highest instream concentration of a toxic substance or an effluent to which organisms are able to be exposed for ninety-six (96) hours without causing an unacceptable harmful effect.

Chronic effect - The effect of a stimulus that lingers or continues for a relatively long period, often one-tenth of the life span or more. The measurement of a chronic effect can be reduced growth, reduced reproduction, and such, in addition to lethality.

Chronic toxicity - means lethality, reduced growth or reproduction or other harmful effect sustained by either indigenous aquatic organisms or representative indicator organisms used in toxicity tests due to long-term exposures, relative to the life span of the organisms or a significant portion of their life span, due to toxic substances or mixtures of toxic substances.

Chronic Toxicity Unit (TU_c) - means the reciprocal of the effluent dilution that causes twenty-five (25) percent inhibition of growth or reproduction to the test organisms by the end of the chronic exposure period.

Clean Water Act (CWA) - The Clean Water Act is a statute passed by the U.S. Congress to control water pollution. It was formerly referred to as the Federal Water Pollution Control Act of 1972 or Federal Water Pollution Control Act Amendments of 1972 (Public Law 92-500), 33 U.S.C. 1251 *et seq.*, as amended by: Public Law 96-483; Public Law 97-117; Public Laws 95-217, 97-117, 97-440, and 100-04.

Code of Federal Regulations (CFR) - A codification of the final rules published daily in the *Federal Register*. Title 40 of the CFR contains regulations for the protection of the environment.

Cold Water Aquatic Habitat (CAH) - means surface waters and associated substrate that are able to support indigenous aquatic life or self-sustaining or reproducing trout populations on a year-round basis.

Compliance Schedule (or Schedule of Compliance) - A schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the CWA and regulations.

Composite Sample - Sample composed of two or more discrete aliquots (samples). The aggregate sample will reflect the average water quality of the compositing or sample period.

Continuous facility discharge - means a discharge that occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Conventional pollutant -DOW defines as: biochemical oxygen demand (BOD), chemical oxygen demand (COD), total organic carbon (TOC), total suspended solids (TSS), ammonia (as N), bromide, chlorine (total residual), color, fecal coliform, fluoride, nitrate, Kjeldahl nitrogen, oil and grease, E. coli, or phosphorus. EPA defines as: BOD, TSS, fecal coliform bacteria, oil and grease, and pH

Criteria - means specific concentrations or ranges of values, or narrative statements of water constituents that represent a quality of water expected to result in an aquatic ecosystem protective of designated uses of surface waters. Criteria are derived to protect legitimate uses such as aquatic life, domestic water supply, and recreation and to protect human health.

Daily maximum concentration - means the daily determination of concentration as an instantaneous maximum that cannot be exceeded by any sample.

Daily precipitation log - means a daily record of precipitation levels maintained by the permittee to provide proof that a qualifying event has occurred within the preceding 24 hours. This may take the form of daily readings of local rain gages, National Oceanic and Atmospheric Administration data, etc.

Day - means a twenty-four (24) hour period.

Designated Uses - Those uses specified in water quality standards for each waterbody or segment whether they are being attained

Development Document - A report prepared during development of an effluent guideline by EPA that provides the data and methodology used to develop effluent guidelines and categorical pretreatment standards for an industrial category.

Direct discharge - means the discharge of a pollutant into waters of the commonwealth if the discharge is not included under the definition of indirect discharger and does not include a discharge of animal waste onto land by land application if the discharge does not reach the waters of the commonwealth.

Disappearing stream - means an intermittent or perennial surface stream that terminates and drains underground through caves, fractures, or swallets in the stream bed.

Discharge monitoring report (DMR) - The state approved form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees.

Discharge or discharge of a pollutant - means the addition of a pollutant or combination of pollutants to waters of the commonwealth from a point source.

Diversion - means a channel, embankment, or other manmade structure constructed for the purpose of diverting water from one area to another

Division - means the Kentucky Division of Water, within the Department for Environmental Protection, Energy and Environment Cabinet.

Domestic - means relating to household wastes or other similar wastes. It is used to distinguish municipal, household, or commercial water or wastewater services from industrial water or wastewater services.

Domestic sewage - means sewage devoid of industrial or other wastes and that is typical of waste received from residential facilities. It may include wastes from commercial developments, schools, restaurants, and other similar developments.

Domestic water supply (DWS) - means surface waters that with conventional domestic water supply treatment are suitable for human consumption through a public water system as defined in 401 KAR 8:010, culinary purposes, or for use in a food or beverage processing industry; and meet state and federal regulations under the Safe Drinking Water Act, as amended, 42 U.S.C. 300f - 300j-26.

Draft permit - means a document prepared pursuant to 401 KAR 5:075 indicating the cabinet's preliminary decision to issue or deny, modify, revoke and reissue, revoke, or reissue a permit. It includes a notice of intent to revoke a permit and a notice of intent to deny a permit as provided in 401 KAR 5:075. It does not include a proposed permit; a denial of a request for modification, revocation, and reissuance; or a denial of a request for revocation.

E. coli or "Escherichia coli" - means an aerobic and facultative anaerobic gram negative, nonspore forming, rod shaped bacterium that can grow at forty-four and five tenths (44.5) degrees Celsius, that is ortho-nitrophenyl-B-D-galactopyranoside (ONPG) positive, and Methylumbelliferyl glucuronide (MUG) positive. It is a member of the indigenous fecal flora of warm-blooded animals.

Effluent ditch - means that portion of a treatment system that is a discrete, person-made conveyance, either totally owned, leased or under valid easement by the discharger that transports a discharge to surface waters of the commonwealth.

Effluent limitation - Any restriction imposed by the KPDES permit on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into waters of the Commonwealth

Effluent limitations guidelines (Effluent Guidelines or ELG) - A regulation published by the Administrator under CWA section 304(b) to adopt or revise effluent limitations.

Environmental Protection Agency, "EPA", or "U.S.EPA" - means the U.S. Environmental Protection Agency.

Eutrophication means the enrichment of a surface water by the discharge or addition of a nutrient.

Exceptional water (EW) - means a surface water categorized as exceptional by the cabinet pursuant to 401 KAR 10:030.

Existing use means a legitimate use being attained in or on a surface water of the commonwealth on or after November 28, 1975, irrespective of its use designation.

Expanded discharge - means an increase in pollutant loading.

Facility - means: (a) As used in 401 KAR 5:005 or 401 KAR 5:006, a document issued by the cabinet that authorizes the permittee to construct, modify, or operate a facility; or (b) In 401 KAR 5:050 through 401 KAR 5:080 and if used in conjunction with activity, any KPDES point source, or any other facility, including land or related appurtenances, that is subject to regulation under the KPDES program.

Fact Sheet - A document that must be prepared for all draft KPDES permits, the document summarizes the principal facts and the significant factual, legal, methodological and policy questions considered in preparing the draft permit and explains how the public may comment.

Fecal coliform - means the portion of the coliform group of bacteria that are present in the intestinal tract or the feces of warm-blooded animals. It includes organisms that are capable of producing gas from lactose broth in a suitable culture medium within twenty-four (24) hours at forty-four and five-tenths (44.5) degrees plus or minus two-tenths (0.2) degrees C.

Fundamentally Different Factors (FDF) - Those components of a petitioner's facility that are determined to be so unlike those components considered by EPA during the effluent guidelines and pretreatment standards rulemaking that the facility is worthy of a variance from the effluent guidelines or categorical pretreatment standards that would otherwise apply.

Grab sample -A sample taken from a wastestream on a one-time basis without consideration of the flow rate of the wastestream and without consideration of time.

Groundwater - means the subsurface water occurring in the zone of saturation beneath the water table and perched water zones below the B soil horizon including water circulating through fractures, bedding planes, and solution conduits.

Harmonic mean flow - means the reciprocal of the mean of the reciprocal daily flow values.

Hazardous substance Any substance—as designated under Part 116 pursuant to CWA section 311—that presents an imminent and substantial danger to the public health or welfare, including fish, shellfish, wildlife, shorelines, and beaches, upon discharge to navigable waters of the United States.

High Quality Water (HQW) - means a surface water categorized as high quality by the cabinet pursuant to 401 KAR 10:030.

Impact - means a change in the chemical, physical, or biological quality or condition of a surface water.

Impairment - means a detrimental impact to a surface water that prevents attainment of a designated use.

Indigenous aquatic community - means naturally occurring aquatic organisms including bacteria, fungi, algae, aquatic insects, other aquatic invertebrates, reptiles, amphibians, and fishes. Under some natural conditions one (1) or more of the above groups may be absent from a surface water.

Industrial Wastewater Treatment Plant (IWWTP) - means a privately owned WWTP with more than ninety (90) percent of the influent flow from sources of industrial waste.

Inhibition concentration of twenty-five (25) percent (IC₂₅) - means the concentration that is determined by a linear interpolation method for estimating the concentration at which a twenty-five (25) percent reduction is shown in reproduction or growth in test organisms, and which statistically approximates the concentration at which an unacceptable chronic effect is not observed.

Injection - means a type of land application in which the waste is placed directly beneath the land surface.

Instantaneous maximum limit - The maximum allowable concentration or other measure of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.

Instantaneous minimum limit - The minimum allowable concentration or other measure of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.

Intermittent water - means a stream that flows only at certain times of the year.

Interstate agency - means an agency of which Kentucky and one (1) or more states is a member established by or under an agreement or compact, or any other agency, of which Kentucky and one (1) or more other states are members, having substantial powers or duties pertaining to the control of pollution as determined and approved by the secretary or administrator pursuant to 33 U.S.C. 1251 – 1387 or KRS Chapter 224.

Karst - means the type of geologic terrain underlain by carbonate rocks where significant solution of rock has occurred due to flowing groundwater.

Kentucky Index of Biotic Integrity (KIBI) – fish community assessment tool as incorporated by reference in 401 KAR 10:030.

Kentucky No Discharge Operational Permit (KNDOP) - means a permit issued pursuant to 401 KAR 5:005 for operating a WWTP that does not have a discharge to a stream, including agricultural waste handling systems and spray irrigation systems.

Kentucky Pollutant Discharge Elimination System (KPDES) - means the Kentucky program for issuing, modifying, revoking and reissuing, revoking, monitoring and enforcing permits to discharge, and imposing and enforcing pretreatment requirements.

KPDES permit - means a Kentucky Pollutant Discharge Elimination System permit issued to a facility, including a POTW, or activity pursuant to KRS Chapter 224 for the purpose of operating the facility or activity.

LC₁ - means that concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to one (1) percent of the organisms tested in a toxicity test during a specified exposure period.

LC₅₀ - means that concentration of a toxic substance or mixture of toxic substances that is lethal, or immobilizing if appropriate, to fifty (50) percent of the species tested in a toxicity test during a specified exposure period.

Load Allocation (LA) - The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments, depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished.

Macroinvertebrate Bioassessment Index (MBI) – macroinvertebrate community assessment tool as incorporated by reference in 401 KAR 10:030.

Maintain - means to preserve or keep in present condition by not allowing an adverse permanent or long-term change to water quality or to a population of an aquatic organism or its habitat.

Major alteration - means a coal mine for which the DOW determines that a new, altered, or increased discharge of pollutants has occurred after May 29, 1981, in connection with the mine for which the KPDES permit is being considered. In making this determination, the DOW shall take into account one or more of the following events: 1) Extraction of a coal seam not previously extracted by that mine; 2) Discharge into a drainage area not previously affected by wastewater discharges from the mine; 3) Extensive new surface disturbance at the mining operation; 4) Construction of a new shaft, slope, or drift; and 5) Such other factors as the Director deems relevant.

Major facility - means a KPDES facility or activity classified as a KPDES facility by the cabinet in cooperation with the regional administrator. Designation as a major industry as used in KRS 224.70-120, does not indicate automatic classification as a major facility.

Maximum Daily Effluent Limitation (MDEL) – means the highest allowable daily discharge of a pollutant.

Measurement - means the ability of the analytical method or protocol to quantify as well as identify the presence of the substance in question.

Method Detection Limit (MDL) - The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

Milligrams per liter (mg/l) - mean the milligrams of substance per liter of solution and are equivalent to parts per million in water, assuming unit density.

Million gallons per day (or mgd) - A unit of flow commonly used for wastewater discharges. One million gallon per day is equivalent to 1.547 cubic feet per second.

Minimum Level (ML) - The level at which the entire analytical system must give a recognizable signal and acceptable calibration point. It is equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

Mixing zone - means a domain of a water body contiguous to a treated or untreated wastewater discharge with quality characteristics different from those of the receiving water. The discharge is in transit and progressively diluted from the source to the receiving system. The mixing zone is the domain where wastewater and receiving water mix.

Monthly average concentration - means the arithmetic average of all sample concentrations collected during a calendar month.

National Pollutant Discharge Elimination System (NPDES) The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA sections 307, 318, 402, and 405. The term includes approved program. NPDES permits regulate discharges of pollutants from point sources to waters of the United States. Such discharges are illegal unless authorized by an NPDES permit.

Natural Resources Conservation Service (NRCS) - means the organization created pursuant to 7 U.S.C. 6962 in the U.S. Department of Agriculture.

Natural temperature - means the temperature that would exist in waters of the commonwealth without the change of enthalpy of artificial origin, as contrasted with that caused by climatic change or naturally occurring variable temperature associated with riparian vegetation and seasonal changes.

Natural water quality - means those naturally occurring physical, chemical, and biological properties of waters.

Net discharge - means the amount of substance released to a surface water by excluding the influent value from the effluent value if both the intake and discharge are from and to the same or similar body of water.

New Source Performance Standards (NSPS) - Technology standards for facilities that qualify as new sources under § 122.2 and § 122.29. Standards consider that the new source facility has an opportunity to design operations to more effectively control pollutant discharges.

Nonconventional pollutant - DOW defines as pollutant not considered to be a conventional pollutant, including priority pollutants identified in 401 KAR 5:060. EPA defines as all pollutants that are not included in the list of conventional or toxic pollutants in Part 40, includes pollutants such as chemical oxygen demand (COD), total organic carbon (TOC), nitrogen, and phosphorus.

Nonpoint Source - Diffuse pollution sources (i.e., without a single point of origin or not introduced into a receiving stream from a specific outlet). The pollutants are generally carried off the land by stormwater. Atmospheric deposition and hydromodification are also sources of nonpoint source pollution.

North American Industrial Classification System (NAICS) - The North American Industry Classification System (NAICS) is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy.

Nutrients - Chemical elements and compounds found in the environment that plants and animals need to grow and survive. Nutrients include compounds of nitrogen (nitrate, nitrite, ammonia, organic nitrogen) and phosphorus (orthophosphate and others), both natural and man-made.

Operator - means a person involved in the operation of a facility or activity.

Outfall - means, for municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to waters of the Commonwealth, but does not include open conveyances connecting two (2) municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the Commonwealth and are used to convey waters of the Commonwealth.

Other wastes - means sawdust, bark or other wood debris, garbage, refuse, ashes, offal, tar, oil, chemicals, acid drainage, wastes from agricultural enterprises, and other foreign substances not included within the definitions of industrial wastes and sewage that may cause or contribute to the pollution of waters of the Commonwealth.

Outstanding National Resource Water (ONRW) - means a surface water categorized by the cabinet as an outstanding national resource water pursuant to 401 KAR 10:030.

Outstanding State Resource Water (OSRW) means a surface water designated by the cabinet as an outstanding state resource water pursuant to 401 KAR 10:031.

Overflow - means any intentional or unintentional diversion of flow from a facility.

Owner - means a person who has legal ownership of a facility or activity regulated pursuant to 401 KAR Chapter 5.

Permitting Authority - means the agency authorized to issue and enforces specific requirements of the NPDES permit program. The permitting authority may be EPA, or a state, territorial, or tribal agency that has been authorized under CWA section 402(b) to administer the NPDES program within its jurisdiction.

pH - A measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration in mg/L. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.

Plan of study means (1) a report that contains the following information required for a regional facility plan by 401 KAR 5:006, Section 4: (a) Planning area maps; (b) A discussion of the need for sewer service in the area; (c) Population projections; and (d) An estimation of the twenty (20) year cost by category; or (2) a plan required by the permit for the purposes of collecting data to determine background stream physical, chemical and biological conditions and discharge conditions.

Point source - means any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, culvert, tunnel, conduit, well, discrete fissure, container, wet seals, mine adits, seeps, or sumps, from which pollutants are or may be discharged.

Pollutant - Dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended [42 U.S.C. 2011 *et seq.*]), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean a. Sewage from vessels. b. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the state in which the well is located, and if the state determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Pollutant, Conservative - Pollutants that do not readily degrade in the environment and that are mitigated primarily by dilution after entering receiving waters (e.g., metals, total suspended solids).

Pollutant, Non-Conservative - Pollutants that are mitigated by natural biodegradation or other environmental decay or removal processes in the receiving water after mixing and dilution have occurred (e.g., biochemical oxygen demand, pH, volatile organic compounds)

Primary Contact Recreation Water (PCRW) - means those waters suitable for full body contact recreation during the recreation season of May 1 through October 31.

Primary Industry Category - Any industry category listed in the NRDC settlement agreement (*Natural Resources Defense Council et al. v. Train*, 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]); also listed in Appendix A of Part 122.

Primary responsibility - means personal, first-hand responsibility to conduct or actively oversee and direct procedures and practices necessary to ensure that the wastewater treatment plant or wastewater collection system is operated in accordance with accepted practices and with KRS Chapter 224 and 401 KAR Chapters 5 and 11 having the authority to conduct the procedures and practices necessary to ensure that the wastewater system or any portion thereof is operated in accordance with accepted practices, laws, and administrative regulations of the commonwealth, or to supervise others in conducting these practices.

Priority Pollutants - Those pollutants considered to be of principal importance for control under the CWA based on the NRDC Consent Decree (*NRDC et al. v. Train*, 8 E.R.C. 2120 [D.D.C. 1976], modified 12 E.R.C. 1833 [D.D.C. 1979]); a list of the pollutants is provided as Appendix A to 40 CFR Part 423.

Privately-owned treatment works - means any device or system which is (a) used to treat wastes from any facility whose operator is not the operator of the treatment works and (b) not a "POTW."

Process Wastewater - Any water [that], during manufacturing or processing, comes into direct contact with, or results from the production or use of any raw material, intermediate product, finished product, by-product, or waste product.

Production-Based Standard - A discharge standard expressed in terms of pollutant mass allowed per unit of product manufactured or some other measure of production. 1996 PWM

Productive aquatic community - means an assemblage of indigenous aquatic life capable of reproduction and growth.

Professional engineer or engineer is defined by KRS 322.010(2).

Propagation - means the continuance of a species by successful spawning, hatching, and development or natural generation in the natural environment, as opposed to the maintenance of the species by artificial culture and stocking.

Proposed permit - means a KPDES permit prepared after the close of the public comment period and, if applicable, any public hearing and administrative appeals that is sent to U.S. EPA for review before final issuance by the cabinet. A proposed permit is not a draft permit.

Public water system - means a system for the provision to the public of water for human consumption through pipes or, after August 5, 1998, other constructed conveyances, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year. Such term includes: any collection, treatment, storage, and distribution facilities under control of the operator of such system and used primarily in connection with such system; and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system. Such term does not include any "special irrigation district." A public water system is either a "community water system" or a "non-community water system."

RCRA - means the Resource Conservation Recovery Act as amended, 42 U.S.C. 6901 - 6992k.

Recommencing discharger - means a source that recommences discharge after terminating operations.

Recurring discharge - means, as it relates to a sewer system overflow, a discharge that occurs two (2) or more times in a twelve (12) month period.

Regional administrator - means the regional administrator of the Region IV office of the U.S. EPA or the authorized representative of the regional administrator.

Representative indicator organism - means an aquatic organism designated for use in toxicity testing because of its relative sensitivity to toxicants and its widespread distribution in the aquatic environment.

Run-off coefficient - means the fraction of total rainfall that will appear at a conveyance as run-off.

SARA - means the Superfund Amendments and Reauthorization Act, 42 U.S.C. 9601 - 9675.

Schedule of compliance - means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements leading to compliance with KRS Chapter 224 and 401 KAR Chapters 4 through 11.

Secondary Contact Recreation Waters (SCRW) - means those waters suitable for partial body contact recreation, with minimal threat to public health due to water quality.

Section 304(a) Criteria - Developed by EPA under authority of CWA section 304(a) based on the latest scientific information on the relationship that the effect of a constituent concentration has on particular aquatic species and/or human health. This information is issued periodically to the states as guidance for use in developing criteria.

Self-Monitoring - Sampling and analyses performed by a facility to determine compliance with effluent limitations or other regulatory requirements.

Seven-Q-ten or "7Q₁₀" - means that minimum average flow that occurs for seven (7) consecutive days with a recurrence interval of ten (10) years.

Sinkhole - means a naturally occurring topographic depression in a karst area. Its drainage is subterranean and serves as a recharge source for groundwater. It is formed by the collapse of a conduit or the solution of bedrock.

Site - means, as used in 401 KAR 5:060 through 5:080, the land or water area where a facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Source - means a building, structure, facility, or installation from which there is or may be a discharge of pollutants.

Spill Prevention Control and Countermeasure Plan (SPCC) - A plan prepared by a facility to minimize the likelihood of a spill and to expedite control and cleanup activities if a spill occurs. Such plans are required for certain facilities under the Oil Pollution Prevention Regulations at 40 CFR 112.

Standard Industrial Classification (SIC) Code - A code number system used to identify various types of industries. A particular industry may have more than one SIC code if it conducts several types of commercial or manufacturing activities onsite. An online version of the 1987 SIC Manual <www.osha.gov/pls/imis/sic_manual.html> is available courtesy of the Occupational Safety & Health Administration (OSHA).

STORET - EPA's computerized STorage and RETrieval water quality data base that includes physical, chemical, and biological data measured in waterbodies throughout the United States. 1996 PWM

Storm Water (or Stormwater) Stormwater runoff, snow melt runoff, and surface runoff and drainage.

Supernatant - means the water that accumulates in the upper portion of a lagoon and contains not greater than two and zero-tenths (2.0) percent total solids by dry weight analysis.

Surface waters - means those waters having well-defined banks and beds, either constantly or intermittently flowing; lakes and impounded waters; marshes and wetlands; and any subterranean waters flowing in well-defined channels and having a demonstrable hydrologic connection with the surface. Lagoons used for waste treatment and effluent ditches that are situated on property owned, leased, or under valid easement by a permitted discharger are not considered to be surface waters of the commonwealth.

Technology-Based Effluent Limitation (TBEL) - means an effluent limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration or mass loading level. TBELs for POTWs are derived from the secondary treatment regulations in Part 133 or state treatment standards. TBELs for non-POTWs are derived from effluent guidelines, state treatment standards, or by the permit writer on a case-by-case basis using best professional judgment.

Tiered permit limits - Permit limits that apply to the discharge only when a certain threshold (e.g., production level), specific circumstance (e.g., batch discharge), or time frame (e.g., after 6 months, during the months of May through October) triggers their use. Adapted from 1996 PWM

Total Dissolved Solids (TDS) means the total dissolved solids (filterable residue) as determined by use of the method specified in 40 CFR Part 136.

Total Maximum Daily Load (TMDL) - The sum of the individual wasteload allocations (WLAs) for point sources and load allocations (LAs) for nonpoint sources and natural background. If a receiving water has only one point source discharger, the TMDL is the sum of that point source WLA plus the LAs for any nonpoint sources of pollution and natural background sources, tributaries, or adjacent segments. TMDLs can be expressed in terms of either mass per time,

toxicity, or other appropriate measure. If best management practices (BMPs) or other nonpoint source pollution controls make more stringent load allocations practicable, then wasteload allocations can be made less stringent. Thus, the TMDL process provides for nonpoint source control tradeoffs.

Total Suspended Solids (TSS) - means the total suspended solids (non-filterable residue) as determined by use of the method specified in 40 CFR Part 136.

Toxic Pollutant - Any pollutant listed as toxic under CWA section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing CWA section 405(d).

Toxic substance - means a substance that is bioaccumulative, synergistic, antagonistic, teratogenic, mutagenic, or carcinogenic and causes death, disease, a behavioral abnormality, a physiological malfunction, or a physical deformity in an organism or its offspring or interferes with normal propagation.

Toxicity Reduction Evaluation (TRE) - A site-specific study conducted in a step-wise process designed to identify the causative agent(s) of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Toxicity Test - means a procedure to determine the toxicity of a chemical or an effluent using living organisms. A toxicity test measures the degree of effect on exposed test organisms of a specific chemical or effluent.

Treatability Manual - Five-set library of EPA guidance manuals that contain information related to the treatability of many pollutants. The manual may be used in developing effluent limitations for facilities and pollutants, which, at the time of permit issuance, are not subject to industry-specific effluent guidelines. The five volumes that comprise this series consist of Volume I - Treatability Data (EPA-600/8-80-042a); Volume II - Industrial Descriptions (EPA-600/8-80-042b); Volume III - Technologies (EPA-600/8-80-042c); Volume IV - Cost Estimating (EPA-600/8-80-042d); and Volume V - Summary (EPA-600/8-80-042e).

UIC - means Underground Injection Control.

Underground injection control well - means a well used for the emplacement of fluids into the subsurface. excludes surface disturbances associated with the underground mine.

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

Variance - means a mechanism or provision pursuant to 401 KAR Chapter 5 that allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines.

Warm water aquatic habitat (WAH) - means a surface water and associated substrate capable of supporting indigenous warm water aquatic life.

Water or Waters of the Commonwealth means and includes any and all rivers, streams, creeks, lakes, ponds, impounding reservoirs, springs, wells, marshes, and all other bodies of surface or underground water, natural or artificial, situated wholly or partly within or bordering upon the Commonwealth or within its jurisdiction

Water quality management plan (WQM plan) - means: (a) A plan consisting of initial plans produced in accordance with 33 U.S.C. 1288 and 1313 and certified and approved updates to those plans; or (b) A state or area-wide waste treatment management plan developed and updated in accordance with 33 U.S.C. 1281, 1285j, 1288, and 1313e and 40 CFR Part 130.

Water quality standard - means an administrative regulation promulgated by the cabinet establishing the designated use of a surface water and the water quality criteria necessary to maintain and protect that designated use.

Water Quality-Based Effluent Limit(s) means effluent limits derived from Kentucky's Water Quality Standards.

Well or water well - means any excavation or opening in the surface of the earth that is drilled, cored, bored, washed, driven, jetted, or otherwise constructed when the actual or intended use in whole or part of an excavation is the removal of water for any purpose, including but not limited to culinary and household purposes, animal consumption, food manufacture, use of geothermal resources for domestic heating purposes and industrial, irrigation, and dewatering purposes, but not including wells to be used for watering stock or for general farmstead use if the wells do not provide water for human consumption

Wellhead protection area - means: (a) The surface and subsurface area surrounding a water well, well field, or spring, supplying a public water system, through which pollutants are reasonably likely to move toward and reach the water well, well field, or spring; or (b) An area defined as a wellhead protection area in a county water supply plan.

Wetlands - means land that has a predominance of hydric soils and that is inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of hydrophytic vegetation typically adapted for life in saturated soil conditions.

Zone of initial dilution (ZID) - means the limited area permitted by the cabinet surrounding or downstream from a discharge location where rapid, first-stage mixing occurs. The zone of initial dilution is the domain where wastewater and receiving water initially mix.

ACRONYMS AND ABBREVIATIONS

Acronym or abbreviation	Full phrase	Acronym or abbreviation	Full phrase
7Q10	7-day, 10-year Low Flow	ML	Minimum Level
ACR	Acute-to-Chronic Ratio	N/A	Not Applicable
AML	Average Monthly Limitation	NEMI	National Environmental Methods Index
ASR	Alternative State Requirement	NOAA	National Oceanic and Atmospheric Administration
AWL	Average Weekly Limitation	NOEC	No Observable Effect Concentration
BAT	Best Available Technology Economically Achievable	NPDES	National Pollutant Discharge Elimination System
BCT	Best Conventional Pollutant Control Technology	NSPS	New Source Performance Standards
BPJ	Best Professional Judgment	O&G	Oil and Grease
BPT	Best Practicable Control Technology Currently Available	°C	Degrees Centigrade or Celsius
CAH	Cold Water Aquatic Habitat	°F	Degrees Fahrenheit
CFR	<i>Code of Federal Regulations</i>	ONRW	Outstanding National Resource Water
cfs	Cubic Feet per Second	OSRW	Outstanding State Resource Water
CWA	Clean Water Act	PCR	Primary Contact Recreation
DMP	Division of Mine Permits	RBP	Rapid Bioassessment Protocol
DMR	Discharge Monitoring Report	SCR	Secondary Contact Recreation
DO	Dissolved Oxygen	SIC	Standard Industrial Classification
EL	Effluent Limit	SIU	Significant Industrial User
ELG	Effluent Limitations Guidelines or Effluent Guidelines	SPCC	Spill Prevention Control and Countermeasure
ELGF	Effluent Limitation Guideline Factor	SS	Settleable Solids
EPA	U.S. Environmental Protection Agency	SSO	Sanitary Sewer Overflow
ESA	Endangered Species Act	STORET	EPA Storage and Retrieval Database
EW	Exceptional Water	SU	Standard Units
FR	<i>Federal Register</i>	TBEL	Technology-Based Effluent Limit(s)
FWS	U.S. Fish and Wildlife Service	TIE	Toxicity Identification Evaluation
GC/MS	Gas Chromatography/Mass Spectroscopy	TMDL	Total Maximum Daily Load

ACRONYMS AND ABBREVIATIONS

Acronym or abbreviation	Full phrase	Acronym or abbreviation	Full phrase
gpd	Gallons per Day	TRE	Toxicity Reduction Evaluation
HQW	High Quality Water	TSD	Technical Support Document for Water Quality-based Toxics Control
IC	Inhibition Concentration	TSS	Total Suspended Solids
KIBI	Kentucky Index of Biological Integrity	TTO	Total Toxic Organics
LA	Load Allocation	TU	Toxic Units
lbs/day	Pounds per Day	TU _A	Toxic Units – Acute
LC ₁	Lethal Concentration to 1% of test organisms	TU _c	Toxic Units – Chronic
LC ₅₀	Lethal Concentration to 50% of test organisms	TWTDS	Treatment Works Treating Domestic Sewage
LOEC	Lowest Observed Effect Concentration	U.S.C.	<i>United States Code</i>
LTA	Long-Term Average	UAA	Use Attainability Analysis
LTCP	Long-Term Control Plan	USGS	United States Geological Survey
MBI	Macroinvertebrate Bioassessment Index	WET	Whole Effluent Toxicity
MDEL	Maximum Daily Effluent Limitation	WLA	Waste Load Allocation
MDL	Method Detection Limit	WQBEL	Water Quality-Based Effluent Limit(s)
MEP	Maximum Extent Practicable	WQS	Water Quality Standard(s)
mg/L	milligrams per liter	µg/L	Micrograms per Liter
MGD	Million Gallons per Day	pCi/l	Pico Curies per Liter

1. LIMITS AND REQUIREMENTS DEVELOPMENT

This section of the fact sheet provides information regarding the general process for the development of limits and requirements for most KPDES permits. Some processes and requirements are universal and apply to all permits while others are specific to particular categories of permits. Section 2 presents permit-specific information regarding the development of effluent limitations and requirements.

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44], each federally- or delegated state-issued NPDES permit shall include conditions meeting (1) technology-based effluent limitations and standards and (2) water quality standards and state requirements. For new sources or new dischargers, these technology-based limitations and standards are subject to the provisions of 401 KAR 5:080, Section 6 [40 CFR 122.29].

1.1. Technology-Based Effluent Limitations

401 KAR 5:065, Section 2(4) [40 CFR 122.44(a)(1)] requires the imposition of effluent limitations and standards promulgated under Section 301 of the Clean Water Act (CWA), or New Source Performance Standards (NSPS) promulgated under section 306 of the CWA, on a case-by-case determination under Section 402(a)(1) of the CWA, or a combination of the three, in accordance with 401 KAR 5:080, Section 2(3) [40 CFR 125.3]. In accordance with Section 301(b) of the CWA, 401 KAR 5:080, Section 2(3) [40 CFR 125.3] establishes the minimum technology-based treatment requirements which are to be imposed on permits issued under section 402 of the CWA. These standards are divided into two categories: Publicly Owned Treatment Works (POTWs) and dischargers other than POTWs (Industrial).

Industrial dischargers are categorized as either an “existing source”, “new discharger” or “new source”. A “new source” is defined as any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced: (1) after promulgation of applicable NSPS in the Effluent Limitation Guideline (ELG) or (2) after proposal of applicable NSPS requirements in an ELG but only if the standards are promulgated within 120 days of proposal. A “new discharger” is defined as any building, structure, facility, or installation: (1) from which there is or may be a discharge of pollutants, (2) that did not commence the discharge of pollutants at that particular site prior to August 13, 1979, (3) is not a new source, and (4) has never received a finally effective NPDES permit for discharges at that site. An “existing source” is defined as any building, structure, facility or installation from which there is or may be a discharge of pollutants which is not a new source or a new discharger.

The following table summarizes the requirements for non-POTW or industrial dischargers.

TECHNOLOGY-BASED TREATMENT REQUIREMENTS FOR INDUSTRIAL DISCHARGERS					
Technology-Based Control Level	Type of Discharger	Type of Pollutant			Compliance Deadline
		Conventional	Nonconventional	Toxic	
Best Practicable Control Technology Currently Available (BPT)	Direct Existing	X	X	X	July 1, 1977
Best Conventional Pollutant Control Technology (BCT)	Direct Existing	X			March 31, 1989
Best Available Technology Economically Achievable (BAT)	Direct Existing		X	X	March 31, 1989
New Source Performance Standards (NSPS)	Direct New	X	X	X	Commencement of discharge

TECHNOLOGY-BASED TREATMENT REQUIREMENTS FOR INDUSTRIAL DISCHARGERS					
Technology-Based Control Level	Type of Discharger	Type of Pollutant			Compliance Deadline
Pretreatment Standards for Existing Sources (PSES)	Indirect Existing-	X	X	X	Date specified in regulation
Pretreatment Standards for New Sources (PSNS)	Indirect New	X	X	X	Commencement of discharge

BPT is the first level of technology-based standards established by the CWA to control pollutants discharged to waters of the US and is generally based on the average of the best existing performance by plants within an industrial category or subcategory.

BCT are technology-based standards for the discharge of existing industrial point sources of conventional pollutants.

BAT are technology-based standards that are the most appropriate means available on a national basis for controlling the direct discharge of toxic and nonconventional pollutants to navigable waters and generally represent the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory.

Unlike BPT, BCT, and BAT, the imposition of which in permits is authorized by 401 KAR 5:080, Section 2(3) [40 CFR 125.3(a)], NSPS requirements are required by Section 306 of the CWA. 401 KAR 5:080, Section 6 [40 CFR 122.29(d)] establishes the compliance date for achieving the pollutant reduction levels specified by the NSPS. 401 KAR 5:080, Section 6 [40 CFR 122.29(d)(1)] states that a new source which meets the applicable promulgated NSPS before commencement of discharge, may not be subject to any more stringent NSPS or to any more stringent technology-based standards under Section 301(b)(2) of the CWA for the soonest ending of the following periods:

- (1) Ten years from the date that construction is completed;
- (2) Ten years from the date the source begins to discharge process or other non-construction related wastewater; or
- (3) The period of depreciation or amortization of the facility for the purposes of Section 167 or 160 or both of the Internal Revenue Code of 1954.

Pursuant to 401 KAR 5:080, Section 6 [40 CFR 122.29(d)(2)], the protection afforded by the aforementioned deadlines do not apply to more stringent limits of performance based on the following criteria:

- (1) The limitations are not technology-based; or
- (2) Additional conditions in accordance with 401 KAR 5:080, Section 2(3) [40 CFR 125.3] controlling toxic pollutants or hazardous substances which are not controlled by NSPS, including those controlling pollutants other than those identified as toxic pollutants or hazardous substances when control of these pollutants has been specifically identified as the method to control the toxic pollutants or hazardous substances.

Section 306(c) of the CWA provides for a state to develop and submit to the EPA Administrator a procedure under state law for applying and enforcing standards of performance for new sources located in the state. If the Administrator finds the state procedure requires the application and enforcement of standards of performance to at least the same extent as by Section 306 then the state is authorized to apply and enforce those performance standards on new sources in the state, except those owned or operated by the United States.

The PSES and PSNS technology-based effluent requirements are applied by POTWs with an approved Pretreatment Program via local limits and user permits.

1.1.1. Methods of Imposing

Pursuant to 401 KAR 5:080, Section 2(3) [40 CFR 125.3(c)], technology-based treatment requirements may be imposed through one of three methods:

- (1) The application of EPA promulgated effluent limitations developed under Section 304 of the CWA to dischargers by category or subcategory (i.e., ELGs);
- (2) On a case-by-case basis under Section 402(a)(1) of the CWA to the extent that EPA-promulgated effluent limitations are inapplicable. The permit writer shall apply the appropriate factors listed in 401 KAR 5:080, Section 2(3) [40 CFR 125.3(d)] and shall consider (a) the appropriate technology for the category or class of point sources of which the applicant is a member, based upon all available information, and (b) any unique factors relating to the applicant using best professional judgment (BPJ), including, where appropriate, limitations expressed in terms of toxicity;
- (3) Through a combination of methods (1) and (2). Where promulgated ELGs only apply to (a) certain aspects of the discharger's operation, (b) to certain pollutants, or (c) other aspects or activities are subject to regulation on a case-by-case basis in order to carry out the provisions of the CWA.

1.1.1.1. Effluent Limitation Guidelines

EPA has developed effluent limitation guidelines (ELGs) for 56 specific point source categories. These guidelines typically referred to as ELGs, are found in 401 KAR 5:065, Section 2(9) [Title 40, Chapter I Subchapter N (40 CFR Parts 401 thru 471)]. The ELG typically establishes numeric requirements for one or more of the technology-based requirements discussed under Section **Error! Reference source not found.** These numeric requirements may be in the form of: (1) mass based, production normalized, (2) mass based, flow normalized, (3) concentration based, (4) zero discharge of pollutants, or (5) other numeric limitations, e.g. pH, temperature.

1.1.1.1.1. Mass Based, Production Normalized Numeric Limitations

To calculate mass based, production normalized numeric limitations, the formula

$$EL = (LAPR) \times (ELGF)$$

is used, where the following is true:

EL is the calculated effluent limit expressed as lbs/day.

LAPR is the long-term average production rate. The LAPR can be expressed in various units such as 1,000 lbs/day, 1000 square feet/day, barrels/day, etc. The LAPR is not the maximum or design production rate for the facility but an average daily, average monthly, or other mean production rate. Typically DOW considers long-term to be equivalent to the term of the permit which is usually 5 years.

ELGF is the effluent limit guideline factor found in the ELG and is expressed in various units such as lbs/1000 lbs, lbs/102 square feet, etc.

1.1.1.1.2. Mass Based, Flow Normalized Numeric Limitations

To calculate these types of limitations the formula

$$EL = (LAF) \times (ELGF) \times (UCF)$$

is used where the following is true:

EL is the calculated effluent limit expressed as lbs/day.

LAF is the long-term average daily flow and is expressed in terms of million gallons per day (MGD). The LAF is not the maximum or design flow for the facility but an average daily, average monthly, or other mean flow rate. Typically DOW considers long-term to be equivalent to the term of the permit which is usually 5 years.

ELGF is the effluent limit guideline factor found in the ELG and is expressed in mg/l.

UCF is a unit conversion factor equivalent to 8.34 (L-lbs/MG-mg)

1.1.1.1.3. Concentration Based, Zero Discharge of Pollutants, and Other Numeric Limitations

These types of limitations are directly applied without modification due to production rate or flow of the facility.

1.1.1.1.2. Best Professional Judgment

The second method for the imposition of technology-based effluent limitations is through a process known as BPJ. As previously stated in Section 1.1.1 Methods of Imposing, the BPJ process may be used on a case-by-case basis to the extent that EPA-promulgated effluent limitations are inapplicable. The NPDES Permit Writers' Manual and NPDES permit writers' training course states that "promulgated effluent limitations are inapplicable" when: (1) EPA has not developed effluent guidelines that apply to the discharge (industry or specific process); or (2) there is an applicable effluent guideline, but pollutants or processes are present that were not considered when the effluent guideline was developed.

401 KAR 5:080, Section 2(3) [40 CFR 125.3 (d)] establishes technical criteria for the permit writer to follow in the development of a case-by-case BPJ determination of appropriate technology-based effluent limitations. These procedures are similar to those utilized by EPA to develop national ELGs. The permit writer determines BPT, BCT, and BAT on a case-by-case basis considering any unique factors related to the facility. The permit writer must develop BPT and BCT criteria for conventional pollutants or BPT and BAT criteria for toxic and nonconventional pollutants.

Technical criteria common to BPT, BCT and BAT include: (1) age of equipment and facilities involved; (2) process or processes employed; (3) engineering aspects of the application of various types of control techniques; (4) process changes; and (5) non-water quality environmental impact including energy requirements. Where the BPJ determination differs for these three levels of technology-based standards is in the area of economic criteria. The following table illustrates these differences.

BPJ ECONOMIC CRITERIA	
Required Technology	Economic Test
BPT	Total cost in relation to effluent reduction benefits achieved
BCT	Two part test: POTW Cost Test – compares the cost-effectiveness of an upgrade by the facility to meet BCT to the benchmark cost-effectiveness of a similar POTW upgrade (from secondary to advanced treatment)
	Industry Cost-Effectiveness Test – compares the ratio of the incremental cost of going beyond BPT and the incremental cost of going from no treatment to BPT to an industry benchmark
BAT	Economic Achievability – determination of whether the cost of achieving the effluent reduction feasible

It should be noted that 401 KAR 5:080, Section 2(3) [40 CFR 125.3 (d)] does not establish technical criteria or economic criteria for the development of a BPJ equivalent of NSPS. Therefore, based on the requirements of Section 306 of the CWA, 401 KAR5:080, Section 6 [40 CFR 122.29(d)] and 401 KAR 5:080, Section 2(3) [40 CFR 125.3(d)], DOW has concluded that EPA did not intend for the permit writer to develop a BPJ-equivalent of NSPS.

1.1.1.3. Combination of ELGs and BPJ Determinations

The third option for imposing technology-based limitations is a combination of the application of an ELG and of a BPJ determination of appropriate technology-based effluent limitations. This option is the most frequently used option of the three. Although EPA has developed and promulgated a significant number of ELGs, these guidelines are not comprehensive of all dischargers. In many cases a facility may have several wastestreams that are commingled for ease and cost of treatment, known as "co-treatment facilities". In such cases there may be a promulgated ELG for one or more of the wastestreams, there may be wastestreams for which an ELG does not exist, and there may be wastestreams that contain pollutants that EPA did not consider in its analysis when the ELG was being developed and promulgated. In such cases it is necessary for the permit writer to determine an aggregate technology-based effluent on the combined wastestream.

The process for developing an aggregate technology-based effluent is straightforward. The permit writer begins by analyzing each wastestream individually to determine if an ELG is applicable to each wastestream. For those wastestreams subject to an ELG the permit writer determines the appropriate contribution using the methods described in Section 1.1.1.1. For those wastestreams where an applicable ELG does not exist the permit writer determines the appropriate contribution by developing a BPJ based technology requirement and applying to the wastestream. The following example illustrates this process.

Example: A discharger commingles three wastestreams in a single treatment unit for ease of treatment. Wastestream one (W_1) is process water subject to an ELG. Wastestream two (W_2) is a non-process wastewater for which no ELG has been developed and promulgated. Wastestream three (W_3) is a pollution-control wastewater that is subject to an ELG; however, the pollutant in question was not addressed by EPA in the development of the ELG.

The permit writer, following the procedures outlined in Sections 1.1.1.1 and 1.1.1.2, has determined the contributions from each wastestream for the pollutant of concern is:

$W_1 = 105$ lbs/day

$W_2 = 20$ lbs/day

$W_3 = 5$ lbs/day

The aggregate limit then is the summation of these three contributing wastestream loads, or 130 lbs/day, to be applied at the point of discharge. It should be noted that wastestream concentrations are never cumulative.

1.1.2. Specific Effluent Guidelines

40 CFR Part 450 – Construction and Development Point Source Category

1.2. Water Quality Based Effluent Limitations

401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)] requires the imposition of water quality standards and state requirements to consider any requirements in addition to or more stringent than promulgated effluent limitations guidelines or standards under Sections 301, 304, 306, 307, 318 and 405 of the CWA necessary to achieve water quality standards established under Section 303 of the CWA, including state narrative criteria for water quality.

401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)(i)] stipulates that limitations must control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic) which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.

When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above a narrative or numeric criteria within a state water quality standard, the permitting authority shall use procedures which account for existing controls on point and nonpoint sources of pollution,

the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity), and where appropriate, the dilution of the effluent in the receiving water, pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)(ii)]. For any discharge causing, having the reasonable potential to cause, or contribute to an instream excursion above the allowable ambient concentration of a state numeric criteria within a state water quality standard for an individual pollutant, the permit must contain effluent limits for that pollutant.

When the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an instream excursion above the numeric criterion for whole effluent toxicity, the permit must contain effluent limits for whole effluent toxicity.

401 KAR 5:065, Section 2(4) [40 CFR 122.44(d)(1)(vi)] requires the permitting authority to establish effluent limits for a specific chemical that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contribute to an excursion above a narrative criterion within the state water quality standard.

1.2.1 Reasonable Potential Analysis

In late 1999 and early 2000, the Division of Water (DOW) documented its procedures for conducting a reasonable potential analysis. In June 2000, this documentation entitled *Permitting Procedures for Determining Reasonable Potential* (Natural Resources and Environmental Protection Cabinet, Division of Water, May 1, 2000) was submitted to EPA Region IV for review. On July 7, 2000, EPA issued a letter approving the Division of Water's procedures. Both chemical-specific numeric and whole effluent toxicity (WET) procedures were developed.

1.2.1.1. Chemical-specific Procedures

When conducting a chemical-specific reasonable potential analysis DOW must first determine the pollutants of concern. Depending on the type of facility being permitted, the wastewaters discharged and the source of the pollutants, this analysis may be performed on a select number of pollutants or may be performed on the entire list of water quality standards found in 401 KAR 10:031. DOW determines the pollutants of concern through the review of the permit application, applicable effluent guidelines, the water quality standards, Discharge Monitoring Reports (DMRs) for existing facilities, etc. For municipal permits this review will include verification of industrial user contribution and, for those with approved pretreatment programs, toxic scans of influent, effluent, and sludge in addition to audits and inspections.

1.2.1.1.1. Numeric Procedures

If DOW determines that a promulgated Effluent Limitation Guideline (ELG) applies or has developed limits for a pollutant based upon its Best Professional Judgment (BPJ), then reasonable potential is considered to exist and effluent limitations and monitoring are imposed in the permit. For pollutants where neither an ELG nor BPJ developed limits apply DOW shall develop a Waste Load Allocation (WLA) for the pollutant to determine if reasonable potential exists. DOW utilizes one or more of the computer models in subsequent sections to develop WLAs, taking into account site-specific background receiving water conditions.

The models use actual or predicted background data and discharge data. In running these models, DOW considers five (5) data points as sufficient dataset in most cases. In cases where insufficient data is available, DOW may condition the permit to include a monitoring-only requirement to generate the data; to require additional data collection prior to the development of the permit; or, in cases where the pollutant concentration in the wastewater is not highly variable, a single data point may be used. While most effluents exhibit a lognormal distribution relative to concentrations of constituents being released, DOW has elected not to assume any coefficient of variation for the data set and instead prefers to use the average concentration or loading as indicative of future discharge.

The output of the WLA is compared to the discharge quality to determine reasonable potential using the following criteria: If the average discharge quality is less than 70% of the WLA then monitoring may not be required; if within the range of 70% to 90% then monitoring shall be required; if greater than 90% then a limit

shall be required. In the case where insufficient data, i.e. less than 5 data points, exists, or where predicted values were used the permit shall require monitoring for the pollutants at a frequency of once per month for the first year at the end of which a new reasonable potential analysis shall be conducted and the permit may be reopened to modify the conditions.

1.2.1.1.2. Narrative Procedures

DOW uses biotic indices, as discussed in 0, to assess streams to determine the level of support for aquatic life. These indices are used to implement Kentucky’s narrative criteria. DOW also uses these indices to determine the reasonable potential for the effluent to adversely affect the aquatic community.

Site-specific data is necessary in order to address reasonable potential to cause or contribute to an excursion from narrative criteria. DOW uses a single baseline data point to determine the level of existing support prior to commencement of the permitted activity. In cases where baseline data is unavailable, DOW may require data collection prior to the development of the permit or condition the permit to include a requirement to generate the data. Additional sample data is required to determine whether reasonable potential to cause an excursion from the narrative standard exists after the permitted activity commences. DOW compares the additional data to baseline biotic indices. Should negative changes in the biotic indices occur, then reasonable potential may exist and DOW may require either an action by the permittee or modification of the permit. Should the negative change in the biotic indices be of sufficient scale as to cause a categorical decline, e.g. moving from the Fair category to the Poor category, then reasonable potential has been demonstrated. A categorical decline is an excursion of the narrative criteria and a violation of the permit unless demonstrated by the permittee that the categorical decline is a result of other causes.

1.2.1.2. Whole Effluent Toxicity Procedures

Complex wastestreams have a number of variable contributing sources which may be individually toxic or collectively act synergistically to cause toxicity and therefore have present a reasonable potential to cause or contribute to instream toxicity. Those industrial facilities which have been rated as “majors” using EPA’s major rating protocols and municipalities with approved pretreatment programs are considered to have a reasonable potential by DOW and therefore have whole effluent toxicity (WET) testing included in the permit.

Additionally, 401 KAR 5:065 Section 2(4) [40 CFR 122.44(d)(vi)(C)] allows for the establishment of limits on an indicator parameter for narrative water quality standards. 401 KAR 10:031 Section 4 (1)(f) and (g) include Kentucky’s narrative standards for TDS or SC and TSS respectively, which should not be changed to the extent that the indigenous aquatic community is affected. Coupled with site-specific biotic surveys, DOW uses WET testing as an indicator parameter for these pollutants.

1.2.2. Derivation of Limitations

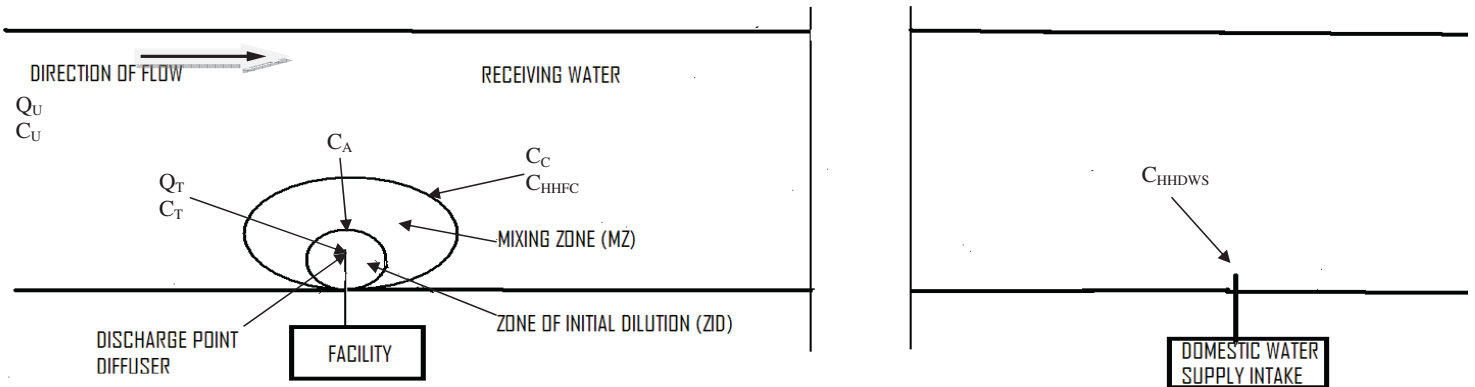
1.2.2.1. Chemical-specific Criteria

The allowable instream concentrations for specific pollutants are found in 401 KAR 10:031, Section 6(1) Table 1. These water quality criteria are divided into the categories of those for the protection of human health and aquatic life. These categories are further divided into the subcategories of Domestic Water Supply (C_{HHDWS}) and Fish Consumption (C_{HHFC}) for human health and Acute Criteria (C_A) and Chronic Criteria (C_C) for aquatic life. Section 4(2) of 401 KAR 10:029 specify the points within the receiving stream where AC, CC, and FC criteria apply. The point where DWS criteria apply is specified by 401 KAR 10:031, Section 3. This section also specifies the stream flows that are used in derivation of water quality based effluent limitations. The following summarizes these requirements.

CHEMICAL-SPECIFIC CRITERIA APPLICATION CONDITIONS			
Criteria	Sub-Criteria	Point of Application	Stream Flow
Aquatic Life	Acute	No Diffuser – End-of-pipe	Not applicable

		Diffuser – Edge of the ZID Receiving Water	7Q10
	Chronic	Edge of Mixing Zone Receiving Water	7Q10
Human Health	Fish Consumption	Edge of Mixing Zone Receiving Water	Harmonic Mean
	Domestic Water Supply	Point of Withdrawal Intake Water	Carcinogen – Harmonic Mean
			Non-Carcinogen – 7Q10

The following figure illustrates the application points for these criteria.



- C_A – Acute criteria for aquatic life
- C_C – Chronic criteria for aquatic life
- C_{HHDWS} - Human Health criteria domestic water supply
- C_{HHFC} - Human Health criteria fish consumption

- C_T – End-of-pipe effluent limit
- C_U – Background pollutant concentration
- Q_T – Total Effluent Flow
- Q_U – Upstream Flow

1.2.2.1.1. Mass-balance Equation

The chemical-specific water quality limitations are calculated using the following mass-balance equation:

$$(C_U)(Q_U) + (C_T)(Q_T) = (C_D)(Q_U + Q_T)$$

Where:

C_D = pollutant concentration downstream (water quality criteria)
 C_T = End-of-pipe effluent limit
 C_U = pollutant concentration upstream (stream background condition)
 Q_T = wastewater flow
 Q_U = receiving stream flow upstream

Solving the equation for C_T first requires rearranging the equation as

$$C_T = \frac{[(C_D)(Q_T + Q_U) - (C_U)(Q_U)]}{Q_T}$$

In the event that the applicable Q_U is zero, $C_T = C_D$.

1.2.2.1.2. Mixing Zones and Zones of Initial Dilution

A mixing zone (MZ) is an area where effluent discharge undergoes dilution and is extended to cover the secondary mixing in the ambient waterbody. It is also an allocated impact zone where water quality criteria can be exceeded as long as acutely toxic conditions are prevented. 401 KAR 10:029, Section 4 sets forth the requirements for the granting of mixing zones, zones of initial dilution (ZIDs) and the application point of the aquatic life and human health criteria found in Kentucky's Water Quality Standards at 401 KAR 10:031. 401 KAR 10:029, Section 4(1) establishes requirements for the granting of an MZ, and Section 4(2) establishes the points of application for the aquatic life and human health criteria and the requirements and restrictions associated with a ZID.

When granting an MZ, DOW must assign definable geometric limits including the linear distance from the point of discharge, the surface area involved, and the volume of the receiving water, and shall take into account other nearby MZs. For streams and rivers, the assigned MZ shall not exceed 1/3 of the width of the waterbody nor 1/2 of the waterbody's cross-sectional area in any spatial direction. For lakes and reservoirs, the assigned MZ shall not exceed 1/10 of width of the waterbody in any spatial direction. The MZ shall not adversely affect the designated uses of the receiving stream nor adversely affect an established community of aquatic organisms. The location of an MZ shall not interfere with fish spawning or nursery areas, fish migration routes, public water supply intakes, or bath areas; preclude the free passage of fish or aquatic life, or jeopardize the continued existence of endangered or threatened aquatic species or result in the destruction or adverse modification of their critical habitat. Unless assigned by the Cabinet on or before September 8, 2004, there shall be no MZ for bioaccumulative chemicals of concern. Existing MZs assigned by the Cabinet for bioaccumulative chemicals of concern shall expire no later than September 8, 2014. The dilution afforded by an MZ is not allowed unless the applicant requests an MZ and DOW assigns the geometric limits.

A ZID is a regularly-shaped area surrounding the discharge structure that encompasses the regions of high pollutant concentrations under design conditions. ZIDs are restricted to facilities with a submerged high-rate multi-port outfall structure (diffuser). Within the ZID, acutely-toxic concentrations may exist; as such, the acute criteria must be met at the edge of the defined ZID. When determining the size of the ZID, DOW evaluates three cases, the most restrictive of which is used to establish the dimensions of the ZID and the allowable dilutions. The three cases that are evaluated are as follows: (1) within 10% of the distance from the edge of the outfall to the edge of the assigned mixing zone in any spatial direction; (2) within 50 times the square root of the cross-sectional area of a discharge port in any spatial direction; and (3) horizontally within 5 times the natural water depth that prevails under mixing zone design conditions, and exists before the installation of a discharge outlet. Unless assigned on or before December 8, 1999, a ZID for a pollutant shall not be allowed in an Exceptional Water. Like MZs, the dilution afforded by a ZID is not allowed unless the applicant requests a ZID and DOW assigns the geometric limits.

1.2.2.1.2.1. Mixing Zone

When an MZ is granted, the available upstream flow Q_U is modified by the MZ factor (MZF). The MZF represents the maximum proportion of the flow allowed to be used for the MZ. The mass-balance equation becomes

$$C_T = \frac{[C_D(Q_T + (MZF)(Q_U)) - C_U(MZF)(Q_U)]}{Q_T}$$

Assuming that the depth is much smaller than width and that the flow is therefore width-dependent, the MZF cannot exceed 0.333 for most streams and rivers. For larger rivers, the cross-sectional limitation of 0.5 is allowed, but 0.333 is generally used to be conservative. Because of the low-flow regime present in lake systems, 0.1 is the maximum MZF for lakes. The MZ dilution (MZD) is then defined as product of the MZF and the ratio of the downstream flow to the upstream flow, or

$$MZD = \frac{(MZF)(Q_U) + Q_T}{Q_T}$$

Substituting MZD into the prior equation yields

$$C_T = \left[MZD \left(C_D - C_U \left(\frac{(MZF)Q_U}{Q_T + (MZF)Q_U} \right) \right) \right]$$

In the case where the receiving water flow condition is many times greater than the discharge flow, $\frac{(MZF)Q_U}{(Q_T + (MZF)Q_U)}$ approaches 1, which is a conservative assumption since it results in smaller values of C_T . The mass-balance equation can be approximated as

$$C_T = (C_D - C_U) MZD$$

1.2.2.1.2.2. Zone of Initial Dilution

A ZID is granted when a high rate multi-port submerged diffuser is installed on the effluent pipe. In such cases the ZID dilution (ZIDD) is defined as the ratio of the downstream flow to the upstream flow, or

$$ZIDD = \frac{(Q_T + Q_U)}{Q_T}$$

And the mass-balance equation is expressed as

$$C_T = \left[ZIDD \left(C_D - C_U \left(\frac{Q_U}{Q_T + Q_U} \right) \right) \right]$$

In cases where the receiving water flow condition is many times greater than the discharge flow, $\frac{Q_U}{(Q_T + Q_U)}$ approaches 1, which is a conservative assumption since it results in smaller values of CT. The mass-balance equation can be approximated as

$$C_T = (C_D - C_U) ZIDD$$

1.2.2.1.3. Aquatic Life Criteria

Effluent discharge limitations for a particular constituent for the aquatic life criteria are based on the instream pollutant concentration limits for both acute conditions (C_A) and chronic conditions (C_C) and an associated ZIDD and/or MZD. The numerical values of the effluent discharge limits for a particular constituent are determined using the following equations. The 7Q10 low-flow condition of the receiving stream is used in place of Q_U when calculating these criteria.

1.2.2.1.3.1 Acute Aquatic Life Criteria

The acute aquatic life criterion (C_A) is applied at either the edge of the ZID or at the end of the discharge pipe. When a ZID is granted, the mass-balance equation is written as

$$C_T = (LC_1 - C_U)(ZIDD)$$

Where LC_1 is the concentration of toxic substance or mixture of toxic substances which is lethal (or immobilizing, if appropriate) to one (1) percent of the organisms tested in a toxicity test during a specified exposure period. The LC_{50} is the concentration of toxic substance or mixture of toxic substances which is lethal (or immobilizing, if appropriate) to fifty (50) percent of the organisms tested in a toxicity test during a specified exposure period. Due to the difficulty in deriving an LC_1 , the equivalent value of the LC_{50} , i.e. $1/3 LC_{50}$, is used instead. The equation can thus be rewritten as

$$C_T = (0.333LC_{50} - C_U)(ZIDD)$$

The acute criteria listed in Table 1 in 401 KAR 10:031, Section 4 is the LC_{50} values for those specific pollutants therefore the equation is ultimately written as

$$C_T = (C_A - C_U)(ZIDD)$$

In the case where a ZID has not been granted, the equation becomes:

$$C_T = (C_A - C_U)$$

1.2.2.1.3.2. Chronic Aquatic Life Criteria

As previously stated, the chronic criterion (C_C) is applied at the end of the discharge pipe or at the edge of the assigned regulatory MZ. When an MZ is granted, the mass-balance equation for non-bioaccumulative or non-persistent chemicals is

$$C_T = (0.1LC_{50} - C_U)(MZD)$$

And for bioaccumulative or persistent chemicals is

$$C_T = (0.01LC_{50} - C_U)(MZD)$$

The chronic criteria listed in Table 1 in 401 KAR 10:031, Section 4 is the 0.1 LC₅₀ and 0.01LC₅₀ values for those specific pollutants therefore the mass-balance equation is ultimately written as

$$C_T = (C_C - C_U)(MZD)$$

In the case where a MZ has not been granted, the equation becomes

$$C_T = (C_C - C_U)$$

Note: As previously stated in Section 0, unless granted prior to September 8, 2004, no new MZs shall be granted for bioaccumulative chemicals and any existing MZ shall expire no later than September 8, 2014. The following table lists those chemicals which are currently defined under 401 KAR 10:029, Section 4(1)(h)2b as bioaccumulative chemicals.

BIOACCUMULATIVE CHEMICALS OF CONCERN

alpha-Hexachlorocyclohexane	Hexachlorobenzene	Pentachlorobenzene
beta-Hexachlorocyclohexane	Hexachlorobutadiene	Photomirex
Chlordane	Hexachlorocyclohexane	Toxaphene
DDD	Lindane	1,2,3,4-Tetrachlorobenzene
DDE	Mercury	1,2,4,6-Tetrachlorobenzene
DDT	Mirex	2,3,7,8-TCDD (Dioxin)
delta-Hexachlorocyclohexane	Octachlorostyrene	
Dieldrin	PCBs	

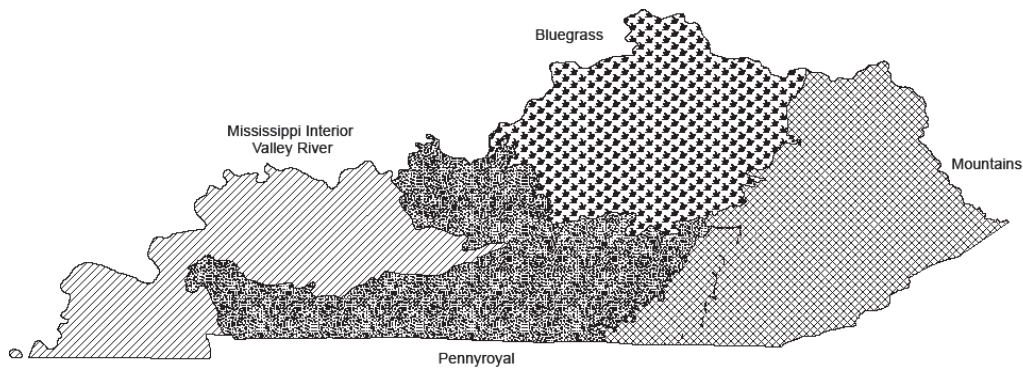
1.2.2.1.3.3. Narrative Criteria

40 CFR 131.11 requires that states must identify water bodies where toxic pollutants may be adversely affecting water quality or the attainment of such designated use, or where the level of such toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use. In establishing narrative criteria, 40 CFR 131.11(b)(2) specifies that criteria should be based on biomonitoring methods where numerical criteria cannot be established or to supplement numerical criteria. Kentucky has developed criteria to protect aquatic life in 401 KAR 10:031, Section 4, including narrative criteria related to total dissolved solids or specific conductance, total suspended solids, settleable solids, and flow.

Aquatic community integrity may be assessed by monitoring biological indicators, including benthic macroinvertebrates (benthics), fish, and related habitats. DOW utilizes the Kentucky MBI and KIBI developed by DOW to assess benthic and fish communities, respectively, in conjunction with the RBP habitat field methods developed by USEPA to evaluate stream conditions for meeting the designated uses of warm and cold water aquatic life, including the narrative criteria, as cited in 401 KAR 10:026, Section 3.

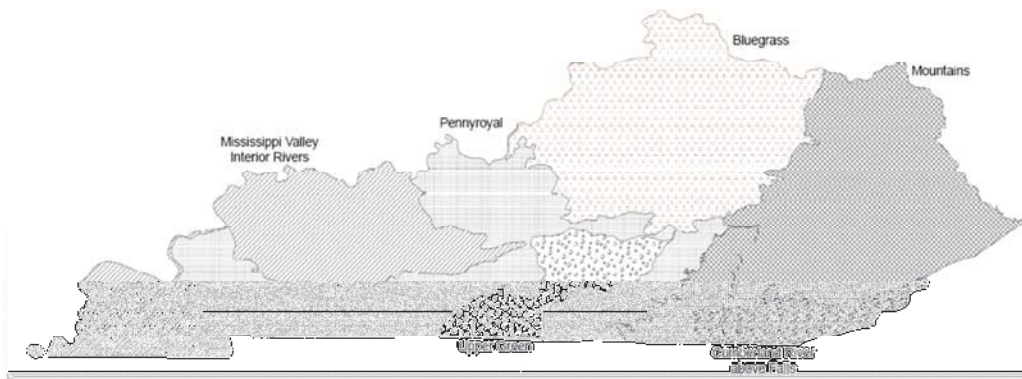
The Kentucky MBI and KIBI include metric scores based on bioregions across the state for benthics and fish, respectively. Numeric metric scores relate to five (5) narrative categories that determine whether the stream meets its designated use for aquatic life. The categories are Excellent, Good, Fair, Poor, and Very Poor. Categories Excellent and Good indicate full support of the designated use; Fair, Poor, and Very Poor indicate non-support of the designated use.

The four (4) bioregions for MBI metrics are the Bluegrass, the Mountains, the Pennyroyal, and the Mississippi Valley and Interior Rivers, as illustrated in the following figure. Associated MBI ranges for each category based on stream size are listed in the following table.



Stream Size	MBI Category	Bluegrass	Mountains	Pennyroyal	Mississippi Valley – Interior River
Headwater ($< 5 \text{ mi}^2$ drainage)	Excellent	≥ 58	≥ 83	≥ 72	≥ 63
	Good	51 - 57	72 - 82	65 - 71	56 - 62
	Fair	39 - 50	48 - 71	43 - 64	35 - 55
	Poor	19 - 38	24 - 47	22 - 42	19 - 34
Wadeable ($\geq 5 \text{ mi}^2$ drainage)	Very Poor	0 - 18	0 - 23	0 - 21	0 - 18
	Excellent	≥ 79	≥ 82	≥ 81	≥ 58
	Good	61 - 79	75 - 81	72 - 80	48 - 57
	Fair	41 - 60	50 - 74	49 - 71	24 - 47
Poor	Poor	21 - 40	25 - 49	25 - 48	13 - 23
	Very Poor	0 - 20	0 - 24	0 - 24	0 - 12

The six (6) bioregions for the KIBI metrics for fish are Bluegrass, Mountains, Pennyroyal, Mississippi Valley and Interior Rivers, Cumberland River above the Falls, and the Green River Valley, as illustrated in the following figure. Associated KIBI ranges for each category are listed in the following table.



KIBI Category	Bluegrass	Mountains	Pennyroyal	Mississippi Valley – Interior River	Cumberland River above Falls	Upper Green
Excellent	≥ 52	≥ 71	≥ 67	≥ 67	≥ 56	≥ 86
Good	47 - 51	59 - 70	53 - 66	48 - 66	47 - 55	76 - 85
Fair	31 - 46	39 - 58	35 - 52	32 - 47	31 - 46	51 - 75
Poor	16 - 30	19 - 38	17 - 34	16 - 31	16 - 30	26 - 50
Very Poor	0 - 15	0 - 18	0 - 16	0 - 15	0 - 15	0 - 25

1.2.2.1.4. Human Health Criteria

For the purposes of protecting human health there are two criteria that must be satisfied, one for fish consumption (C_{HHFC}) and one for domestic water supply (C_{HHDS}). Either the 7Q10 low-flow condition or harmonic mean stream flow of the receiving water or the source water of the nearest downstream public water supply is used in place of QU when calculating effluent limits based on these criteria, as stated below.

1.2.2.1.4.1 Fish Consumption Criteria

Like C_C , C_{HHFC} is applied at the edge of the assigned regulatory MZ. However, the harmonic mean flow of the receiving water is used when calculating effluent limits based on these criteria. When an MZ is granted, the mass-balance equation is written as

$$C_T = (C_{HHFC} - C_U)(MZD)$$

In the case where an MZ has not been granted, the equation becomes

$$C_T = (C_{HHFC} - C_U)$$

1.2.2.1.4.2 Domestic Water Supply Criteria

The domestic water supply criteria (C_{HHDWS}) may apply to a pollutant that is categorized as a carcinogen or a non-carcinogen, based on a one-in-a-million or 10^6 cancer risk-protection level. C_{HHDWS} is applied at the point of withdrawal of the nearest downstream public water supply intake using appropriate flow regime of the source water for the public water supply, i.e. the harmonic mean stream flow for carcinogens and the 7Q10 low-flow condition for non-carcinogens. Table B found in 401 KAR 10:026, Section 5(2)(b) lists the surface water intakes for domestic water supply use. Because of this application point, C_{HHDWS} is calculated assuming a complete mix. The mass-balance equation is written for a carcinogen as

$$C_T = \frac{[(C_{HHDWS})(Q_T + Q_{SWHM}) - (C_U)(Q_{SWHM})]}{Q_T}$$

And for a non-carcinogen as

$$C_T = \frac{[(C_{HHDWS})(Q_T + Q_{SW7Q10}) - (C_U)(Q_{SW7Q10})]}{Q_T}$$

1.2.2.1.5.1 Waste Load Allocation Models

DOW uses QUAL2K, CORMIX and SSTWAM models to assist in the development of the WLA. The QUAL2K model develops effluent limitations for biochemically degradable wastewaters from residential types of effluents. CORMIX is a mixing zone analysis model used to determine the size and effect of a mixing zone. SSTWAM is a WLA model that generates effluent limits for toxic pollutants which have water quality criteria. These models are detailed below.

1.2.2.1.5.1.1 CORMIX v7.0

CORMIX is an EPA-supported simulation and decision support system developed by MixZon for environmental impact assessment of mixing zones resulting from continuous point-source discharges. The system emphasizes the role of boundary interaction to predict mixing behavior and plume geometry.

The CORMIX methodology contains systems to model and design single-port, multiport diffuser discharges and surface discharge sources. Effluents considered may be conservative, non-conservative, heated, dense brine discharges or contain suspended sediments. Advanced information systems provide documented water quality modeling, NPDES regulatory decision support, visualization of regulatory mixing zones, and tools for outfall specification.

DOW primarily utilizes this model to determine plume geometry, i.e., allowable MZ and ZID, for multi-port high-rate submerged diffusers with conservative discharges.

1.2.2.1.5.2 River and Stream Water Quality Model

The River and Stream Water Quality Model (QUAL2K) is a non-uniform, steady-state mass-balance model that assumes mixing vertically and laterally. The model has the ability to accept many combinations of point or nonpoint sources or withdrawals.

QUAL2K was developed by EPA to modernize QUAL2E, developed by Brown and Barnwell in 1987.

DOW primarily uses the model to develop effluent limitations for biochemically-degradable wastewaters, including BOD, pH, and DO (DO).

1.2.2.1.5.3. Steady-State Toxics Wasteload Allocation Model

The Steady-State Toxics Wasteload Allocation Model (SSTWAM) models is a uniform, steady-state mass-balance model that models water quality using the formulas developed above.

1.2.2.2. Whole Effluent Toxicity Criteria

In addition to chemical-specific criteria, 401 KAR 10:031 contain whole effluent toxicity (WET) criteria that necessitate the evaluation of complete effluents. Like the chemical-specific aquatic life criteria, the WET criterion is divided into two categories – acute and chronic. However, WET criteria are not measured in pollutant concentrations but rather in toxicity units (TUs). Toxicity Units are defined mathematically as 100 defined by a specific toxic effect. Acute toxicity is expressed in units of TU_A and is defined as $100/LC_{50}$ (in percent). Chronic toxicity is expressed as TU_C and is defined as $100/IC_{25}$. The IC_{25} is concentration at which a twenty-five (25) percent reduction is shown in reproduction or growth in test organisms.

Additionally, a relationship between TU_A and TU_C must be defined. This relationship is known as the acute to chronic ratio and is defined as the ratio of acute toxicity, expressed as an LC_{50} , of an effluent to its chronic toxicity. It is used as a factor to estimate chronic toxicity from acute toxicity data. DOW has defined two factors, one for bioaccumulative or persistent and one for non-accumulative or non-persistent effluents. For bioaccumulative or persistent constituents,

$$TUC = 0.01 TU_A$$

For non-bioaccumulative or non-persistent constituents,

$$TU_C = 0.1 TU_A$$

1.2.2.2.1. Acute Whole Effluent Criteria

Like C_A , C_{AWET} is applied at either the edge of the ZID or at the end of the discharge pipe. Pursuant to 401 KAR 10:029, Section 4(2) and 401 KAR 10:031, Section 4(1)(j), acute toxicity shall not exist within an assigned mixing zone or in the discharge itself unless a ZID has been assigned. Or, more simply stated, C_{AWET} shall not exceed $1.00TU_A$ unless a ZID has been assigned, in which case C_{AWET} shall not exceed $0.3 TU_A$. The mass-balance equation is written with no ZID as

$$C_T = C_{AWET} = 1.00 TU_A$$

And with a ZID assigned as

$$C_T = (0.3C_{AWET} - C_U)(ZIDD)$$

Or

$$C_T = (0.3TU_A - C_U)(ZIDD)$$

1.2.2.2.2. Chronic Whole Effluent Criteria

Pursuant to 401 KAR 10:031, Section 4(j), the allowable instream concentration of toxic substances or whole effluents containing toxic substances shall not exceed a TU_C of 1.00, utilizing the IC_{25} . Like C_C , C_{CWET} is applied at the edge of the assigned regulatory MZ. When an MZ is granted the mass-balance equation is written as

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$$C_T = (C_{CWET} - C_U)(MZD)$$

The equation can be rewritten substituting 1.00 TU_C for C_{CWET} as

$$C_T = (1.00 TU_C - C_U)(MZD)$$

In order to compare C_{CWET} to C_{AWET}, the equation can be rewritten substituting the acute-to-chronic ratio and C_{AWET} for C_{CWET} for a non-bioaccumulative or non-persistent pollutant as

$$C_T = (0.1 C_{AWET} - C_U)(MZD)$$

And for a bioaccumulative or persistent pollutant as

$$C_T = (0.01 C_{AWET} - C_U)(MZD)$$

In the case where an MZ has not been granted the equation becomes

$$C_T = (C_{CWET} - C_U)$$

If no background data is available for the specific pollutant then C_U is assumed to be zero (0) and C_{CWET} is applied as an end-of-pipe effluent limit.

1.2.2.3. Exception to Criteria for Individual Dischargers

Kentucky WQS at 401 KAR 10:031, Section 11 enables DOW to grant an exception to criteria through the KPDES permit to an individual discharger based on a demonstration that KPDES permit compliance with existing instream criteria cannot be attained because of one or more of the following conditions:

- (1) naturally occurring pollutant concentrations prevent attainment;
- (2) natural, ephemeral, intermittent, or low flow conditions or water levels prevent attainment;
- (3) non remediable human induced conditions or sources of pollution prevent attainment;
- (4) hydrologic modifications preclude the attainment of the use;
- (5) non-water quality related natural physical features of the surface water preclude attainment; or
- (6) Controls more stringent than those required by Sections 301(b) and 306 of the Clean Water Act, 33 U.S.C. 1311(b) and 1316, would result in substantial and widespread economic and social impact as determined by the guidelines in Interim Economic Guidance for Water Quality Standards Workbook, EPA, March 1995.

1.2.3. Antidegradation

The CWA requires each State to develop an Antidegradation Policy and associated implementation procedures for the protection and maintenance of a waterbody's existing water quality. Kentucky's Antidegradation Policy is found in 401 KAR 10:029, Section 1. The antidegradation policy implementation methodology is contained in 401 KAR 10:030.

1.2.3.1. Antidegradation Policy

The purpose of 401 KAR 10:026 through 10:031 is to safeguard the surface waters of the commonwealth for their designated uses, to prevent the creation of new pollution of these waters, and to abate existing pollution.

Where the quality of surface waters exceeds that necessary to support propagation of fish, shellfish, wildlife and recreation in and on the water, that quality shall be maintained and protected unless the Cabinet finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the Cabinet's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located.

For point source discharges, water quality shall be maintained and protected in these waters according to the procedures specified in 401 KAR 10:030, Section 1(2)(b) or (3)(b).

In allowing degradation or lower water quality, the Cabinet shall assure water quality adequate to protect existing uses fully.

The Cabinet shall assure that there shall be achieved the highest statutory and regulatory requirements for waste treatment by all new and existing point sources and that nonpoint sources of pollutants be controlled by application of all cost effective and reasonable best management practices.

Water quality shall be maintained and protected in a water categorized as an outstanding national resource water according to the procedures specified in 401 KAR 10:030, Section 1(1)(b).

Water quality shall be maintained and protected in those waters designated as outstanding state resource waters according to the procedures specified in 401 KAR 10:031, Section 8.

If potential water quality impairment associated with a thermal discharge is involved, a successful demonstration conducted under Section 316 of the Clean Water Act, 33 U.S.C. 1326, shall be in compliance with this section.

1.2.3.2. Implementation Methodology

All surface waters of the commonwealth have been assigned to an antidegradation category based on specific criteria. These categories are: Outstanding National Resource Water (ONRW), Exceptional Water (EW), Impaired Water (IW) and High Quality Water (HQW).

1.2.3.2.1. Outstanding National Resource Water

An ONRW is surface water that at minimum meets the requirements to be designated an Outstanding State Resource Water (OSRW) pursuant to 401 KAR 10:031, Section 8 and demonstrates national ecological or recreational significance. Kentucky has eight (8) such categorized as ONRWs. A list of these waters can be found in 401 KAR 10:030, Section 1(1) Table 1. The implementation methodology for this category of waters is as follows:

- (1) The water quality shall be maintained and protected;
- (2) New or expanded discharges that result in permanent or long-term changes in water quality are prohibited; and
- (3) Temporary or short term changes in water quality may be approved if the changes do not have a demonstrable impact on the ability of the water to support its designated uses.

1.2.3.2.2. Exceptional Water

The Cabinet has categorized over 250 surface waters as an EW. To be categorized as an EW a surface water must meet one of the following criteria:

- (1) Designated as a Kentucky Wild River and is not categorized as an ONRW;
- (2) Designated as an outstanding state resource water as established in 401 KAR 10:031, Section 8(1)(a)1, 2, and 3 and Section 8(1)(b);
- (3) Contains a fish community that is rated "excellent" by the use of the Index of Biotic Integrity included in Development and Application of the Kentucky Index of Biotic Integrity (KIBI), 2003;
- (4) Contains a macroinvertebrate community that is rated "excellent" by the Macroinvertebrate Bioassessment Index included in "The Kentucky Macroinvertebrate Bioassessment Index," 2003; or
- (5) Included in the Cabinet's reference reach network.

The implementation methodology for new or expanded discharges to an EW is the same as the implementation methodology for an HQW except where the surface water's use designation may require more stringent requirements or maintenance of current water quality.

1.2.3.2.1. Impaired Water

Surface waters that have been identified pursuant to 33 U.S.C. 1315(b) are categorized as impaired waters. Impaired waters are those waters which have been assessed by the Cabinet as not fully supporting any applicable designated use unless the designated is OSRW or the impairment is for fish consumption due to mercury contamination. Surface waters categorized as impaired are listed in DOW's biannual *Integrated Report to Congress on the Condition of Water Resources in Kentucky*. The implementation methodology for new or expanded discharges to this category of waters is as follows:

- (1) All existing uses shall be protected and the level of water quality necessary to protect those existing uses shall be assured in impaired water; and
- (2) The process to allow a discharge into an impaired water and to assure protection of the water shall be regulated by the requirements in the Kentucky Pollution Discharge Elimination System Program, 401 KAR 5:050 through 5:080.

1.2.3.2.4. High Quality Water

The largest of all of the antidegradation categories is the High Quality Water (HQW) group. It consists of all surface waters that have not been categorized as an ONRW, EW or IW; it is therefore the default category for any surface water that has not been assessed by the Cabinet. The implementation methodology for new or expanded discharges to HQWs consists of the following requirements:

- (1) Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected;
- (2) An application for a KPDES permit for a new or expanded discharge shall contain information demonstrating that the lowering of water quality is necessary to accommodate important economic or social development in the area in which the water is located, utilizing Form SDAA;
- (3) A permit applicant who has failed to demonstrate the necessity and social or economic development importance for lowering water quality shall not receive a permit unless (a) The applicant submits a revised SDAA that demonstrates the necessity for lowering water quality, or (b) The applicant demonstrates that the discharge shall not consume more than ten (10) percent of the available assimilative capacity of the receiving stream outside of a designated mixing zone or zone of initial dilution for each new or increased pollutant in the discharge;
- (4) A permit applicant who demonstrates the necessity and social or economic development importance for lowering water quality shall meet the requirements of the KPDES program, 401 KAR 5:050 through 5:080; and
- (5) The Cabinet's determination shall be documented in the permit Fact Sheet and included in the administrative record for the permit or action.

1.2.3.2.5. Socioeconomic Demonstration and Alternates Analysis

1.2.3.2.5.1. Socioeconomic Demonstration

The socioeconomic demonstration portion of this requirement shall consider the following factors:

- (1) The boundaries of the affected community;
- (2) The potential effect on employment, including a comparison of local unemployment rates and state and national unemployment rates;
- (3) The potential effect on median household income levels, including a comparison of the present median household income level, projected median household income level, and number of households affected in the defined community;
- (4) The potential effect on tax revenues, including current tax revenues in the affected community compared to projected increase in tax revenues generated by the permitted project;
- (5) The potential effect of the facility on the environment and public health; and
- (6) Other potential economic or social effect to the community that the applicant includes in the application.

1.2.3.2.5.2. Alternatives Analysis

The alternatives analysis shall consider the following factors:

- (1) Pollution prevention measures, such as changes in plant processes, source reductions, or substitution with less toxic substances;
- (2) The use of best management practices to minimize impacts;
- (3) Recycle or reuse of wastewater, waste by-products, or production materials and fluids;
- (4) Application of water conservation methods;
- (5) Alternative or enhanced treatment technology;
- (6) Improved operation and maintenance of existing treatment systems;
- (7) Seasonal or controlled discharge options;
- (8) Land application or infiltration to capture pollutants and reduce surface runoff, on-site treatment, or alternative discharge locations; and
- (9) Discharge to other treatment facilities.

1.2.3.2.5.3. Activities Not Subject to Antidegradation Implementation

The following activities are not subject to the EW or HQW antidegradation implementation procedures include:

- (1) The renewal of a KPDES permit that does not authorize pollutant loading to the receiving stream in excess of that previously authorized;
- (2) An increase in pollutant loading within the limits previously approved by the KPDES permit; or
- (3) A new or expanded discharge that the applicant demonstrates shall not consume more than ten (10) percent of the available assimilative capacity of the receiving stream outside of a designated mixing zone or zone of initial dilution for each new or increased pollutant in the discharge.

1.3. Effluent Limitations and Monitoring Requirements

Having completed an evaluation of the applicable technology-based effluent requirements and applicable water quality based effluent requirements, the permit writer determines (1) the pollutants that are to be controlled by chemical-specific numeric effluent limits, (2) if WET testing is appropriate, (3) the type and frequency of self monitoring, and (4) for permit renewals if anti-backsliding applies.

1.3.1.1. Chemical-specific Numeric Effluent Limitations

The imposition of chemical-specific numeric effluent limitations is necessary when reasonable potential has been demonstrated. Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44] the permit must contain effluent limitations that satisfy both technology and water quality based concerns. To comply with this requirement a comparison of the calculated technology-based effluent limitations to the calculated water quality based effluent limitations is required. When performing such a comparison there must be consistency in the units and the chemical species. Direct comparisons of different speciations of a pollutant are irrelevant and produce illogical results; therefore e.g. calculated technology-based effluent requirements for total chromium must be compared to the calculated water quality based effluents for total chromium not trivalent chromium.

In general technology-based effluent limitations are expressed in terms of mass, i.e. lbs/day, whereas most water quality based effluent limitations are expressed in terms of concentration, i.e. mg/l. The permit writer must convert from lbs/day to mg/l or mg/l to lbs/day using the following formulas in order to perform a comparison of the calculated effluent limitations:

Load = Flow × Concentration × 8.34, or

$$\text{Concentration} = \frac{\text{Load}}{\text{Flow} \times 8.34}$$

8.34 is a conversion factor with units of l-lbs/MG-mg

Where load is expressed in lbs/day, flow is expressed in MGD, and concentration is expressed in mg/l.

The final effluent limits for a selected pollutant of concern shall be expressed in appropriate units, i.e. mass, concentration or a combination of the two. 401 KAR 5:065 Section 2(4) [40 CFR 122.44 (f)] requires all pollutants limited in permits to be expressed in terms of mass except for pollutants which cannot appropriately be expressed by mass or the applicable requirements are more appropriately expressed in terms of concentrations. Pollutants limited in terms of mass additionally may be limited in terms of other units of measurement, and the permit shall require the permittee to comply with both limitations.

1.3.2. WET Testing Requirements

DOW imposes WET testing on the following types of dischargers: (1) industrial dischargers rated as a major using EPA's major rating system; (2) industrial dischargers with complex wastestreams which DOW has determined to have a reasonable potential; (3) POTWs with a design capacity equal to or greater than 1.0 MGD; and (4) POTWs having an approved Pretreatment Program. Depending on discharge-specific and receiving stream-specific characteristics; DOW applies either acute or chronic WET testing. In some instances DOW may include both types of WET testing on the permit to address separate outfalls or to address changing conditions.

WET testing involves the exposure of two representative organism to an effluent for a specific period of time to determine either lethality or inhibition. The test organisms used in Kentucky are *Pimephales promelas* (fathead minnow) and *Ceriodaphnia dubia* (water flea). Serial dilutions of the effluent are used to determine the point at which toxicity occurs. Each test consists of a control and a series of five dilutions of the effluent, consisting of the permit limit (expressed as percent effluent) and two each above and two below. The two above the permit limit shall include 100% and the midpoint between 100% and the limit. The two below the permit limit shall be at spaced at 50% and 25% of the permit limit. However if the permit limit is 100%, the dilutions shall be at 80%, 60%, 40% and 20%. Additional provisions specific to both tests include:

- (1) If after a minimum of six consecutive passing tests, the more sensitive organism can be determined, the permittee may request that subsequent tests be performed using the more sensitive organism only;
- (2) Should routine testing result indicate a noncompliance with the effluent limit for either organism, the permittee is required to conduct a second round of testing with both organisms within a specified period;
- (3) Should the second round of testing demonstrate a noncompliance with the permit limit, the permittee shall complete four additional rounds of testing (accelerated testing) within 60 days of the failure of the second round test;
- (4) If the results of any of the six rounds of testing show a significant noncompliance with the WET limit, i.e. ≥ 1.2 times the WET limit or if any four of the six tests indicate a noncompliance with the WET limit then a Toxicity Reduction Evaluation (TRE) will be required; and
- (5) Should toxicity prove not to be persistent during the accelerated testing period, but reoccur within 12 months of the initial failure at a level ≥ 1.2 times the WET limit, and then TRE will be required.

1.3.2.1. Acute WET Testing Requirements

This test is a 48-hour static non-renewal toxicity test performed on each of two grab samples taken over a 24-hour period approximately 12 hours apart. Should the permittee be required to conduct a second round of testing as a result of a noncompliance with the permit limit sampling for the second round testing shall be initiated within 10 days of completing the failed test.

1.3.2.2. Chronic WET Testing Requirements

This test is a short-term (7-day) static renewal toxicity test performed on a series of three (3) 24-hour composite samples collected at a frequency of one every other day. Each sample shall be collected using a refrigerated automatic sampler and shall consist of not less than 96 discrete equal volume-time proportional aliquots of effluent.

1.3.2.3. Toxicity Reduction Evaluations

If the initial and subsequent rounds of testing indicate that toxicity is persistent, the permittee shall develop and submit to DOW for review and approval a toxicity reduction evaluation (TRE) plan. The plan shall be developed in accordance with the latest EPA and DOW guidance and submitted within 30 days of determining that a TRE is necessary. Components of the TRE include:

- (1) Toxic Identification Evaluation (TIE) procedures;
- (2) Treatability studies;
- (3) Evaluations of chemical usage including changes, operational and process procedures, housekeeping, maintenance and raw materials; and
- (4) An implementation schedule of not less than 6 months or greater than 24 months including quarterly progress reports.

Upon completion of the TRE, a final report detailing the TRE findings and actions taken or to be taken to prevent the reoccurrence of toxicity shall be submitted to DOW.

1.3.3. Monitoring, Analytical and Reporting Requirements

All permits are required by 401 KAR 5:070, Section 3 [40 CFR 122.48] and 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)] to include monitoring and reporting requirements designed to measure compliance with permit conditions.

1.3.3.1. Monitoring Requirements

The permit must include monitoring requirements for each pollutant limited in the permit and the volume of effluent discharged from each outfall. When establishing monitoring requirements, the permit writer must determine the type, intervals, and frequency of monitoring. The monitoring program is required to be sufficient to yield data that is representative of the monitored activity. In regards to the type of monitoring required, the permit writer must decide if effluent monitoring alone is sufficient or if other monitoring is required. Examples of other types of monitoring and when they are required include:

- (1) Influent monitoring when permit conditions are written in the form of a pollutant reduction;
- (2) Source water monitoring when permit limits are expressed in the form of net limits;
- (3) Internal monitoring when it is infeasible or impractical to monitor at the outfall, i.e. when outfall may be flooded or when it is necessary to demonstrate compliance with a technology-based effluent limit when wastestreams are combined for treatment and discharge; and
- (4) Ambient monitoring when permit contains conditions that are measured by changes in receiving water conditions, i.e. hydrographically controlled releases, etc.

In determining the frequency of monitoring, the permit writer considers: size and design of the facility, type of treatment, location of discharge, frequency of discharge (batch, continuous), compliance history, nature of pollutants, number of monthly samples used in developing permit limit, and cost. The frequency of sampling must be of sufficient regularity to provide adequate data to evaluate compliance with the permit limits.

In addition to frequency, the permit writer must specify sample collection requirements. In determining the appropriate sample type, the permit writer considers pollutant characteristics, analytical method requirements, frequency of discharge (batch, continuous), etc. Types of samples most often required are: grab, composite, continuous, and instantaneous.

Grab samples are taken on a one-time basis without consideration of flow rate and time. This sample type is typically used for monitoring batch discharges. Grab samples are required for pollutants that are affected by changes in ambient conditions. Composite samples are made up of two or more discrete aliquots collected over a period of time. They provide a more representative measure of the discharge of pollutants over a given period of time and account for variability in pollutant concentration and discharge rate. Composite samples are defined by the time interval between aliquots and volume of each aliquot and are typically used for pollutants with varying concentration over the period of discharge, i.e. BOD, TSS, chronic toxicity, etc. Continuous and instantaneous samples are used primarily for flow measurements.

1.3.3.2. Analytical Methods Requirements

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(i)(1)(iv)], pollutant analysis shall be according to test procedures approved under 401 KAR 5:065, Section 2(8) [40 CFR 136] or other methods approved under 401 KAR 5:065, Section 2(9) and 2(10) [40 CFR subchapters N or O]. 401 KAR 5:065, Section 2(9) [Subchapter N] establishes the ELGs and 401 KAR 5:065, Section 2(10) [Subchapter O] establishes requirements for sewage sludge. When two or more approved analytical methods are available for a pollutant of concern, the method selected must be sufficiently sensitive to demonstrate compliance with the assigned effluent limitation. DOW includes a general statement requiring the permittee to utilize such methods. However, in cases where DOW has determined that a specific analytical method or method detection level (MDL) is required, language is included in the permit requiring that analytical method or MDL, e.g. EPA Method 200.8 for metals, and EPA Method 1631E for mercury.

1.3.3.3. Reporting Requirements

All permits must contain reporting requirements based upon the impact of the regulated activity. At a minimum, monitoring reports must be submitted annually. In accordance with 401 KAR 5:065, Section 2(4) [40 CFR 122.41(l)(4)], DOW requires analytical results to be reported on Discharge Monitoring Report (DMRs) form and submitted on a schedule commensurate with the frequency of monitoring, e.g. monthly monitoring equals monthly submission, etc.

1.3.3.4. Anti-backsliding Provision

Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(l)], when a permit is renewed or reissued, interim effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit.

In the case of effluent limitations established on the basis of ELG, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.

Exceptions to the anti-backsliding provision include:

- (1) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;
- (2) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance;
- (3) Technical mistakes or mistaken interpretations of law were made in issuing the permit under Section 402(a)(1)(b) of the CWA;
- (4) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;
- (5) The permittee has received a permit modification under section 301(c), 301(g), 301(h), 301(i), 301(k), 301(n), or 316(a); or
- (6) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

In no event may a permit be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may a permit to discharge into waters be renewed, issued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under Section 303 applicable to such waters.

1.4. Standard Conditions

All permits issued by DOW include language specific to 401 KAR 5:065, Section 2(1) [40 CFR 122.41], schedules of compliance, and reopener clauses.

1.4.1. Conditions Applicable to All Permits

All permits shall either expressly or by reference include the conditions established by 401 KAR 5:065, Section 2(1) [40 CFR 122.41]. These standard conditions or "boiler plate language" address (1) duty to comply with all conditions of the permit, (2) duty to reapply, (3) need to halt or reduce activity not a defense, (4) duty

to mitigate, (5) proper operation and maintenance of treatment facilities and systems, (6) permit actions, (7) property rights, (8) duty to provide information, (9) inspection And Entry, (10) Monitoring And Records, (11) Signatory Requirements, (12) Reporting Requirements, (13) Bypasses, And (14) Upsets.

1.4.2 Schedules of Compliance

All permits contain a general compliance schedule requiring the permittee to be in compliance with all conditions of the permit upon the effective date of the permit. 401 KAR 5:070, Section 2 [40 CFR 122.47] authorizes specific schedules of compliance for the first issuance of a permit to a new source or new discharger when necessary to allow a reasonable opportunity to attain compliance with requirements issued or revised after commencement of construction and for water quality based effluent limitations for water quality standards adopted after July 1, 1977. Such schedules of compliance must include a final date for achieving compliance and interim compliance and reporting dates if the final compliance date is more than one year from the effective date of the permit.

1.4.3. Reopener Clause

In accordance with 401 KAR 5:070, Section 6(1) [40 CFR 122.62(a)(7)], a permit may be reopened for modification or revoked and reissued when required by the reopener conditions of 401 KAR 5:065, Section 2(4) [40 CFR 122.44(b)]. A permit shall be modified, or alternatively revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved in accordance with 401 KAR 5:050 through 5:080, if the effluent standard or limitation so issued or approved:

- (1) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit;
- (2) Controls any pollutant not limited in the permit; or
- (3) This permit may be reopened to implement the findings of a reasonable potential analysis performed by the DOW.

A permit shall be modified, or alternatively revoked and reissued, if DOW determines surface waters are aesthetically or otherwise degraded by substances that:

- (1) Settle to form objectionable deposits;
- (2) Float as debris, scum, oil, or other matter to form a nuisance;
- (3) Produce objectionable color, odor, taste, or turbidity;
- (4) Injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life;
- (5) Produce undesirable aquatic life or result in the dominance of nuisance species; or
- (6) Cause fish flesh tainting.

1.5. Special Conditions

Special conditions are used to address unique situations, incorporate preventative requirements and incorporate other programmatic requirements. Typical special conditions are (1) best management practices, (2) pretreatment programs, (3) sludge disposal, (4) combined sewer overflows, and (5) incorporation by reference.

1.5.1. Best Management Practices Plan

Best management practices (BMPs) are defined at 401 KAR 5:080, Section 2(1) [40 CFR 122.2] as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of "waters of the United States." BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. Pursuant to 401 KAR 5:065, Section 2(4) [40 CFR 122.44(k)] BMPs are to be used to abate the discharge of pollutants when:

- (1) Authorized under Section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities;

- (2) Authorized under Section 402(p) of the CWA for the control of storm water discharges;
- (3) Numeric effluent limitations are infeasible; or
- (4) The practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA.

DOW includes requirements to develop, implement, and maintain effective BMPs and a BMP Plan for individual and general permits.

1.5.2. Incorporation by Reference

When necessary to implement conditions or requirements that have not been directly developed through the permitting process, the permit may be conditioned to implement these conditions or requirements through incorporation by reference. Documents typically referenced by reference include: (1) consent orders, (2) agreed orders, (3) water quality certifications, and (4) other permits or authorizations.

1.6. State Conditions

State conditions are those conditions DOW has determined that are necessary to implement requirements promulgated under state or federal laws and regulations

1.6.1. Certified Operators

Pursuant to 401 KAR 5:010 wastewater treatment plants and wastewater collection systems that accept wastewaters containing domestic sewage are to be operated by a certified operator. In accordance with KRS 224.10-110 and KRS 224.73-110 the Cabinet has established an operator's certification program that is administered by the Division of Compliance Assistance. Specific requirements of this program are found in 401 KAR 11:001 through 11:060.

1.6.2. Outfall Signage

KRS 224.18-760 establishes Kentucky as a member of the Ohio River Valley Water Sanitation Compact (ORSANCO). Article I of the Compact pledges faithful cooperation between the signatory states. Article IV authorizes the Commission to adopt, prescribe and promulgate rules, regulations and standards for administering and enforcing the Compact. Part V, Section A.3 of the ORSANCO pollution control standards for discharges to the Ohio River require that holders of an individual NPDES permit post and maintain a permanent marker having specific dimensions at each Ohio River outfall. DOW includes language in permits for discharges to the Ohio River requiring compliance with the ORSANCO signage requirements. For discharges to receiving waters other than the Ohio River DOW includes language recommending the installation of a permanent marker at each of the monitoring to better document and clarify these locations.

1.6.3. Disposal of Non-Domestic Wastes

For non-POTWs that treat domestic waste from residential and commercial activities, DOW includes language advising the permittees that pass-through or non-treatment by the wastewater treatment plant of chemicals or compounds which may injure, be chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish and other aquatic life is not desirable. DOW recommends the permittee should educate users of its system that introduction of such chemicals or compounds as acids, caustics, herbicides, household chemicals or cleansers, insecticides, lawn chemicals, non-biodegradable products, paints, pesticides, pharmaceuticals, and petroleum-based products that may not be treatable by the wastewater treatment plant could result in an adverse environmental impact.

2. PERMIT-SPECIFIC LIMITS AND REQUIREMENTS DEVELOPMENT

This section of the Fact Sheet presents the limitations and conditions specific to the permitted facility and the specific process and procedures utilized by DOW in the development of the permit.

2.1. Synopsis of Application

2.1.1. Name and Address of Applicant

Kentucky Transportation Cabinet
 200 Mero Street
 Frankfort, Kentucky 40622

2.1.2. Facility Location

I-65 between Horse Cave and Munfordville, Kentucky
 Hart County, Kentucky

2.1.3. Description of Applicant's Operation

The Kentucky Transportation Cabinet is widening approximately 6.6 miles of Interstate 65 and is reconstructing the interchange with 31-W. The project range begins 1.5 miles north of the KY 474 interchange near Rowletts (mile point 59) and ends one mile north of the 31-W interchange near Munfordville (mile point 65.6). The project will increase the total number of traffic lanes from four to six (SIC Code 1611). The project will have a disturbance of approximately 185 acres.

2.1.4. Permitting Action

This is a first issuance of a minor KPDES permit for a road-widening project.

2.2. Receiving / Intake Waters

2.2.1. Receiving Waters

RECEIVING WATERS				
Receiving Water Name	Use Classification	Antidegradation Categorization	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
Green River (This 6.6 mile project crosses the Green River at mile point 225.7)	WAH, PCR, SCR, OSRW ¹	Impaired Water (IW) ¹	N/A	N/A
Various sinkholes in Garvin, Gorin Mill, McKorkle and Munfordville West basins outside Mammoth Cave National Park Boundary	CAH, PCR, SCR, OSRW	High Quality (HQ)	N/A	N/A
Impaired Water Status				

Pursuant to 401 KAR 10:030, Section 1, the Green River is categorized as an Impaired Water. The segment of the Green River from mile point 210.5 to 250.3 is listed as impaired in the 2010 303(d) List of Waters for Kentucky. Green River impairments include partial support for fish consumption. The pollutant of concern is mercury in fish tissue and the suspected sources are unknown.

¹Pursuant to 10:030, Section 1(4)(a)2, a surface water shall not be categorized as an impaired water if the surface water is listed as an OSRW in 401 KAR 10:026. The segment of the Green River from mile point 210.6 to 309.1 is listed as WAH, PCR, SCR, and OSRW in 10:026. For the purposes of satisfying the Antidegradation requirements of 401 KAR Chapter 10, the affected portion of the Green River will be treated as a High Quality Water.

2.2.2. Intake Waters – Nearest Downstream Intake

INTAKE WATERS						
Intake Water Name	Public Water Supply Name	River Mile	Miles Downstream	County	7Q10 Low Flow (cfs)	Harmonic Mean Flow (cfs)
N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.3. Outfalls / Internal Monitoring Points / Instream Monitoring Points

Number	Type	Description Of Wastewater	Receiving Water	Latitude	Longitude
001	Direct	Construction site storm water runoff	Garvin	37.215036N	85.935928W
002	Direct	Construction site storm water runoff	Garvin	37.223182N	85.933583W
003	Direct	Construction site storm water runoff	Gorin Mill	37.229014N	85.930565W
004	Direct	Construction site storm water runoff	Gorin Mill	37.232161N	85.929624W
005	Direct	Construction site storm water runoff	Gorin Mill	37.234717N	85.928739W
006	Direct	Construction site storm water runoff	Gorin Mill	37.236402N	85.930080W
007	Direct	Construction site storm water runoff	Gorin Mill	37.241478N	85.929118W
008	Direct	Construction site storm water runoff	Gorin Mill	37.242573N	85.927978W
009	Direct	Construction site storm water runoff	Green River	37.243150N	85.927366W
010	Direct	Construction site storm water runoff	Green River	37.247791N	85.926795W
011	Direct	Construction site storm water runoff	Green River	37.250204N	85.924770W
012	Direct	Construction site storm water runoff	Green River	37.250968N	85.924893W
013	Direct	Construction site storm water runoff	Green River	37.252659N	85.925397W
014	Direct	Construction site storm water runoff	Green River	37.252433N	85.924566W
015	Direct	Construction site storm water runoff	Green River	37.257676N	85.924169W
016	Direct	Construction site storm water runoff	McKorkle	37.260443N	85.923482W

Number	Type	Description Of Wastewater	Receiving Water	Latitude	Longitude
017	Direct	Construction site storm water runoff	Green River	37.263607N	85.920848W
018	Direct	Construction site storm water runoff	McKorkle	37.266808N	85.920221W
019	Direct	Construction site storm water runoff	Green River	37.266830N	85.919116W
020	Direct	Construction site storm water runoff	Green River	37.268170N	85.918193W
021	Direct	Construction site storm water runoff	Green River	37.268443N	85.917989W
022	Direct	Construction site storm water runoff	Green River	37.270962N	85.915747W
023	Direct	Construction site storm water runoff	Green River	37.272234N	85.914556W
024	Direct	Construction site storm water runoff	Green River	37.273344N	85.913483W
025	Direct	Construction site storm water runoff	Green River	37.273570N	85.913284W
026	Direct	Construction site storm water runoff	Green River	37.275965N	85.911643W
027	Direct	Construction site storm water runoff	McKorkle	37.278108N	85.911579W
028	Direct	Construction site storm water runoff	McKorkle	37.279330N	85.911026W
029	Direct	Construction site storm water runoff	Munfordville West	37.283828N	85.907614W
030	Direct	Construction site storm water runoff	Munfordville West	37.285010N	85.906922W
031	Direct	Construction site storm water runoff	Munfordville West	37.285321N	85.906745W
032	Direct	Construction site storm water runoff	Munfordville West	37.286354N	85.906053W
033	Direct	Construction site storm water runoff	Munfordville West	37.286145N	85.907330W
034	Direct	Construction site storm water runoff	Munfordville West	37.290059N	85.905066W
035	Direct	Construction site storm water runoff	Munfordville West	37.294506N	85.903087W
036	Direct	Construction site storm water runoff	Munfordville West	37.293810N	85.901290W
037	Direct	Construction site storm water runoff	Munfordville West	37.296507N	85.900780W
038	Direct	Construction site storm water runoff	Munfordville West	37.298543N	85.902046W
039	Direct	Construction site storm water runoff	Munfordville West	37.300032N	85.902089W
040	Direct	Construction site storm water runoff	Munfordville West	37.300117N	85.901365W
041	Direct	Construction site storm water runoff	Munfordville West	37.292214N	85.905018W
042	Direct	Construction site storm water runoff	Munfordville West	37.291702N	85.904127W
043	Direct	Construction site storm water runoff	Munfordville West	37.289086N	85.902067W
050	Direct	Construction site storm water runoff	Garvin	37.219718N	85.934490W
051	Direct	Construction site storm water runoff	McKorkle	37.230431N	85.930316W
052	Direct	Construction site storm water runoff	Munfordville West	37.292380N	85.900394W

Number	Type	Description Of Wastewater	Receiving Water	Latitude	Longitude
053	Direct	Construction site storm water runoff	Munfordville West	37.295171N	85.902700W

2.4. Treatment Provided

DESCRIPTION OF TREATMENT				
Outfall No.	Wastewater Type	Flow	Current Treatment Train	Proposed Treatment Train
001	Storm water	Varies	None	Spill Containment Area
002	Storm water	Varies	None	Spill Containment Area and Filter Ditch
003	Storm water	Varies	None	Spill Containment Area
004	Storm water	Varies	None	Spill Containment Area
005	Storm water	Varies	None	Spill Containment Area
006	Storm water	Varies	None	None
007	Storm water	Varies	None	None
008	Storm water	Varies	None	Spill Containment Area
009	Storm water	Varies	None	Spill Containment Area
010	Storm water	Varies	None	None
011	Storm water	Varies	None	Spill Containment Area
012	Storm water	Varies	None	Spill Containment Area
013	Storm water	Varies	None	Spill Containment Area
014	Storm water	Varies	None	Spill Containment Area
015	Storm water	Varies	None	None
016	Storm water	Varies	None	Spill Containment Area and Filter Ditch
017	Storm water	Varies	None	Spill Containment Area and Filter Ditch
018	Storm water	Varies	None	Spill Containment Area and Filter Ditch
019	Storm water	Varies	None	Spill Containment Area
020	Storm water	Varies	None	Spill Containment Area and Filter Ditch
021	Storm water	Varies	None	Spill Containment Area and Filter Ditch
022	Storm water	Varies	None	Spill Containment Area and Filter Ditch
023	Storm water	Varies	None	Spill Containment Area
024	Storm water	Varies	None	Spill Containment Area
025	Storm water	Varies	None	Spill Containment Area and Filter Ditch

026	Storm water	Varies	None	Spill Containment Area
027	Storm water	Varies	None	Spill Containment Area
028	Storm water	Varies	None	Spill Containment Area
029	Storm water	Varies	None	None
030	Storm water	Varies	None	Spill Containment Area and Filter Ditch
031	Storm water	Varies	None	Spill Containment Area and Filter Ditch
032	Storm water	Varies	None	Spill Containment Area and Filter Ditch
033	Storm water	Varies	None	Spill Containment Area and Filter Ditch
034	Storm water	Varies	None	Spill Containment Area and Filter Ditch
035	Storm water	Varies	None	Spill Containment Area and Filter Ditch
036	Storm water	Varies	None	Spill Containment Area and Filter Ditch
037	Storm water	Varies	None	Spill Containment Area
038	Storm water	Varies	None	Spill Containment Area
039	Storm water	Varies	None	Spill Containment Area
040	Storm water	Varies	None	Spill Containment Area
041	Storm water	Varies	None	Spill Containment Area
042	Storm water	Varies	None	Spill Containment Area
043	Storm water	Varies	None	Spill Containment Area
050	Storm water	Varies	None	Spill Containment Area
051	Storm water	Varies	None	Spill Containment Area
052	Storm water	Varies	None	Spill Containment Area and Filter Ditch
053	Storm water	Varies	None	Spill Containment Area and Filter Ditch

In order to protect underground water resources in the area, the project will provide for the placement of permanent spill containment basins that will receive roadway runoff. These containment basins will hold a minimum of 10,000 gallons each and will serve as sediment basins during the construction phase of the project to treat construction site runoff. Due to their locations, this project will involve capping 14 sinkholes.

2.5. Effluent Limitations and Monitoring Requirements

The following tables identify the effluent limitations and monitoring requirements for these outfalls.

Outfall Effluent Limitations and Monitoring Requirements		
Effluent Characteristic	Effluent Limitations	Monitoring Requirements

	Units	Minimum	Monthly Average	Daily Maximum	Maximum	Frequency	Sample Type
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

2.6. Limits Development

The proposed effluent limitations and monitoring requirements were developed using the processes and procedures detailed in Section 1.

2.6.1. Specific Technology-Based Effluent Requirements

2.6.1.1. New Source Performance Standards (NSPS)

40 CFR 450.24 states that any new source must achieve, at a minimum, new source performance standards representing the degree of effluent reduction attainable by application of the best available demonstrated control technology (NSPS). The section further states that these standards are described in 40 CFR 450.22, which establishes the Best Available Technology Economically Achievable (BAT) requirements.

2.6.1.2. Best Available Technology Economically Achievable (BAT)

No later than August 1, 2011 construction activities, that disturb 20 acres or more at one time including non-contiguous land disturbances that take place at the same time and are part of larger common plan of development shall implement BAT requirements. By February 2, 2014, construction activities that disturb 10 acres or more at one time including non-contiguous land disturbances that take place at the same time and are part of larger common plan of development shall implement BAT requirements.

The BAT requirements are as follows:

The average turbidity of any discharge for any day must not exceed the value listed in the following table:

Storm Event	Daily Maximum Turbidity Limit
A storm event in that same day that is less than or equal to the local 2-year, 24-hour storm	280 Nephelometric Turbidity Units (NTUs)
A storm event in that same day that is larger than the local 2-year, 24-hour storm	No limitation

Conduct turbidity monitoring consistent with the frequency and sample type specified in the permit.

However, the two phased implementation schedule requirements of 40 CFR 450.22(a) and (b) have been stayed indefinitely, effective January 4, 2011. Therefore, no daily maximum effluent limitations for turbidity exist at this time.

Requirements for erosion and sediment controls, soil stabilization, dewatering, pollution prevention measures, prohibited discharges and surface outlets are described in 40 CFR 450.21 which establishes Best Practicable Technology Currently Available (BPT) requirements.

2.6.1.3. Best Practicable Technology Currently Available (BPT)

40 CFR 450.21 states that any point source subject to this subpart must achieve, at a minimum, effluent limitations representing the degree of effluent reduction attainable by application of the best practicable control technology currently available (BPT).

The BPT requirements are as follows:

2.6.1.3.1. Erosion and Sediment Controls

Design, install and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. At a minimum, the controls shall: (1) control storm water volume and velocity within the site to minimize soil erosion; (2) control storm water discharges, including both peak flow rates and total storm water volume to minimize erosion at outlets and to minimize downstream channel and stream bank erosion; (3) minimize the amount of soil exposed during construction activity; (4) minimize the disturbance of steep slopes; (5) minimize sediment discharges from the site. The design, installation and maintenance of erosion and sediment controls must address factors such as the amount, frequency, intensity and duration of precipitation, the nature of resulting storm water runoff, and soil characteristics, including the range of soil particle sizes expected to be present on the site; (6) provide and maintain natural buffers around surface waters, direct storm water to vegetated areas to increase sediment removal and maximize storm water infiltration, unless infeasible; and (7) minimize soil compaction and, unless infeasible, preserve topsoil.

2.6.1.3.2. Soil Stabilization

Stabilization of disturbed areas must, at a minimum, be initiated immediately whenever any clearing, grading, excavating or other earth disturbing activities have permanently ceased on any portion of the site, or temporarily ceased on any portion of the site and will not resume for a period exceeding 14 calendar days.

Stabilization must be completed within a period of time determined by the permitting authority. In arid, semiarid, and drought-stricken areas where initiating vegetative stabilization measures immediately is infeasible, alternative stabilization measures must be employed as specified by the permitting authority.

2.6.1.3.3. Dewatering

Discharges from dewatering activities, including discharges from dewatering of trenches and excavations, are prohibited unless managed by appropriate controls.

2.6.1.3.4. Pollution Prevention Measures

Design, install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, such measures shall: (1) minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a sediment basin or alternative control that provides equivalent or better treatment prior to discharge; (2) minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to storm water; and (3) minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

2.6.1.3.5. Prohibited Discharges

The following discharges are prohibited: (1) wastewater from washout of concrete, unless managed by an appropriate control; (2) wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials; (3) fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and (4) soaps or solvents used in vehicle and equipment washing.

2.6.1.3.6. Surface Outlets

When discharging from basins and impoundments, unless infeasible, outlet structures which withdraw water from the surface are to be utilized.

2.6.2. Specific Water Quality-Based Effluent Requirements

APPLICABLE WATER QUALITY CRITERIA				
Effluent Characteristic	Criteria			
	Human Health		Aquatic Life	
	DWS	FC	Acute	Chronic
Alkalinity 401 KAR 10:031 Section 4(1)(a)	Natural alkalinity as CaCO ₃ shall not be reduced by more than 25%. If natural alkalinity is below 20 mg/l as CaCO ₃ , there shall not be a reduction in the natural level. Alkalinity shall not be reduced or increased to a degree that may adversely affect the aquatic community.			
Ammonia 401 KAR 10:031 Section 4(1)(i)	<p>The concentration of the un-ionized form shall not be greater than 0.05 mg/l at any time instream after mixing. Un-ionized ammonia shall be determined from values for total ammonia-N, in mg/l, pH and temperature, by means of the following equations:</p> $Y = \frac{1.2(\text{Total ammonia} - N)}{1 + 10^{(pK_a - pH)}}$ $pK_a = 0.0902 + \left(\frac{2730}{273.2 + T_c} \right)$ <p>Where: T_c = temperature, degrees Celsius. Y = un-ionized ammonia (mg/l);</p>			
Antimony 401 KAR 10:031 Section 6	5.6	640	N/A	N/A
Arsenic 401 KAR 10:031 Section 6	10.0	N/A	340	150
Beryllium 401 KAR 10:031 Section 6	4	N/A	N/A	N/A
Cadmium 401 KAR 10:031 Section 6	5	N/A	$e^{[1.0166 \ln(Ha) - 3.924]}$	$e^{[0.7409 \ln(Ha) - 4.719]}$
Chloride 401 KAR 10:031 Section 6	250,000	N/A	1,200,000	600,000

APPLICABLE WATER QUALITY CRITERIA				
Effluent Characteristic	Criteria			
	Human Health		Aquatic Life	
	DWS	FC	Acute	Chronic
Chromium 401 KAR 10:031 Section 6	100	N/A	N/A	N/A
Copper 401 KAR 10:031 Section 6	1,300	N/A	$e^{[0.9422 \ln(Ha) - 1.700]}$	$e^{[0.8545 \ln(Ha) - 1.702]}$
DO 401 KAR 10:031 Section 4(e)	Shall be maintained at a minimum concentration of 5.0 mg/l as a 24-hour average and shall not be less than 4.0 mg/l as an instantaneous minimum.			
Escherichia coli 401 KAR 10:031 Section 7(1)(a)	Shall not exceed 130 colonies per 100 ml as a geometric mean based on not less than 5 samples taken during a 30 day period. Shall not exceed 240 colonies per 100 ml in 20% or more of all samples taken during a 30 day period.			
Iron 401 KAR 10:031 Section 6	300	N/A	4,000	1,000; 3,500 if aquatic life has not shown to be adversely affected
Lead 401 KAR 10:031 Section 6	15	N/A	$e^{[1.273 \ln(Ha) - 1.460]}$	$e^{[1.273 \ln(Ha) - 4.705]}$
Mercury 401 KAR 10:031 Section 6	2.0	0.051	1.4	0.77
Minimum Criteria 401 KAR 10:031 Section 2	Waters shall not be aesthetically or otherwise degraded by substances that: settle to form objectionable deposits; float as debris, scum, oil, or other matter to form a nuisance; produce objectionable color, odor, taste, or turbidity; injure, are chronically or acutely toxic to or produce adverse physiological or behavioral responses in humans, animals, fish, and other aquatic life; produce undesirable aquatic life or result in the dominance of nuisance species; or cause fish flesh tainting. The concentration of phenol shall not exceed 300 mg/l as an instream value.			
Nickel 401 KAR 10:031 Section 6	610	4,600	$e^{[0.8460 \ln(Ha) + 2.255]}$	$e^{[0.8460 \ln(Ha) + 0.0584]}$

APPLICABLE WATER QUALITY CRITERIA				
Effluent Characteristic	Criteria			
	Human Health		Aquatic Life	
	DWS	FC	Acute	Chronic
Nutrients 401 KAR 10:031 Section 1	In lakes and reservoirs and their tributaries, and other surface waters where eutrophication problems may exist, nitrogen, phosphorus, carbon, and contributing trace element discharges shall be limited in accordance with: the scope of the problem; the geography of the affected area; and relative contributions from existing and proposed sources.			
pH 401 KAR 10:031 Section 4 (1)(b)	Shall not be less than 6.0 or more than 9.0 and shall not fluctuate more than 1.0 pH unit over a period of 24 hours.			
Phenol 401 KAR 10:031 Section 6	21,000	1,700,000	N/A	N/A
Selenium 401 KAR 10:031 Section 6	170	4,200	20	5.0
Silver 401 KAR 10:031 Section 6	N/A	N/A	$e^{[1.72 \ln(Ha) - 6.59]}$	N/A
SS 401 KAR 10:031 Section 4(1)(h)	The addition of SS that may alter the stream bottom so as to adversely affect productive aquatic communities shall be prohibited.			
Sulfate 401 KAR 10:031 Section 6	250,000	N/A	N/A	N/A
Temperature 401 KAR 10:031 Section 4(1)(c)	Shall not exceed 31.7° C (89° F). The normal daily and seasonal temperature fluctuations that existed before the addition of heat due to other than natural causes shall be maintained. The Cabinet may determine allowable surface water temperatures on a site-specific basis utilizing available data that shall be based on the effects of temperature on the aquatic biota that utilize specific surface waters of the Commonwealth that may be affected by person-induced temperature changes.			
Thallium 401 KAR 10:031 Section 6	0.24	0.47	N/A	N/A
TDS or SC 401 KAR 10:031 Section 4(1)(f)	Shall not be changed to the extent that the indigenous aquatic community is adversely affected. Constituents of TDS include calcium, magnesium, sodium, and potassium, as well as chloride and sulfate.			

APPLICABLE WATER QUALITY CRITERIA				
Effluent Characteristic	Criteria			
	Human Health		Aquatic Life	
	DWS	FC	Acute	Chronic
TDS 401 KAR 10:031 Section 6	250,000	N/A	N/A	N/A
Total Residual Chlorine 401 KAR 10:031 Section 4(1)(k)	Shall not exceed an acute criteria value of 19 µg/l or a chronic criteria value of 11 µg/l.			
TSS 401 KAR 10:031 Section 4(1)(g)	Shall not be changed to the extent that the indigenous aquatic community is adversely affected.			
Toxic Pollutants & Nonconventional Pollutants 401 KAR 10:031 Section 4(1)(j) 401 KAR 10:031 Section 6	<p>The allowable instream concentration of toxic substances, or whole effluents containing toxic substances, which are noncumulative or nonpersistent with a half-life of less than 96 hours, shall not exceed 0.1 of the 96-hour LC₅₀ of representative indigenous or indicator aquatic organisms, or a chronic toxicity unit of 1.00 utilizing the LC₂₅. The allowable instream concentration of toxic substances, or whole effluents containing toxic substances, which are bioaccumulative or persistent, including pesticides, if not specified elsewhere in 401 KAR 10:031 Section 4, shall not exceed 0.01 of the 96-hour LC₅₀ of representative indigenous or indicator aquatic organisms, a chronic toxicity unit of 1.00 utilizing the IC₂₅. In the absence of acute criteria for pollutants listed in 401 KAR 10:031 Section 6, for other substances known to be toxic but not listed in 401 KAR 10:031, or for whole effluents that are acutely toxic, the allowable instream concentration shall not exceed the LC₁ or 1/3 the LC₅₀ concentration derived from toxicity tests on representative indigenous or indicator aquatic organisms or exceed 0.3 acute toxicity units. If specific application factors have been determined for a toxic substance or whole effluent such as an acute to chronic ratio or water effect ratio, they may be used instead of the 0.1 and 0.01 factors listed in this subsection upon demonstration by the applicant that the application factors are scientifically defensible.</p> <p>Allowable instream concentrations for specific pollutants for the protection of warm water aquatic habitat are listed in 401 KAR 10:031 Section 6. These concentrations are based on protecting aquatic life from acute and chronic toxicity and shall not be exceeded. Specific pollutants expected in the wastewater have been highlighted in this table.</p>			
Zinc 401 KAR 10:031 Section 6	7,400	26,000	$e^{[0.84736 \ln(Ha)+0.884]}$	$e^{[0.84736 \ln(Ha)+0.884]}$

(Ha) indicates hardness in mg/l as CaCO₃.

2.6.3. Specific Biologic Categories

In establishing narrative criteria, 40 CFR 131.11 (b) (2) also specifies that criteria should be based on bio-monitoring methods where numerical criteria cannot be established or to supplement numerical criteria.

The Kentucky MBI, as incorporated by reference in 401 KAR 10:030 Section 3, lists the following ranges of scores to evaluate stream conditions for meeting the designated uses for streams supporting macroinvertebrate communities.

MBI Ranges by Category, Mountain Bioregion				
Category	Headwater Streams		Wadeable Streams	
	Minimum	Maximum	Minimum	Maximum
Excellent	83		82	
Good	72	82	75	81
Fair	48	71	50	74
Poor	24	47	25	49
Very Poor	0	23	0	24

The KIBI, as incorporated by reference in 401 KAR 10:030 Section 3, lists the following ranges of scores to evaluate stream conditions for meeting the designated uses for streams supporting invertebrate communities.

KIBI Ranges by Category, Mountain Bioregion		
Category	Minimum	Maximum
Excellent	52	
Good	47	51
Fair	31	46
Poor	16	30
Very Poor	0	15

2.6.4. Reported Discharge Levels

REPORTED DISCHARGE LEVELS							
Effluent Characteristics	Units	Minimum		Average		Maximum	
		DMR	Application	DMR	Application	DMR	Application
Oil & Grease	mg/l	N/A	N/A	N/A	< 5.0	N/A	N/A
Biological Oxygen Demand (BOD)	mg/l	N/A	N/A	N/A	< 5.0	N/A	N/A
Chemical Oxygen Demand (COD)	mg/l	N/A	N/A	N/A	15	N/A	N/A
Total Suspended Solids	mg/l	N/A	N/A	N/A	300	N/A	N/A

REPORTED DISCHARGE LEVELS							
Effluent Characteristics	Units	Minimum		Average		Maximum	
Total Kjeldahl Nitrogen	mg/l	N/A	N/A	N/A	1.1	N/A	N/A
Nitrate plus Nitrite Nitrogen	mg/l	N/A	N/A	N/A	< 2.6	N/A	N/A
Total Phosphorus	mg/l	N/A	N/A	N/A	3.6	N/A	N/A
pH	Std Units	N/A	N/A	N/A	7.58	N/A	N/A
This data is representative of a construction activity in general and does not represent the pollutant discharge levels of any particular project.							

REPORTED INSTREAM BACKGROUND LEVELS				
Instream Characteristics	Units	Minimum	Average	Maximum
N/A	N/A	N/A	N/A	N/A

2.6.5. Reasonable Potential

In accordance with the EPA approved reasonable potential procedures outlined in Section 0, DOW has conducted an analysis to determine whether there is a reasonable potential that the proposed discharge will violate water quality standards. Based on that analysis, DOW imposes the following requirements.

RPA RESULTS					
Effluent Characteristics	Units	Chronic Limitation	Acute Limitation	Average Discharge	Requirement
N/A	N/A	N/A	N/A	N/A	N/A

2.6.5.1. SC and TDS

TDS are that portion of wastewater that, when passed through a filter, does not remain on the filter. SC is a measure of water's ability to conduct an electrical charge. SC is directly related to the total dissolved ionized solids in the water. Common constituents of TDS are sulfates, chlorides, calcium, sodium, magnesium, potassium and metals. SC is also related to salinity and is influenced by pH, hardness and temperature.

Changes in SC may result in modifications to the makeup of the aquatic biological community of a water body. Depending on the severity of the alteration in SC, some species of aquatic organisms may no longer be present, thus reducing the taxa richness of the benthic macroinvertebrate community. Taxa richness is defined as the number of species in a given community, and is influenced by the water body size, temperature, reproductivity, water chemistry, etc.

2.6.5.2. TSS

In order to perform an RPA in accordance with DOW's EPA-approved methodology, a numerical interpretation of the narrative standard would be required. However, when evaluating waters of the Commonwealth for compliance with this narrative standard, DOW does not develop a numerical interpretation but rather takes into consideration biological indicators such as the taxonomic richness of macroinvertebrates and level of siltation.

2.6.5.3. Minimum Criteria

The minimum criteria for all waters specified in 401 KAR 10:031, Section 2 are categorical and not pollutant-specific except for phenol, which has an instream criteria of 300 mg/l; therefore the selection of an indicator pollutant or pollutant characteristic that would adequately address the criteria is not feasible. However, DOW has determined that a reasonable potential exists with all dischargers to cause or contribute to an excursion of these categorical requirements. As specific indicator pollutants and limitations are not feasible DOW has included these criteria as part of the reopener required in all permits.

2.6.5.4. pH

Imbalances in pH are typically associated with industrial facilities where the wastewater is exposed to industrial materials or chemicals. Storm water runoff from construction activity is not a significant source of either acidic or alkaline discharges, therefore DOW has determined that reasonable potential for this pollutant does not exist and does not propose any additional requirements.

2.6.5.5. Temperature

Thermal pollution or heat loads are typically associated with industrial facilities where large volumes of cooling water are utilized. Storm water runoff is not a significant source of thermal pollution or heat load, therefore DOW has determined that reasonable potential for this pollutant does not exist and does not propose any additional requirements.

2.6.6. Final Determination of Limits

This permit does not contain any monitoring requirements or effluent limitations.

2.7. Antidegradation

The conditions of 401 KAR 10:029, Section 1, have been satisfied by this permit action. In accordance with 401 KAR 10:030, Section 1(3)2c, new or expanded discharges associated with a project identified in the Kentucky Transportation Cabinet's Six (6) Year Road Plan as established in KRS 176.430 shall constitute compliance with socioeconomic demonstration and alternatives analysis of 401 KAR 10:030, Section 1(3)3. In the policy document HD-601 and HD 602 KYTC describes its process that public involvement should be early and continuous. The document further states that "it is essential to understand the community's values in order to avoid, minimize, and mitigate impacts as well as to narrow the range of alternatives". Socioeconomic benefits of roads are well established, and KYTC in coordination with Kentucky's General Assembly, determines where roads are most needed as part of the legislative process. The Energy and Environment Cabinet has determined that the Transportation Cabinet's planning process and the General Assembly's approval of the 6-year plan constitute an acceptable socioeconomic benefits analysis and conclusion. Additionally EEC had determined that the 6-year planning process considers alternative routes and other alternatives for managing discharges from these projects and that the Transportation Cabinet's use of technical alternatives to treating or managing discharges as outlined in the KYTC Standard Specifications for Road and Bridge Construction and other technical documents, constitutes an acceptable alternatives analysis.

For those discharges subject to the provisions of 401 KAR 10:030 Section 1(3)(b)5, the permittee shall install, operate, and maintain wastewater treatment facilities consistent with those identified below:

The devices, procedures and structures detailed in the KPDES Individual Permit Supplemental Data and the structural BMPs shown on the design plans. These two documents are incorporated by reference into the KPDES permit as enforceable conditions.

2.8. Schedule of Compliance

The permittee will comply with all effluent limitations by the effective date of the permit except as allowed pursuant to 401 KAR 5:080, Section 6. Special KPDES program requirements related to new sources and new discharges shall be as established in 40 CFR 122.29, effective July 1, 2008.

2.9. Special Conditions**2.9.1. Other Special Conditions****2.9.1.1. Storm Water Pollution Prevention Plan (SWPPP)**

The permittee shall develop a Storm Water Pollution Prevention Plan (SWPPP) and implement the SWPPP at the commencement of construction disturbance. The SWPPP shall include erosion prevention measures, sediment control measures and other site management practices necessary to prevent the discharge of sediment and other pollutants into waters of the Commonwealth that would result in those waters being degraded or non-supportive of their designed uses. Sediment control measures and other site management practices must be properly selected based on site-specific conditions and shall be installed and maintained to effectively minimize discharges from storm events up to and including a 2-year, 24-hour event. The SWPPP shall be consistent with the requirements of 40 CFR 450.

The permittee shall utilize the Kentucky 2008 Standards Specifications for Road and Bridge Construction document as a means of establishing sediment control measures, erosion control measures and other site management practices. In addition, the permittee shall implement the enhanced Best Management Practices (BMPs) contained in the supplemental data document.

The permittee shall utilize KTC Design Memorandum Number 12-05. Should karst features develop or be discovered during construction, activities shall cease until the SWPPP can be modified to provide adequate erosion prevention and sediment control measures.

2.9.2. BMP Plan

The required SWPPP shall constitute a BMP Plan. This permit does not require a separate BMP Plan.

2.10. State Conditions**2.10.1. Outfall Signage**

This permit does not require any outfall signage.

2.10.2. Stabilization Requirements

Temporary stabilization practices may be less effective than permanent ones. Therefore, the DOW has included stabilization time frames to insure the minimization of potential impacts from the activity. This condition is consistent with the requirements of 40 CFR 122.44(d) and 40 CFR 450.

Final stabilization practices shall replace any temporary stabilization practices on those portions of the site where construction activities have been suspended for more than 180 days. In such cases, final stabilization practices shall be initiated as soon as practical but no later than fourteen (14) days after the 180th day of suspended activity.

2.10.3. Buffer Zone

Where possible, the permittee shall maintain a 50-foot minimum buffer zone between any disturbance and all edges of the receiving water.

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3. OTHER INFORMATION

3.1. Permit Duration

The permit shall have a duration of five (5) years from the effective date unless modified or reissued. This facility is in the Tradewater, Green Basin Management Unit as per the Kentucky Watershed Management Framework.

3.2. Permit and Public Notice Information

The application, draft permit, fact sheet and public notice are available on the DOW Public Notice web page and the Department of Environmental Protection's Pending Approvals Search web page at:

<http://water.ky.gov/Pages/PublicNotices.aspx>:

http://dep.gateway.ky.gov/eSearch/Search_Pending_Approvals.aspx?Program=Wastewater&NumDaysDoc=30

Comments may be filed electronically at the following e-mail address: DOWPublicNotice@ky.gov

Or by sending written comments to:

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

3.3. References and Cited Documents

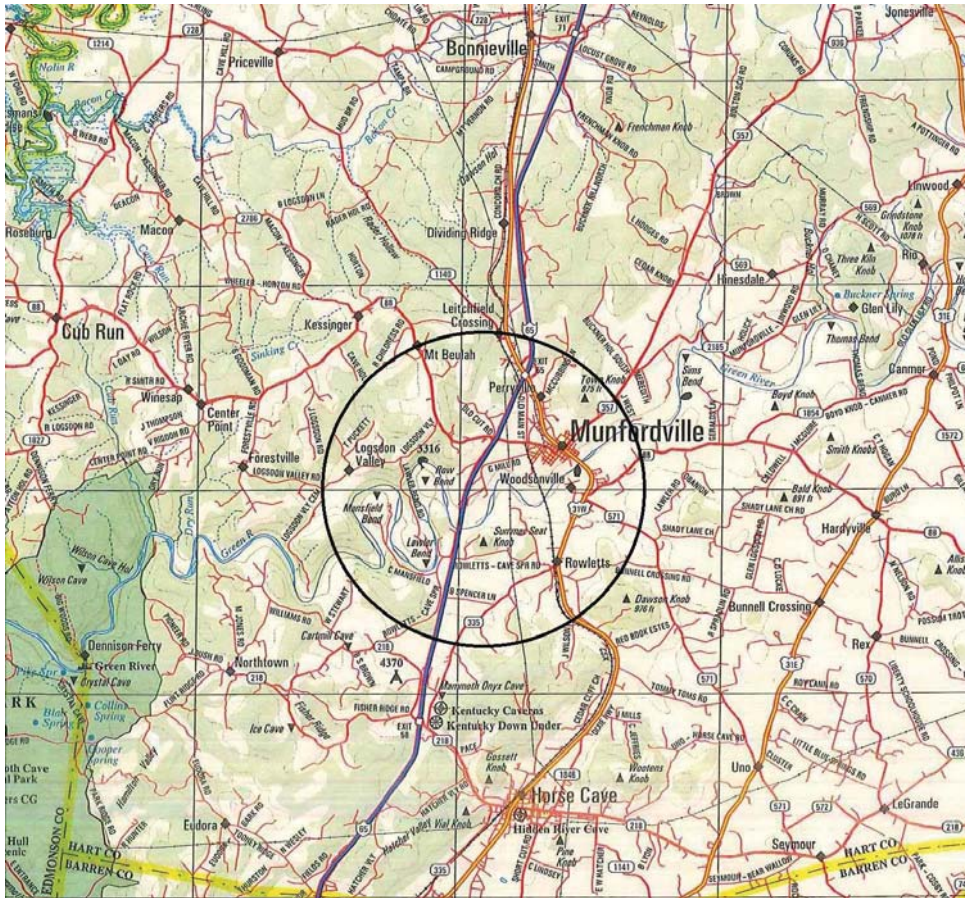
All material and documents referenced or cited in this fact sheet are parts of the permit information as described above and are readily available at the Division of Water Central Office. Information regarding these materials may be obtained from the Division of Water's Open Records Coordinator at (502) 564-3410 or by e-mail at dowopenrecords@ky.gov.

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3.4. Location Map



PROPOSAL BID ITEMS

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Report Date 1/20/13

Section: 0001 - PAVING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0010	00001		DGA BASE	117,853.00	TON		\$	
0020	00003		CRUSHED STONE BASE	4,829.00	TON		\$	
0030	00008		CEMENT STABILIZED ROADBED	113,929.00	SQYD		\$	
0040	00018		DRAINAGE BLANKET-TYPE II-ASPH	83,088.00	TON		\$	
0050	00022		JPC PAVEMENT DRAINAGE BLANKET	1,369.00	TON		\$	
0060	00100		ASPHALT SEAL AGGREGATE	813.00	TON		\$	
0070	00103		ASPHALT SEAL COAT	98.00	TON		\$	
0080	00190		LEVELING & WEDGING PG64-22	24,244.00	TON		\$	
0090	00205		CL3 ASPH BASE 1.50D PG64-22	63,542.00	TON		\$	
0100	00208		CL4 ASPH BASE 1.50D PG64-22	50,583.00	TON		\$	
0110	00214		CL3 ASPH BASE 1.00D PG64-22 (PERFORATED PIPE INSTALL)	2,553.00	TON		\$	
0120	00214		CL3 ASPH BASE 1.00D PG64-22	81,994.00	TON		\$	
0130	00217		CL4 ASPH BASE 1.00D PG64-22	57,859.00	TON		\$	
0140	00219		CL4 ASPH BASE 1.00D PG76-22	56,329.00	TON		\$	
0150	00339		CL3 ASPH SURF 0.38D PG64-22	16,455.00	TON		\$	
0160	00342		CL4 ASPH SURF 0.38A PG76-22	25,530.00	TON		\$	
0170	00358		ASPHALT CURING SEAL	274.00	TON		\$	
0180	00388		CL3 ASPH SURF 0.38B PG64-22	1,022.00	TON		\$	
0190	02071		JPC PAVEMENT-11 IN	4,300.00	SQYD		\$	
0200	02072		JPC PAVEMENT-11 IN SHLD	2,542.00	SQYD		\$	
0210	02101		CEM CONC ENT PAVEMENT-8 IN	125.00	SQYD		\$	
0220	02542		CEMENT	2,215.00	TON		\$	
0230	02677		ASPHALT PAVE MILLING & TEXTURING	25,148.00	TON		\$	
0240	02702		SAND FOR BLOTTER	579.00	TON		\$	

Section: 0002 - ROADWAY

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0250	00071		CRUSHED AGGREGATE SIZE NO 57	418.44	TON		\$	
0260	00078		CRUSHED AGGREGATE SIZE NO 2	29,258.00	TON		\$	
0270	01015		INSPECT & CERTIFY EDGE DRAIN SYSTEM	1.00	LS		\$	
0280	01810		STANDARD CURB AND GUTTER	2,800.00	LF		\$	
0290	01845		ISLAND INTEGRAL CURB	176.00	LF		\$	
0300	01877		SPECIAL HEADER CURB	13,215.00	LF		\$	
0310	01955		CONC MEDIAN BARRIER TYPE 12C1	300.00	LF		\$	
0320	01967		CONC MEDIAN BARRIER TYPE 12C	36,059.00	LF		\$	
0330	01982		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL WHITE	433.00	EACH		\$	
0340	01983		DELINEATOR FOR GUARDRAIL MONO DIRECTIONAL YELLOW	76.00	EACH		\$	
0350	01984		DELINEATOR FOR BARRIER - WHITE	3,675.00	EACH		\$	
0360	01985		DELINEATOR FOR BARRIER - YELLOW	8,119.00	EACH		\$	
0370	01992		INSTALL TEMP CONC MED BARR	55,940.00	LF		\$	
0380	02003		RELOCATE TEMP CONC BARRIER	176,794.00	LF		\$	
0390	02014		BARRICADE-TYPE III	6.00	EACH		\$	
0400	02081		JPC PAVEMENT-8 IN SHLD	312.00	SQYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0410	02159		TEMP DITCH	51,863.00	LF		\$	
0420	02165		REMOVE PAVED DITCH	2,913.00	SQYD		\$	
0430	02200		ROADWAY EXCAVATION	315,169.00	CUYD		\$	
0440	02223		GRANULAR EMBANKMENT	380.00	CUYD		\$	
0450	02237		DITCHING	16,825.00	LF		\$	
0460	02259		FENCE-TEMP	500.00	LF		\$	
0470	02262		FENCE-WOVEN WIRE TYPE 1	57,986.00	LF		\$	
0480	02265		REMOVE FENCE	55,822.00	LF		\$	
0490	02363		GUARDRAIL CONNECTOR TO BRIDGE END TY A	10.00	EACH		\$	
0500	02367		GUARDRAIL END TREATMENT TYPE 1	27.00	EACH		\$	
0510	02369		GUARDRAIL END TREATMENT TYPE 2A	18.00	EACH		\$	
0520	02371		GUARDRAIL END TREATMENT TYPE 7	2.00	EACH		\$	
0530	02381		REMOVE GUARDRAIL	24,537.00	LF		\$	
0540	02387		GUARDRAIL CONNECTOR TO BRIDGE END TY A-1	5.00	EACH		\$	
0550	02429		RIGHT-OF-WAY MONUMENT TYPE 1	39.00	EACH		\$	
0560	02432		WITNESS POST	39.00	EACH		\$	
0570	02469		CLEAN SINKHOLE	19.00	EACH		\$	
0580	02483		CHANNEL LINING CLASS II	3,201.16	TON		\$	
0590	02484		CHANNEL LINING CLASS III	2,913.00	TON		\$	
0600	02545		CLEARING AND GRUBBING (APPROX. 135 ACRES, INCLUDES 35 ACRES FOR MEDIAN)	1.00	LS		\$	
0610	02555		CONCRETE-CLASS B	40.00	CUYD		\$	
0620	02562		TEMPORARY SIGNS	2,771.00	SQFT		\$	
0630	02570		PROJECT CPM SCHEDULE SEE DESIGN FOR SPECIAL NOTE	1.00	LS		\$	
0640	02585		EDGE KEY	142.00	LF		\$	
0650	02596		FABRIC-GEOTEXTILE TYPE I	3,377.00	SQYD		\$	
0660	02598		FABRIC-GEOTEXTILE TYPE III	3,461.00	SQYD		\$	
0670	02599		FABRIC-GEOTEXTILE TYPE IV	99,299.00	SQYD		\$	
0680	02600		FABRIC GEOTEXTILE TY IV FOR PIPE	9,854.00	SQYD	\$2.00	\$	\$19,708.00
0690	02650		MAINTAIN & CONTROL TRAFFIC	1.00	LS		\$	
0700	02651		DIVERSIONS (BY-PASS DETOURS) (US 31W)	1.00	LS		\$	
0710	02651		DIVERSIONS (BY-PASS DETOURS) (KY 88 & OLD CUT ROAD)	1.00	LS		\$	
0720	02671		PORTABLE CHANGEABLE MESSAGE SIGN	6.00	EACH		\$	
0730	02676		MOBILIZATION FOR MILL & TEXT	1.00	LS		\$	
0740	02696		SHOULDER RUMBLE STRIPS-SAWED	134,600.00	LF		\$	
0750	02701		TEMP SILT FENCE	51,863.00	LF		\$	
0760	02703		SILT TRAP TYPE A	500.00	EACH		\$	
0770	02704		SILT TRAP TYPE B	500.00	EACH		\$	
0780	02705		SILT TRAP TYPE C	500.00	EACH		\$	
0790	02706		CLEAN SILT TRAP TYPE A	1,000.00	EACH		\$	
0800	02707		CLEAN SILT TRAP TYPE B	1,000.00	EACH		\$	
0810	02708		CLEAN SILT TRAP TYPE C	1,000.00	EACH		\$	
0820	02709		CLEAN TEMP SILT FENCE	51,863.00	LF		\$	
0830	02720		SIDEWALK-4 IN CONCRETE	130.00	SQYD		\$	
0840	02726		STAKING	1.00	LS		\$	
0850	02775		ARROW PANEL	8.00	EACH		\$	
0860	02898		RELOCATE CRASH CUSHION	9.00	EACH		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
0870	02998		MASONRY COATING	37,840.00	SQYD		\$	
0880	03171		CONCRETE BARRIER WALL TYPE 9T	6,532.00	LF		\$	
0890	03225		TUBULAR MARKERS	156.00	EACH		\$	
0900	03270		TREE AND BRUSH REMOVAL	28,744.00	LF		\$	
0910	04933		TEMP SIGNAL 2 PHASE	1.00	EACH		\$	
0920	05950		EROSION CONTROL BLANKET	66,186.00	SQYD		\$	
0930	05952		TEMP MULCH	373,444.00	SQYD		\$	
0940	05966		TOPDRESSING FERTILIZER	27.00	TON		\$	
0950	05985		SEEDING AND PROTECTION	519,961.00	SQYD		\$	
0960	06417		FLEXIBLE DELINEATOR POST-W	377.00	EACH		\$	
0970	06418		FLEXIBLE DELINEATOR POST-Y	42.00	EACH		\$	
0980	06510		PAVE STRIPING-TEMP PAINT-4 IN	27,740.00	LF		\$	
0990	06511		PAVE STRIPING-TEMP PAINT-6 IN	584,176.00	LF		\$	
1000	06514		PAVE STRIPING-PERM PAINT-4 IN	16,804.00	LF		\$	
1010	06516		PAVE STRIPING-PERM PAINT-8 IN	200.00	LF		\$	
1020	06550		PAVE STRIPING-TEMP REM TAPE-W	1,000.00	LF		\$	
1030	06551		PAVE STRIPING-TEMP REM TAPE-Y	1,000.00	LF		\$	
1040	06568		PAVE MARKING-THERMO STOP BAR-24IN	80.00	LF		\$	
1050	06570		PAVE MARKING-PAINT CROSS-HATCH	23,000.00	SQFT		\$	
1060	06574		PAVE MARKING-THERMO CURV ARROW	13.00	EACH		\$	
1070	06578		PAVE MARKING-THERMO MERGE ARROW	4.00	EACH		\$	
1080	06585		PAVEMENT MARKER TY IVA-MW TEMP	5,697.00	EACH		\$	
1090	06586		PAVEMENT MARKER TY IVA-MY TEMP	7,686.00	EACH		\$	
1100	06588		PAVEMENT MARKER TY IVA-BY TEMP	3,834.00	EACH		\$	
1110	06592		PAVEMENT MARKER TYPE V-B W/R	1,904.00	EACH		\$	
1120	06593		PAVEMENT MARKER TYPE V-B Y/R	1,046.00	EACH		\$	
1130	06600		REMOVE PAVEMENT MARKER TYPE V	885.00	EACH		\$	
1140	08903		CRASH CUSHION TY VI CLASS BT TL3	10.00	EACH		\$	
1150	10020NS		FUEL ADJUSTMENT REVISED: 11-20-13	1.00	DOLL	631,310.00	\$	\$631,310.00
1160	10030NS		ASPHALT ADJUSTMENT REVISED: 11-20-13	1.00	DOLL	915,741.00	\$	\$915,741.00
1170	20415ES508		CONC MED BAR TY 12C2(50)	260.00	LF		\$	
1180	20432ES112		REMOVE CRASH CUSHION	4.00	EACH		\$	
1190	20757ED		PAVEMENT REPAIR	5,000.00	SQYD		\$	
1200	20758ED		REMOVE AND RESET PERF PIPE HEADWALL	25.00	EACH		\$	
1210	21370ED		LONGITUDINAL SAW CUT- 6 IN	74,907.00	LF		\$	
1220	21802EN		G/R STEEL W BEAM-S FACE (7 FT POST)	23,612.50	LF		\$	
1230	22664EN		WATER BLASTING EXISTING STRIPE	14,270.00	LF		\$	
1240	23131ER701		PIPELINE VIDEO INSPECTION	1,616.00	LF		\$	
1250	23274EN11F		TURF REINFORCEMENT MAT 1	6,034.00	SQYD		\$	
1260	23979EC		CRASH CUSHION TY VI CLASS C TL3	1.00	EACH		\$	
1270	24189ER		DURABLE WATERBORNE MARKING-6 IN W	114,167.00	LF		\$	
1280	24190ER		DURABLE WATERBORNE MARKING-6 IN Y	81,742.00	LF		\$	
1290	24191ER		DURABLE WATERBORNE MARKING-12 IN W	5,248.00	LF		\$	
1300	24255EC		REMOVE CABLE GUARDRAIL BARRIER SYSTEM	18,716.00	LF		\$	
1310	24277EC		FLUSH SEDIMENT	1.00	LS		\$	
1320	24470ED		PERMEABLE PAVEMENT DRAIN	144.00	SQYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1330	00440		ENTRANCE PIPE-15 IN	42.00	LF	\$		
1340	00461		CULVERT PIPE-15 IN	111.00	LF	\$		
1350	00462		CULVERT PIPE-18 IN	767.00	LF	\$		
1360	00464		CULVERT PIPE-24 IN	78.00	LF	\$		
1370	00466		CULVERT PIPE-30 IN	16.00	LF	\$		
1380	00521		STORM SEWER PIPE-15 IN	987.00	LF	\$		
1390	00522		STORM SEWER PIPE-18 IN	1,214.00	LF	\$		
1400	00526		STORM SEWER PIPE-30 IN	19.00	LF	\$		
1410	01000		PERFORATED PIPE-4 IN	61,251.00	LF	\$		
1420	01001		PERFORATED PIPE-6 IN	32,212.00	LF	\$		
1421	01010		NON-PERFORATED PIPE-4 IN ADDED: 11-20-13	3,992.00	LF	\$		
1430	01011		NON-PERFORATED PIPE-6 IN REVISED: 11-20-13	412.00	LF	\$		
1440	01020		PERF PIPE HEADWALL TY 1-4 IN	42.00	EACH	\$		
1450	01024		PERF PIPE HEADWALL TY 2-4 IN	2.00	EACH	\$		
1460	01028		PERF PIPE HEADWALL TY 3-4 IN	78.00	EACH	\$		
1470	01032		PERF PIPE HEADWALL TY 4-4 IN	58.00	EACH	\$		
1480	01202		PIPE CULVERT HEADWALL-15 IN	3.00	EACH	\$		
1490	01204		PIPE CULVERT HEADWALL-18 IN	8.00	EACH	\$		
1500	01208		PIPE CULVERT HEADWALL-24 IN	2.00	EACH	\$		
1510	01432		SLOPED BOX OUTLET TYPE 1-15 IN	2.00	EACH	\$		
1520	01433		SLOPED BOX OUTLET TYPE 1-18 IN	16.00	EACH	\$		
1530	01440		SLOPED BOX INLET-OUTLET TYPE 1	1.00	EACH	\$		
1540	01450		S & F BOX INLET-OUTLET-18 IN	2.00	EACH	\$		
1550	01480		CURB BOX INLET TYPE B	11.00	EACH	\$		
1560	01490		DROP BOX INLET TYPE 1	17.00	EACH	\$		
1570	01493		DROP BOX INLET TYPE 2	1.00	EACH	\$		
1580	01496		DROP BOX INLET TYPE 3	6.00	EACH	\$		
1590	01544		DROP BOX INLET TYPE 11	2.00	EACH	\$		
1600	01559		DROP BOX INLET TYPE 13G	2.00	EACH	\$		
1610	01584		CAP DROP BOX INLET	8.00	EACH	\$		
1620	01642		JUNCTION BOX-18 IN	2.00	EACH	\$		
1630	01690		FLUME INLET TYPE 1	6.00	EACH	\$		
1640	01691		FLUME INLET TYPE 2	21.00	EACH	\$		
1650	01740		CORED HOLE DRAINAGE BOX CON-4 IN	3.00	EACH	\$		
1660	01741		CORED HOLE DRAINAGE BOX CON-6 IN	49.00	EACH	\$		
1670	02157		PAVED DITCH TYPE 1	731.00	SQYD	\$		
1680	02690		SAFELoading	20.00	CUYD	\$		
1690	21601NN		CONC MED BAR BOX INLET TY 12A2-50	5.00	EACH	\$		
1700	21602NN		CONC MED BARR BOX INLET TY 12B2-50	45.00	EACH	\$		
1710	23126EN		BORE AND JACK PIPE-18 IN	116.00	LF	\$		

Section: 0004 - BRIDGE I-65 OVER GREEN RIVER

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1720	02231		STRUCTURE GRANULAR BACKFILL	1,886.00	CUYD	\$		
1730	02403		REMOVE CONCRETE MASONRY	385.00	CUYD	\$		
1740	02599		FABRIC-GEOTEXTILE TYPE IV	1,280.00	SQYD	\$		

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
1750	02731		REMOVE STRUCTURE (GREEN RIVER BRIDGE)	1.00	LS		\$	
1760	02998		MASONRY COATING	2,105.00	SQYD		\$	
1770	03299		ARMORED EDGE FOR CONCRETE	254.00	LF		\$	
1780	08001		STRUCTURE EXCAVATION-COMMON	1,128.00	CUYD		\$	
1790	08002		STRUCTURE EXCAV-SOLID ROCK	57.00	CUYD		\$	
1800	08019		CYCLOPEAN STONE RIP RAP	3,569.00	TON		\$	
1810	08020		CRUSHED AGGREGATE SLOPE PROT	661.00	TON		\$	
1820	08033		TEST PILES	266.00	LF		\$	
1830	08046		PILES-STEEL HP12X53	3,085.00	LF		\$	
1840	08094		PILE POINTS-12 IN	65.00	EACH		\$	
1850	08100		CONCRETE-CLASS A	2,401.00	CUYD		\$	
1860	08104		CONCRETE-CLASS AA	3,423.00	CUYD		\$	
1870	08130		MECHANICAL REINF COUPLER #5	3,660.00	EACH		\$	
1880	08132		MECHANICAL REINF COUPLER #7	3,082.00	EACH		\$	
1890	08136		MECHANICAL REINF COUPLER #11	180.00	EACH		\$	
1900	08150		STEEL REINFORCEMENT	327,038.00	LB		\$	
1910	08151		STEEL REINFORCEMENT-EPOXY COATED	1,097,002.00	LB		\$	
1920	08160		STRUCTURAL STEEL (APPROXIMATE WEIGHT: 3,878,670 LBS.)	1.00	LS		\$	
1930	08170		SHEAR CONNECTORS (APPROXIMATE WEIGHT: 21,895 LBS.)	1.00	LS		\$	
1940	08473		EXPANSION DAM-NEOPRENE (5 INCH)	254.00	LF		\$	
1950	08500		APPROACH SLAB	704.00	SQYD		\$	
1960	20745ED		ROCK SOUNDINGS	108.00	LF		\$	
1970	20746ED		ROCK CORINGS	203.00	LF		\$	
1980	21532ED		RAIL SYSTEM TYPE III	1,494.00	LF		\$	
1990	22839NN		CSL TESTING10 TUBES	4.00	EACH		\$	
2000	23428EC		CONCRETE PATCHING REPAIR	500.00	CUFT		\$	
2010	24621EC		DRILLED SHAFT - 108 IN (COMMON)	100.00	LF		\$	
2020	24622EC		DRILLED SHAFT - 108 IN (SOLID ROCK)	50.00	LF		\$	
2030	24623EC		DRILLED SHAFT - 102 IN (SOLID ROCK)	56.00	LF		\$	

Section: 0005 - BRIDGE I-65 OVER CSX RAILROAD

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2040	02231		STRUCTURE GRANULAR BACKFILL	1,354.00	CUYD		\$	
2050	02731		REMOVE STRUCTURE (CSX RAILROAD BRIDGE)	1.00	LS		\$	
2060	02998		MASONRY COATING	840.00	SQYD		\$	
2070	03299		ARMORED EDGE FOR CONCRETE	373.40	LF		\$	
2080	08001		STRUCTURE EXCAVATION-COMMON	346.00	CUYD		\$	
2090	08002		STRUCTURE EXCAV-SOLID ROCK	2,599.00	CUYD		\$	
2100	08020		CRUSHED AGGREGATE SLOPE PROT	70.00	TON		\$	
2110	08033		TEST PILES	27.00	LF		\$	
2120	08039		PRE-DRILLING FOR PILES	220.00	LF		\$	
2130	08046		PILES-STEEL HP12X53	357.00	LF		\$	
2140	08094		PILE POINTS-12 IN	22.00	EACH		\$	
2150	08100		CONCRETE-CLASS A	792.00	CUYD		\$	
2160	08104		CONCRETE-CLASS AA	815.80	CUYD		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2170	08150		STEEL REINFORCEMENT	56,867.00	LB		\$	
2180	08151		STEEL REINFORCEMENT-EPOXY COATED	147,617.00	LB		\$	
2190	21532ED		RAIL SYSTEM TYPE III	261.30	LF		\$	
2200	24539EC		PPC I-BEAM HN60-49	1,771.00	LF		\$	

Section: 0006 - BRIDGE I-65 OVER US 31W

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2210	02231		STRUCTURE GRANULAR BACKFILL	571.00	CUYD		\$	
2220	02731		REMOVE STRUCTURE (US 31W BRIDGE)	1.00	LS		\$	
2230	02998		MASONRY COATING	1,821.00	SQYD		\$	
2240	03299		ARMORED EDGE FOR CONCRETE	308.00	LF		\$	
2250	08001		STRUCTURE EXCAVATION-COMMON	3,077.00	CUYD		\$	
2260	08020		CRUSHED AGGREGATE SLOPE PROT	726.00	TON		\$	
2270	08033		TEST PILES	1,720.00	LF		\$	
2280	08046		PILES-STEEL HP12X53	16,384.00	LF		\$	
2290	08094		PILE POINTS-12 IN	268.00	EACH		\$	
2300	08100		CONCRETE-CLASS A	870.80	CUYD		\$	
2310	08104		CONCRETE-CLASS AA	945.00	CUYD		\$	
2320	08130		MECHANICAL REINF COUPLER #5	72.00	EACH		\$	
2330	08133		MECHANICAL REINF COUPLER #8	32.00	EACH		\$	
2340	08135		MECHANICAL REINF COUPLER #10	72.00	EACH		\$	
2350	08150		STEEL REINFORCEMENT	132,902.00	LB		\$	
2360	08151		STEEL REINFORCEMENT-EPOXY COATED	268,487.00	LB		\$	
2370	08671		PRECAST PC BOX BEAM SB33	3,537.00	LF		\$	
2380	21532ED		RAIL SYSTEM TYPE III	361.00	LF		\$	

Section: 0007 - BRIDGE KY 88 OVER I-65

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2390	02231		STRUCTURE GRANULAR BACKFILL	302.00	CUYD		\$	
2400	02731		REMOVE STRUCTURE (KY 88 BRIDGE)	1.00	LS		\$	
2410	02998		MASONRY COATING	1,480.00	SQYD		\$	
2420	03299		ARMORED EDGE FOR CONCRETE	87.50	LF		\$	
2430	08001		STRUCTURE EXCAVATION-COMMON	283.00	CUYD		\$	
2440	08002		STRUCTURE EXCAV-SOLID ROCK	20.00	CUYD		\$	
2450	08020		CRUSHED AGGREGATE SLOPE PROT	264.00	TON		\$	
2460	08033		TEST PILES	38.00	LF		\$	
2461	08039		PRE-DRILLING FOR PILES ADDED: 11-19-13	121.00	LF		\$	
2470	08046		PILES-STEEL HP12X53	308.00	LF		\$	
2480	08094		PILE POINTS-12 IN	24.00	EACH		\$	
2490	08100		CONCRETE-CLASS A	182.30	CUYD		\$	
2500	08104		CONCRETE-CLASS AA	427.10	CUYD		\$	
2510	08150		STEEL REINFORCEMENT	24,451.00	LB		\$	
2520	08151		STEEL REINFORCEMENT-EPOXY COATED	126,578.00	LB		\$	
2530	21532ED		RAIL SYSTEM TYPE III	553.30	LF		\$	
2540	24539EC		PPC I-BEAM HN60-49 REVISED 11-19-13	1,365.80	LF		\$	

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Section: 0008 - SIGNING

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2550	04903		REFERENCE MARKER	62.00	EACH		\$	
2560	04904		BARRIER MOUNTING BRACKET	31.00	EACH		\$	
2570	06400		GMSS GALV STEEL TYPE A	9,104.00	LB		\$	
2580	06405		SBM ALUMINUM PANEL SIGNS	1,825.00	SQFT		\$	
2590	06406		SBM ALUM SHEET SIGNS .080 IN	601.00	SQFT		\$	
2600	06407		SBM ALUM SHEET SIGNS .125 IN	578.00	SQFT		\$	
2610	06410		STEEL POST TYPE 1	2,400.00	LF		\$	
2620	06412		STEEL POST MILE MARKERS	13.00	EACH		\$	
2630	06441		GMSS GALV STEEL TYPE C	12,391.00	LB		\$	
2640	06451		REMOVE SIGN SUPPORT BEAM	60.00	EACH		\$	
2650	06490		CLASS A CONCRETE FOR SIGNS	95.00	CUYD		\$	
2660	06491		STEEL REINFORCEMENT FOR SIGNS	3,295.00	LB		\$	
2670	20418ED		REMOVE & RELOCATE SIGNS	22.00	EACH		\$	
2680	20419ND		ROADWAY CROSS SECTION	20.00	EACH		\$	
2690	20912ND		BARRIER WALL POST	35.00	EACH		\$	
2700	21373ND		REMOVE SIGN	8.00	EACH		\$	
2710	21596ND		GMSS TYPE D	106.00	EACH		\$	
2720	24631EC		BARCODE SIGN INVENTORY	265.00	EACH		\$	

Section: 0009 - HIGH MAST LIGHTING AT 1-65 & US 31W

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2730	04714		POLE 120 FT MTG HT HIGH MAST	8.00	EACH		\$	
2740	04760		POLE W/SECONDARY CONTROL EQUIP	2.00	EACH		\$	
2750	04773		HPS LUMINAIRE HIGH MAST	48.00	EACH		\$	
2760	04797		CONDUIT-3 IN	1,282.00	LF		\$	
2770	04800		MARKER	17.00	EACH		\$	
2780	04820		TRENCHING AND BACKFILLING	6,155.00	LF		\$	
2790	04860		CABLE-NO. 8/3C DUCTED	775.00	LF		\$	
2800	04861		CABLE-NO. 6/3C DUCTED	1,925.00	LF		\$	
2810	04862		CABLE-NO. 4/3C DUCTED	5,025.00	LF		\$	
2820	04863		CABLE-NO. 2/3C DUCTED	2,600.00	LF		\$	
2830	04940		REMOVE LIGHTING	1.00	LS		\$	
2840	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	10.00	EACH		\$	
2850	20392NS835		ELECTRICAL JUNCTION BOX TYPE C	4.00	EACH		\$	
2860	20410ED		MAINTAIN LIGHTING	1.00	LS		\$	
2870	21543EN		BORE AND JACK CONDUIT	1,282.00	LF		\$	
2880	23161EN		POLE BASE-HIGH MAST	85.00	CUYD		\$	
2890	24601EC		INSTALL (MONITORING SYSTEM)	2.00	EACH		\$	

Section: 0010 - TRAFFIC LOOPS

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2900	04793		CONDUIT-1 1/4 IN	80.00	LF		\$	
2910	04795		CONDUIT-2 IN	20.00	LF		\$	

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LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2920	04820		TRENCHING AND BACKFILLING	90.00	LF		\$	
2930	04829		PIEZOELECTRIC SENSOR	6.00	EACH		\$	
2940	04830		LOOP WIRE	2,900.00	LF		\$	
2950	04895		LOOP SAW SLOT AND FILL	560.00	LF		\$	
2960	20359NN		GALVANIZED STEEL CABINET	2.00	EACH		\$	
2970	20360ES818		WOOD POST	4.00	EACH		\$	
2980	20391NS835		ELECTRICAL JUNCTION BOX TYPE A	2.00	EACH		\$	

Section: 0011 - WATER MAIN AND FORCE MAIN RELOCATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
2990	03383		PVC PIPE-4 IN 4 INCH WATER MAIN	51.00	LF		\$	
3000	03385		PVC PIPE-6 IN 6 INCH WATER MAIN	20.00	LF		\$	
3010	03389		PVC PIPE-10 IN 10 INCH WATER MAIN	1,789.00	LF		\$	
3020	03464		TIE-IN 4 IN	1.00	EACH		\$	
3030	03466		TIE-IN 6 IN	1.00	EACH		\$	
3040	03470		TIE-IN 10 IN	1.00	EACH		\$	
3050	03530		GATE VALVE-10 IN	2.00	EACH		\$	
3060	03559		BEND 90 DEG 4 IN	1.00	EACH		\$	
3070	03560		BEND 90 DEG 6 IN	1.00	EACH		\$	
3080	03561		BEND 90 DEG 10 IN	1.00	EACH		\$	
3090	21109ND		RELOCATE SERVICE (1 INCH)	2.00	EACH		\$	
3100	21109ND		RELOCATE SERVICE (2 INCH)	2.00	EACH		\$	
3110	21353ND		TIE-IN TO FORCE MAIN (2.5 INCH)	2.00	EACH		\$	
3120	22605NN		CAP AND BLOCK-6 IN (6 INCH CAP AND PLUG)	1.00	EACH		\$	
3130	23499EC		CONN TO TAP SLEEVE & VALVE-10X10X6 (10X10X6 TEE)	1.00	EACH		\$	
3140	23843EC		PVC PIPE-2 1/2 IN (2.5 INCH FORCE MAIN)	930.00	LF		\$	
3150	24186EC		BORE AND JACK PIPE-36 IN (36 INCH CASING PIPE)	840.00	LF		\$	
3160	24236ND		CUT AND PLUG 10 IN 10 INCH CAP AND PLUG	1.00	EACH		\$	
3170	24486ED		TEE 10X10X4	1.00	EACH		\$	
3180	24633EC		CAP & PLUG (4 INCH)	1.00	EACH		\$	
3190	24633EC		CAP & PLUG (2.5 INCH)	2.00	EACH		\$	
3200	24634EC		BEND (2.5 INCH BEND 90 DEGREE)	2.00	EACH		\$	
3210	24634EC		BEND (2.5 INCH BEND 45 DEGREE SEG)	2.00	EACH		\$	

Section: 0012 - TRAINEE

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
3220	02742		TRAINEE PAYMENT REIMBURSEMENT 1 IRON WORKER	1,400.00	HOUR		\$	
3230	02742		TRAINEE PAYMENT REIMBURSEMENT 1 CEMENT MASON	1,200.00	HOUR		\$	

Section: 0013 - MOBILIZATION &/OR DEMOBILIZATION

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SECTION 0010 - MOBILIZATION AND DEMOBILIZATION

LINE	BID CODE	ALT	DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	FP	AMOUNT
3240	02568		MOBILIZATION	1.00	LS		\$	
3250	02569		DEMOBILIZATION	1.00	LS		\$	