APPENDIX F
Potential ARARs and TBC Guidance for the Non-Time-Critical Removal Action for the River System
Kingston Fly Ash Recovery Project, Roane County, Tennessee

Media/Resource/Action	Requirement	Prerequisite	Citation
	Chemical-specific ARARs	5	
Restoration of Rivers classified for <i>Domestic</i> <i>Water Supply</i>	Waters shall not contain toxic substances, whether alone or in combination with other substances, which will produce toxic conditions that materially affect the health and safety of man and animals, or impair the safety of conventionally treated water supplies.	Presence of pollutant(s) in waters of the State as defined in TCA 69-3-103(33) — relevant and appropriate	TDEC 1200-4-303(1)(j)
	May not exceed AWQC in surface water(s) for the listed toxic substances.		TDEC 1200-4-303(1)(j)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Solids, Turbidity, and Temperature.		TDEC 1200-4-303(1)(a) through (g)
	Waters shall not contain other pollutants in quantities that may be detrimental to public health or impair the usefulness of the water as a source of domestic water supply.		TDEC 1200-4-303(1)(k)
Restoration of Rivers classified for <i>Industrial</i> <i>Water Supply</i>	The waters shall not contain toxic substances whether alone or in combination with other substances, which will adversely affect industrial processing.	Presence of pollutant(s) in waters of the State as defined in TCA 69-3-103(33) — relevant and appropriate	TDEC 1200-4-303(2)(i)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Solids, Turbidity, and Temperature.		TDEC 1200-4-303(2)(a) through (g)
	Waters shall not contain other pollutants in quantities that may adversely affect industrial processing.		TDEC 1200-4-303(2)(j)

Media/Resource/Action	Requirement	Prerequisite	Citation
Restoration of Rivers classified for Fish and Aquatic Life	Waters shall not contain toxic substances or a combination of substances including disease-causing agents that, by way of either direct or indirect exposure through food chains, may cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, physical deformations, or restrict or impair growth in fish or aquatic life or their offspring.	Presence of pollutant(s) in waters of the State as defined in TCA 69-3- 103(33) — relevant and appropriate	TDEC 1200-4-303(3)(g)
	May not exceed AWQC in surface water(s) for the listed toxic substances.		TDEC 1200-4-303(3)(g)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Turbidity, and Temperature.		TDEC 1200-4-303(3)(a) through (g)
	Waters shall not contain other pollutants that will be detrimental to fish or aquatic life.		TDEC 1200-4-303(3)(h)
	The waters shall not contain iron at concentrations that cause toxicity or in such amounts that interfere with habitat due to precipitation or bacteria growth.		TDEC 1200-4-303(3)(i)
	The waters shall not be modified through the addition of pollutants or through physical alteration to the extent that the diversity and/or productivity of aquatic biota within the receiving waters are substantially decreased or adversely affected, except as allowed under 1200-4-306.		TDEC 1200-4-303(3)(m)
	The quality of stream habitat shall provide for the development of a diverse aquatic community that meets regionally-based biological integrity goals. Types of habitat loss include, but are not limited to: channel and substrate alterations, rock and gravel removal, stream flow changes, accumulation of silt, precipitation of metals, and removal of riparian vegetation. For wadeable streams, the instream habitat within each subecoregion shall be generally similar to that found at reference streams.		TDEC 1200-4-303(3)(n)

Media/Resource/Action	Requirement	Prerequisite	Citation
	Stream or other water body flows shall support the fish and aquatic life criteria.		TDEC 1200-4-303(3)(o)
Restoration of Rivers classified for <i>Recreation</i>	Waters shall not contain toxic substances, whether alone or in combination with other substances, that will render the water unsafe or unsuitable for water contact activities including the capture and subsequent consumption of fish and shellfish, or will propose toxic conditions that will adversely affect man, animal, aquatic life or wildlife	Presence of pollutant(s) in waters of the State as defined in TCA 69-3-103(33) — relevant and appropriate	TDEC 1200-4-303(4)(j)
	May not exceed AWQC in surface water(s) for the listed		TDEC 1200-4-303(4)(j)
	toxic substances (applies to waters classified for both recreation & domestic water supply)		As written in TDEC 1200- 4-3-03
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Solids, Total Suspended Solids, Turbidity, and Temperature		TDEC 1200-4-303(4)(a) through (e)
	Waters shall not contain other pollutants in quantities that may have a detrimental effect on recreation		TDEC 1200-4-303(4)(k)
Restoration of Rivers classified for <i>Irrigation</i> and/or <i>Livestock Watering</i> and Wildlife	Waters shall not contain toxic substances, whether alone or in combination with other substances, that will produce toxic conditions that adversely affect the quality of the waters for irrigation and/or livestock watering and wildlife.	Presence of pollutant(s) in waters of the State as defined in TCA 69-3-103(33) — relevant and appropriate	TDEC 1200-4-303(5)(f) and (6)(f)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Solids, and Temperature.		TDEC 1200-4-303(5)(a) through (e); and TDEC 1200-4-303(6)(a) through (e)
	Waters shall not contain other pollutants in quantities that may be detrimental to the waters used for irrigation and/or for livestock watering and wildlife.		TDEC 1200-4-303(5)(g) and (6)(g)

Media/Resource/Action	Requirement	Prerequisite	Citation
	Location-specific ARARs	5	
Floodplains			
Presence of floodplain	An evaluation shall consider (1) the effect of the proposed action on natural and beneficial floodplain values and (2) alternatives that would eliminate or minimize such effects. The initiating office shall determine if there is no practicable alternative to siting in a floodplain. If a determination of no practicable alternative is made, all practical measures to minimize impacts on the floodplain shall be implemented. If at any time prior to commencement of the action it is determined that there is a practicable alternative that will avoid affecting floodplains, the proposed action shall not proceed.	Federal actions that involve potential impacts to, or take place within, floodplains — TBC guidance	Tennessee Valley Authority Instruction, Section IX, Environmental Review: Procedures for Compliance with the National Environmental Policy Act, April 28, 1983, which incorporates E011988, Section 2(a)(2) requirements.
Aquatic resources			
Waters of the State as defined in <i>TCA</i> 69-3-103(33)	It is unlawful for any person, except in accordance with the conditions of a valid permit, to carry out any activity which may result in the alteration of the physical, chemical, radiological, biological, or bacteriological properties of any waters of the State, including wetlands.  Must comply with the substantive requirements of the General Aquatic Resources Alteration Permits (ARAP) for:  Bank Stabilization Minor Alteration to Wetlands Minor Dredging and Filling Sediment Removal for Stream Remediation Stream Restoration and Habitat Enhancement  Note: Permits are not required under CERCLA 121(e)(1); however compliance with the relevant substantive requirements contained in the specified General Permits is expected.	Action potentially altering the physical, chemical, radiological, biological, or bacteriological properties of any Waters of the State, including wetlands. These activities include, but are not limited to: the discharge of dredge or fill material, dredging, stream channel modifications, water withdrawals, wetlands alterations including drainage, and other construction activities which result in the alteration of the waters of the State – relevant and appropriate	TDEC 1200-4-7.01(3)  TDEC General Aquatic Resource Alteration Permits TBC (effective July 1, 2010)

Media/Resource/Action	Requirement	Prerequisite	Citation
Within area impacting stream or any other body of water –and - presence of wildlife resources (e.g., fish)	The effects of water-related projects on fish and wildlife resources and their habitat should be considered with a view to the conservation of fish and wildlife resources by preventing loss of and damage to such resources.	Action that impounds, modifies, diverts, or controls waters, including navigation and drainage activities — relevant and appropriate	Fish and Wildlife Coordination Act (16 USC 661 et seq.)
Location encompassing aquatic ecosystem as defined in 40 <i>CFR</i> 230.3(c)	No discharge of dredged or fill material into an aquatic ecosystem is permitted if there is a practicable alternative that would have less adverse impact.	Action that involves discharge of dredged or fill material into waters of the U.S., including jurisdictional	40 CFR 230.10(a)
	No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 CFR 230.70 <i>et seq.</i> are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.	opropriate and practicable steps in accordance with 30.70 <i>et seq.</i> are taken that will minimize potential	40 CFR 230.10(d)
	Must comply with the substantive requirements of the NWP 38 General Conditions, as appropriate, any regional or case-specific conditions recommended by the Corps District Engineer, after consultation.	Onsite CERCLA action conducted by Federal agency that involves the discharge of dredged or fill material into waters of the United States, including jurisdictional wetlands – relevant and appropriate	Nation Wide Permit (38) Cleanup of Hazardous and Toxic Waste  33 CFR 323.3(b)
Endangered, threatened, or r	are species		
Presence of Tennessee nongame species as defined	May not take (i.e., harass, hunt, capture, kill or attempt to kill), possess, transport, export, or process wildlife species.	Action impacting Tennessee nongame species, including wildlife species	TCA 70-8-104(c)
in <i>TCA 70-8-103</i>	May not knowingly destroy the habitat of such wildlife species.	which are "in need of management" (as listed in TWRCP 94-16 and 94-17)  — relevant and appropriate	TWRCP 94-16(II)(1)(a) and TWRCP 94-17(II) (TBC guidance)
	Upon good cause shown and where necessary to protect human health or safety, endangered or threatened species may be removed, captured, or destroyed Provisions for removal, capture, or destruction of nongame wildlife for the purposes set forth above shall be set forth in regulations issued by the executive director pursuant to § 70-8-104(a).		TCA 70-8-106(e) and TWRCP 94-16(II)(1)(c) (TBC guidance)

(continued)	

Media/Resource/Action	Requirement	Prerequisite	Citation
Presence of federally endangered or threatened species, as designated in 50 CFR 17.11 and 17.12 or critical habitat of such species	Actions that jeopardize the existence of a listed species or results in the destruction or adverse modification of critical habitat must be avoided or reasonable and prudent mitigation measures take.	Action that is likely to jeopardize fish, wildlife, or plant species or destroy or adversely modify critical habitat — applicable	16 U.S.C. § 1536(a)(2) – Sect. 7(a)(2)
	Action-specific ARARs		
Site preparation, construction	n, and excavation activities		
Activities causing fugitive dust emissions	Shall take reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions shall include, but are not limited to, the following:	Fugitive emissions from land-disturbing activities (e.g., excavation, construction) — applicable	TDEC 1200-3-801(1)
	Use, where possible, of water or chemicals for control of dust and in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land; and		TDEC 1200-3-801(1)(a)
	Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stock piles, and other surfaces which can create airborne dusts.		TDEC 1200-3-801(1)(b)
	Shall not cause or allow fugitive dust to be emitted in such a manner to exceed 5 minutes/hour or 20 minutes/day beyond property boundary lines on which emission originates.		TDEC 1200-3-801(2)
	Operator must take dust control measures as necessary to prevent dust from creating a nuisance or safety hazard to adjacent landowners or to persons engaged in supervising, operating, and using the site. The use of any oils or other chemicals (other than water) for dust suppression must be approved in writing beforehand.	Emissions from coal ash drying area- relevant and appropriate	TDEC 1200-1-7- .02(1)(c)(1)(ii)(XI)

Media/Resource/Action	Requirement	Prerequisite	Citation
Activities causing storm water runoff (e.g., clearing, grading, excavation)	Implement good construction management techniques (including sediment and erosion controls, vegetative controls, and structural controls) in accordance with the substantive requirements of <i>General Permit No. TNR10-0000, Appendix F</i> to ensure water discharge:	Storm water runoff discharges from land disturbed by construction activity— disturbance of ≥1 acre total — applicable	TCA 69-3-108(j) TDEC 1200-4-1003(2)(a)
	<ul> <li>Does not violate water quality criteria as stated in TDEC 1200-4-303, including but not limited to prevention of discharges that cause a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of water of the state for any of the uses designated for that water body by TDEC 1200-4-4, and</li> <li>Does not violate other conditions detailed in <i>General Permit No. TNR10-0000</i>.</li> </ul>	Stormwater discharges from construction activities — TBC guidance	General Permit No. TNR10-0000 Section 4.3.2(a)
	Does not contain distinctly visible floating scum, oil, or other matter.		General Permit No. TNR10-0000 Section 4.3.2(b)
	Results in no materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.		General Permit No. TNR10-0000 Section 4.3.2(d)
General duty to mitigate for discharge of wastewater from treatment system	Take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of effluent standards which has a reasonable likelihood of adversely affecting human health or the environment.	Discharge of pollutants to surface waters—applicable	40 CFR §122.41(d)
Operation and maintenance of treatment system	Properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the effluent standards. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.	Discharge of pollutants to surface waters—applicable	40 CFR §122.41(e)

(continued)	

Media/Resource/Action	Requirement	Prerequisite	Citation
Technology-based treatment requirements for wastewater discharge	To the extent that EPA promulgated effluent limitations are inapplicable, shall develop on a case-by-case Best Professional Judgment (BPJ) basis under Section 402(a)(1)(B) of the CWA, technology based effluent limitations by applying the factors listed in 40 CFR §125.3(d) and shall consider:  The appropriate technology for this category or class of point sources, based upon all available information; and  Any unique factors relating to the discharger.	Discharge of pollutants to surface waters from other than a POTW–applicable	40 CFR §125.3(c)(2)
Monitoring requirements for treatment system discharges	In addition to 40 CFR §122.48 and to assure compliance with effluent limitations, one must monitor, as provided in subsections (i) thru (iv) of 122.44(i)(1).	Discharge of pollutants to surface waters—applicable	40 CFR §122.44(i)(1)
	All effluent limitations, standards and prohibitions shall be established for each outfall or discharge point, except as provided under section 122.44(k)		40 CFR §122.45(a)
	All effluent limitations, standards and prohibitions, including those necessary to achieve water quality standards, shall unless impracticable be stated as:  • Maximum daily and average monthly discharge limitations for all discharges	Continuous discharge of pollutants to surface waters—applicable	40 CFR §122.45(d)(1)
Waste characterization, store	age, and disposal		
Characterization of solid waste (all primary and secondary wastes)	Must determine if waste is hazardous or is excluded under 40 CFR 261.4; and	Generation of solid waste as defined in 40 CFR 261.2 — applicable	40 CFR 262.11(a) TDEC 1200-1-11- .03(1)(b)(1)
	Must determine if waste is listed under 40 CFR Part 261; or		40 CFR 262.11(b) TDEC 1200-1-11- .03(1)(b)(2)

Media/Resource/Action	Requirement	Prerequisite	Citation
	Must characterize waste by using prescribed testing methods or applying generator knowledge based on information regarding material or processes used. If waste is determined to be hazardous, it must be managed in accordance with appropriate sections of 40 CFR 260–272.		40 CFR 262.11(c) TDEC 1200-1-11- .03(1)(b)(3)
Disposal of solid waste in offsite landfill	May receive for disposal only those solid wastes it is allowed to manage under the terms of its permit (i.e., those which meet its WAC) or "special wastes" as approved in writing by the TDEC Commissioner.	Disposal of solid waste in a class I, II, III, IV disposal facility regulated by TDEC — relevant and appropriate	TDEC 1200-1-7- .04(2)(k)(1)
Disposal of solid waste in onsite landfill	May receive for disposal only those solid wastes it is allowed to manage under the terms of its permit (i.e., those which meet its WAC) or "special wastes" as approved in writing by the TDEC Commissioner.	Disposal of solid waste in a class I, II, III, IV disposal facility regulated by TDEC — relevant and appropriate	TDEC 1200-1-7- .04(2)(k)(1)
Temporary storage of remediation waste in staging piles (excavated soils)	An accumulation of solid, non-flowing remediation waste defined in 40 CFR 260.10 not in a containment building may be temporarily stored, including mixing, sizing, blending or other similar physical operations intended to prepare the wastes for subsequent management or treatment, at a facility if used only during remedial operations provided that the staging pile will:	Accumulation of remediation waste onsite as defined in 40 CFR 260.10 — relevant and appropriate	40 CFR 264.554(a)(1)
	Facilitate a reliable, effective and protective remedy;		40 CFR 264.554(d)(1)(i)
	Prevent or minimize releases of hazardous wastes and constituents into the environment and minimize or adequately control cross-media transfer as necessary to protect human health and the environment (e.g. use of liners, covers, run-off/run-on controls);		40 CFR 264.554(d)(1)(ii)

Media/Resource/Action	Requirement	Prerequisite	Citation
Design criteria for staging pile	In setting standards and design criteria must consider the following factors:	Storage of remediation waste in a staging pile – applicable	40 CFR 264.554(d)(2)(i) – (vi)
	<ul> <li>Length of time pile will be in operation;</li> <li>Volumes of waste you intend to store in the pile;</li> <li>Physical and chemical characteristics of the wastes to be stored in the unit;</li> <li>Potential for releases from the unit;</li> <li>Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and</li> <li>Potential for human and environmental exposure to potential releases from the unit.</li> </ul>		
Closure of staging piles of remediation waste located in previously contaminated area	Must be closed within 180 days after the operating term by removing or decontaminating all remediation waste, contaminated containment system components, and structures and equipment contaminated with waste and leachate.	Storage of remediation waste in staging pile in previously contaminated area — relevant and appropriate	40 CFR 264.554(j)
Closure of staging piles of remediation waste located in an uncontaminated area	Must be closed within 180 days after the operating term according to 40 CFR 264.258(a) and 264.111 or 265.258(a) and 265.111.	Storage of remediation waste in staging pile in uncontaminated area — relevant and appropriate	40 CFR 264.554(k)
Onsite storage of used oil	Used oil shall not be stored in a unit other than a tank or container.	Generation and storage of used oil — applicable	40 CFR 279.22(a) TDEC 1200-1-11- .11(3)(c)1
	Containers and aboveground tanks used to store used oil must be:		40 CFR 279.22(b) TDEC 1200-1-11- .11(3)(c)2
	In good condition (no severe rusting, apparent structural defects or deterioration); and		40 CFR 279.22(b)(1) TDEC 1200-1-11- .11(3)(c)2(i)

Media/Resource/Action	Requirement	Prerequisite	Citation
	Not leaking (no visible leaks).		40 CFR 279.22(b)(2) TDEC 1200-1-11- .11(3)(c)2(ii)
	Containers and aboveground tanks used to store used oil and fill pipes used to transfer used oil into USTs must be labeled or marked clearly with the words "Used Oil".		40 CFR 279.22(c)(1) and (2) TDEC 1200-1-1111(3)(c)3(i) and (ii)
Disposal of RCRA hazardous waste in a land-based unit	May be land disposed if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at 40 CFR 268.40 before land disposal.	Land disposal, as defined in 40 CFR 268.2, of restricted RCRA waste - applicable	40 CFR 268.40(a)
	All underlying hazardous constituents [as defined in 40 CFR 268.2(i)] must meet the Universal Treatment Standards, found in 40 CFR 268.48 Table UTS prior to land disposal	Land disposal of restricted RCRA characteristic wastes (D001-D043) that are not managed in a wastewater treatment system that is regulated under the CWA, that is CWA equivalent, or that is injected into a Class I nonhazardous injection wellapplicable	40 CFR 268.40(e)
Disposal of RCRA-hazardous waste soil in a land-based unit	Must be treated according to the alternative treatment standards of 40 CFR 268.49(c) or according to the UTSs specified in 40 CFR 268.48 applicable to the listed and/or characteristic waste contaminating the soil prior to land disposal	Land disposal, as defined in 40 CFR 268.2, of restricted hazardous soilsapplicable	40 CFR 268.49(b)
Transportation			
Transportation of hazardous materials	Shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49 CFR 171-180.	Any person who, under contract with a department or agency of the federal government, transports "in commerce," or causes to be transported or shipped, a hazardous material — applicable	49 CFR 171.1(c)

(continued)

Media/Resource/Action	Requirement	Prerequisite	Citation
Transportation of hazardous waste <i>offsite</i>	Must comply with the generator requirements of 40 CFR 262.20–23 for manifesting, Sect. 262.30 for packaging, Sect. 262.31 for labeling, Sect. 262.32 for marking, Sect. 262.33 for placarding, Sect. 262.40, 262.41(a) for record keeping requirements, and Sect. 262.12 to obtain EPA ID number.	Preparation and initiation of shipment of hazardous waste offsite - applicable	40 CFR 262.10(h);
Transportation of samples (i.e. contaminated soils and wastewaters)	<ul> <li>Exemption: Not subject to any requirements of 40 CFR Parts 261 through 268 or 270 when:</li> <li>the sample is being transported to a laboratory for the purpose of testing; or</li> <li>the sample is being transported back to the sample collector after testing.</li> <li>the sample is being stored by sample collector before transport to a lab for testing</li> <li>To qualify for this exemption, a sample collector shipping samples to a laboratory must:</li> <li>Comply with U.S. DOT, U.S. Postal Service, or any other applicable shipping requirements</li> <li>Assure that the information provided in (1) thru (5) of this section accompanies the sample.</li> <li>Package the sample so that it does not leak, spill, or vaporize from its packaging.</li> </ul>	Samples of solid waste or a sample of water, soil for purpose of conducting testing to determine its characteristics or composition - applicable	40 CFR 261.4(d)(1)(i)—(iii)  40 CFR 261.4(d)(2)(i)(A) and (B)

ARARs = applicable or appropriate and relevant

AWQC = ambient water quality criteria

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

RCRA = Resource Conservation and Recovery Act

TBC = to be considered

TCA = Tennessee Code Annotated

TDEC = Tennessee Department of Environment and Conservation

TWRCP = Tennessee Wildlife Resources Commission Proclamation

USC = United States Code

WAC = waste acceptance criteria