

APPENDIX C
Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee

Media/Resource/Action	Requirement	Prerequisite	Citation
Chemical-specific ARARs			
Restoration of Rivers classified for <i>Domestic 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 1200-4-3-.03(1)(j)
	May not exceed AWQC in surface water(s) for the listed toxic substances.		TDEC 1200-4-3-.03(1)(j)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Solids, Turbidity, and Temperature.		TDEC 1200-4-3-.03(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 1200-4-3-.03(1)(k)
Restoration of Rivers classified for <i>Industrial 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 1200-4-3-.03(2)(i)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Solids, Turbidity, and Temperature.		TDEC 1200-4-3-.03(2)(a) through (g)
	Waters shall not contain other pollutants in quantities that may adversely affect industrial processing.		TDEC 1200-4-3-.03(2)(j)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
Restoration of Rivers classified for <i>Fish and Aquatic Life</i>	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 1200-4-3-.03(3)(g)
	May not exceed AWQC in surface water(s) for the listed toxic substances.		TDEC 1200-4-3-.03(3)(g)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Total Dissolved Solids, Turbidity, and Temperature.		TDEC 1200-4-3-.03(3)(a) through (g)
	Waters shall not contain other pollutants that will be detrimental to fish or aquatic life.		TDEC 1200-4-3-.03(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 1200-4-3-.03(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 1200-4-3-.06.		TDEC 1200-4-3-.03(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 1200-4-3-.03(3)(n)
	Stream or other waterbody flows shall support the fish and aquatic life criteria.		TDEC 1200-4-3-.03(3)(o)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
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 1200-4-3-.03(4)(j)
	May not exceed AWQC in surface water(s) for the listed toxic substances (applies to waters classified for both recreation & domestic water supply)		TDEC 1200-4-3-.03(4)(j) 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 1200-4-3-.03(4)(a) through (e)
	Waters shall not contain other pollutants in quantities that may have a detrimental effect on recreation		TDEC 1200-4-3-.03(4)(k)
Restoration of Rivers classified for <i>Irrigation and/or Livestock Watering and Wildlife</i>	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 1200-4-3-.03(5)(f) and (6)(f)
	Shall not violate physical and chemical parameters or conditions related to Dissolved Oxygen, pH, Solids, and Temperature.		TDEC 1200-4-3-.03(5)(a) through (e); and TDEC 1200-4-3-.03(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 1200-4-3-.03(5)(g) and (6)(g)
ARAR for radium at Superfund sites, is 40 CFR 192, which contains a criteria of 5 pCi/g above the established background [usually around 1 to 2 pCi/g in the Southeast U.S.].	The concentration of radium-226 in land averaged over any area of 100 square meters shall not exceed the background level by more than 5pCi/g, averaged over the first 15 cm of soil below the surface and 15pCi/g averaged over 15cm thick layers of soil more than 15cm below the surface.	Remediation Goals for CERCLA sites — to be considered	40 CFR 192.12 (a)(1) and (2)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
Location-specific ARARs			
<i>Floodplains</i>			
Presence of floodplain	An evaluation shall consider (1) the effect of the proposed action on natural and beneficial floodplain and wetland 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 or constructing in a wetland. If a determination of no practicable alternative is made, all practical measures to minimize impacts on the floodplain or wetland 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 or wetlands, the proposed action shall not proceed.	Federal actions that involve potential impacts to, or take place within, floodplains — to be considered	Tennessee Valley Authority Instruction, Section IX, Environmental Review: Procedures for Compliance with the National Environmental Policy Act, April 28, 1983, which incorporates E011988 and E011990 requirements.
<i>Aquatic resources</i>			
Waters of the State as defined in TCA 69-3-103(33)	Must comply with the substantive requirements of the Aquatic Resources Alteration Permit (ARAP) for erosion and sediment control to prevent pollution. Pollution control requirements include, but are not limited to the following: <ul style="list-style-type: none"> • Limit clearing, grubbing, and other disturbances in areas in, or immediately adjacent to Waters of the State to the minimum necessary to, accomplish the proposed activity; • Unnecessary vegetation removal is prohibited, and all disturbed areas must be properly stabilized and revegetated as soon as practicable. 	Action potentially altering the properties of any Waters of the State — applicable	TCA 69-3-108(b)(1) TDEC ARAP Program general requirements (to be considered guidance)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
	<ul style="list-style-type: none"> • Limit excavation, dredging, bank reshaping, or grading to the minimum necessary to install authorized structures, accommodate stabilization, or prepare banks for revegetation; • Maintain the erosion and sedimentation control measures throughout construction period; and • Upon achievement of a final grade, stabilize and revegetate, within 30 days, all disturbed areas by sodding, seeding, or mulching, or using appropriate native riparian species. 		
<p>Waters of the State as defined in <i>TCA 69-3-103(33)</i></p>	<p>Bank stabilization activities along Waters of the State must be conducted in accordance with the requirements of the aquatic resources alteration program (TDEC 1200-4-7). The general permit requirements for stream bank stabilization include the following:</p> <ul style="list-style-type: none"> • The erosion and sedimentation control practices indicated above under the TDEC ARAP general requirements; • Adverse impacts to T&E species are prohibited; • Placement of rip rap is limited to 300 linear feet of stream bank; • Material may not be placed such that it impairs surface water flow into or out of any wetland area; and • Stabilization materials shall not contain waste metal, construction debris, hazardous substances or toxic pollutants. 	<p>Bank-stabilization activities affecting Waters of the State — to be considered</p>	<p>ARAP General Permit for Stream Bank Stabilization</p>
<p>Waters of the State as defined as <i>TCA 69.3-103(33)</i></p>	<p>Wet weather conveyances may be altered provided the following conditions are met:</p> <ul style="list-style-type: none"> • Erosion and sedimentation controls must be maintained throughout the construction period; and • Adverse impacts to T&E species are prohibited. 	<p>Activities that alter wet weather conveyances — to be considered</p>	<p>ARAP General Permit for Alteration of Wet Weather Conveyances</p>

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
Within area impacting stream or any other body of water – <i>and</i> - 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 <i>USC</i> 661 <i>et seq.</i>)
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 wetlands — applicable	40 <i>CFR</i> 230.10(a)
	No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 <i>CFR</i> 230.70 <i>et seq.</i> are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 <i>CFR</i> 230.10(d)
Wetlands			
Executive Order 11990 for Protection of Wetlands and 40 <i>CFR</i> Part 6	An evaluation shall consider (1) the effect of the proposed action on natural and beneficial floodplain and wetland 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 or constructing in a wetland. If a determination of no practicable alternative is made, all practical measures to minimize impacts on the floodplain or wetland 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 or wetlands, the proposed action shall not proceed.	Federal actions that involve potential impacts to, or take place within, floodplains — to be considered	Tennessee Valley Authority Instruction, Section IX, Environmental Review: Procedures for Compliance with the National Environmental Policy Act, April 28, 1983, which incorporates E011988 and E011990 requirements.
Endangered, threatened, or rare species			
Presence of Tennessee nongame species as defined in TCA 70-8-103	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 which are “in need of management” (as listed in TWRCP 94-16 and 94-17) — applicable	TCA 70-8-104(c)
	May not knowingly destroy the habitat of such wildlife species.		TWRCP 94-16(II)(1)(a) and TWRCP 94-17(II) (to be considered guidance)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
	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 TWRCF 94-16(II)(1)(c) (to be considered guidance)
Presence of Tennessee-listed endangered or rare plant species as listed in TDEC 0400-6-2-.04	It is a violation for any person other than the landowner, lessee, or other person entitled to possession (or the manager, in the case of publicly owned land) or a person with the written permission of the landowner (or manager) to knowingly uproot, dig, take, remove, damage or destroy, possess or otherwise disturb for any purposes any endangered species.	Action impacting rare plant species including but not limited to federally listed endangered species — relevant and appropriate	TCA 70-8-309(a) TWRCF 94-16(II)(1)(a) TWRCF 94-17(II)
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			
<i>Site preparation, construction, and excavation activities</i>			
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 1200-3-8-.01(1)
	<ul style="list-style-type: none"> • 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 1200-3-8-.01(1)(a)
	<ul style="list-style-type: none"> • Application of asphalt, oil, water, or suitable chemicals on dirt roads, materials stock piles, and other surfaces which can create airborne dusts. 		TDEC 1200-3-8-.01(1)(b)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
	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 1200-3-8-.01(2)
Activities causing storm water runoff (e.g., demolition)	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 1200-4-10-.03(2)(a)
	<ul style="list-style-type: none"> • Does not violate water quality criteria as stated in TDEC 1200-4-3, 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 • Does not violate other conditions detailed in <i>General Permit No. TNR10-0000</i>. 	Stormwater discharges from construction activities — to be considered	<i>General Permit No. TNR100000</i> Section 4.3.2(a) (to be considered)
	<ul style="list-style-type: none"> • Does not contain distinctly visible floating scum, oil, or other matter. 		<i>General Permit No. TNR10-0000</i> Section 4.3.2(b)
	<ul style="list-style-type: none"> • 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. 		<i>General Permit No. TNR10-0000</i> Section 4.3.2(d)
Technology-based limitations on direct discharges to surface waters	Where promulgated effluent limitations guidelines only apply to certain aspects of the discharger's operation, other aspects or activities are subject to regulation on a case-by-case basis considering the appropriate technology and other unique factors.		Discharges of pollutants to surface waters — to be considered

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
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Media/Resource/Action	Requirement	Prerequisite	Citation
Technology-based limitations on direct discharges to surface waters	In considering best available technology requirements, consider: <ul style="list-style-type: none"> • Age of equipment and facilities involved; • Process employed; • Engineering aspects of the application of various types of control techniques; • Process changes • Cost of achieving effluent reduction; and • Non-water quality environmental impact. 	Discharges of pollutants to surface waters — to be considered	40 C.F.R. § 125.3(d)(3)
<i>Dredging and Filling</i>			
Clean Water Act §404, Dredge and Fill of Material in Waters of the U.S.	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 wetlands — applicable	40 <i>CFR</i> 230.10(a)
	No discharge of dredged or fill material shall be permitted unless appropriate and practicable steps in accordance with 40 <i>CFR</i> 230.70 <i>et seq.</i> are taken that will minimize potential adverse impacts of the discharge on the aquatic ecosystem.		40 <i>CFR</i> 230.10(d)
<i>Waste generation, characterization, management and disposal</i>			
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 — relevant and appropriate	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
	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
Management and disposal of solid waste	If a waste is determined to be a solid waste, it must be managed in accordance with the applicable state regulations at TDEC 1200-1-7 <i>et seq.</i>	Generation of a solid waste — relevant and appropriate	TDEC 1200-1-7 <i>et seq.</i>

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
	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)
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 on site as defined in 40 CFR 260.10 — to be considered	40 CFR 264.554(a)(1)
	<ul style="list-style-type: none"> Facilitate a reliable, effective and protective remedy; 		40 CFR 264.554(d)(1)(i)
	<ul style="list-style-type: none"> 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)
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 — to be considered	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 — to be considered	40 CFR 264.554(k)
Characterization and management of universal waste	A large quantity handler of universal waste must manage universal waste in accordance with 40 CFR 273 (TDEC 1200-1-11-.12) in a way that prevents releases of any universal waste or component of a universal waste to the environment. Must label or mark the universal waste to identify the type of universal waste.	Generation of universal waste [as defined in TDEC 1200-1-11-.12(1)(a)] for disposal — applicable	40 CFR 273 TDEC 1200-1-11-.12 40 CFR 273.34 TDEC 1200-1-11-.12(3)(e)

**Potential ARARs and TBC Guidance for Non-Time-Critical Removal Actions for the Kingston Ash Recovery Project,
Roane County, Tennessee (continued)**

Media/Resource/Action	Requirement	Prerequisite	Citation
On-site 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
	<ul style="list-style-type: none"> • 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)
	<ul style="list-style-type: none"> • 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 1200-1-11-.11(3)(c)3(i) and (ii)
Transportation			
Transportation of hazardous materials	Shall be subject to and must comply with all applicable provisions of the HMTA and HMR at 49 <i>CFR</i> 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)
Dam Safety			
National Dam Safety Program Act	Alteration, maintenance and operation of a dam in an approved manner.	Operation and maintenance of a dam — to be considered	TDEC 1200-5-7

CFR = *Code of Federal Regulations*
TBC = to be considered
TCA = *Tennessee Code Annotated*

USC = *United States Code*
WAC = waste acceptance criteria