UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

April 18, 2018

Mr. Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division
U.S. Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

RE: **EPA Comments on the Draft Action Memorandum and Responsiveness Summary for the Non-Time Critical Removal Action for the C-Area Groundwater Operable Unit (U), CERCLIS Number: 82, received February 23, 2018 and comments on the Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for C-Area Groundwater Operable Unit (U), CERCLIS Number: 82, SRNS-RP-2017-00365, Revision 1, February 2018, Savannah River Site, South Carolina**

Dear Mr. Hennessey,

The U.S. Environmental Protection Agency, Region 4 (EPA), has reviewed the Draft Action Memorandum for the Non-Time Critical Removal Action (NTCRA) for the C-Area Groundwater Operable Unit (U), CERCLIS Number: 82 and also the RSER/EE/CA for C-Area Groundwater Operable Unit (U), CERCLIS Number: 82, SRNS-RP-2017-00365, Revision 1. EPA Region 4, Office of Regional Counsel recommends that additional ARARs be included in Section 5.2 of the RSER/EE/CA that will address all activities identified in the RSER/EE/CA. The recommended ARAR table is attached as a separate document (Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU). EPA's comment on the Draft Action Memorandum for the NTCRA for the C-Area Groundwater Operable Unit (U) is attached.

If you have any questions or require additional information, please contact me at (404) 562-8513.

Sincerely,

JENNIFER TUFTS

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Date: 2018.04.18 13:35:39 -04'00'

Jennifer Tufts
Remedial Project Manager
Superfund Division

ec: C.L. Bergren, SRNS-ACP
Susan Fulmer, SCDHEC

Attachment

Removal Site Evaluation Report/Engineering Evaluation/Cost Analysis (RSER/EE/CA) for C-Area Groundwater Operable Unit (U), CERCLIS Number: 82, SRNS-RP-2017-00365, Revision 1, February 2018, Savannah River Site, South Carolina

GENERAL COMMENT

1. Section 3.2 Removal Action Objectives. Rather than state that groundwater contaminated with TCE above MCLs will be reduced to MCLs before discharging to surface water, the cleanup goal should be AWQC. Please modify the RAO to state:

   The removal action objective to protect human health and the environment is to reduce discharge of groundwater contaminated with TCE above MCLs to surface water so that the ~~MCL (5 µg/L)~~ AWQC ~~no longer~~ will not be exceeded in the unnamed tributary to Castor Creek.

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Action-specific ARARs ***General Construction Standards — All Land-disturbing Activities (i.e., excavation, clearing, grading, etc.)***					
Managing storm water runoff from land-disturbing activities	Must comply with the substantive requirements for stormwater management and sediment control of *NPDES Construction General (CG) Permit for Stormwater Discharges No. SCR100000, issued under R.122.8 and developed consistent with the conditions in R.61-9.122.41 applicable to all permits.*	Large and small construction activities (as defined in R. 61-9 and SCR100000) of more than 1 acre of land – **applicable**	SCDHEC R. 61-9.122.41 and 122.28(a)(2)(i)	✓	✓
	Coverage under the CG Permit requires development of a stormwater management and sediment control plan which is to be consistent, at a minimum, to the substantive standards listed in SC Regulation 72-300, unless specifically exempted by SC Regulation 72-302.A	Large and small construction activities (as defined in R. 61-9 and SCR100000) of more than 1 acre of land – **TBC**	*NPDES Construction General (CG) Permit for Stormwater Discharges*, Permit No. SCR100000	✓	✓
	The stormwater management and sediment control plan shall contain at a minimum the information provided in the following subsections: • A plan for temporary and permanent vegetative and structural erosion and sediment control measures which specify the erosion and sediment control measures to be used during all phases of the land.disturbing activity and a description of their proposed operation; • Provisions for stormwater runoff control during the land disturbing activity and during the life of the facility meeting the peak discharge rate and velocities requirements in subsections (e)1. and (e)2. of this section.	Activities involving more than two (2) acres and less than five (5) acres of actual land disturbance which are not part of a larger common plan of development or sale – **applicable**	SCDHEC R. 72-307I(3)(d) and (e) – *South Carolina Storm Water Management and Sediment Reduction Regulations*	✓	✓
Managing fugitive dust emissions from land disturbing activities	Emissions of fugitive particulate matter shall be controlled in such a manner and to the degree that it does not create an undesirable level of air pollution. Volatile organic compounds shall not be used for dust control purposes. Oil treatment is also prohibited.	Activities that will generate fugitive particulate matter (Statewide) –**applicable**	SCDHEC R. 61-62.6 Section III(a)- *Control of Fugitive Particulate Matter Statewide* SCDHEC R. 61-62.6 Section III(d)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
	Action-Specific ARARs ***Underground Injection Well - Installation, Operation and Abandonment***				
Injection of fluids, solids, or mixtures into subsurface	No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 *CFR* Part 142 or may otherwise adversely affect the health of persons.	Underground injection into an underground source of drinking water –**applicable.**	40 CFR 144.12(a)	✓	✓
	The movement of fluids containing wastes or contaminants into underground sources of drinking water as a result of injection is prohibited if the presence of the waste or contaminant: May cause a violation of any drinking water standard under R61-58.5; or, May otherwise adversely affect the health of persons. As defined in R.61-87.2: ''Fluid'' means material or substance which flows or moves whether in a semisolid, liquid, sludge, gas, or any other form or state. ''Well'' means any excavation which is cored, bored, drilled, jetted, dug, or otherwise constructed the depth of which is greater than its largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.	Underground injection of any fluids into the subsurface or ground waters of the State of South Carolina – **applicable.**	SCDHEC R.61-87.5(A) and (B)	✓	✓
	No person shall construct, use or operate a Class V.A. well for injection in violation of R61-87.5. R.61-87.11(E)(1) - Class V.A. injection wells include: (g) Injection wells used in experimental technologies	Class V.A injection wells [as classified in R.61-87.11(E)(1)] – **applicable**	SCDHEC R.61-87.11(E)(2)(b)	✓	✓
Operation of underground injection wells	At a minimum, the following information concerning the injection formation shall be determined or calculated: (1) Fluid pressure; (2) Estimated fracture pressure; (3) Physical and chemical characteristics of the injection zone.	Operation of Class V.A. wells, [as classified in R.61-87.11(E)(1)] – **applicable**	SCDHEC R.61-87.14(D)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
	Shall at all times properly operate and maintain all facilities and systems of treatment and controls which are installed or used.		SCDHEC R.61-87.13(X)	✓	✓
	Shall report malfunction of injection system which may cause fluid migration into or between underground sources of drinking water; shall immediately stop injection upon determination that the injection system has malfunctioned and could cause fluid migration into or between underground sources of drinking water; shall not restart the injection system until the malfunction has been corrected.		SCDHEC R.61-87.13(EE)	✓	✓
Monitoring of underground injection wells	An appropriate number of monitoring wells shall be completed into the injection zone and into any underground sources of drinking water which could be affected by the injection operation. These wells shall be located in such a fashion as to detect any excursion of injection fluids, process by-products, or formation fluids outside the injection area or zone. If the operation may be affected by subsidence or catastrophic collapse the monitoring wells shall be located so that they will not be physically affected.	Monitoring of Class V.A. wells, [as classified in R.61-87.11(E)(1)]– **applicable**	SCDHEC R.61-87.14(G)(1)	✓	✓
Closure of Class V underground injections wells	Wells must be closed in a manner that complies with the prohibition of fluid movement in 40 CFR 144.82(a)(l). Also, any soil, gravel, sludge, liquids, or other materials removed from or adjacent to the well must be disposed or otherwise managed in accordance with substantive applicable Federal, State, and local regulations and requirements.	Closure of Class V wells [as defined in 40 CFR 144.6(e)] – **applicable**	40 CFR 144.82(b)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Action-specific ARARs ***Monitoring Well Installation, Operation, and Abandonment***					
Installation of Permanent and Temporary Monitoring Wells	All monitoring wells shall be drilled, constructed, maintained, operated, and/or abandoned to ensure that underground sources of drinking water are not contaminated.	Construction of permanent and temporary monitoring wells, as defined in R. 61-71B – **applicable**	SCDHEC R. 61-71H.1(b)	✓	✓
Installation of Permanent Conventionally Installed or Direct Push Monitoring Wells	Wells shall be grouted from the top of the bentonite seal to the land surface. Grout is to be composed of neat cement, a bentonite cement mixture, or high solids sodium bentonite grout.	Construction of permanent conventionally installed or direct push monitoring wells, as defined in R. 61-71B – **applicable**	SCDHEC R. 61-71H.2.a.(1),(2) *[conventionally installed wells]* SCDHEC R. 61-71H.3.b.(1),(2) *[direct push wells]*	✓	✓
	The diameter of the annular space shall be large enough to allow for forced injection of grout through a tremie pipe. All grouting shall be accomplished using forced injection to emplace the grout. When emplacing the grouting material, the tremie pipe shall be lowered to the bottom of the zone to be grouted. The tremie pipe shall be kept full continuously from start to finish of the grouting procedure, with the discharge end of the tremie pipe being continuously submerged in the grout until the zone to be grouted is completely filled.		SCDHEC R. 61-71H.2.a.(3),(4) *[conventionally installed wells]* SCDHEC R. 61-71H.3.b.(3),(4) *[direct push wells]*	✓	✓
	A cement or aggregate reinforced concrete pad at the ground surface of appropriate durability and strength, considering the setting and location of each well, that extends six inches beyond the borehole diameter and six inches below ground surface is required. The pad shall be capable of preventing infiltration between the surface casing and the borehole to the subsurface.		SCDHEC R. 61-71H.2.a.(5) *[conventionally installed wells]* SCDHEC R. 61-71H.3.b.(5) *[direct push wells]*	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Installation of Permanent Conventionally Installed or Direct Push Monitoring Wells (cont'd)	Well Construction and Materials Standards – (1) Casing shall be of sufficient strength to withstand normal forces encountered during and after well installation and be composed of material so as to minimally affect water quality analyses. (2) Casing shall have a sufficient diameter to provide access for sampling equipment. (3) A properly hydrated bentonite seal with a minimum thickness of twelve inches directly above the filter pack shall be used, if the well has a filter pack. (4) The monitoring well intake or screen design shall minimize formational materials from entering the well. The filter pack 17 shall be utilized opposite the well screen as appropriate in so that parameter analyses will be minimally affected. (5) A locking cap or other security devices to prevent damage and/or vandalism shall be used. (6) Monitoring wells completed below grade shall be in a watertight vault with a well cap to prevent infiltration of surface water into the well.	Construction of permanent conventionally installed or direct push monitoring wells, as defined in R. 61-71B – **applicable**	SCDHEC R. 61-71H.2.b. *[conventionally installed wells]* SCDHEC R. 61-71H.3.c *[direct push wells]*	✓	✓
	All monitoring wells shall be properly labeled with an identification plate immediately upon well completion. The identification plate shall be constructed of a durable, weatherproof, rustproof, material. The identification plate shall be permanently secured to the well casing or enclosure floor around the casing where it is readily visible and shall identify: (1) company name and certification number of the driller who installed the well; (2) date well was completed; (3) total depth (feet); (4) casing depth (feet); (5) screened Interval; (6) designator and/or identification number.		R. 61-71H.2.c. *[conventionally installed wells]* SCDHEC R. 61-71H.3.d *[direct push wells]*	✓	✓
Additional Requirements for Installation of Direct Push Monitoring Wells	Direct push wells cannot be installed below a confining layer unless it can be demonstrated to the satisfaction of the Department that cross-contamination of the aquifer systems can be prevented.	Construction of direct push monitoring wells, as defined in R. 61-71B – **applicable**	R. 61-71H.3.a.	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Installation of *Temporary* Monitoring Wells	Construction and Materials – (1) Casing shall be of sufficient strength to withstand normal forces encountered during and after well installation and be 20 composed of material so as to minimally affect water quality analyses. (2) Casing shall have a sufficient diameter to provide access for sampling equipment. (3) The monitoring well intake or screen design shall minimize formational materials from entering the well. The filter pack or intake shall be utilized opposite the well screen as appropriate so that parameter analyses will be minimally affected.	Construction of *temporary* monitoring wells, as defined in R. 61-71B – **applicable**	SCDHEC R. 61-71H.4.a.	✓	✓
	All temporary monitoring wells shall be sealed with a watertight cap or seal until abandoned. Temporary monitoring wells shall be maintained such that they are not a source or channel of contamination before they are abandoned.	Operation and maintenance of *temporary* monitoring wells, as defined in R. 61-71B – **applicable**	SCDHEC R. 61-71H.4.b.	✓	✓
Abandonment of *Permanent Conventionally Installed* Monitoring Wells	Abandonment of permanent conventionally installed monitoring wells shall be by forced injection of grout or pouring through a tremie pipe starting at the bottom of the well and proceeding to the surface in one continuous operation. The well shall be filled with either with neat cement, bentonite-cement, or 20% high solids sodium bentonite grout, from the bottom of the well to the land surface.	Abandonment of *permanent conventionally installed* monitoring wells – **applicable**	SCDHEC R. 61-71H.2.e.	✓	✓
Abandonment of *Permanent Direct Push* Monitoring Wells	(1) Permanent direct push wells that do not penetrate a confining layer shall be abandoned by removing all casing from the subsurface and be grouted by forced injection through a tremie pipe from the total depth to the land surface, or by forced injection or pouring of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through a tremie pipe starting at the bottom of the well and proceeding to the surface. (2) Direct push wells that penetrate a confining layer shall be abandoned by forced injection or pouring of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through a tremie pipe starting at the bottom of the well and proceeding to the surface in one continuous operation.	Abandonment of *permanent direct push* monitoring wells, as defined in R.61-71B – **applicable**	SCDHEC R. 61-71H.2.f.	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Abandonment of *Temporary* Conventionally Installed or Direct Push Monitoring Wells	(1) All temporary monitoring wells shall be abandoned within 5 days of borehole completion. (2) A conventionally drilled temporary well shall be abandoned by forced injection of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through a tremie pipe starting at the bottom of the well and proceeding to the surface in one continuous operation. (3) A temporary direct push well that does not penetrate a confining layer shall be abandoned by forced injection of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through a tremie pipe after the sampling device has been removed. (4) A temporary direct push well that penetrates a confining layer shall be abandoned by forced injection of neat cement, bentonite-cement, or 20% high solids sodium bentonite grout through the sampling device as the sampling device is removed from the sub-surface. Abandonment shall occur during the initial withdrawal from the original push borehole and not by a separate tremie tool after the sampling device has been removed to ensure the breech in the confining layer is permanently sealed.	Abandonment of *temporary* conventionally installed or direct push monitoring wells, as defined in R.61-71B – **applicable**	SCDHEC R. 61-71H.4.c.	✓	✓
Action-specific ARARs ***Waste Characterization and Storage (e.g., soil cuttings from well installation, monitoring well purgewater, wastewaters)***					
Characterization of solid waste	Must determine if solid waste is a hazardous waste using the following method: Should first determine if waste is excluded from regulation under 40 CFR §261.4; and	Generation of solid waste as defined in 40 CFR §261.2 – **applicable**	40 CFR §262.11(a) SCDHEC R. 61-79 §262.11*(a)*	✓	✓
	Must determine if waste is listed as hazardous waste under 40 CFR Part 261.	Generation of solid waste which is not excluded under 40 CFR §261.4(a) – **applicable**	40 CFR §262.11(b) SCDHEC R. 61-79 §262.11*(b)*	✓	✓
	Must determine whether the waste is (characteristic waste) identified in subpart C of 40 CFR Part 261 by either: (1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261, or according to an equivalent	Generation of solid waste which is not excluded under 40 CFR §261.4(a) – **applicable**	40 CFR §262.11(c) SCDHEC R. 61-79 §262.11*(c)*	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
	method approved by the Administrator under 40 CFR §260.21; or (2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.				
	Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 for possible exclusions or restrictions pertaining to management of the specific waste.	Generation of solid waste which is determined to be hazardous waste –**applicable**	40 CFR §262.11(d) SCDHEC R. 61-79 §262.11*(d)*	✓	✓
Determinations for management of hazardous waste	Must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 CFR 268 *et seq.*. *Note:* This determination may be made concurrently with the hazardous waste determination required in Sec. 262.11 of this chapter.	Generation of hazardous waste for storage, treatment or disposal – **applicable**	40 CFR 268.9(a) SCDHEC R. 61-79 268.9*(a)*	✓	✓
	Must determine the underlying hazardous constituents [as defined in 40 CFR 268.2(i)] in the characteristic waste.	Generation of RCRA characteristic hazardous waste (and is not D001 non-wastewaters treated by CMBST, RORGS, or POLYM of Section 268.42 Table 1) for storage, treatment or disposal – **applicable**	40 CFR 268.9(a) SCDHEC R. 61-79 268.9*(a)*	✓	✓
	Must determine if the hazardous waste meets the treatment standards in 40 CFR 268.40, 268.45, or 268.49 by testing in accordance with prescribed methods or use of generator knowledge of waste. *Note:* This determination can be made concurrently with the hazardous waste determination required in 40 CFR 262.11.	Generation of hazardous waste for storage, treatment or disposal – **applicable**	40 CFR 268.7(a) SCDHEC R. 61-79 268.7*(a)* (1)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Temporary storage of hazardous waste in containers	A generator may accumulate hazardous waste at the facility provided that: • waste is placed in containers that comply with 40 CFR 265.171-173; and • the date upon which accumulation begins is clearly marked and visible for inspection on each container • container is marked with the words "hazardous waste"; or	Accumulation of RCRA hazardous waste on site as defined in 40 CFR 260.10 – **applicable**	40 CFR 262.34(a)(1) and (2) SCDHEC R. 61-79 262.34*(a)* (1) and (2) 40 CFR 264.34(a)(3) SCDHEC R. 61-79 262.34*(a)* (3)	✓	✓
	• container may be marked with other words that identify the contents.	Accumulation of 55 gal. or less of RCRA hazardous waste or 1 quart of acutely hazardous waste listed in 261.33(e) at or near any point of generation – **applicable**	40 CFR 262.34(c)(1) SCDHEC R. 61-79 262.34*(c)* (1)	✓	✓
Use and management of hazardous waste in containers	If container holding waste is not in good condition (e.g. severe rusting, structural defects), or if it begins to leak, must transfer waste into container in good condition.	Storage of RCRA hazardous waste in containers – **applicable**	40 CFR 265.171 SCDHEC R. 61-79 265.171	✓	✓
	Must use a container made or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired.		40 CFR 265.172 SCDHEC R. 61-79 265.172	✓	✓
	A container holding hazardous waste must always be closed during storage, except when necessary to add or remove waste. A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak.		40 CFR 265.173(a) and (b) SCDHEC R. 61-79 265.173*(a)* and *(b)*	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Storage of hazardous waste in container area	Area must have a containment system designed and operated in accordance with 40 CFR 265.175(b).	Storage of RCRA hazardous waste in containers ***with free liquids*** – **applicable**	40 CFR 264.175(a) SCDHEC R. 61-79 264.175*(a)*	✓	✓
	Area must be sloped or otherwise designed and operated to drain liquid from precipitation, or Containers must be elevated or otherwise protected from contact with accumulated liquid.	Storage of RCRA-hazardous waste in containers that ***do not contain free liquids*** (other than F020, F021, F022, F023, F026 and F027) **– applicable**	40 CFR 265.175(c)(1) and (2) SCDHEC R. 61-79 265.175*(c)* (1) and (2)	✓	✓
Closure of RCRA container storage unit	At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soils containing or contaminated with hazardous waste and hazardous waste residues must be decontaminated or removed. [Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with 40 CFR 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 262 through 266 of this chapter].	Storage of RCRA hazardous waste in containers in a unit with a containment system – **applicable**	40 CFR 264.178	✓	✓
Action-specific ARARs ***Waste treatment and disposal — e.g., contaminated soils, wastewaters, monitoring well purge water***					
Disposal of solid waste	Shall ultimately dispose of solid waste at facilities and/or sites permitted or registered by the Department for processing or disposal of that waste stream.	Generation of solid waste intended for off-site disposal **– relevant and appropriate**	SCDHEC R. 61-107.5(D)(3)	✓	✓
Land disposal of RCRA-hazardous waste	May be land disposed if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at § 268.40 before land disposal.	Land disposal, as defined in 40 CFR 268.2, of restricted RCRA waste – **applicable**	40 CFR 268.40(a) SCDHEC R. 61-79 §268.40*(a)*	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Land disposal of RCRA-hazardous waste	All underlying hazardous constituents (as defined in 268.2(i)) must meet the Universal Treatment Standards, found in § 268.48, Table Universal Treatment Standards, prior to land disposal as defined in § 268.2(c).	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 well **– applicable**	40 CFR 268.40(e) SCDHEC R. 61-79 §268.40*(e)*	✓	✓
	Must be treated according to the alternative treatment standards in 268.49(c) **or** must be treated according to the Universal Treatment Standards (UTS) [specified in 268.48 Table UTS] 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 soils **–applicable**	40 CFR 268.49(b) SCDHEC R. 61-79 268.49*(b)*	✓	✓
	To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards of 40 CFR 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentration in the waste extract or waste, or the generator may use knowledge of the waste. If the waste contains constituents (including UHCs in the characteristic wastes) in excess of the applicable UTS levels in 40 CFR 268.48, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.	Land disposal of RCRA toxicity characteristic wastes (D004-D011) that are newly identified (i.e., wastes or soil identified by the TCLP but not the Extraction Procedure) **– applicable**	40 CFR 268.34(f) SCDHEC R. 61-79 268.34*(f)*	✓	✓
Disposal of RCRA wastewaters into CWA wastewater treatment unit	Wastes that are hazardous only because they exhibit a hazardous characteristic, and which are otherwise prohibited under this part, are not prohibited [from land disposal] if the waste meet any of the following criteria, unless the wastes are subject to a specified method of treatment other than DEACT in §268.40, or are D003 reactive cyanide: (i) The wastes are managed in a treatment system which subsequently discharges to waters of the U.S. pursuant to a	Restricted RCRA characteristic hazardous wastewaters managed in a wastewater treatment system **—applicable**	40 CFR §268.1(c)(4) SCDHEC R. 61-79 §268.1(c)(4)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
	permit issued under section 402 of the Clean Water Act [SC R.61-9 and R. 61-68]; or (ii) The wastes are treated for purposes of the pretreatment requirements of section 307 of the Clean Water Act [SC R. 61-9 and R.61-68]; or (iii) The wastes are managed in a zero discharge system engaged in Clean Water Act-equivalent treatment as defined in 268.37(a); and (iv) The wastes no longer exhibit a prohibited characteristic at the point of land disposal (i.e., placement in a surface impoundment).				
Action-specific ARARs ***Transportation of Wastes***					
Transportation of hazardous waste *on-site*	The generator manifesting requirements of §262.20 and §262.32(b) do not apply. Generator or transporter must comply with the requirements set forth in §§263.30 and 263.31 in the event of a discharge of hazardous waste on a private or public right-of-way.	Transportation of hazardous wastes on public or private right-of-way within or along the border of contiguous property under control of same person – **applicable**	40 CFR §262.20(f) SCDHEC R. 61-79 §262.20*(f)*	✓	✓
Transportation of samples (i.e. solid waste, soils and wastewaters)	Are not subject to any requirements of 40 CFR Parts 261 through 268 or 270 when: • the sample is being transported to a laboratory for the purpose of testing; or • the sample is being transported back to the sample collector after testing. • the sample is being stored by sample collector before transport to a lab for testing.	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) SCDHEC R. 61-79 §261.4*(d)* (1)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
	In order to qualify for the exemption in 40 CFR 261.4 (d)(1)(i) and (ii), a sample collector shipping samples to a laboratory must: • Comply with U.S. DOT, U.S. Postal Service, or any other applicable shipping requirements. • Assure that the information provided in (1) thru (5) of this section accompanies the sample. • Package the sample so that it does not leak, spill, or vaporize from its packaging.		40 CFR 261.4(d)(2) 40 CFR 261.4(d)(2) (ii)(A) and (B) SCDHEC R. 61-79 261.4*(d)* (2)(ii)(A) and (B)	✓	✓
Chemical-specific ARARs					
Protection of surface water	Freshwaters (FW) are freshwaters suitable for primary and secondary contact recreation and as a source for drinking water supply after conventional treatment in accordance with the requirements of the Department. Suitable for fishing and the survival and propagation of a balanced indigenous aquatic community of fauna and flora. Suitable also for industrial and agricultural uses.	Surface waters classified as Class FW (fresh waters) – **relevant and appropriate**	SC R. 61-68.G.10	✓	✓
	Quality Standards for FW: b. No treated wastes, toxic wastes, deleterious substances, colored or other wastes, alone or in combination with other substances or wastes, in sufficient amounts to make the waters unsafe or unsuitable for primary contact recreation or to impair the waters for any other best usage as determined for the specific waters which are assigned to this class. c. Toxic pollutants listed in the Appendix must meet the standards as prescribed in Section E of this regulation.		SC R. 61-68.G.10.b and c.	✓	✓
	All ground waters and surface waters of the State shall at all times, regardless of flow, be free from: (d) High temperature, toxic, corrosive, or deleterious substances attributable to sewage, industrial waste, or other waste in concentrations or combinations which interfere with classified water uses, existing water uses, or which are harmful to human, animal, plant or aquatic life.		SC R. 61-68.E.5(d)	✓	✓

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Protection of surface water	Tests or analytical methods to determine compliance or non-compliance with standards shall be made in accordance with methods and procedures approved by the Department and the EPA. a. Surface water and ground water samples shall be collected so as to permit a realistic appraisal of quality and actual or potential damage to existing or classified water uses. For ground waters, consideration shall be given to, but shall not be limited to, depth to 28 water table, flow direction, and velocity. For surface waters, time of day, flow, surface area, and depth shall be considered. b. Biological assessment methods may be employed in appropriate situations to determine abnormal nutrient enrichment, trophic condition, LC50, concentration of toxic substances, acceptable instream concentrations, or acceptable effluent concentrations for maintenance of a balanced indigenous aquatic community.	Surface waters classified as Class FW (fresh waters) – **relevant and appropriate**	SC R. 61-68.E.17	✓	✓
Protection of surface water	Numeric criteria for the protection and maintenance of all classes of surface waters are adopted and are listed in Sections E, G, and the appendix. b. Application of numeric criteria to protect human health. (1) If separate numeric criteria are given for organism consumption, water and organism consumption (W/O), and drinking water Maximum Contaminant Levels (MCLs), they shall be applied as appropriate. The most stringent of the criteria shall be applied to protect the existing and classified uses of the waters of the State.		SC R. 61-68.E.14.b.	✓	✓
Protection of surface water	Numerical water quality standards (maximum permissible levels): - Trichloroethylene (TCE) = 2.5 µg/L (W/O) - Cis-1,2-dichlroethylene = 70 µg/L (MCL) *(Note: compound is a degradation product of TCE)* .		SC R. 61-68. Appendix: Water Quality Criteria for Protection of Aquatic Life and Human Health	✓	✓
Location-specific ARARs					

Table A-1 – Potential ARARs and TBC Criteria for the CAGW OU

	Requirements	Prerequisite	Citation	Alt-2	Alt-3
Discharge of groundwater during well drilling operations	Discharges to the ground must not impact or reach waters of the state.	Discharges of water to the ground that will not reach surface waters – **TBC**	SRS No Discharge Permit #ND0072125	✓	✓
Protection of Migratory Birds	No person may take, possess, import, export, transport, sell, purchaser, barter or offer for sale, purchase or barter, any migratory bird, or the parts, nests, or eggs of such bird except as under the terms of a valid permit.	Migratory bird populations may be present in the vicinity – **applicable**	16 *USC* 703-704 – Migratory Bird Treaty Act	✓	✓

Alt = Alternative
ARAR = applicable or relevant and appropriate requirement
CFR = *Code of Federal Regulations*
CWA = Clean Water Act of 1972
DEACT = deactivation
DOT = U.S. Department of Transportation
EPA = U.S. Environmental Protection Agency
LDR = Land Disposal Restrictions
MCL = Maximum Contaminant Level under Safe Drinking Water Act
NPDES = National Pollutant Discharge Elimination System
RCRA = Resource Conservation and Recovery Act of 1976
SCDHEC = South Carolina Department of Health and Environmental Control
TBC = to be considered
TCLP = Toxicity Characteristic Leaching Procedure
UTS = Universal Treatment Standard
W/O = Water & Organism