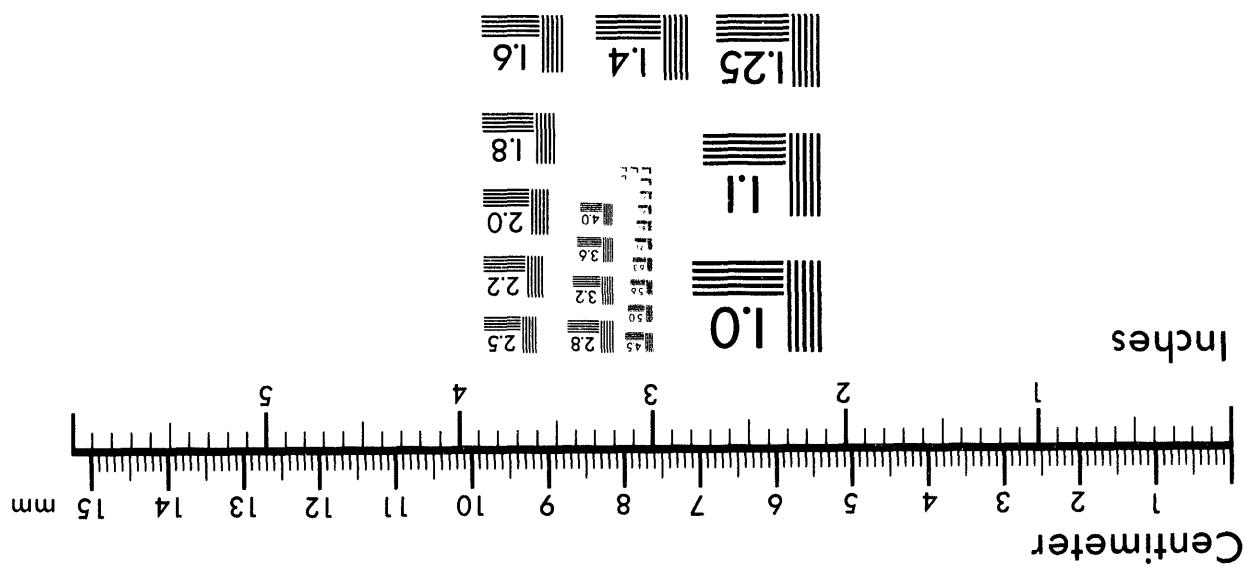


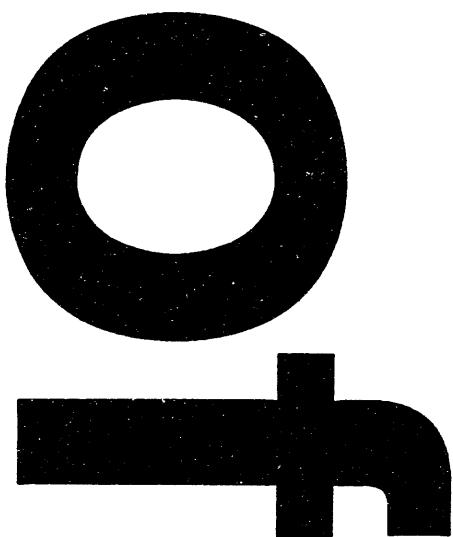
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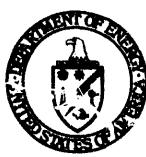
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## RCRA Corrective Action Definitions Under Subpart F and Proposed Subpart S

### BACKGROUND:

Under the authority of the Resource Conservation and Recovery Act (RCRA), owners or operators of RCRA permitted or interim status treatment, storage, or disposal facilities (TSDFs) are required to conduct corrective action to address releases of hazardous wastes or hazardous waste constituents. The Environmental Protection Agency (EPA) has promulgated regulations in 40 Code of Federal Regulations (CFR) 264 Subpart F to address releases of hazardous wastes or hazardous waste constituents to ground water from regulated units. Regulated units include surface impoundments, waste piles, land treatment units, or landfills that received hazardous waste after July 26, 1982. Additionally, EPA issued a proposed rule that would create 40 CFR 264 Subpart S, which is intended to establish corrective action requirements for releases of hazardous wastes or hazardous waste constituents to any environmental medium, including ground water, from any solid waste management unit (SWMU), including regulated units. In the absence of a final Subpart S rule, EPA is implementing the provisions of the proposed rule as guidance until such time as the final rule is issued. On February 16, 1993, EPA promulgated specific provisions under Subpart S to address two new units that will be used for corrective action purposes under RCRA authorities: corrective action management units (CAMUs) and temporary units (TUs). It is important to note that in the February 16, 1993, CAMU/TU final rule the definitions of CAMU and TU were changed substantially from the originally proposed rule.

In some cases, such as the use of the term "TSDFs," the corrective action terminology used under Subpart F is identical to that used in the proposed Subpart S. In other cases, such as the definition of "facility," the same term has slightly different meanings in the two Subparts. Finally, each of the two programs uses terms that are unique to that particular program. This Information Brief discusses the terminology used in the two corrective action programs and discusses both the proposed Subpart S rule and the final CAMU and TU rule. It is one of a series of Information Briefs on RCRA Corrective Action.

### STATUTE:

RCRA as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA)

### REGULATIONS:

Subpart F: 40 CFR 264.90, 264.93, and 264.100-101

Subpart S: Proposed 40 CFR 264 Subpart S (55 FR 30798, July 27, 1990)

Subpart S: 40 CFR 260, 264, 265, 268, 270, and 271 (58 FR 9858, February 16, 1993)

### What is the definition of corrective action?

**Subpart F:** Under 40 CFR 264 Subpart F, "corrective action" includes the following actions taken by an owner or operator:

- Ensuring that regulated units are in compliance with the ground water protection standards of 40 CFR 264.92 and the standards specified in the facility permit.
- Removing or treating in place a hazardous constituent that is released to ground water from a regulated unit in order to prevent that hazardous constituent from exceeding, at the point of compliance, the concentration limit set forth in the facility permit.
- In general, the corrective action process under 40 CFR Subpart F consists of the following elements: detection monitoring [40 CFR 264.98], compliance monitoring [40 CFR 264.99], and corrective action [40 CFR 264.100 and 264.101]. (Note: EPA has indicated that the Subpart F regulations will be revised when the Subpart S regulations are finalized to make the two regulations consistent.)

**Subpart S:** Under proposed Subpart S, "corrective action" includes all activities related to the investigation, characterization, and cleanup of a release of hazardous wastes or hazardous waste constituents from a SWMU at a permitted or interim status TSDF to any environmental medium (including ground water).

### What is the definition of facility?

**Subpart F:** The definition of "facility" under Subpart F [40 CFR 260.10] includes all contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of units).

**Subpart S:** The definition of "facility" under proposed Subpart S [40 CFR 260.10] includes all contiguous property under the control of the owner or operator of a TSDF. EPA has interpreted the terms "contiguous lands" and "contiguous property" to include lands separated only by a public right-of-way, such as a road or power line right-of-way. For Federal facilities, EPA has interpreted these terms to mean all contiguous lands under the control of the Federal agency having administrative responsibility for the permitted or interim status facility.

### What is the definition of "regulated unit"?

**Subpart F:** "Regulated units" [40 CFR 264.90(a)(2)] include surface impoundments, waste piles, land treatment units, or landfills that received hazardous waste after July 26, 1982. Regulated units are subject to the ground water protection standards, which include requirements for monitoring ground water quality (detection monitoring) in the uppermost aquifer; if a release occurs, compliance monitor-

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ing; and if the release poses a threat to human health or the environment, corrective action.

**Subpart S:** This term is not defined under the proposed Subpart S rule; however, the term “regulated units” is used in the preamble to the proposed Subpart S rule when discussing the applicability and scope of Subpart F (see 55 FR 30805). Under proposed Subpart S, regulated units are identified as a subcategory of SWMUs. Under the CAMU and TU final rule, if approved by the Regional Administrator or the authorized State, closed or closing regulated units may be incorporated into a CAMU if inclusion will enhance implementation of effective, protective, and reliable remedial actions for the facility.

### **What is the definition of “SWMU”?**

**Subpart F:** The regulations [40 CFR 264 Subpart F] do not provide a specific definition of the term “SWMU.”

**Subpart S:** A “SWMU” is defined in the proposed Subpart S rule [40 CFR 264.501] as “any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous wastes.” Such units include any area at a facility where solid wastes have been routinely and systematically released. SWMUs include regulated units as well as units used to manage non-hazardous solid wastes (i.e., wastes subject to RCRA Subtitle D). Examples of SWMUs include landfills, surface impoundments,umps, underground piping, land application areas, incinerators, waste piles, and storage areas. By definition, all regulated units are identified as SWMUs.

### **What is the definition of “release”?**

**Subpart F:** The regulations [40 CFR 264 Subpart F] do not provide a specific definition of the term “release.” However, under Subpart F a release is determined to have occurred if detection monitoring identifies specific hazardous waste constituents in the ground water samples from downgradient monitoring wells at levels that are statistically different from those observed in samples from upgradient monitoring wells. Under Subpart F, the term “release” applies to hazardous wastes or hazardous waste constituents that are identified in the facility permit and usually includes a subset of the constituents identified in 40 CFR 264 Appendix IX. Under detection monitoring [40 CFR 264.98], the owner or operator is required to collect and analyze samples from each well (background and compliance wells) at least semiannually. The owner or operator conducts the statistical analyses to determine whether there has been statistically significant contamination in excess of “background” concentrations. The context of 40 CFR 264.101 suggests that the definition of a release may include releases to media other than ground water.

**Subpart S:** The proposed Subpart S rule defines a release using essentially the same language as Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 101(22).

The definition of “release” includes any “...spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents)....” The definition of release under the proposed Subpart S applies *only* to hazardous wastes or hazardous waste constituents; it does not include

releases of any material that is not a hazardous waste or hazardous waste constituent. The definition of release under CERCLA does not have this restriction.

### **What is the definition of “hazardous waste”?**

**Subpart F:** In Subpart F, “hazardous waste” [40 CFR 261.3] is defined as any solid waste that

- is a listed waste [40 CFR 261.31 through 261.33],
- demonstrates a characteristic of a hazardous waste [40 CFR 261.20 through 261.24],
- is mixed with any quantity of a listed hazardous waste or is mixed with a characteristic hazardous waste and the mixture continues to demonstrate the hazardous waste characteristic, and
- is not specifically excluded from the definition of a hazardous waste.

In summary, under Subpart F the definition of “hazardous waste” applies to materials specifically listed or exhibiting a characteristic of a hazardous waste.

**Subpart S:** In the proposed Subpart S rule, “hazardous waste” is defined by using the statutory definition in RCRA Section 1004(5), which states “...a hazardous waste is any solid waste, or combination of a solid waste, which because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed....” The definition of hazardous waste under the proposed Subpart S regulations may apply to materials that are not otherwise regulated under the current RCRA regulations.

### **What is the definition of “hazardous waste constituent”?**

**Subpart F:** Under Subpart F “hazardous waste constituents” are defined as the compounds listed in 40 CFR 261 Appendix VIII. Most of the Appendix VIII compounds are also listed in 40 CFR 264 Appendix IX, the ground water monitoring list. However, the Appendix IX list also includes ground water monitoring parameters, such as chloride and pH, as well as parameters that may be used to monitor ground water quality, but these additional parameters may not be used to compel corrective action.

**Subpart S:** Under proposed Subpart S, the definition of hazardous waste constituent is broader in that it includes all compounds listed in 40 CFR 261 Appendix VIII, as well as those compounds listed in 40 CFR 264 Appendix IX. Under proposed Subpart S, owners or operators may be required to clean up releases of constituents that are included in either Appendix VIII or Appendix IX.

### **What is the definition of “point of compliance”?**

**Subpart F:** In Subpart F, the point of compliance (POC) [40 CFR 264.95] is defined as the point where the ground water protection standard applies and, should corrective action be required, where cleanup levels must be attained. This point is typically where the

facility conducts ground water monitoring. The POC is a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated unit. The hazardous waste management area includes any dikes, berms, or barriers where waste will be placed during the active life of a regulated unit. If a facility has more than one land-based unit, the regulated unit is the area within an imaginary line circumscribing all the land-based units. Under Subpart F, the location of the POC is clearly defined and is related to the location of the unit.

**Subpart S:** Under 40 CFR 264.525(e)(1)(i)-(v) of the proposed Subpart S rule, the POC is the point(s) or area(s) where a facility must measure or predict contaminant levels and eventually demonstrate compliance with the media cleanup standards. The location of the POC is medium-specific and depends on factors such as the potential for exposure of human or animal populations, the potential for migration, the potential for impact to sensitive ecosystems, and accessibility.

#### **What is the definition of “action level”?**

**Subpart F:** While the term “action level” is not used in the Subpart F regulations, the ground water protection standard established under Subpart F is analogous to “action levels” under the proposed Subpart S regulations. The ground water protection standard [40 CFR 264.92] is specified by the regulatory agency in the RCRA permit and includes background, published maximum contaminant levels, or alternative concentrations of hazardous constituents in the ground water underlying the regulated unit. The facility must conduct detection monitoring for these constituents at the POC. If the ground water protection standard limits are exceeded, the facility is required to conduct compliance monitoring and, potentially, corrective action.

**Subpart S:** Under the proposed Subpart S rule (see 40 CFR 264.521), “action levels” are media-specific, health- and environmentally-based contaminant concentrations determined by EPA to be protective of human health and the environment. Action levels are established for each environmental medium, including ground water, and serve as the trigger for the requirement to conduct a RCRA Corrective Measures Study (CMS). If the RCRA Facility Investigation (RFI) determines that hazardous waste concentrations in ground water, surface water, soils, or air exceed an action level, a CMS is usually required. If action levels are not exceeded, the facility may request a Determination of No Further Action, ending the corrective action requirements at that unit.

#### **What is the definition of “media cleanup standards”?**

**Subpart F:** The Subpart F regulations do not use the term “media cleanup standards.” However, the owner or operator must remove or treat in place hazardous wastes and hazardous waste constituents to achieve compliance with the ground water protection standard from the compliance point to the downgradient property boundary, or beyond as necessary to protect human health and the environment. The period of performance is specified in the facility’s permit. While the cleanup level is not addressed in Subpart F, the RCRA permit issued for a regulated unit with a release will identify cleanup levels, or the permit will be amended to incorporate cleanup levels.

**Subpart S:** Proposed Subpart S defines “media cleanup standards” (MCS) [40 CFR 264.525(d)] as concentration levels of hazardous constituents in ground water, surface water, air, or soils that are determined by EPA to provide long-term protection of human health and the environment. The MCS are specified in the facility permit, or

in the RCRA Section 3008(h) Order requiring implementation of a corrective measure. The objective of the implemented corrective measure is the reduction of the concentrations of hazardous constituents at the POC to the MCS. Action levels can differ significantly from media cleanup standards, particularly in cases where action levels are unattainable by current technology. Most often, the action level will serve as a point of departure for the establishment of the MCS.

#### **What is the definition of a CAMU?**

**Subpart F:** The regulations governing corrective action under Subpart F do not specifically define CAMUs. The section of Subpart F addressing the POC [(40 CFR 264.95(b)(2)] does state that if a facility has more than one land-based unit, the regulated unit is the area within a line circumscribing all the land-based treatment units. This provision allows for the consolidation of individual units into one large unit.

**Subpart S:** CAMUs are addressed in the final CAMU and TU rule [58 FR 8658, February 16, 1993]. A CAMU is an area within a facility that is designated by the Regional Administrator or the authorized State for the purpose of managing remediation wastes generated during corrective action. There were several changes in the CAMU concept between the proposed Subpart S rule and the final CAMU and TU rule. Under the final regulations, a CAMU does not have to be a contiguous area of contamination as it was under the proposed Subpart S rule; the location of the CAMU is linked primarily to where remediation wastes (defined below) are managed. Further, non-land-based units, such as tanks, may be physically located within the boundaries of a CAMU, but the non-land-based unit would not be a part of the CAMU. The unit would maintain a separate regulatory identity and all applicable RCRA Subtitle C requirements would apply to that unit. The designation of an area as a CAMU requires consideration of factors that were not discussed in the proposed Subpart S rule. However, the advantage of designating an area as a CAMU remains unchanged; that is, neither do the RCRA land disposal restrictions apply if remediation wastes are disposed of in a CAMU, nor does consolidation or placement of remediation wastes into or within a CAMU constitute creation of a unit that is subject to the 40 CFR Part 264 minimum technology requirements.

#### **What is the definition of a TU?**

**Subpart F:** The regulations [40 CFR 264 Subpart F] do not provide a specific definition for TUs.

**Subpart S:** TUs are addressed in the CAMU and TU rule. Under 40 CFR 264.553, only tanks or container storage units used for the treatment or storage of remediation wastes are eligible for designation as temporary units. TU provisions apply to neither land-based units such as waste piles nor to Subpart X units because EPA believes that Subpart X provides sufficient regulatory flexibility for short-term use at a miscellaneous unit. A TU must be located at the facility and have a permissible life of not more than two years. The designation of an area at a facility as a TU will be at the discretion of EPA or the authorized State, and will be based on factors such as the length of time the unit will be in operation, type of unit, volumes of waste to be managed, physical and chemical characteristics of the wastes to be managed, potential for releases from the unit, hydrogeologic and other relevant environmental conditions at the facility which may influence the migration of any potential releases, and potential for exposure to humans or environmental receptors if releases were to occur from the unit. The advantage of designating a container or tank as a TU is that EPA or the authorized State may permit less stringent

rules other than the full 40 CFR 264 standards to apply; and that utilization of TUs will expedite remediation at permitted facilities with continuing releases, facilitate corrective action beyond the facility boundary, aid facilities in complying with RCRA 3008(h) Orders, promote the use of bioremediation, and provide an environment to encourage the development and implementation of innovative treatment technologies.

### What are "remediation wastes?"

**Subpart F:** The regulations [40 CFR 264 Subpart F] do not provide a specific definition of the term "remediation wastes."

**Subpart S:** Remediation wastes are a new class of wastes, and are defined in the CAMU and TU rule. Under 40 CFR 260.10, remediation wastes are those wastes that are managed for the purpose of implementing corrective action and include the following: 1) those that are solid and hazardous wastes and 2) any remediation-derived debris and media (including ground water, surface water, soils, and sediments) that contain listed hazardous wastes or exhibit a hazardous waste characteristic. For a given facility, remediation wastes may originate only from within the facility boundary; however, remediation wastes include wastes generated as part of a response to a release beyond the facility boundary (i.e., as in the case of corrective action under RCRA Section 3004(v)). Wastes (e.g., drilling muds) generated as part of site investigations (e.g., the RFI) are also considered to be remediation wastes. The definition of remediation waste excludes "new" or "as-generated" wastes (either hazardous or non-hazardous) that are generated from other ongoing facility operations that are not related to corrective action.

### What is the definition of "conditional remedy?"

**Subpart F:** The regulations [40 CFR 264 Subpart F] do not provide a specific definition for the term "conditional remedy."

**Subpart S:** "Conditional remedies" are addressed in the proposed Subpart S regulations. A conditional remedy under proposed 40 CFR 264.525(f) would allow, at EPA's or the authorized State's discretion, an owner or operator to phase in a remedy over time, as long as certain conditions are met. Specific conditions that a conditional remedy must meet include the following:

- protection of human health and the environment,
- achieving all MCS beyond the facility boundary, as soon as practicable,
- prevention of further environmental degradation through source controls, and the use of engineered measures to prevent further migration of the release within the facility boundary,
- implementation of management and institutional controls to prevent exposure to hazardous wastes at the facility,
- continuation of environmental monitoring to determine if additional environmental degradation occurs,
- provision for financial assurances (not applicable to Federal facilities), and
- compliance with waste management standards for wastes generated during the corrective measure.

The benefit of using a conditional remedy is that EPA or the authorized State may permit contaminants to remain at an operating facility (for the term of the permit) if 1) the owner or operator implements source controls that prevent off-site migration; 2) the risk of exposure, additional releases, or further migration is low; and 3) there is remediation of off-site contamination to MCS (as soon as practicable). However, conditional remedies are not necessarily final remedies.

### What are the RCRA Section 3004(u) and (v) Corrective Action Requirements?

**Subpart F:** The statutory authority to require corrective action under Subpart F for releases from regulated units was provided by RCRA Section 3004(u). Requirements for corrective action under Subpart F pertain to cleanup of ground water contaminated by releases from regulated units only, and are triggered when the ground water protection standard is exceeded at or beyond the POC.

**Subpart S:** RCRA Section 3004(u) provides EPA with the authority to require corrective action to address releases of hazardous wastes or hazardous waste constituents from any SWMU at a RCRA permitted TSDF to any environmental medium. EPA uses the RCRA Section 3004(v) authority to require corrective action for releases that have migrated beyond the boundary of a permitted or interim status facility.

### What is a RCRA Section 3008(h) Corrective Action Order?

If EPA or the authorized State determines there has been a release of a hazardous waste or hazardous waste constituent at an interim status facility, RCRA Section 3008(h)(1) authorizes EPA or the authorized State to issue an administrative order requiring corrective action or other measures.

**Subpart F:** There are no regulations specifically addressing corrective action orders under Subpart F. However, while an interim status facility is seeking a RCRA permit, the facility is required by 40 CFR 265 Subpart F to monitor ground water and report the results of this monitoring program to the regulatory agency. If a release of a hazardous waste or hazardous waste constituent occurs, the facility may be issued a RCRA Section 3008(h) Order to conduct corrective action.

**Subpart S:** While the proposed Subpart S regulations apply specifically to SWMUs at permitted TSDFs, EPA intends to use similar corrective action requirements at interim status facilities where there has been a release of a hazardous waste or hazardous waste constituent. The specific requirements for corrective action at an interim status facility will be specified in a RCRA Section 3008(h) Order. Alternatively, EPA may compel corrective action under proposed Subpart S through a permit Schedule of Compliance, especially if the permit is expected to be issued in the near term.

Questions of policy or questions regarding policy decisions will not be addressed in EH-231 Information Briefs unless that policy has already been established through appropriate documentation. Please refer any questions concerning the subject material covered in this Information Brief to Jerry Coalgate, RCRA/CERCLA Division, EH-231, (202) 569-0078.



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