THE LAW OFFICE OF C. WILLIAM SMALLING, PC 1700 Post Oak Boulevard, 2 Blvd Place, Suite 600 Houston, Texas 77056 OFC (713)513-7153 February 19, 2018

TO ALL INTERESTED PERSONS AND PARTIES

First Public Notice and the National Contingency Plan required by 40 CFR § 300.700 (c)(6) for CERCLA Dump Site at 7012 Banyan Street, Houston, Texas 77028, Lot 7, Block 4, Houston Gardens Addition, City of Houston County of Harris, Texas

This is a public notice pursuant to 40 CFR § 300.700 (c)(6) regarding waste characterization, clean-up, disposal and labor for the <u>non-EPA party clean-up</u> of said CERCLA dump site located at 7012 Banyan Street, Houston, Texas 77028, Lot 7, Block 4, Houston Gardens Addition, City of Houston County of Harris, Texas known as 7012 Banyan St, Houston, Texas 77028. The notice is being filed pursuant to 40 CFR § 300.700 - Activities by other persons. The Law Office of C William Smalling is the lead agency until further notice. William Smalling is the Spokesperson and Onsite Coordinator ("OSC"). Publication is being made in the *Houston Chronicle* in English on February 20, 2018 and Spanish in the *LaVoz* on March 4, 2018. A future Public Notice will announce the time and location for a public meeting on this plan. Final copies of the notices will be added to the plan, when available.

Call us at (713)513-7153 or (281)455-6569 if you would like to provide comments on this plan or would like to request a written copy of this plan.

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An electronic copy is available for review and copying at: https://cwilliamsmallinglaw.com/7012banyancerclacleanup

A written copy is available for review and copying at: Houston Public Library Public Document Display Desk 500 McKinney Houston, TX 77002 (832) 393-1313

NATIONAL CONTINGENCY PLAN

I. REGULATION REQUIREMENTS

40 CFR § 300.700 Activities by other persons.

(a)General. Except as provided (e.g., in CWA section 311(c)), any person may undertake a response action to reduce or eliminate a release of a hazardous substance, pollutant, or contaminant.

The following applicable requirements in paragraphs (5) and (6) of 40 CFR § 300.700 have been completed.

- (5) The following provisions of this part are potentially applicable to private party response actions: **Holcomb actions are in bold.**
 - (i) Section 300.150 (on worker health and safety); ¹

Section 300.150 requires that each employer at response actions comply with the requirements of the Occupational Safety and Health Act of 1970, applicable state laws, and EPA regulations regarding worker safety and health. Section 300.150 applies to actions taken either by a responsible party or a lead agency and requires that there be an occupational safety and health program for the protection of workers at the response site. Section VI.B. of this Plan describes the Plan's compliance with this rule.

(ii) Section 300.160 (on documentation and cost recovery); ²

Section 300.160 discusses the procedures for documentation of cost recovery for a response action. Section 300.160(a) states that an accurate accounting of federal, state or private-party costs incurred for response actions can be supported with an OSC report as required by 300.165 for all major releases and Fund-financed removals.

Sections V., VI., VII., and VIII of this Plan describes the Plan's compliance with this rule. The OSC will provide the required reports.

(iii) Section 300.400(c)(1), (4), (5), and (7) (on determining the need for a Fund-financed action); (e) (on permit requirements) except that the permit waiver does not apply to private party response actions; and (g) (on identification of ARARs) except that applicable requirements of federal or state law may not be waived by a private party; ³

Sections V., VI., VII., and VIII of this Plan describes the Plan's compliance with this rule.

(iv) Section 300.405(b), (c), and (d) (on reports of releases to the NRC); ⁴

Appendix A.1 of this Plan for the NRC and EPA Reports. Reported to EPA on August 10, 2017. Release reported to NRC on August 14, 2017.

(v) Section 300.410 (on removal site evaluation) except paragraphs (f)(5) and

 $(6);^5$

Sections V., VI., VII., and VIII of this Plan describes the Plan's compliance with this rule. Refer to Appendix A.2 of this Plan for Initial Costs Incurred.

(vi) Section 300.415 (on removal actions) except paragraphs (a)(2), (b)(2)(vii), (b)(5), and (g); and including § 300.415(j) with regard to meeting ARARs where practicable except that private party removal actions must always comply with the requirements of applicable law; ⁶

Sections V., VI., and VII of this Plan describes the Plan's compliance with this rule. §300.415(b) Authorizes the lead agency to initiate appropriate removal action in the event of a hazardous substance release. Decisions of action have been based on:

- Threats to human or animal populations;
- Contamination of drinking water supplies or sensitive ecosystems;
- High levels of hazardous substances in soils;
- Weather conditions that may cause migration or release of hazardous substances;
- Threat of fire or explosion; or
- Other significant factors effecting public health or the environment.

\$300.415(c) Authorizes the OSC to direct appropriate actions to mitigate or remove the release of hazardous substances.

Clean-up and decontamination of the site has been selected as appropriate removal action. The site's contaminated soils, containers and other debris will be removed to an approved treatment, storage and disposal facility ("TSDF") as described in Section VII of this Plan.

(vii) Section 300.420 (on remedial site evaluation);⁷

Sections V., VI., and VII of this Plan describes the Plan's compliance with this rule. Refer to Appendix A.3 of this Plan for Maps Indicating Sample Results.

(viii) Section 300.430 (on Remedial investigation/Feasibility study ["RI/FS"] and selection of remedy) except paragraph (f)(1)(ii)(C)(6) and that applicable requirements of federal or state law may not be waived by a private party; and 8

Sections V., VI., and VII of this Plan describes the Plan's compliance with this rule. Refer to Appendix A.4 for the remedial investigation/feasibility study (RI/FS) statement of work to investigate the nature and extent of contamination at the OTR site and to develop and evaluate remedial alternatives, as appropriate.

(ix) Section 300.435 (on Remedial design/Remedial action ["RD/RA"] and operation and maintenance). 9

Sections V., VI., and VII of this Plan describes the Plan's compliance with this rule.

(6) Private parties undertaking response actions should provide an opportunity for public comment concerning the selection of the response action based on the provisions set out below or based on substantially equivalent state and local requirements. The

following provisions of this part regarding public participation are potentially applicable to private party response actions, with the exception of administrative record and information repository requirements stated therein:

- (i) Section 300.155 (on public information and community relations); ¹⁰
- (ii) Section 300.415(n) (on community relations during removal actions); ¹¹
- (iii) Section 300.430(c) (on community relations during RI/FS) except paragraph (c)(5); 12
- (iv) Section 300.430(f)(2), (3), and (6) (on community relations during selection of remedy); and 13
- (v) Section 300.435(c) (on community relations during RD/RA and operation and maintenance). 14

For Parts (6)(i) through (v), Refer to this Plan. The Law Office of C William Smalling is the lead agency until further notice. William Smalling is the Spokesperson and Onsite Coordinator ("OSC"). Publication is being made in the *Houston Chronicle* in English on February 20, 2018 and Spanish in the *LaVoz* on March 4, 2018. A future Public Notice will announce the time and location for a public meeting on this plan. Final copies of the notices will be added to the plan, when available.

II. PROJECT INFORMATION

The site is located at 7012 Banyan Street in Houston, Texas. According to Harris County Appraisal District (HCAD) on-line information, site consists of 41,060 square foot (sf) of land. The site is improved with a residential and other smaller structures.

The scope of work has been developed based on a site visit conducted by Sampling Consultant Environmental on August 23, 2017. During the site numerous soil mounds were observed at the site where various types of drums were buried within the soil mounds. Also, numerous aboveground storage tanks (ASTs) of various capacities were observed at the site. Some of the materials requiring clean-up are not visible such as including, but not limited, to: (1) waste paint and (2) 55-gallon drums with unknown contents (probably paint, solvent, and other types of hazardous wastes). These apparently are wastes from some type of prior painting business, such as an automobile body shop. This material is buried beneath the dirt and debris located in the right rear corner of the lot. Similar wastes may also be buried in other locations on the lot. The clean-up will require a licensed environmental firm to perform the initial testing, waste clean-up, and final testing. The removed waste must be properly manifested and hauled off to a licensed hazardous waste disposal site. In addition, the lot must be restored to the specifications as prescribed by the U.S. Environmental Protection Agency ("EPA") and the Texas Commission on Environmental Quality ("TCEQ") regulations.

III. COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT ("CERCLA")

For December 12, 2017 Phase I Environmental Site Assessment; Area/Site History Review of 7100 Block of Homestead Road, 7000 Block of Banyan Street, Houston Texas; Aerial Photographs – 1979, 1989, 1995, 1996, and 2004 refer to Appendices A.8, A.9 and A.10, respectively.

IV. CERCLA SUMMARY

Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"). Site is believed to be subject to site clean-up costs under CERCLA (42 U.S.C.A. §9607; Liability). ¹⁵

Refer to Appendix A.11-Summary of Samples for RCRA Violations.

V. REMEDIAL INVESTIGATIONS/REQUIRED SAMPLING (PHASE II) - PRELIMINARY SAMPLING

A. Field Sampling and Laboratory Analysis Protocol

The soil sampling involved the sampling of subsurface/surface soils at ten locations. All soil samples were at different locations and were collected from the depth of 6 inches.

Field activities included collection of subsurface soil samples 6 inches deep to assess the potential environmental impacts from historical on-site activities. The soil samples were collected on December 1, 2017 (Sample Numbers 1 through 5) and December 18, 2017 (Sample Numbers 6 through 10), in accordance with standard environmental scientific and engineering practices. The soil sampling locations are shown in Appendix A.3.

On December 1st, five soil samples (Sample Numbers 1 through 5) were submitted to the ALS Laboratories in Houston, Texas ("ALS") for analysis. ALS is accredited by the Texas Commission on Environmental Quality ("TCEQ") and the National Environmental Laboratory Accreditation Conference ("NELAC"). The soil samples were analyzed for Volatile Organic Compounds ("VOC") by U.S. Environmental Protection Agency ("EPA") Method SW8260C and Total Petroleum Hydrocarbons ("TPH") by Texas Method 1005. The soil samples were also analyzed for 21 heavy metals by EPA Method SW6020A and mercury by EPA Method SW7471A.

On December 18th, five soil samples (Sample Numbers 6 through 10) were submitted to the A&B Laboratories in Houston, Texas ("A&B") for analysis. ¹⁶ A&B is accredited by the TCEQ and the NELAC. The soil samples were analyzed for VOC by EPA Method SW8260C and TPH by Texas Method 1005. Soil sample number 6 was analyzed for 11 heavy metals by EPA Method SW846-6010C and mercury by EPA Method SW846-7470A. Soil sample number 8 was analyzed for eight RCRA heavy metals by EPA Method SW846-6010C.

On January 5, 2018, two liquid samples (Sample Numbers 11 and 12) were submitted to the A&B Laboratories in Houston, Texas ("A&B") for analysis. A&B is accredited by the TCEQ and the NELAC. Both samples were analyzed for VOC by EPA Method SW8260C and TPH by Texas Method 1005. Liquid samples numbers 11 and 12 were analyzed for eight RCRA heavy metals by EPA Method SW846-6010C. Liquid sample number 11 was analyzed for Semi-volatile VOC ("SVOC") by EPA Method SW846-8270D.

The liquid samples were extracted from two tanks remaining from the Potentially Responsible Parties ("PRPs") ownership of the property. The tanks are adjacent to each other and are about 2,000 gallons capacity each. They are located near the southeastern border of the property.

Sample number 11 was extracted from the western of the two tanks. Sample number 12 was extracted from the eastern of the two tanks. Neither tank met the EPA RCRA definition of "Empty" as provided by 40 CFR \$261.7.

Refer to Appendices A.5 and A.6 for the Sample Reports and an Audit by an Expert Witness, respectively, of the Sample Reports.

B. FINDINGS

1. Specific Violations of RCRA Regulations as Indicated by Soil Samples

The soil contamination described as follows are the result of PRPs discarding drums and other wastes on the property. This soil will have to be classified as hazardous wastes.

The analysis of three samples indicated that the cadmium and lead content of the samples exceeded the regulatory limit as prescribed by 40 CFR §261.24; Table 1, which is a violation of 40 CFR §261.24 (Toxicity characteristic).

The analysis of six samples (numbers 1 through 6) indicated that arsenic content was present, which indicated an Acute Hazardous Waste as prescribed by the 40 CFR §261.33(e) Table. The analysis of five samples (numbers 1 through 5) indicated that beryllium content was present, which indicated an acute Hazardous Waste as prescribed by the 40 CFR §261.33(e) Table. This constitutes a violation of 40 CFR §261.33(e).

The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of the section (40 CFR §261.33), are identified as toxic ("T") or ignitable ("I") unless otherwise designated. The analysis of sample number 6 indicated that xylene and ethylbenzene were present above reportable quantities, which indicated a Hazardous Waste as prescribed by the 40 CFR §261.33(f) Table. This constitutes a violation of 40 CFR §261.33(f).

Under Appendix A to 40 CFR Part 300, Antimony, Arsenic, Cobalt, Copper, Lead, Selenium, Zinc and Mercury had sample measurements of three times or more above the background concentration. Cadmium, Nickel, and Silver had no established background concentrations and had sample measurements greater than the sample quantitation limit. Ethylbenzene and Xylene had no established background concentrations and had sample measurements greater than the sample quantitation limit.

2. Specific Violations of RCRA Regulations as Indicated by Tank Liquid Samples

Between three and six tanks belonging to prior PRPs remain on the property. These tanks do not meet the RCRA definition of "empty" and will have to be classified as hazardous wastes.

The analysis of two tank samples (numbers 11 and 12) indicated that the benzene¹⁸ content of the samples exceeded the regulatory limit as prescribed by 40 CFR §261.24; Table 1, which is a violation of 40 CFR §261.24.

The analysis of two tank samples (numbers 11 and 12) indicated that five chemicals with content above reportable levels were present, which indicated Hazardous Wastes as prescribed by the 40 CFR §261.33(f) Table. These chemicals are benzene, methyl ethyl ketone, naphthalene, toluene, and xylene. The commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products referred to in paragraphs (a) through (d) of section 40 CFR §261.33, are identified as ignitable ("T") or toxic wastes ("T") unless otherwise designated. The analysis of two samples (numbers 11 and 12) indicated that the chemicals listed were present, which indicated Ignitable and Toxic Hazardous Waste as prescribed by the 40 CFR §261.33(f) Table, which is a violation of 40 CFR §261.33(f).

C. SUMMARY OF RESULTS

Refer to Appendix A.3 of this Plan for Maps Indicating Sample Results.

RCRA Limits

- 1. 40 CFR §261.24; Table 1—Maximum Concentration of Contaminants for the Toxicity Characteristic
- 2. Products Listed in 40 CFR §261.33 (e) Table
- 3. Products Listed in 40 CFR §261.33 (f) Table

Summary

Type RCRA Wastes	Source	Contaminant	Sample Numbers
Characteristic 40 CFR	Soil	Cadmium**	8
\$261.24	Soil	Lead**	2, 6, 8
§201.2 4	Tank	Benzene*	11, 12
	Soil	Arsenic*	1-6, 8
	Soil	Beryllium**	1-5
Listed 40 CFR	Soil	Vanadium	1-5
\$261.33	Soil	Fluoride	1-5
§201.33	Soil	Xylene (I)	6
	Soil	Ethylbenzene (I)	6
	Tank	Benzene (I) (T) *	11, 12

Tank	Methyl ethyl ketone	11, 12
	(I)(T)	
Tank	Naphthalene	11, 12
Tank	Toluene	11, 12
Tank	Xylene (I)	11, 12

^{*} Human Carcinogen

Characteristic Wastes

40 CFR §261.24; Table 1—Maximum Concentration of Contaminants for the Toxicity Characteristic

PA HW No. 1	Contaminant	CAS No.	Regulatory Level (mg/L) ¹⁹
D006, F006	Cadmium (Note 1)**	7440-43-9	1.0
D008	Lead (Notes 2, 3, 4)**	7439-92-1	5.0

Note 1: The soil cadmium content of sample number 8 was 23.4 mg per Kg, which converts to 1.17 mg/L as compared to a regulatory limit of 1.0 mg/L. (117% of Regulatory Limit).

Note 2: The soil lead content of sample number 2 was 108 mg per Kg, which converts to 5.16 mg/L as compared to a regulatory limit of 5.0 mg/L. (108% of Regulatory Limit).

Note 3: The soil lead content of sample number 6 was 188 mg per Kg, which converts to 9.4 mg/L as compared to a regulatory limit of 5.0 mg/L. (188% of Regulatory Limit).

Note 4: The soil lead content of sample number 8 was 1077 mg per Kg, which converts to 53.85 mg/L as compared to a regulatory limit of 5.0 mg/L. (1077% of Regulatory Limit).

*** Probable Human Carcinogen

^{**} Probable Human Carcinogen

⁽T) Toxic

⁽I) Ignitable

Table 7: Summary of Storage Tank Samples for Benzene Content ²⁰					
PA HW No. 1	Contaminant CAS No. Regulatory Let (mg/L)				
D018	Benzene*	71-43-2	0.5		

The liquid benzene content of sample number 11 was 0.624 mg/L as compared to a regulatory limit of 0.5 mg/L.

The liquid benzene content of sample number 12 was 0.616 mg/L as compared to a regulatory limit of 0.5 mg/L.

Listed Wastes

	Table 3 -Products Listed in 40 CFR §261.33 (e) Table							
Sample No	1	2	3	4	5	6	8	Summ ary
Compound								
Arsenic*	X	X	X	X	X	X	X	1-6, 8
Beryllium**	X	X	X	X	X			1-5
Vanadium	X	X	X	X	X			1-5
Fluoride	X	X	X	X	X			1-5

^{*} Human Carcinogen

Table 4 - Products Listed in 40 CFR §261.33 (f) Table

^{&#}x27;* Known Human Carcinogen

^{**} Probable Human Carcinogen

Sample No	1	2	3	4	5	6	8	Summ ary
Compound								
Xylene***						X		6
Ethylbenzene ***						X		6
*** EPA Ignitable Compound								

Table 8: Summary of Storage Tank Samples for Ignitable ("I") or Toxic Wastes ("T") Content						
Sample No			11	12		
Compound	EPA Hazardous Waste Code	CAS Number		ve reportable (X = Yes)		
Benzene (I) (T)	U019	71-43-2	X	X		
Methyl ethyl ketone (I) (T)	U159	78-93-3	X	X		
Naphthalene	U165	91-20-3	X	X		
Toluene	U220	108-88-8	X	X		
Xylene (I)	U239	1330-20-7	X	X		
Total Petroleum Hydrocarbons	N/A – For Infor	mation only	8.1%	15.2%		

VI. REMEDIAL INVESTIGATIONS ("RI")/REQUIRED SAMPLING (PHASE II) - DETAILED SAMPLING

As funds recovered from Other Potentially Responsible Third Parties allow, ¹ the sampling scope of services, including schedule and compensation, are provided in the following sections. **Refer to Appendix A.4 of this Plan for the RI Plan.**

A. PROJECTINFORMATION

The site is located at 7012 Banyan Street in Houston, Texas. According to Harris County Appraisal District (HCAD) on-line information, site consists of 41,060 square foot (sf) of land. The site is improved with a residential and other smaller structures.

The scope of work has been developed based on a site visit conducted by Sampling Consultant on August 23, 2017. During the site numerous soil mounds were observed at the site where various types of drums were buried within the soil mounds. Also, numerous aboveground storage tanks (ASTs) of various capacities were observed at the site.

B. COMMITMENT TO SAFETY

Sampling Consultant has a commitment to the safety of all its employees. As such, and in accordance with Incident and Injury Free® safety culture, Sampling Consultant will develop a safety plan to be used by our personnel during field services. Prior to commencement of on-site activities, Sampling Consultant will hold a meeting with field personnel to review health and safety needs for this specific project. At this time, we anticipate performing the fieldwork in a USEPA Level D work uniform consisting of hard hats, safety glasses, protective gloves, and steel-toed boots. It may become necessary to upgrade this level of protection, at additional cost, while sampling activities are being conducted in the event that petroleum or chemical constituents are encountered in soils or groundwater that present an increased risk for personal exposure.

C. SCOPE OF SERVICES

The objective of the proposed LSI is to investigate soil and groundwater at the site for chemicals- of-concern (COCs) associated with the soil mounds and ASTs. Please note that the intent of the proposed scope of work is to assess only whether contaminants are present in selected locations considered likely to have been impacted by the RECs identified above. This proposed scope of work

¹ "Other Potentially Responsible Third Parties" are defined as Potentially Responsible Third Parties <u>other than</u> Holcomb Environmental Oil Services ("HEOS"), any and all owners of HEOS and their assignees and heirs, jointly and individually and Potentially Responsible Third Parties <u>other than</u> The Law Office of C. William Smalling PC ("TLOOCWS") and any and all owners of TLOOCWS and their assignees and heirs, jointly and individually.

is not intended to provide a comprehensive understanding of the extent of impact to soil or groundwater, or of potential costs which may be incurred if remediation is necessary, or of times required to achieve regulatory closure, if appropriate. Based on the results of the proposed LSI, Sampling Consultant will advise the client of recommended additional investigation or consulting services, as appropriate, if contaminants are discovered in soil or groundwater.

Following receipt of your Notice to Proceed and no later than 48 hours prior to intrusive activities, we will contact a utility locator to arrange for public underground utility locates at the site. Utilities on private land that are not located by public companies will be located by property owner/operator. Please note that, in accordance with the Agreement for Services, the Client shall provide the location and/or arrange for the marking of private utilities and subterranean structures. Consultant shall take reasonable precautions to avoid damage or injury to subterranean structures or utilities, Consultant shall not be responsible for damage to subterranean structures or utilities that are not called to Consultant's attention, are not correctly marked, including by a utility locate service or are incorrectly shown on the plans furnished to Consultant.

1. Soil Borings

Ten soil borings will be advanced at the site in reasonably accessible locations. The soil borings will be advanced utilizing a hollow stem auger rig under the supervision of a State of Texas licensed monitor well driller. Sampling equipment will be decontaminated prior to commencement of the project and following the drilling of each soil boring using a nonphosphate detergent and potable water wash followed by a potable water rinse.

The soil borings will be advanced to a depth of 15 feet below ground surface (bgs). Five of the borings will be advanced to a depth where the first groundwater-bearing unit is encountered. For purposes of this proposal, it is assumed that the borings will be advanced to a depth of 40 feet bgs.

Soil cores will be collected continuously to document lithology, color, relative moisture content and visual or olfactory evidence of petroleum hydrocarbons. In addition, the cores will be scanned in the field with an organic vapor monitor (OVM) equipped with a photoionization detector (PIO) for the presence of volatile organic vapors.

2. Groundwater Monitor Well Installation

Upon completion, five of the ten soil borings will be converted to a groundwater monitor well using the following procedures:

• Installation of 10 feet of 2-inch diameter, 0.010-inch machine slotted PVC well screen with a threaded bottom cap;

- Installation of 2-inch diameter, threaded, flush-joint PVC riser pipe to surface;
- Addition of pre-sieved 20/40 grade silica sand for annular sand pack around the well screen from the bottom of the boring to approximately 2 feet above the top of the well screen;
- Placement of 2 feet of hydrated bentonite pellets above the sand pack;
- Addition of cement/bentonite slurry to the surface; and
- Installation of an 8-inch diameter, circular, bolt-down, steel, monitor well cover with a locking well cap inset in a flush-mount, concrete well pad.

Subsequent to installation, the monitor well will be developed by removing groundwater until groundwater appears relatively clear and free of sediment.

The elevation of the top of the well casing will be surveyed relative to an arbitrary on-site benchmark. Groundwater levels in the monitor wells will be measured and used in combination with the casing elevations to evaluate direction of groundwater flow and gradient.

3. Sampling and Analysis Program

Sampling Consultant will collect soil samples from each soil boring from the zone exhibiting the highest potential for environmental impact based on visual, olfactory or PIO evidence. If no evidence of chemical impact is identified in the field, a sample will be collected from an interval selected in the field. If additional soil samples are collected due to field screening and observations, the additional soil samples will be placed on hold at the laboratory until Sampling Consultant discusses the possible additional analyses with the client and receives authorization for the additional analyses.

In addition, Sampling Consultant will collect up to ten soil samples from the soil mounds. The monitor wells will be allowed to stabilize for a period of at least 48-hours after development of the wells prior to purging and sampling. The groundwater monitor wells will be purged and sampled using low-flow sampling techniques. The monitor wells will be purged until groundwater quality parameters pH, oxidation/reduction potential, dissolved oxygen, temperature, and conductivity have stabilized. Groundwater samples will then be collected from each of the monitor wells using the low-flow-rate pump.

In addition, one set of groundwater samples from each temporary groundwater sampling point will be filtered in the field using a 10 micron filter for potential analysis pending results on the metals analyses of the non-filtered samples. Suspended sediments in non-filtered groundwater samples can result in potential false positives results for metals.

The soil and groundwater samples will be collected in laboratory-supplied glassware and/or sampling kits and placed on ice in a cooler. The samples will be transported to a selected analytical laboratory along with a completed chain-of-custody form. The planned analytical program is outlined in the table below.

Soil Boring/Monitor Well (MW) Location	Matrix/No. of Samples	Parameter (Test Method No.)	Sample Collection Rationale
Ten borings/ Five MWs across the site	Soil: 1 sample per boring (10 total) Water: 1 sample per TSP	VOCs (EPA 82608) SVOCs (EPA 8270C) TPH (TCEQ TX 1005) Priority Metals (EPA 60208/7471A) * Pesticides (EPA 8081) Organochlorine Pesticides (EPA 8141) Herbicides (EPA 8151)	Evaluate presence of suspected constituents
Ten soil samples from the soil mounds	(5 total) Soil: 10 samples	PCBs (8082) VOCs (EPA 82608) SVOCs (EPA 8270C) TPH (TCEQ TX 1005) Priority Metals (EPA 60208/7471A) Pesticides (EPA 8081) Organochlorine Pesticides (EPA 8141) Herbicides (EPA 8151) PCBs (8082)	Evaluate presence of suspected constituents
Drummed soil cuttings/ waste cores	Soil: 1 composite sample	VOCs (EPA 82608) SVOCs (EPA 8270C) TPH (TCEQ TX 1005) Priority Metals (EPA 60208/7471A	Characterize waste for potential disposal

^{*} Filtered and non-filtered groundwater samples will be collected for metal analyses. Filtered samples will be only analyzed if results of non-filtered samples indicate a TCEQ Action Level exceedence only for metal(s) to evaluate for potential false positive results due to suspended sediment.

TPH - total petroleum hydrocarbons
 VOCS - volatile organic compounds
 SVOCs - semivolatile organic compounds
 PCBs - polychlorinated biphenyls

4. Management of Investigation Derived Waste (IDW)

Soil cores not retained for analytical testing and purge water generated from the temporary groundwater sampling points will be containerized in 55-gallon drums and stored at the site. The drums will bear labels to document the contents of the drum and provide a name and telephone

number for the client contact. Upon receipt of analytical results, the materials will be classified for disposal. Sampling Consultant will complete the necessary waste profile forms and manifests for disposal of the IOW. A representative of the Client will be required to sign the forms and manifests as the generator. For the purposes of this proposal, it is assumed that the materials can be disposed as a Class II (nonhazardous) waste. If the materials cannot be disposed as a Class II waste, a revised cost estimate will be submitted to you for your approval for the proper disposal of the materials. If no contaminants are detected in soil and groundwater, the soil cores and purge water can be managed as unaffected materials and, with landowner permission, dispersed at the site. Please note that, in accordance with the attached Agreement for Services, the Client is responsible for directing the disposition of any waste generated by the services herein, including the IDW. By offering to manage the IDW, Sampling Consultant in no way assumes responsibility for proper disposition of the waste, but is providing this activity as a service to our client.

5. Report Preparation

Upon completion of field activities, Sampling Consultant will contact the client to provide a summary of field observations. It should be noted that the field observations will be of a preliminary nature, and that confirmation through laboratory analysis will be required prior to providing any appropriate recommendations. Upon completion of site activities and laboratory analyses, a final report will be prepared that will include the following:

- Documentation of field activities;
- Site plan showing pertinent site features;
- Soil boring logs;
- Analytical laboratory results;
- Data evaluation and presentation of pertinent findings; and
- Recommendations concerning further action, if necessary.

Sampling Consultant's services will be performed in a manner consistent with generally accepted practices of the professional undertaken in similar studies in the same geographic area during the same period. Sampling Consultant makes no warranties, express or implied, regarding its services, findings, conclusions or recommendations. Please note that Sampling Consultant does not warrant the work of laboratories, regulatory agencies or other third parties supplying information used in the preparation of the report. These LSI services will be performed in accordance with the scope of work agreed with you, our client, as set forth in this proposal and are not intended to be in strict conformance with ASTM E1903-11.

Findings, conclusions, and recommendations resulting from these services will be based upon information derived from on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services, and we cannot represent that the site contains no hazardous substances, toxic substances, petroleum products, or other latent conditions beyond those identified during this LSI. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations or exploratory services; the data, interpretations, findings and our

recommendations are based solely upon data obtained at the time and within the scope of these services.

6. Schedule

Sampling Consultant is prepared to commence work on this project within five days following receipt of written notification to proceed. We anticipate completing the field activities in two to three days. The standard analytical turnaround time is seven working days (expedited turnaround is available at an additional charge). Preliminary verbal results of the LSI may be available within [24 hours] of Sampling Consultant's receipt of laboratory analytical reports. The LSI report will be available [two weeks] following Sampling Consultant's receipt of final laboratory analytical reporting. This written report will reflect results, findings, and recommendations, and, as such, will take precedence over any verbal reports that Sampling Consultant personnel may have provided. The analysis, comments and recommendations presented in the written report will be based on the information collected as discussed in this proposal.

The client will provide Sampling Consultant with all existing as-built plans including underground utilities and structures prior to commencement of field activities.

VII. FEASIBILITY STUDY/REMEDIAL DESIGN/REMEDIAL ACTION/SCOPE OF WORK ("FS/RD/RA")

Refer to Appendix A.7 of this the RI Plan for the FS/RD/RA.

A. Feasibility Study/Bench Scale Remediation

As funds recovered from Other Potentially Responsible Third Parties allow, the abbreviated scope of work is as follows:

- 1. Excavate three representative drums
- 2. Full spectrum sample analysis for three drums
- 3. Prepare waste for shipment, including Labor and equipment
- 4. Prepare UN approved packaging and supplies
- 5. Transportation and disposal of wastes at an approved treatment facility.

Estimated Cost \$5,313.00

B. Remedial Design/Remedial Action/Scope of Work

<u>As funds recovered from Other Potentially Responsible Third Parties allow,</u> the abbreviated scope of work is as follows:

- Load, transport and dispose of at least 150 RCRA empty steel drums
- Load, transport and dispose of at least 250 tires
- Removal of 2-10K ASTs, at least 20 Steel ASTs, 4 poly tanks and at least 10 totes containing non-hazardous waste material. Remove residual pumpable liquid from all tanks and pressure wash them. Transport and dispose of at least 10,000 gallons of pumpable liquid as non-hazardous liquid waste material (solids at least 0.5%).
- Remove, load, transport and dispose of at least three (3) loads of concrete debris to a concrete recycler.²¹
- Demolition and disposal of metal building assume that the building is empty. We did not consider removal of concrete slab associated with this building. No asbestos abatement and/or mold remediation included.
- Consolidate, stage, load, transport and dispose of at least three (3) roll-off boxes containing various debris as non-hazardous solid waste material (plastic garbage, plastic drums, poly tanks, used hoses, etc.)
- Excavate, stockpile, load, transport and dispose of at least three (3) roll-off boxes containing stained soil as non-hazardous solid waste material
- Haz-Cat, lab pack, transport and dispose of at least 40 5-gallon pails (The client will provide all necessary MSDS and/or necessary analytical to profile waste material)

These EPA and TCEQ certifications will likely require environmental testing and a series of technical reports to these agencies. Pipes, tires, various types of metal equipment, concrete and debris are dumped on the lot. These materials must be removed as well. ²²

Assumptions:

- The site is easily accessible and there are no objects including overhead or underground utilities present to hinder the progress of the work. Pricing does not include removal, rerouting, supporting and/or bracing any lines.
- The client will be responsible for providing all required analytical to profile the waste at an approved disposal/landfill facility.
- Budgetary pricing does not include transportation and disposal of any waste material as hazardous waste.
- The client will be responsible for all required permits/notification/survey.
- The client will be responsible for all sampling and analysis.
- Payment terms net 30 days.
- Pricing does not include any applicable federal, state, county and/or local taxes. The client shall pay all applicable taxes imposed or levied by any governmental authority with respect to such services or products.

Cost Estimate for Remedial Action 7012 Banyan Street, Houston, Harris County

Task	Estimate Cost	Comments						
F	Excavation and Disposal of Buried Debris							
Load, transport and disposal of buried drums, tires, and various debris	\$325,000	See attached Budgetary Proposal for Site Cleanup from Stericycle.						
Soil and Groundwater Investigation								
Affected Property Assessment (APA): Assuming six to eight monitor wells and up to 15 soil borings to delineate the affected soil and groundwater at this site.	\$35,000 to \$40,000	The APA will be conducted to delineate the extent of affected soil and groundwater at the site.						
Affected Property Assessment Report (APAR)	\$12,000 to \$15,000	Upon delineation of the affected soil and groundwater, the results of the investigation will be submitted to TCEQ as an APAR.						

Quarterly Groundwater Monitoring and reporting (\$10,000 per event). Eight to 12 sampling events.	\$80,000 to \$120,000	It is assumed that eight to 12 groundwater sampling events may be necessary to establish plume stability.
City of Houston (COH) Process to obtain Municipal Settings Designation (MSD) Ordinance	\$30,000 to \$40,000	If the site is eligible, a Municipal Setting Designation application will be submitted to COH.
TCEQ Process to obtain MSD Certificate	\$30,000 to \$40,000	Up on issuance of a COH MSD Ordinance, a TCEQ MSD application will be submitted to obtain a MSD Certificate that will eliminate the groundwater ingestion pathway.
Amended APAR	\$6,500 to \$8,500	Upon receipt of a TCEQ MSD Certificate, the APAR will be revised to eliminate the groundwater ingestions pathway and will be submitted with a request to close the site.
Plugging of monitor wells	\$8,000 to \$10,000	
Subtotal for Soil and	\$201,500 to \$273,500	
Groundwater		
Total Estimated Cost	\$526,500 to 598,500	

Please note that these costs are for only budgetary purposes, which were developed based on a visual inspection of the site. The actual costs will depend on site conditions, concentrations of chemicals-of-concern (COCs) detected in soil and groundwater and the volume of debris identified at the site.

VIII. REQUEST FOR COMMENTS/CONCLUSION

Please call us at (713)513-7153 or (281)455-6569 if you would like to provide comments on this plan or would like to request a written copy of this plan.

THE LAW OFFICE OF C. WILLIAM SMALLING, PC 1700 Post Oak Boulevard, 2 Blvd Place, Suite 600 Houston, Texas 77056 OFC (713)513-7153 MOBILE (281) 455-6569

An electronic copy is available for review and copying at: https://cwilliamsmallinglaw.com/7012banyancerclacleanup

A written copy is available for review and copying at: Houston Public Library Public Document Display Desk 500 McKinney Houston, TX 77002 (832) 393-1313

C. William Smalling Attorney

BSm/blr

Enclosures: Appendices

Endnotes

APPENDICIES

Appendix Number	Element
A.1	Reports to National Response Center and
	EPA
A.2	Initial Costs to March 1, 2018
A.3	Location of Contamination Area Maps
	(Figures 1 through 6)
A.4	Remedial Investigation/Feasibility Study
	(RI/FS) Statement of Work
A.5	1. ALS Environmental Laboratory
	Report (5 samples on Dec 01, 2017).
	2. A&B Labs Laboratory Report (5
	samples on Dec 18, 2017).
	3. A&B Labs Laboratory Report (2
	samples on Jan 5, 2018).
A.6	Laboratory Reports Audit by Expert
	Witness
A.7	Preliminary Studies and Quotes
A.8	December 12, 2017 Phase I Environmental
	Site Assessment
A.9	Area/Site History Review of 7100 Block of
	Homestead Road; 7000 Block of Banyan
	Street; Houston Texas.
A.10	Aerial Photographs – 1979, 1989, 1995,
	1996, and 2004
A.11	Summary of Samples – RCRA Violations.

Endnotes:

¹ § 300.150 Worker health and safety. (a) Response actions under the NCP will comply with the provisions for response action worker safety and health in 29 CFR 1910.120. The NRS meets the requirements of 29 CFR 1910.120 concerning use of an incident command system. (b) In a response action taken by a responsible party, the responsible party must assure that an occupational safety and health program consistent with 29 CFR 1910.120 is made available for the protection of workers at the response site. (c) In a response taken under the NCP by a lead agency, an occupational safety and health program should be made available for the protection of workers at the response site, consistent with, and to the extent required by, 29 CFR 1910.120. Contracts relating to a response action under the NCP should contain assurances that the contractor at the response site will comply with this program and with any applicable provisions of the Occupational Safety and Health Act of 1970 (29 U.S.C. 651 et seq.) (OSH Act) and state laws with plans approved under section 18 of the OSH Act. (d) When a state, or political subdivision of a state, without an OSHA-approved state plan is the lead agency for response, the state or political subdivision must comply with standards in 40 CFR part 311, promulgated by EPA pursuant to section 126(f) of SARA. (e) Requirements, standards, and regulations of the OSH Act and of state OSH laws not directly referenced in paragraphs (a) through (d) of this section, must be complied with where applicable. Federal OSH Act requirements include, among other things, Construction Standards (29 CFR part 1926), General Industry Standards (29 CFR part 1910), and the general duty requirement of section 5(a)(1) of the OSH Act (29 U.S.C. 654(a)(1)). No action by the lead agency with respect to response activities under the NCP constitutes an exercise of statutory authority within the meaning of section 4(b)(1) of the OSH Act. All governmental agencies and private employers are directly responsible for the health and safety of their own employees.

² § 300.160 Documentation and cost recovery. (a) For releases of a hazardous substance, pollutant, or contaminant, the following provisions apply: (1) During all phases of response, the lead agency shall complete and maintain documentation to support all actions taken under the NCP and to form the basis for cost recovery. In general, documentation shall be sufficient to provide the source and circumstances of the release, the identity of responsible parties, the response action taken, accurate accounting of federal, state, or private party costs incurred for response actions, and impacts and potential impacts to the public health and welfare and the environment. Where applicable, documentation shall state when the NRC received notification of a release of a reportable quantity. (2) The information and reports obtained by the lead agency for Fund-financed response actions shall, as appropriate, be transmitted to the chair of the RRT. Copies can then be forwarded to the NRT, members of the RRT, and others as appropriate. (3) The lead agency shall make available to the trustees of affected natural resources information and documentation that can assist the trustees in the determination of actual or potential natural resource injuries. (b) For discharges of oil, documentation and cost recovery provisions are described in § 300.315. (c) Response actions undertaken by the participating agencies shall be carried out under existing programs and authorities when available. Federal agencies are to make resources available, expend funds recovered, or participate in response to discharges and releases under their existing authority. Interagency agreements may be signed when necessary to ensure that the federal resources will be available for a timely response to a discharge or release. The ultimate decision as to the appropriateness of expending funds recovered rests with the agency that is held accountable for such expenditures. Further funding provisions for discharges of oil are described in § 300.335. (d) The Administrator of EPA and the Administrator of the Agency for Toxic Substances and Disease Registry (ATSDR) shall assure that the costs of health assessment or health effect studies conducted under the authority of CERCLA section 104(i) are documented in accordance with standard EPA procedures for cost recovery. Documentation shall include information on the nature of the hazardous substances addressed by the research, information concerning the locations where these substances have been found, and any available information on response actions taken concerning these substances at the location.

³ § 300.400 General. (a) This subpart establishes methods and criteria for determining the appropriate extent of response authorized by CERCLA and CWA section 311(c): (1) When there is a release of a hazardous substance into the environment; or (2) When there is a release into the environment of any pollutant or contaminant that may present an imminent and substantial danger to the public health or welfare of the United States. (c) *Fund-financed action*. In determining the need for and in planning or undertaking Fund-financed action, the lead agency shall, to

the extent practicable: (1) Engage in prompt response; (4) Be sensitive to local community concerns; (5) Consider using treatment technologies; (7) Encourage the involvement and sharing of technology by industry and other experts; (e) Permit requirements. (1) No federal, state, or local permits are required for on-site response actions conducted pursuant to CERCLA sections 104, 106, 120, 121, or 122. The term on-site means the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action. (2) Permits, if required, shall be obtained for all response activities conducted off-site. (g) Identification of applicable or relevant and appropriate requirements. (1) The lead and support agencies shall identify requirements applicable to the release or remedial action contemplated based upon an objective determination of whether the requirement specifically addresses a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. (2) If, based upon paragraph (g)(1) of this section, it is determined that a requirement is not applicable to a specific release, the requirement may still be relevant and appropriate to the circumstances of the release. In evaluating relevance and appropriateness, the factors in paragraphs (g)(2)(i) through (viii) of this section shall be examined, where pertinent, to determine whether a requirement addresses problems or situations sufficiently similar to the circumstances of the release or remedial action contemplated, and whether the requirement is well-suited to the site, and therefore is both relevant and appropriate. The pertinence of each of the following factors will depend, in part, on whether a requirement addresses a chemical, location, or action. The following comparisons shall be made, where pertinent, to determine relevance and appropriateness: (i) The purpose of the requirement and the purpose of the CERCLA action; (ii) The medium regulated or affected by the requirement and the medium contaminated or affected at the CERCLA site; (iii) The substances regulated by the requirement and the substances found at the CERCLA site; (iv) The actions or activities regulated by the requirement and the remedial action contemplated at the CERCLA site; (v) Any variances, waivers, or exemptions of the requirement and their availability for the circumstances at the CERCLA site; (vi) The type of place regulated and the type of place affected by the release or CERCLA action; (vii) The type and size of structure or facility regulated and the type and size of structure or facility affected by the release or contemplated by the CERCLA action; (viii) Any consideration of use or potential use of affected resources in the requirement and the use or potential use of the affected resource at the CERCLA site. (3) In addition to applicable or relevant and appropriate requirements, the lead and support agencies may, as appropriate, identify other advisories, criteria, or guidance to be considered for a particular release. The "to be considered" (TBC) category consists of advisories, criteria, or guidance that were developed by EPA, other federal agencies, or states that may be useful in developing CERCLA remedies. (4) Only those state standards that are promulgated, are identified by the state in a timely manner, and are more stringent than federal requirements may be applicable or relevant and appropriate. For purposes of identification and notification of promulgated state standards, the term promulgated means that the standards are of general applicability and are legally enforceable. (5) The lead agency and support agency shall identify their specific requirements that are applicable or relevant and appropriate for a particular site. These agencies shall notify each other, in a timely manner as described in § 300.515(d), of the requirements they have determined to be applicable or relevant and appropriate. When identifying a requirement as an ARAR, the lead agency and support agency shall include a citation to the statute or regulation from which the requirement is derived. (6) Notification of ARARs shall be according to procedures and timeframes specified in § 300.515 (d)(2) and (h)(2). ⁴ § 300.405 Discovery or notification. (a) A release may be discovered through: (1) A report submitted in accordance with section 103(a) of CERCLA, i.e., reportable quantities codified at 40 CFR part 302; (2) A report submitted to EPA in accordance with section 103(c) of CERCLA; (3) Investigation by government authorities conducted in accordance with section 104(e) of CERCLA or other statutory authority; (4) Notification of a release by a federal or state permit holder when required by its permit; (5) Inventory or survey efforts or random or incidental observation reported by government agencies or the public; (6) Submission of a citizen petition to EPA or the appropriate federal facility requesting a preliminary assessment, in accordance with section 105(d) of CERCLA; (7) A report submitted in accordance with section 311(b)(5) of the CWA; and (8) Other sources. (b) Any person in charge of a vessel or a facility shall report releases as described in paragraph (a)(1) of this section to the National Response Center (NRC). If direct reporting to the NRC is not practicable, reports may be made to the United States Coast Guard (USCG) on-scene coordinator (OSC) for the geographic area where the release occurs. The EPA predesignated OSC may also be contacted through the regional 24-hour emergency response telephone number. All such reports shall be promptly relayed to the NRC. If it is not possible to notify the NRC or predesignated OSC

immediately, reports may be made immediately to the nearest USCG unit. In any event, such person in charge of the vessel or facility shall notify the NRC as soon as possible. (c) All other reports of releases described under paragraph (a) of this section, except releases reported under paragraphs (a)(2) and (6) of this section, shall, as appropriate, be made to the NRC. (d) The NRC will generally need information that will help to characterize the release. This will include, but not be limited to: Location of the release; type(s) of material(s) released; an estimate of the quantity of material released; possible source of the release; and date and time of the release. Reporting under paragraphs (b) and (c) of this section shall not be delayed due to incomplete notification information.

⁵ **8 300.410 Removal site evaluation.** (a) A removal site evaluation includes a removal preliminary assessment and. if warranted, a removal site inspection. (b) A removal site evaluation of a release identified for possible CERCLA response pursuant to § 300.415 shall, as appropriate, be undertaken by the lead agency as promptly as possible. The lead agency may perform a removal preliminary assessment in response to petitions submitted by a person who is, or may be, affected by a release of a hazardous substance, pollutant, or contaminant pursuant to § 300.420(b)(5). (c)(1) The lead agency shall, as appropriate, base the removal preliminary assessment on readily available information. A removal preliminary assessment may include, but is not limited to: (i) Identification of the source and nature of the release or threat of release; (ii) Evaluation by ATSDR or by other sources, for example, state public health agencies, of the threat to public health; (iii) Evaluation of the magnitude of the threat; (iv) Evaluation of factors necessary to make the determination of whether a removal is necessary; and (v) Determination of whether a nonfederal party is undertaking proper response. (2) A removal preliminary assessment of releases from hazardous waste management facilities may include collection or review of data such as site management practices, information from generators, photographs, analysis of historical photographs, literature searches, and personal interviews conducted, as appropriate. (d) A removal site inspection may be performed if more information is needed. Such inspection may include a perimeter (i.e., off-site) or on-site inspection, taking into consideration whether such inspection can be performed safely. (e)(1) As part of the evaluation under this section, the OSC shall determine whether a release governed by CWA section 311(c)(1), as amended by OPA section 4201(a), has occurred. (2) If such a release of a CWA hazardous substance has occurred, the OSC shall determine whether the release results in a substantial threat to the public health or welfare of the United States. Factors to be considered by the OSC in making this determination include, but are not limited to, the size of the release, the character of the release, and the nature of the threat to public health or welfare of the United States. Upon obtaining relevant elements of such information, the OSC shall conduct an evaluation of the threat posed, based on the OSC's experience in assessing other releases, and consultation with senior lead agency officials and readily available authorities on issues outside the OSC's technical expertise. (f) A removal site evaluation shall be terminated when the OSC or lead agency determines: (1) There is no release; (2) The source is neither a vessel nor a facility as defined in § 300.5 of the NCP; (3) The release involves neither a hazardous substance, nor a pollutant or contaminant that may present an imminent and substantial danger to public health or welfare of the United States; (4) The release consists of a situation specified in § 300.400(b)(1) through (3) subject to limitations on response; or (7) The removal site evaluation is completed. (g) The results of the removal site evaluation shall be documented. (h) The OSC or lead agency shall ensure that natural resource trustees are promptly notified in order that they may initiate appropriate actions, including those identified in subpart G of this part. The OSC or lead agency shall coordinate all response activities with such affected trustees. (i) If the removal site evaluation indicates that removal action under § 300.415 is not required, but that remedial action under § 300.430 may be necessary, the lead agency shall, as appropriate, initiate a remedial site evaluation pursuant to

⁶ § 300.415 Removal action. (a)(1) In determining the appropriate extent of action to be taken in response to a given release, the lead agency shall first review the removal site evaluation, any information produced through a remedial site evaluation, if any has been done previously, and the current site conditions, to determine if removal action is appropriate. (3) This section does not apply to removal actions taken pursuant to section 104(b) of CERCLA. The criteria for such actions are set forth in section 104(b) of CERCLA. (b)(1) At any release, regardless of whether the site is included on the National Priorities List (NPL), where the lead agency makes the determination, based on the factors in paragraph (b)(2) of this section, that there is a threat to public health or welfare of the United States or the environment, the lead agency may take any appropriate removal action to abate, prevent, minimize, stabilize, mitigate, or eliminate the release or the threat of release. (2) The following factors shall be considered in determining the appropriateness of a removal action pursuant to this section: (i) Actual or potential exposure to

nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants; (ii) Actual or potential contamination of drinking water supplies or sensitive ecosystems; (iii) Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release; (iv) High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; (v) Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; (vi) Threat of fire or explosion; and (viii) Other situations or factors that may pose threats to public health or welfare of the United States or the environment. (3) If the lead agency determines that a removal action is appropriate, actions shall, as appropriate, begin as soon as possible to abate, prevent, minimize, stabilize, mitigate, or eliminate the threat to public health or welfare of the United States or the environment. The lead agency shall, at the earliest possible time, also make any necessary determinations pursuant to paragraph (b)(4) of this section. (4) Whenever a planning period of at least six months exists before on-site activities must be initiated, and the lead agency determines, based on a site evaluation, that a removal action is appropriate: (i) The lead agency shall conduct an engineering evaluation/cost analysis (EE/CA) or its equivalent. The EE/CA is an analysis of removal alternatives for a site. (ii) If environmental samples are to be collected, the lead agency shall develop sampling and analysis plans that shall provide a process for obtaining data of sufficient quality and quantity to satisfy data needs. Sampling and analysis plans shall be reviewed and approved by EPA. The sampling and analysis plans shall consist of two parts: (A) The field sampling plan, which describes the number, type, and location of samples and the type of analyses; and (B) The quality assurance project plan, which describes policy, organization, and functional activities and the data quality objectives and measures necessary to achieve adequate data for use in planning and documenting the removal action. (c)(1) In carrying out a response to a release of a CWA hazardous substance, as described in CWA section 311(c)(1), as amended by OPA section 4201(a), the OSC may: (i) Remove or arrange for the removal of a release, and mitigate or prevent a substantial threat of a release, at any time; (ii) Direct or monitor all federal, state, and private actions to remove a release; and (iii) Remove and, if necessary, destroy a vessel releasing or threatening to release CWA hazardous substances, by whatever means are available. (2) If the investigation by the OSC under § 300.410 shows that the release of a CWA hazardous substance results in a substantial threat to public health or welfare of the United States, the OSC shall direct all federal, state, or private actions to remove the release or to mitigate or prevent the threat of such a release, as appropriate. In directing the response, the OSC may act without regard to any other provision of law governing contracting procedures or employment of personnel by the federal government to: (i) Remove or arrange for the removal of the release; (ii) Mitigate or prevent the substantial threat of the release; and (iii) Remove and, if necessary, destroy a vessel releasing, or threatening to release, by whatever means are available. (3) In the case of a release of a CWA hazardous substance posing a substantial threat to public health or welfare of the United States, the OSC shall: (i) Assess opportunities for the use of various special teams and other assistance described in § 300.145, as appropriate; (ii) Request immediate activation of the RRT; and (iii) Take whatever additional response actions are deemed appropriate. When requested by the OSC, the lead agency or RRT shall dispatch appropriate personnel to the scene of the release to assist the OSC. This assistance may include technical support in the agency's areas of expertise and disseminating information to the public in accordance with § 300.155. The lead agency shall ensure that a contracting officer is available on-scene, at the request of the OSC. (d) Removal actions shall, to the extent practicable, contribute to the efficient performance of any anticipated long-term remedial action with respect to the release concerned. (e) The following removal actions are, as a general rule, appropriate in the types of situations shown; however, this list is not exhaustive and is not intended to prevent the lead agency from taking any other actions deemed necessary under CERCLA, CWA section 311, or other appropriate federal or state enforcement or response authorities, and the list does not create a duty on the lead agency to take action at any particular time: (1) Fences, warning signs, or other security or site control precautions—where humans or animals have access to the release; (2) Drainage controls, for example, run-off or run-on diversion—where needed to reduce migration of hazardous substances or pollutants or contaminants off-site or to prevent precipitation or run-off from other sources, for example, flooding, from entering the release area from other areas; (3) Stabilization of berms, dikes, or impoundments or drainage or closing of lagoons—where needed to maintain the integrity of the structures; (4) Capping of contaminated soils or sludges—where needed to reduce migration of hazardous substances or pollutants or contaminants into soil, ground or surface water, or air; (5) Using chemicals and other materials to retard the spread of the release or to mitigate its effects—where the use of such chemicals will reduce the spread of the release;

(6) Excavation, consolidation, or removal of highly contaminated soils from drainage or other areas—where such actions will reduce the spread of, or direct contact with, the contamination; (7) Removal of drums, barrels, tanks, or other bulk containers that contain or may contain hazardous substances or pollutants or contaminants—where it will reduce the likelihood of spillage; leakage; exposure to humans, animals, or food chain; or fire or explosion; (8) Containment, treatment, disposal, or incineration of hazardous materials—where needed to reduce the likelihood of human, animal, or food chain exposure; or (9) Provision of alternative water supply—where necessary immediately to reduce exposure to contaminated household water and continuing until such time as local authorities can satisfy the need for a permanent remedy. (f) Where necessary to protect public health or welfare, the lead agency shall request that FEMA conduct a temporary relocation or that state/local officials conduct an evacuation. (h) CERCLA removal actions conducted by states under cooperative agreements, described in subpart F of this part, shall comply with all requirements of this section. (i) Facilities operated by a state or political subdivision at the time of disposal require a state cost share of at least 50 percent of Fund-financed response costs if a Fund-financed remedial action is conducted. (j) Fund-financed removal actions under CERCLA section 104 and removal actions pursuant to CERCLA section 106 shall, to the extent practicable considering the exigencies of the situation, attain applicable or relevant and appropriate requirements (ARARs) under federal environmental or state environmental or facility siting laws. Waivers described in § 300.430(f)(1)(ii)(C) may be used for removal actions. Other federal and state advisories, criteria, or guidance may, as appropriate, be considered in formulating the removal action (see § 300.400(g)(3)). In determining whether compliance with ARARs is practicable, the lead agency may consider appropriate factors, including: (1) The urgency of the situation; and (2) The scope of the removal action to be conducted.

⁷ § 300.420 Remedial site evaluation. (a) General. The purpose of this section is to describe the methods, procedures, and criteria the lead agency shall use to collect data, as required, and evaluate releases of hazardous substances, pollutants, or contaminants. The evaluation may consist of two steps: a remedial preliminary assessment (PA) and a remedial site inspection (SI). (b) Remedial preliminary assessment. (1) The lead agency shall perform a remedial PA on all sites entered into the SEMS remedial assessment active inventory as defined in § 300.5 to: (i) Eliminate from further consideration those sites that pose no threat to public health or the environment; (ii) Determine if there is any potential need for removal action; (iii) Set priorities for site inspections; and (iv) Gather existing data to facilitate later evaluation of the release pursuant to the Hazard Ranking System (HRS) if warranted. (2) A remedial PA shall consist of a review of existing information about a release such as information on the pathways of exposure, exposure targets, and source and nature of release. A remedial PA shall also include an offsite reconnaissance as appropriate. A remedial PA may include an on-site reconnaissance where appropriate. (3) If the remedial PA indicates that a removal action may be warranted, the lead agency shall initiate removal evaluation pursuant to § 300.410. (4) In performing a remedial PA, the lead agency may complete the EPA Preliminary Assessment form, available from EPA regional offices, or its equivalent, and shall prepare a PA report, which shall include: (i) A description of the release; (ii) A description of the probable nature of the release; and (iii) A recommendation on whether further action is warranted, which lead agency should conduct further action, and whether an SI or removal action or both should be undertaken. (5) Any person may petition the lead federal agency (EPA or the appropriate federal agency in the case of a release or suspected release from a federal facility), to perform a PA of a release when such person is, or may be, affected by a release of a hazardous substance, pollutant, or contaminant. Such petitions shall be addressed to the EPA Regional Administrator for the region in which the release is located, except that petitions for PAs involving federal facilities should be addressed to the head of the appropriate federal agency. (i) Petitions shall be signed by the petitioner and shall contain the following: (A) The full name, address, and phone number of petitioner; (B) A description, as precisely as possible, of the location of the release; and (C) How the petitioner is or may be affected by the release. (ii) Petitions should also contain the following information to the extent available: (A) What type of substances were or may be released; (B) The nature of activities that have occurred where the release is located; and (C) Whether local and state authorities have been contacted about the release. (iii) The lead federal agency shall complete a remedial or removal PA within one year of the date of receipt of a complete petition pursuant to paragraph (b)(5) of this section, if one has not been performed previously, unless the lead federal agency determines that a PA is not appropriate. Where such a determination is made, the lead federal agency shall notify the petitioner and will provide a reason for the determination. (iv) When determining if performance of a PA is appropriate, the lead federal agency shall take into

consideration: (A) Whether there is information indicating that a release has occurred or there is a threat of a release of a hazardous substance, pollutant, or contaminant; and (B) Whether the release is eligible for response under CERCLA. (c) Remedial site inspection. (1) The lead agency shall perform a remedial SI as appropriate to: (i) Eliminate from further consideration those releases that pose no significant threat to public health or the environment; (ii) Determine the potential need for removal action; (iii) Collect or develop additional data, as appropriate, to evaluate the release pursuant to the HRS; and (iv) Collect data in addition to that required to score the release pursuant to the HRS, as appropriate, to better characterize the release for more effective and rapid initiation of the RI/FS or response under other authorities. (2) The remedial SI shall build upon the information collected in the remedial PA. The remedial SI shall involve, as appropriate, both on- and off-site field investigatory efforts, and sampling. (3) If the remedial SI indicates that removal action may be appropriate, the lead agency shall initiate removal site evaluation pursuant to § 300.410. (4) Prior to conducting field sampling as part of site inspections, the lead agency shall develop sampling and analysis plans that shall provide a process for obtaining data of sufficient quality and quantity to satisfy data needs. The sampling and analysis plans shall consist of two parts: (i) The field sampling plan, which describes the number, type, and location of samples, and the type of analyses, and (ii) The quality assurance project plan (QAPP), which describes policy, organization, and functional activities, and the data quality objectives and measures necessary to achieve adequate data for use in site evaluation and hazard ranking system activities. (5) Upon completion of a remedial SI, the lead agency shall prepare a report that includes the following: (i) A description/history/nature of waste handling; (ii) A description of known contaminants; (iii) A description of pathways of migration of contaminants; (iv) An identification and description of human and environmental targets; and (v) A recommendation on whether further action is warranted.

- ⁸ § 300.430 Remedial investigation/feasibility study and selection of remedy. (a) General—(1) Introduction. The purpose of the remedy selection process is to implement remedies that eliminate, reduce, or control risks to human health and the environment. Remedial actions are to be implemented as soon as site data and information make it possible to do so. Accordingly, EPA has established the following program goal, expectations, and program management principles to assist in the identification and implementation of appropriate remedial actions.(i) Program goal. The national goal of the remedy selection process is to select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste.(ii) Program management principles. EPA generally shall consider the following general principles of program management during the remedial process:(A) Sites should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup.(B) Operable units, including interim action operable units, should not be inconsistent with nor preclude implementation of the expected final remedy.(C) Site-specific data needs, the evaluation of alternatives, and the documentation of the selected remedy should reflect the scope and complexity of the site problems being addressed.(iii) Expectations. EPA generally shall consider the following expectations in developing appropriate remedial alternatives:(A) EPA expects to use treatment to address the principal threats posed by a site, wherever practicable. Principal threats for which treatment is most likely to be appropriate include liquids, areas contaminated with high concentrations of toxic compounds, and highly mobile materials.
- (B) EPA expects to use engineering controls, such as containment, for waste that poses a relatively low long-term threat or where treatment is impracticable.(C) EPA expects to use a combination of methods, as appropriate, to achieve protection of human health and the environment. In appropriate site situations, treatment of the principal threats posed by a site, with priority placed on treating waste that is liquid, highly toxic or highly mobile, will be combined with engineering controls (such as containment) and institutional controls, as appropriate, for treatment residuals and untreated waste.(D) EPA expects to use institutional controls such as water use and deed restrictions to supplement engineering controls as appropriate for short- and long-term management to prevent or limit exposure to hazardous substances, pollutants, or contaminants. Institutional controls may be used during the conduct of the remedial investigation/feasibility study (RI/FS) and implementation of the remedial action and, where necessary, as a component of the completed remedy. The use of institutional controls shall not substitute for active response measures (e.g., treatment and/or containment of source material, restoration of ground waters to their beneficial uses) as the sole remedy unless such active measures are determined not to be practicable, based on the balancing of trade-offs among alternatives that is conducted during the selection of remedy.(E) EPA expects to consider using

innovative technology when such technology offers the potential for comparable or superior treatment performance or implementability, fewer or lesser adverse impacts than other available approaches, or lower costs for similar levels of performance than demonstrated technologies.(F) EPA expects to return usable ground waters to their beneficial uses wherever practicable, within a timeframe that is reasonable given the particular circumstances of the site. When restoration of ground water to beneficial uses is not practicable, EPA expects to prevent further migration of the plume, prevent exposure to the contaminated ground water, and evaluate further risk reduction.(2) Remedial investigation/feasibility study. The purpose of the remedial investigation/feasibility study (RI/FS) is to assess site conditions and evaluate alternatives to the extent necessary to select a remedy. Developing and conducting an RI/FS generally includes the following activities: project scoping, data collection, risk assessment, treatability studies, and analysis of alternatives. The scope and timing of these activities should be tailored to the nature and complexity of the problem and the response alternatives being considered.(b) Scoping. In implementing this section, the lead agency should consider the program goal, program management principles, and expectations contained in this rule. The investigative and analytical studies should be tailored to site circumstances so that the scope and detail of the analysis is appropriate to the complexity of site problems being addressed. During scoping, the lead and support agencies shall confer to identify the optimal set and sequence of actions necessary to address site problems. Specifically, the lead agency shall:(1) Assemble and evaluate existing data on the site, including the results of any removal actions, remedial preliminary assessment and site inspections, and the NPL listing process.(2) Develop a conceptual understanding of the site based on the evaluation of existing data described in paragraph (b)(1) of this section.(3) Identify likely response scenarios and potentially applicable technologies and operable units that may address site problems.(4) Undertake limited data collection efforts or studies where this information will assist in scoping the RI/FS or accelerate response actions, and begin to identify the need for treatability studies, as appropriate.

(5) Identify the type, quality, and quantity of the data that will be collected during the RI/FS to support decisions regarding remedial response activities.(6) Prepare site-specific health and safety plans that shall specify, at a minimum, employee training and protective equipment, medical surveillance requirements, standard operating procedures, and a contingency plan that conforms with 29 CFR 1910.120 (l)(1) and (l)(2).(7) If natural resources are or may be injured by the release, ensure that state and federal trustees of the affected natural resources have been notified in order that the trustees may initiate appropriate actions, including those identified in subpart G of this part. The lead agency shall seek to coordinate necessary assessments, evaluations, investigations, and planning with such state and federal trustees.(8) Develop sampling and analysis plans that shall provide a process for obtaining data of sufficient quality and quantity to satisfy data needs. Sampling and analysis plans shall be reviewed and approved by EPA. The sampling and analysis plans shall consist of two parts:(i) The field sampling plan, which describes the number, type, and location of samples and the type of analyses; and(ii) The quality assurance project plan, which describes policy, organization, and functional activities and the data quality objectives and measures necessary to achieve adequate data for use in selecting the appropriate remedy. (9) Initiate the identification of potential federal and state ARARs and, as appropriate, other criteria, advisories, or guidance to be considered.(c) Community relations. (1) The community relations requirements described in this section apply to all remedial activities undertaken pursuant to CERCLA section 104 and to section 106 or section 122 consent orders or decrees, or section 106 administrative orders.(2) The lead agency shall provide for the conduct of the following community relations activities, to the extent practicable, prior to commencing field work for the remedial investigation:(i) Conducting interviews with local officials, community residents, public interest groups, or other interested or affected parties, as appropriate, to solicit their concerns and information needs, and to learn how and when citizens would like to be involved in the Superfund process.(ii) Preparing a formal community relations plan (CRP), based on the community interviews and other relevant information, specifying the community relations activities that the lead agency expects to undertake during the remedial response. The purpose of the CRP is to:(A) Ensure the public appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alternatives analysis, and selection of remedy; (B) Determine, based on community interviews, appropriate activities to ensure such public involvement, and(C) Provide appropriate opportunities for the community to learn about the site.(iii) Establishing at least one local information repository at or near the location of the response action. Each information repository should contain a copy of items made available to the public, including information that describes the technical assistance grants application process. The lead agency shall inform interested parties of the

establishment of the information repository.(iv) Informing the community of the availability of technical assistance grants.(3) For PRP actions, the lead agency shall plan and implement the community relations program at a site. PRPs may participate in aspects of the community relations program at the discretion of and with oversight by the lead agency.(4) The lead agency may conduct technical discussions involving PRPs and the public. These technical discussions may be held separately from, but contemporaneously with, the negotiations/settlement discussions. (5) In addition, the following provisions specifically apply to enforcement actions:(i) Lead agencies entering into an enforcement agreement with de minimis parties under CERCLA section 122(g) or cost recovery settlements under section 122(h) shall publish a notice of the proposed agreement in the Federal Register at least 30 days before the agreement becomes final, as required by section 122(i). The notice must identify the name of the facility and the parties to the proposed agreement and must allow an opportunity for comment and consideration of comments; and(ii) Where the enforcement agreement is embodied in a consent decree, public notice and opportunity for public comment shall be provided in accordance with 28 CFR 50.7.(d) Remedial investigation. (1) The purpose of the remedial investigation (RI) is to collect data necessary to adequately characterize the site for the purpose of developing and evaluating effective remedial alternatives. To characterize the site, the lead agency shall, as appropriate, conduct field investigations, including treatability studies, and conduct a baseline risk assessment. The RI provides information to assess the risks to human health and the environment and to support the development, evaluation, and selection of appropriate response alternatives. Site characterization may be conducted in one or more phases to focus sampling efforts and increase the efficiency of the investigation. Because estimates of actual or potential exposures and associated impacts on human and environmental receptors may be refined throughout the phases of the RI as new information is obtained, site characterization activities should be fully integrated with the development and evaluation of alternatives in the feasibility study. Bench- or pilot-scale treatability studies shall be conducted, when appropriate and practicable, to provide additional data for the detailed analysis and to support engineering design of remedial alternatives.(2) The lead agency shall characterize the nature of and threat posed by the hazardous substances and hazardous materials and gather data necessary to assess the extent to which the release poses a threat to human health or the environment or to support the analysis and design of potential response actions by conducting, as appropriate, field investigations to assess the following factors:(i) Physical characteristics of the site, including important surface features, soils, geology, hydrogeology, meteorology, and ecology;(ii) Characteristics or classifications of air, surface water, and ground water; (iii) The general characteristics of the waste, including quantities, state, concentration, toxicity, propensity to bioaccumulate, persistence, and mobility;(iv) The extent to which the source can be adequately identified and characterized; (v) Actual and potential exposure pathways through environmental media; (vi) Actual and potential exposure routes, for example, inhalation and ingestion; and(vii) Other factors, such as sensitive populations, that pertain to the characterization of the site or support the analysis of potential remedial action alternatives.(3) The lead and support agency shall identify their respective potential ARARs related to the location of and contaminants at the site in a timely manner. The lead and support agencies may also, as appropriate, identify other pertinent advisories, criteria, or guidance in a timely manner (see § 300.400(g)(3)).(4) Using the data developed under paragraphs (d)(1) and (2) of this section, the lead agency shall conduct a site-specific baseline risk assessment to characterize the current and potential threats to human health and the environment that may be posed by contaminants migrating to ground water or surface water, releasing to air, leaching through soil, remaining in the soil, and bioaccumulating in the food chain. The results of the baseline risk assessment will help establish acceptable exposure levels for use in developing remedial alternatives in the FS, as described in paragraph (e) of this section. (e) Feasibility study. (1) The primary objective of the feasibility study (FS) is to ensure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected. The lead agency may develop a feasibility study to address a specific site problem or the entire site. The development and evaluation of alternatives shall reflect the scope and complexity of the remedial action under consideration and the site problems being addressed. Development of alternatives shall be fully integrated with the site characterization activities of the remedial

investigation described in paragraph (d) of this section. The lead agency shall include an alternatives screening step, when needed, to select a reasonable number of alternatives for detailed analysis.(2) Alternatives shall be developed that protect human health and the environment by recycling waste or by eliminating, reducing, and/or controlling

at each site, taking into account the scope, characteristics, and complexity of the site problem that is being addressed. In developing and, as appropriate, screening the alternatives, the lead agency shall:(i) Establish remedial action objectives specifying contaminants and media of concern, potential exposure pathways, and remediation goals. Initially, preliminary remediation goals are developed based on readily available information, such as chemical-specific ARARs or other reliable information. Preliminary remediation goals should be modified, as necessary, as more information becomes available during the RI/FS. Final remediation goals will be determined when the remedy is selected. Remediation goals shall establish acceptable exposure levels that are protective of human health and the environment and shall be developed by considering the following:(A) Applicable or relevant and appropriate requirements under federal environmental or state environmental or facility siting laws, if available, and the following factors:(1) For systemic toxicants, acceptable exposure levels shall represent concentration levels to which the human population, including sensitive subgroups, may be exposed without adverse effect during a lifetime or part of a lifetime, incorporating an adequate margin of safety; (2) For known or suspected carcinogens, acceptable exposure levels are generally concentration levels that represent an excess upper bound lifetime cancer risk to an individual of between 10-4 and 10-6 using information on the relationship between dose and response. The 10-6 risk level shall be used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure; (3) Factors related to technical limitations such as detection/quantification limits for contaminants; (4) Factors related to uncertainty; and (5) Other pertinent information. (B) Maximum contaminant level goals (MCLGs), established under the Safe Drinking Water Act, that are set at levels above zero, shall be attained by remedial actions for ground or surface waters that are current or potential sources of drinking water, where the MCLGs are relevant and appropriate under the circumstances of the release based on the factors in § 300.400(g)(2). If an MCLG is determined not to be relevant and appropriate, the corresponding maximum contaminant level (MCL) shall be attained where relevant and appropriate to the circumstances of the release.(C) Where the MCLG for a contaminant has been set at a level of zero, the MCL promulgated for that contaminant under the Safe Drinking Water Act shall be attained by remedial actions for ground or surface waters that are current or potential sources of drinking water, where the MCL is relevant and appropriate under the circumstances of the release based on the factors in $\S 300.400(g)(2)$.

(D) In cases involving multiple contaminants or pathways where attainment of chemical-specific ARARs will result in cumulative risk in excess of 10-4, criteria in paragraph (e)(2)(i)(A) of this section may also be considered when determining the cleanup level to be attained.(E) Water quality criteria established under sections 303 or 304 of the Clean Water Act shall be attained where relevant and appropriate under the circumstances of the release.(F) An alternate concentration limit (ACL) may be established in accordance with CERCLA section 121(d)(2)(B)(ii).(G) Environmental evaluations shall be performed to assess threats to the environment, especially sensitive habitats and critical habitats of species protected under the Endangered Species Act.(ii) Identify and evaluate potentially suitable technologies, including innovative technologies;(iii) Assemble suitable technologies into alternative remedial actions.(3) For source control actions, the lead agency shall develop, as appropriate:(i) A range of alternatives in which treatment that reduces the toxicity, mobility, or volume of the hazardous substances, pollutants, or contaminants is a principal element. As appropriate, this range shall include an alternative that removes or destroys hazardous substances, pollutants, or contaminants to the maximum extent feasible, eliminating or minimizing, to the degree possible, the need for long-term management. The lead agency also shall develop, as appropriate, other alternatives which, at a minimum, treat the principal threats posed by the site but vary in the degree of treatment employed and the quantities and characteristics of the treatment residuals and untreated waste that must be managed; and(ii) One or more alternatives that involve little or no treatment, but provide protection of human health and the environment primarily by preventing or controlling exposure to hazardous substances, pollutants, or contaminants, through engineering controls, for example, containment, and, as necessary, institutional controls to protect human health and the environment and to assure continued effectiveness of the response action.(4) For ground-water response actions, the lead agency shall develop a limited number of remedial alternatives that attain site-specific remediation levels within different restoration time periods utilizing one or more different technologies.(5) The lead agency shall develop one or more innovative treatment technologies for further consideration if those technologies offer the potential for comparable or superior performance or implementability; fewer or lesser adverse impacts than other available approaches; or lower costs for similar levels of performance than demonstrated treatment

technologies.(6) The no-action alternative, which may be no further action if some removal or remedial action has already occurred at the site, shall be developed. (7) As appropriate, and to the extent sufficient information is available, the short- and long-term aspects of the following three criteria shall be used to guide the development and screening of remedial alternatives:(i) Effectiveness. This criterion focuses on the degree to which an alternative reduces toxicity, mobility, or volume through treatment, minimizes residual risks and affords long-term protection, complies with ARARs, minimizes short-term impacts, and how quickly it achieves protection. Alternatives providing significantly less effectiveness than other, more promising alternatives may be eliminated. Alternatives that do not provide adequate protection of human health and the environment shall be eliminated from further consideration.(ii) Implementability. This criterion focuses on the technical feasibility and availability of the technologies each alternative would employ and the administrative feasibility of implementing the alternative. Alternatives that are technically or administratively infeasible or that would require equipment, specialists, or facilities that are not available within a reasonable period of time may be eliminated from further consideration. (iii) Cost. The costs of construction and any long-term costs to operate and maintain the alternatives shall be considered. Costs that are grossly excessive compared to the overall effectiveness of alternatives may be considered as one of several factors used to eliminate alternatives. Alternatives providing effectiveness and implementability similar to that of another alternative by employing a similar method of treatment or engineering control, but at greater cost, may be eliminated.(8) The lead agency shall notify the support agency of the alternatives that will be evaluated in detail to facilitate the identification of ARARs and, as appropriate, pertinent advisories, criteria, or guidance to be considered.(9) Detailed analysis of alternatives. (i) A detailed analysis shall be conducted on the limited number of alternatives that represent viable approaches to remedial action after evaluation in the screening stage. The lead and support agencies must identify their ARARs related to specific actions in a timely manner and no later than the early stages of the comparative analysis. The lead and support agencies may also, as appropriate, identify other pertinent advisories, criteria, or guidance in a timely manner.(ii) The detailed analysis consists of an assessment of individual alternatives against each of nine evaluation criteria and a comparative analysis that focuses upon the relative performance of each alternative against those criteria.(iii) Nine criteria for evaluation. The analysis of alternatives under review shall reflect the scope and complexity of site problems and alternatives being evaluated and consider the relative significance of the factors within each criteria. The nine evaluation criteria are as follows:(A) Overall protection of human health and the environment. Alternatives shall be assessed to determine whether they can adequately protect human health and the environment, in both the short- and long-term, from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site by eliminating, reducing, or controlling exposures to levels established during development of remediation goals consistent with § 300.430(e)(2)(i). Overall protection of human health and the environment draws on the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.(B) Compliance with ARARs. The alternatives shall be assessed to determine whether they attain applicable or relevant and appropriate requirements under federal environmental laws and state environmental or facility siting laws or provide grounds for invoking one of the waivers under paragraph (f)(1)(ii)(C) of this section.(C) Long-term effectiveness and permanence. Alternatives shall be assessed for the long-term effectiveness and permanence they afford, along with the degree of certainty that the alternative will prove successful. Factors that shall be considered, as appropriate, include the following:(1) Magnitude of residual risk remaining from untreated waste or treatment residuals remaining at the conclusion of the remedial activities. The characteristics of the residuals should be considered to the degree that they remain hazardous, taking into account their volume, toxicity, mobility, and propensity to bioaccumulate.(2) Adequacy and reliability of controls such as containment systems and institutional controls that are necessary to manage treatment residuals and untreated waste. This factor addresses in particular the uncertainties associated with land disposal for providing long-term protection from residuals; the assessment of the potential need to replace technical components of the alternative, such as a cap, a slurry wall, or a treatment system; and the potential exposure pathways and risks posed should the remedial action need replacement.(D) Reduction of toxicity, mobility, or volume through treatment. The degree to which alternatives employ recycling or treatment that reduces toxicity, mobility, or volume shall be assessed, including how treatment is used to address the principal threats posed by the site. Factors that shall be considered, as appropriate, include the following:

(1) The treatment or recycling processes the alternatives employ and materials they will treat;(2) The amount of hazardous substances, pollutants, or contaminants that will be destroyed, treated, or recycled; (3) The degree of expected reduction in toxicity, mobility, or volume of the waste due to treatment or recycling and the specification of which reduction(s) are occurring;(4) The degree to which the treatment is irreversible;(5) The type and quantity of residuals that will remain following treatment, considering the persistence, toxicity, mobility, and propensity to bioaccumulate of such hazardous substances and their constituents; and (6) The degree to which treatment reduces the inherent hazards posed by principal threats at the site.(E) Short-term effectiveness. The short-term impacts of alternatives shall be assessed considering the following:(1) Short-term risks that might be posed to the community during implementation of an alternative; (2) Potential impacts on workers during remedial action and the effectiveness and reliability of protective measures; (3) Potential environmental impacts of the remedial action and the effectiveness and reliability of mitigative measures during implementation; and (4) Time until protection is achieved.(F) Implementability. The ease or difficulty of implementing the alternatives shall be assessed by considering the following types of factors as appropriate:(1) Technical feasibility, including technical difficulties and unknowns associated with the construction and operation of a technology, the reliability of the technology, ease of undertaking additional remedial actions, and the ability to monitor the effectiveness of the remedy.(2) Administrative feasibility, including activities needed to coordinate with other offices and agencies and the ability and time required to obtain any necessary approvals and permits from other agencies (for off-site actions);(3) Availability of services and materials, including the availability of adequate off-site treatment, storage capacity, and disposal capacity and services; the availability of necessary equipment and specialists, and provisions to ensure any necessary additional resources; the availability of services and materials; and availability of prospective technologies.(G) Cost. The types of costs that shall be assessed include the following:(1) Capital costs, including both direct and indirect costs; (2) Annual operation and maintenance costs; and (3) Net present value of capital and O&M costs.(H) State acceptance. Assessment of state concerns may not be completed until comments on the RI/FS are received but may be discussed, to the extent possible, in the proposed plan issued for public comment. The state concerns that shall be assessed include the following:(1) The state's position and key concerns related to the preferred alternative and other alternatives; and(2) State comments on ARARs or the proposed use of waivers.(I) Community acceptance. This assessment includes determining which components of the alternatives interested persons in the community support, have reservations about, or oppose. This assessment may not be completed until comments on the proposed plan are received.(f) Selection of remedy—(1) Remedies selected shall reflect the scope and purpose of the actions being undertaken and how the action relates to long-term, comprehensive response at the site.(i) The criteria noted in paragraph (e)(9)(iii) of this section are used to select a remedy. These criteria are categorized into three groups.(A) Threshold criteria. Overall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection.(B) Primary balancing criteria. The five primary balancing criteria are long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost.

(C) *Modifying criteria*. State and community acceptance are modifying criteria that shall be considered in remedy selection.(ii) The selection of a remedial action is a two-step process and shall proceed in accordance with § 300.515(e). First, the lead agency, in conjunction with the support agency, identifies a preferred alternative and presents it to the public in a proposed plan, for review and comment. Second, the lead agency shall review the public comments and consult with the state (or support agency) in order to determine if the alternative remains the most appropriate remedial action for the site or site problem. The lead agency, as specified in § 300.515(e), makes the final remedy selection decision, which shall be documented in the ROD. Each remedial alternative selected as a Superfund remedy will employ the criteria as indicated in paragraph (f)(1)(i) of this section to make the following determination:(A) Each remedial action selected shall be protective of human health and the environment.(B) Onsite remedial actions selected in a ROD must attain those ARARs that are identified at the time of ROD signature or provide grounds for invoking a waiver under § 300.430(f)(1)(ii)(C).(1) Requirements that are promulgated or modified after ROD signature must be attained (or waived) only when determined to be applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment.(2) Components of the remedy not described in the ROD must attain (or waive) requirements that are identified as applicable or relevant and appropriate at the time the amendment to the ROD or the explanation of significant

difference describing the component is signed.(C) An alternative that does not meet an ARAR under federal environmental or state environmental or facility siting laws may be selected under the following circumstances:(1) The alternative is an interim measure and will become part of a total remedial action that will attain the applicable or relevant and appropriate federal or state requirement; (2) Compliance with the requirement will result in greater risk to human health and the environment than other alternatives; (3) Compliance with the requirement is technically impracticable from an engineering perspective; (4) The alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation through use of another method or approach; (5) With respect to a state requirement, the state has not consistently applied, or demonstrated the intention to consistently apply, the promulgated requirement in similar circumstances at other remedial actions within the state; or(6) For Fund-financed response actions only, an alternative that attains the ARAR will not provide a balance between the need for protection of human health and the environment at the site and the availability of Fund monies to respond to other sites that may present a threat to human health and the environment.(D) Each remedial action selected shall be cost-effective, provided that it first satisfies the threshold criteria set forth in § 300.430(f)(1)(ii)(A) and (B). Cost-effectiveness is determined by evaluating the following three of the five balancing criteria noted in § 300.430(f)(1)(i)(B) to determine overall effectiveness: long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost-effective. A remedy shall be cost-effective if its costs are proportional to its overall effectiveness.(E) Each remedial action shall utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. This requirement shall be fulfilled by selecting the alternative that satisfies paragraph (f)(1)(ii)(A) and (B) of this section and provides the best balance of trade-offs among alternatives in terms of the five primary balancing criteria noted in paragraph (f)(1)(i)(B) of this section. The balancing shall emphasize long-term effectiveness and reduction of toxicity, mobility, or volume through treatment. The balancing shall also consider the preference for treatment as a principal element and the bias against off-site land disposal of untreated waste. In making the determination under this paragraph, the modifying criteria of state acceptance and community acceptance described in paragraph (f)(1)(i)(C) of this section shall also be considered. (2) The proposed plan. In the first step in the remedy selection process, the lead agency shall identify the alternative that best meets the requirements in § 300.430(f)(1), above, and shall present that alternative to the public in a proposed plan. The lead agency, in conjunction with the support agency and consistent with § 300.515(e), shall prepare a proposed plan that briefly describes the remedial alternatives analyzed by the lead agency, proposes a preferred remedial action alternative, and summarizes the information relied upon to select the preferred alternative. The selection of remedy process for an operable unit may be initiated at any time during the remedial action process. The purpose of the proposed plan is to supplement the RI/FS and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to participate in the selection of remedial action at a site. At a minimum, the proposed plan shall:(i) Provide a brief summary description of the remedial alternatives evaluated in the detailed analysis established under paragraph (e)(9) of this section;(ii) Identify and provide a discussion of the rationale that supports the preferred alternative;(iii) Provide a summary of any formal comments received from the support agency; and(iv) Provide a summary explanation of any proposed waiver identified under paragraph (f)(1)(ii)(C) of this section from an ARAR.(3) Community relations to support the selection of remedy. (i) The lead agency, after preparation of the proposed plan and review by the support agency, shall conduct the following activities: (A) Publish a notice of availability and brief analysis of the proposed plan in a major local newspaper of general circulation; (B) Make the proposed plan and supporting analysis and information available in the administrative record required under subpart I of this part;(C) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the proposed plan and the supporting analysis and information located in the information repository, including the RI/FS. Upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days;(D) Provide the opportunity for a public meeting to be held during the public comment period at or near the site at issue regarding the proposed plan and the supporting analysis and information;(E) Keep a transcript of the public meeting held during the public comment period pursuant to CERCLA section 117(a) and make such transcript available to the public; and(F) Prepare a written summary of significant comments, criticisms, and new relevant information submitted during the public comment period and the lead agency response to each issue. This

responsiveness summary shall be made available with the record of decision. (ii) After publication of the proposed plan and prior to adoption of the selected remedy in the record of decision, if new information is made available that significantly changes the basic features of the remedy with respect to scope, performance, or cost, such that the remedy significantly differs from the original proposal in the proposed plan and the supporting analysis and information, the lead agency shall:(A) Include a discussion in the record of decision of the significant changes and reasons for such changes, if the lead agency determines such changes could be reasonably anticipated by the public based on the alternatives and other information available in the proposed plan or the supporting analysis and information in the administrative record; or

(B) Seek additional public comment on a revised proposed plan, when the lead agency determines the change could not have been reasonably anticipated by the public based on the information available in the proposed plan or the supporting analysis and information in the administrative record. The lead agency shall, prior to adoption of the selected remedy in the ROD, issue a revised proposed plan, which shall include a discussion of the significant changes and the reasons for such changes, in accordance with the public participation requirements described in paragraph (f)(3)(i) of this section.(4) Final remedy selection. (i) In the second and final step in the remedy selection process, the lead agency shall reassess its initial determination that the preferred alternative provides the best balance of trade-offs, now factoring in any new information or points of view expressed by the state (or support agency) and community during the public comment period. The lead agency shall consider state (or support agency) and community comments regarding the lead agency's evaluation of alternatives with respect to the other criteria. These comments may prompt the lead agency to modify aspects of the preferred alternative or decide that another alternative provides a more appropriate balance. The lead agency, as specified in § 300.515(e), shall make the final remedy selection decision and document that decision in the ROD.(ii) If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action.(iii) The process for selection of a remedial action at a federal facility on the NPL, pursuant to CERCLA section 120, shall entail:(A) Joint selection of remedial action by the head of the relevant department, agency, or instrumentality and EPA; or(B) If mutual agreement on the remedy is not reached, selection of the remedy is made by EPA.(5) Documenting the decision. (i) To support the selection of a remedial action, all facts, analyses of facts, and site-specific policy determinations considered in the course of carrying out activities in this section shall be documented, as appropriate, in a record of decision, in a level of detail appropriate to the site situation, for inclusion in the administrative record required under subpart I of this part. Documentation shall explain how the evaluation criteria in paragraph (e)(9)(iii) of this section were used to select the remedy.(ii) The ROD shall describe the following statutory requirements as they relate to the scope and objectives of the action:(A) How the selected remedy is protective of human health and the environment, explaining how the remedy eliminates, reduces, or controls exposures to human and environmental receptors;(B) The federal and state requirements that are applicable or relevant and appropriate to the site that the remedy will attain; (C) The applicable or relevant and appropriate requirements of other federal and state laws that the remedy will not meet, the waiver invoked, and the justification for invoking the waiver;(D) How the remedy is cost-effective, i.e., explaining how the remedy provides overall effectiveness proportional to its costs;(E) How the remedy utilizes permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and(F) Whether the preference for remedies employing treatment which permanently and significantly reduces the toxicity, mobility, or volume of the hazardous substances, pollutants, or contaminants as a principal element is or is not satisfied by the selected remedy. If this preference is not satisfied, the record of decision must explain why a remedial action involving such reductions in toxicity, mobility, or volume was not selected.

(iii) The ROD also shall:(A) Indicate, as appropriate, the remediation goals, discussed in paragraph (e)(2)(i) of this section, that the remedy is expected to achieve. Performance shall be measured at appropriate locations in the ground water, surface water, soils, air, and other affected environmental media. Measurement relating to the performance of the treatment processes and the engineering controls may also be identified, as appropriate;(B) Discuss significant changes and the response to comments described in paragraph (f)(3)(i)(F) of this section;(C) Describe whether hazardous substances, pollutants, or contaminants will remain at the site such that a review of the remedial action under paragraph (f)(4)(ii) of this section no less often than every five years shall be required; and(D) When appropriate, provide a commitment for further analysis and selection of long-term response measures within

an appropriate time-frame.(6) Community relations when the record of decision is signed. After the ROD is signed, the lead agency shall:(i) Publish a notice of the availability of the ROD in a major local newspaper of general circulation; and(ii) Make the record of decision available for public inspection and copying at or near the facility at issue prior to the commencement of any remedial action.

⁹ § 300.435 Remedial design/remedial action, operation and maintenance. (a) General. The remedial design/remedial action (RD/RA) stage includes the development of the actual design of the selected remedy and implementation of the remedy through construction. A period of operation and maintenance may follow the RA activities.(b) RD/RA activities. (1) All RD/RA activities shall be in conformance with the remedy selected and set forth in the ROD or other decision document for that site. Those portions of RD/RA sampling and analysis plans describing the QA/QC requirements for chemical and analytical testing and sampling procedures of samples taken for the purpose of determining whether cleanup action levels specified in the ROD are achieved, generally will be consistent with the requirements of § 300.430(b)(8).(2) During the course of the RD/RA, the lead agency shall be responsible for ensuring that all federal and state requirements that are identified in the ROD as applicable or relevant and appropriate requirements for the action are met. If waivers from any ARARs are involved, the lead agency shall be responsible for ensuring that the conditions of the waivers are met.(c) Community relations. (1) Prior to the initiation of RD, the lead agency shall review the CRP to determine whether it should be revised to describe further public involvement activities during RD/RA that are not already addressed or provided for in the CRP.(2) After the adoption of the ROD, if the remedial action or enforcement action taken, or the settlement or consent decree entered into, differs significantly from the remedy selected in the ROD with respect to scope, performance, or cost, the lead agency shall consult with the support agency, as appropriate, and shall either:(i) Publish an explanation of significant differences when the differences in the remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost. To issue an explanation of significant differences, the lead agency shall:(A) Make the explanation of significant differences and supporting information available to the public in the administrative record established under § 300.815 and the information repository; and(B) Publish a notice that briefly summarizes the explanation of significant differences, including the reasons for such differences, in a major local newspaper of general circulation; or(ii) Propose an amendment to the ROD if the differences in the remedial or enforcement action, settlement, or consent decree fundamentally alter the basic features of the selected remedy with respect to scope, performance, or cost. To amend the ROD, the lead agency, in conjunction with the support agency, as provided in § 300.515(e), shall:

(A) Issue a notice of availability and brief description of the proposed amendment to the ROD in a major local newspaper of general circulation; (B) Make the proposed amendment to the ROD and information supporting the decision available for public comment; (C) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written or oral comments on the amendment to the ROD. Upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days;(D) Provide the opportunity for a public meeting to be held during the public comment period at or near the facility at issue;(E) Keep a transcript of comments received at the public meeting held during the public comment period;(F) Include in the amended ROD a brief explanation of the amendment and the response to each of the significant comments, criticisms, and new relevant information submitted during the public comment period;(G) Publish a notice of the availability of the amended ROD in a major local newspaper of general circulation; and(H) Make the amended ROD and supporting information available to the public in the administrative record and information repository prior to the commencement of the remedial action affected by the amendment.(3) After the completion of the final engineering design, the lead agency shall issue a fact sheet and provide, as appropriate, a public briefing prior to the initiation of the remedial action.(d) Contractor conflict of interest. (1) For Fund-financed RD/RA and O&M activities, the lead agency shall:(i) Include appropriate language in the solicitation requiring potential prime contractors to submit information on their status, as well as the status of their subcontractors, parent companies, and affiliates, as potentially responsible parties at the site.(ii) Require potential prime contractors to certify that, to the best of their knowledge, they and their potential subcontractors, parent companies, and affiliates have disclosed all information described in § 300.435(d)(1)(i) or that no such information exists, and that any such information discovered after submission of their bid or proposal or contract award will be disclosed immediately.(2) Prior to contract award, the lead agency shall evaluate the information provided by the potential prime contractors and:(i) Determine whether

they have conflicts of interest that could significantly impact the performance of the contract or the liability of potential prime contractors or subcontractors.(ii) If a potential prime contractor or subcontractor has a conflict of interest that cannot be avoided or otherwise resolved, and using that potential prime contractor or subcontractor to conduct RD/RA or O&M work under a Fund-financed action would not be in the best interests of the state or federal government, an offeror or bidder contemplating use of that prime contractor or subcontractor may be declared nonresponsible or ineligible for award in accordance with appropriate acquisition regulations, and the contract may be awarded to the next eligible offeror or bidder.(e) Recontracting. (1) If a Fund-financed contract must be terminated because additional work outside the scope of the contract is needed. EPA is authorized to take appropriate steps to continue interim RAs as necessary to reduce risks to public health and the environment. Appropriate steps may include extending an existing contract for a federal-lead RA or amending a cooperative agreement for a state-lead RA. Until the lead agency can reopen the bidding process and recontract to complete the RA, EPA may take such appropriate steps as described above to cover interim work to reduce such risks, where:(i) Additional work is found to be needed as a result of such unforeseen situations as newly discovered sources, types, or quantities of hazardous substances at a facility; and (ii) Performance of the complete RA requires the lead agency to rebid the contract because the existing contract does not encompass this newly discovered work. (2) The cost of such interim actions shall not exceed \$2 million. (f) Operation and maintenance. (1) Operation and maintenance (O&M) measures are initiated after the remedy has achieved the remedial action objectives and remediation goals in the ROD, and is determined to be operational and functional, except for ground- or surface-water restoration actions covered under § 300.435(f)(4). A state must provide its assurance to assume responsibility for O&M, including, where appropriate, requirements for maintaining institutional controls, under § 300.510(c). (2) A remedy becomes "operational and functional" either one year after construction is complete, or when the remedy is determined concurrently by EPA and the state to be functioning properly and is performing as designed, whichever is earlier. EPA may grant extensions to the one-year period, as appropriate. (3) For Fund-financed remedial actions involving treatment or other measures to restore ground- or surface-water quality to a level that assures protection of human health and the environment, the operation of such treatment or other measures for a period of up to 10 years after the remedy becomes operational and functional will be considered part of the remedial action. Activities required to maintain the effectiveness of such treatment or measures following the 10-year period, or after remedial action is complete, whichever is earlier, shall be considered O&M. For the purposes of federal funding provided under CERCLA section 104(c)(6), a restoration activity will be considered administratively "complete" when: (i) Measures restore ground- or surface-water quality to a level that assures protection of human health and the environment; (ii) Measures restore ground or surface water to such a point that reductions in contaminant concentrations are no longer significant; or (iii) Ten years have elapsed, whichever is earliest. (4) The following shall not be deemed to constitute treatment or other measures to restore contaminated ground or surface water under § 300.435(f)(3): (i) Source control maintenance measures; and (ii) Ground- or surface-water measures initiated for the primary purpose of providing a drinking-water supply, not for the purpose of restoring ground water. ¹⁰ § 300.155 Public information and community relations. (a) When an incident occurs, it is imperative to give the public prompt, accurate information on the nature of the incident and the actions underway to mitigate the damage. OSCs/RPMs and community relations personnel should ensure that all appropriate public and private interests are kept informed and that their concerns are considered throughout a response. They should coordinate with available public affairs/community relations resources to carry out this responsibility by establishing, as appropriate, a Joint Information Center bringing together resources from federal and state agencies and the responsible party. (b) An on-scene news office may be established to coordinate media relations and to issue official federal information on an incident. Whenever possible, it will be headed by a representative of the lead agency. The OSC/RPM determines the location of the on-scene news office, but every effort should be made to locate it near the scene of the incident. If a participating agency believes public interest warrants the issuance of statements and an onscene news office has not been established, the affected agency should recommend its establishment. All federal news releases or statements by participating agencies should be cleared through the OSC/RPM. Information dissemination relating to natural resource damage assessment activities shall be coordinated through the lead administrative trustee. The designated lead administrative trustee may assist the OSC/RPM by disseminating information on issues relating to damage assessment activities. Following termination of removal activity, information dissemination on damage assessment activities shall be through the lead administrative trustee. (c) The

community relations requirements specified in §§ 300.415, 300.430, and 300.435 apply to removal, remedial, and enforcement actions and are intended to promote active communication between communities affected by discharges or releases and the lead agency responsible for response actions. Community Relations Plans (CRPs) are required by EPA for certain response actions. The OSC/RPM should ensure coordination with such plans which may be in effect at the scene of a discharge or release or which may need to be developed during follow-up activities. 11 §300.415 (n) Community relations in removal actions. (1) In the case of all CERCLA removal actions taken pursuant to § 300.415 or CERCLA enforcement actions to compel removal response, a spokesperson shall be designated by the lead agency. The spokesperson shall inform the community of actions taken, respond to inquiries. and provide information concerning the release. All news releases or statements made by participating agencies shall be coordinated with the OSC/RPM. The spokesperson shall notify, at a minimum, immediately affected citizens, state and local officials, and, when appropriate, civil defense or emergency management agencies. (2) For CERCLA actions where, based on the site evaluation, the lead agency determines that a removal is appropriate, and that less than six months exists before on-site removal activity must begin, the lead agency shall: (i) Publish a notice of availability of the administrative record file established pursuant to § 300.820 in a major local newspaper of general circulation or use one or more other mechanisms to give adequate notice to a community within 60 days of initiation of on-site removal activity; (ii) Provide a public comment period, as appropriate, of not less than 30 days from the time the administrative record file is made available for public inspection, pursuant to § 300.820(b)(2); and (iii) Prepare a written response to significant comments pursuant to § 300.820(b)(3). (3) For CERCLA removal actions where on-site action is expected to extend beyond 120 days from the initiation of on-site removal activities, the lead agency shall by the end of the 120-day period: (i) Conduct interviews with local officials, community residents, public interest groups, or other interested or affected parties, as appropriate, to solicit their concerns, information needs, and how or when citizens would like to be involved in the Superfund process; (ii) Prepare a formal community relations plan (CRP) based on the community interviews and other relevant information, specifying the community relations activities that the lead agency expects to undertake during the response; and (iii) Establish at least one local information repository at or near the location of the response action. The information repository should contain items made available for public information. Further, an administrative record file established pursuant to subpart I for all removal actions shall be available for public inspection in at least one of the repositories. The lead agency shall inform the public of the establishment of the information repository and provide notice of availability of the administrative record file for public review. All items in the repository shall be available for public inspection and copying. (4) Where, based on the site evaluation, the lead agency determines that a CERCLA removal action is appropriate and that a planning period of at least six months exists prior to initiation of the on-site removal activities, the lead agency shall at a minimum: (i) Comply with the requirements set forth in paragraphs (n)(3)(i), (ii), and (iii) of this section, prior to the completion of the EE/CA, or its equivalent, except that the information repository and the administrative record file will be established no later than when the EE/CA approval memorandum is signed; (ii) Publish a notice of availability and brief description of the EE/CA in a major local newspaper of general circulation or use one or more other mechanisms to give adequate notice to a community pursuant to § 300.820; (iii) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments after completion of the EE/CA pursuant to § 300.820(a). Upon timely request, the lead agency will extend the public comment period by a minimum of 15 days; and (iv) Prepare a written response to significant comments pursuant to § 300.820(a).

1212 §300.430 (c) *Community relations*. (1) The community relations requirements described in this section apply to all remedial activities undertaken pursuant to CERCLA section 104 and to section 106 or section 122 consent orders or decrees, or section 106 administrative orders. (2) The lead agency shall provide for the conduct of the following community relations activities, to the extent practicable, prior to commencing field work for the remedial investigation: (i) Conducting interviews with local officials, community residents, public interest groups, or other interested or affected parties, as appropriate, to solicit their concerns and information needs, and to learn how and when citizens would like to be involved in the Superfund process. (ii) Preparing a formal community relations plan (CRP), based on the community interviews and other relevant information, specifying the community relations activities that the lead agency expects to undertake during the remedial response. The purpose of the CRP is to: (A) Ensure the public appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alternatives analysis, and selection of remedy; (B) Determine, based on community

interviews, appropriate activities to ensure such public involvement, and (C) Provide appropriate opportunities for the community to learn about the site. (iii) Establishing at least one local information repository at or near the location of the response action. Each information repository should contain a copy of items made available to the public, including information that describes the technical assistance grants application process. The lead agency shall inform interested parties of the establishment of the information repository. (iv) Informing the community of the availability of technical assistance grants. (3) For PRP actions, the lead agency shall plan and implement the community relations program at a site. PRPs may participate in aspects of the community relations program at the discretion of and with oversight by the lead agency. (4) The lead agency may conduct technical discussions involving PRPs and the public. These technical discussions may be held separately from, but contemporaneously with, the negotiations/settlement discussions. (5) In addition, the following provisions specifically apply to enforcement actions: (i) Lead agencies entering into an enforcement agreement with de minimis parties under CERCLA section 122(g) or cost recovery settlements under section 122(h) shall publish a notice of the proposed agreement in the Federal Register at least 30 days before the agreement becomes final, as required by section 122(i). The notice must identify the name of the facility and the parties to the proposed agreement and must allow an opportunity for comment and consideration of comments; and (ii) Where the enforcement agreement is embodied in a consent decree, public notice and opportunity for public comment shall be provided in accordance with 28 CFR

¹³ §300.430 (f) Selection of remedy—(1) Remedies selected shall reflect the scope and purpose of the actions being undertaken and how the action relates to long-term, comprehensive response at the site. (i) The criteria noted in paragraph (e)(9)(iii) of this section are used to select a remedy. These criteria are categorized into three groups. (A) Threshold criteria. Overall protection of human health and the environment and compliance with ARARs (unless a specific ARAR is waived) are threshold requirements that each alternative must meet in order to be eligible for selection. (B) Primary balancing criteria. The five primary balancing criteria are long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. (C) Modifying criteria. State and community acceptance are modifying criteria that shall be considered in remedy selection. (ii) The selection of a remedial action is a two-step process and shall proceed in accordance with § 300.515(e). First, the lead agency, in conjunction with the support agency, identifies a preferred alternative and presents it to the public in a proposed plan, for review and comment. Second, the lead agency shall review the public comments and consult with the state (or support agency) in order to determine if the alternative remains the most appropriate remedial action for the site or site problem. The lead agency, as specified in § 300.515(e), makes the final remedy selection decision, which shall be documented in the ROD. Each remedial alternative selected as a Superfund remedy will employ the criteria as indicated in paragraph (f)(1)(i) of this section to make the following determination: (A) Each remedial action selected shall be protective of human health and the environment. (B) On-site remedial actions selected in a ROD must attain those ARARs that are identified at the time of ROD signature or provide grounds for invoking a waiver under § 300.430(f)(1)(ii)(C). (1) Requirements that are promulgated or modified after ROD signature must be attained (or waived) only when determined to be applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment. (2) Components of the remedy not described in the ROD must attain (or waive) requirements that are identified as applicable or relevant and appropriate at the time the amendment to the ROD or the explanation of significant difference describing the component is signed. (C) An alternative that does not meet an ARAR under federal environmental or state environmental or facility siting laws may be selected under the following circumstances: (1) The alternative is an interim measure and will become part of a total remedial action that will attain the applicable or relevant and appropriate federal or state requirement; (2) Compliance with the requirement will result in greater risk to human health and the environment than other alternatives; (3) Compliance with the requirement is technically impracticable from an engineering perspective; (4) The alternative will attain a standard of performance that is equivalent to that required under the otherwise applicable standard, requirement, or limitation through use of another method or approach; (5) With respect to a state requirement, the state has not consistently applied, or demonstrated the intention to consistently apply, the promulgated requirement in similar circumstances at other remedial actions within the state; or (6) For Fund-financed response actions only, an alternative that attains the ARAR will not provide a balance between the need for protection of human health and the environment at the site and the availability of Fund monies to respond to other sites that may present a threat to human health and the

environment. (D) Each remedial action selected shall be cost-effective, provided that it first satisfies the threshold criteria set forth in § 300.430(f)(1)(ii)(A) and (B). Cost-effectiveness is determined by evaluating the following three of the five balancing criteria noted in § 300.430(f)(1)(i)(B) to determine overall effectiveness: long-term effectiveness and permanence, reduction of toxicity, mobility, or volume through treatment, and short-term effectiveness. Overall effectiveness is then compared to cost to ensure that the remedy is cost-effective. A remedy shall be cost-effective if its costs are proportional to its overall effectiveness. (E) Each remedial action shall utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. This requirement shall be fulfilled by selecting the alternative that satisfies paragraph (f)(1)(ii)(A) and (B) of this section and provides the best balance of trade-offs among alternatives in terms of the five primary balancing criteria noted in paragraph (f)(1)(i)(B) of this section. The balancing shall emphasize long-term effectiveness and reduction of toxicity, mobility, or volume through treatment. The balancing shall also consider the preference for treatment as a principal element and the bias against off-site land disposal of untreated waste. In making the determination under this paragraph, the modifying criteria of state acceptance and community acceptance described in paragraph (f)(1)(i)(C) of this section shall also be considered. (2) The proposed plan. In the first step in the remedy selection process, the lead agency shall identify the alternative that best meets the requirements in § 300.430(f)(1), above, and shall present that alternative to the public in a proposed plan. The lead agency, in conjunction with the support agency and consistent with § 300.515(e), shall prepare a proposed plan that briefly describes the remedial alternatives analyzed by the lead agency, proposes a preferred remedial action alternative, and summarizes the information relied upon to select the preferred alternative. The selection of remedy process for an operable unit may be initiated at any time during the remedial action process. The purpose of the proposed plan is to supplement the RI/FS and provide the public with a reasonable opportunity to comment on the preferred alternative for remedial action, as well as alternative plans under consideration, and to participate in the selection of remedial action at a site. At a minimum, the proposed plan shall: (i) Provide a brief summary description of the remedial alternatives evaluated in the detailed analysis established under paragraph (e)(9) of this section; (ii) Identify and provide a discussion of the rationale that supports the preferred alternative; (iii) Provide a summary of any formal comments received from the support agency; and (iv) Provide a summary explanation of any proposed waiver identified under paragraph (f)(1)(ii)(C) of this section from an ARAR. (3) Community relations to support the selection of remedy. (i) The lead agency, after preparation of the proposed plan and review by the support agency, shall conduct the following activities: (A) Publish a notice of availability and brief analysis of the proposed plan in a major local newspaper of general circulation; (B) Make the proposed plan and supporting analysis and information available in the administrative record required under subpart I of this part; (C) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the proposed plan and the supporting analysis and information located in the information repository, including the RI/FS. Upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days; (D) Provide the opportunity for a public meeting to be held during the public comment period at or near the site at issue regarding the proposed plan and the supporting analysis and information; (E) Keep a transcript of the public meeting held during the public comment period pursuant to CERCLA section 117(a) and make such transcript available to the public; and (F) Prepare a written summary of significant comments, criticisms, and new relevant information submitted during the public comment period and the lead agency response to each issue. This responsiveness summary shall be made available with the record of decision. (ii) After publication of the proposed plan and prior to adoption of the selected remedy in the record of decision, if new information is made available that significantly changes the basic features of the remedy with respect to scope, performance, or cost, such that the remedy significantly differs from the original proposal in the proposed plan and the supporting analysis and information, the lead agency shall: (A) Include a discussion in the record of decision of the significant changes and reasons for such changes, if the lead agency determines such changes could be reasonably anticipated by the public based on the alternatives and other information available in the proposed plan or the supporting analysis and information in the administrative record; or (B) Seek additional public comment on a revised proposed plan, when the lead agency determines the change could not have been reasonably anticipated by the public based on the information available in the proposed plan or the supporting analysis and information in the administrative record. The lead agency shall, prior to adoption of the selected remedy in the ROD, issue a revised proposed plan, which shall include a discussion of the significant changes and the reasons for such changes, in accordance with the public participation requirements

described in paragraph (f)(3)(i) of this section. (6) Community relations when the record of decision is signed. After the ROD is signed, the lead agency shall: (i) Publish a notice of the availability of the ROD in a major local newspaper of general circulation; and (ii) Make the record of decision available for public inspection and copying at or near the facility at issue prior to the commencement of any remedial action.

¹⁴ §300.435(c) Community relations. (1) Prior to the initiation of RD, the lead agency shall review the CRP to determine whether it should be revised to describe further public involvement activities during RD/RA that are not already addressed or provided for in the CRP. (2) After the adoption of the ROD, if the remedial action or enforcement action taken, or the settlement or consent decree entered into, differs significantly from the remedy selected in the ROD with respect to scope, performance, or cost, the lead agency shall consult with the support agency, as appropriate, and shall either: (i) Publish an explanation of significant differences when the differences in the remedial or enforcement action, settlement, or consent decree significantly change but do not fundamentally alter the remedy selected in the ROD with respect to scope, performance, or cost. To issue an explanation of significant differences, the lead agency shall: (A) Make the explanation of significant differences and supporting information available to the public in the administrative record established under § 300.815 and the information repository; and (B) Publish a notice that briefly summarizes the explanation of significant differences, including the reasons for such differences, in a major local newspaper of general circulation; or (ii) Propose an amendment to the ROD if the differences in the remedial or enforcement action, settlement, or consent decree fundamentally alter the basic features of the selected remedy with respect to scope, performance, or cost. To amend the ROD, the lead agency, in conjunction with the support agency, as provided in § 300.515(e), shall: (A) Issue a notice of availability and brief description of the proposed amendment to the ROD in a major local newspaper of general circulation; (B) Make the proposed amendment to the ROD and information supporting the decision available for public comment; (C) Provide a reasonable opportunity, not less than 30 calendar days, for submission of written or oral comments on the amendment to the ROD. Upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days; (D) Provide the opportunity for a public meeting to be held during the public comment period at or near the facility at issue; (E) Keep a transcript of comments received at the public meeting held during the public comment period; (F) Include in the amended ROD a brief explanation of the amendment and the response to each of the significant comments, criticisms, and new relevant information submitted during the public comment period; (G) Publish a notice of the availability of the amended ROD in a major local newspaper of general circulation; and (H) Make the amended ROD and supporting information available to the public in the administrative record and information repository prior to the commencement of the remedial action affected by the amendment. (3) After the completion of the final engineering design, the lead agency shall issue a fact sheet and provide, as appropriate, a public briefing prior to the initiation of the remedial action.

¹⁵ 42 U.S.C.A. § 9607; Liability. Effective: January 11, 2002.

- (a) Covered persons; scope; recoverable costs and damages; interest rate; "comparable maturity" date. Notwithstanding any other provision or rule of law, and subject only to the defenses set forth in subsection (b) of this section--
- (1) the owner and operator of a vessel or a facility,
- (2) any person who at the time of disposal of any hazardous substance owned or operated any facility at which such hazardous substances were disposed of,
- (3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment, of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances, and
- (4) any person who accepts or accepted any hazardous substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance, shall be liable for--
- (A) all costs of removal or remedial action incurred by the United States Government or a State or an Indian tribe not inconsistent with the national contingency plan;
- (B) any other necessary costs of response incurred by any other person consistent with the national contingency plan;

- (C) damages for injury to, destruction of, or loss of natural resources, including the reasonable costs of assessing such injury, destruction, or loss resulting from such a release; and
- (D) the costs of any health assessment or health effects study carried out under section 9604(i) of this title. The amounts recoverable in an action under this section shall include interest on the amounts recoverable under subparagraphs (A) through (D). Such interest shall accrue from the later of (i) the date payment of a specified amount is demanded in writing, or (ii) the date of the expenditure concerned. The rate of interest on the outstanding unpaid balance of the amounts recoverable under this section shall be the same rate as is specified for interest on investments of the Hazardous Substance Superfund established under subchapter A of chapter 98 of Title 26. For purposes of applying such amendments to interest under this subsection, the term "comparable maturity" shall be determined with reference to the date on which interest accruing under this subsection commences.
- ¹⁶ The five soil samples that were submitted to the A&B Laboratories were originally numbered sample numbers 1 through 5. These samples were renumbered to sample numbers 6 through 10, respectively, to avoid confusion with the samples submitted to ALS.
- ¹⁷ 40 CFR §261.7: Residues of hazardous waste in empty containers.
- (a)(1) Any hazardous waste remaining in either: an empty container; or an inner liner removed from an empty container, as defined in paragraph (b) of this section, is not subject to regulation under parts 261 through 268, 270, or 124 this chapter or to the notification requirements of section 3010 of RRA.(2) Any hazardous waste in either a container that is not empty or an inner liner removed from a container that is not empty, as defined in paragraph (b) of this section, is subject to regulation under parts 261 through 268, 270 and 124 of this chapter and to the notification requirements of section 3010 of RCRA.
- (b)(1) A container or an inner liner removed from a container that has held any hazardous waste, except a waste that is a compressed gas or that is identified as an acute hazardous waste listed in §§261.31 or 261.33(e) of this chapter is empty if: (i) All wastes have been removed that can be removed using the practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating, and (ii) No more than 2.5 centimeters (one inch) of residue remain on the bottom of the container or inner liner, or (iii)(A) No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is less than or equal to 119 gallons in size; or (B) No more than 0.3 percent by weight of the total capacity of the container remains in the container or inner liner if the container is greater than 119 gallons in size.
- (b)(2) A container that has held a hazardous waste that is a compressed gas is empty when the pressure in the container approaches atmospheric.
- (b)(3) A container or an inner liner removed from a container that has held an acute hazardous waste listed in §§261.31 or 261.33(e) is empty if: (i) The container or inner liner has been triple rinsed using a solvent capable of removing the commercial chemical product or manufacturing chemical intermediate; (ii) The container or inner liner has been cleaned by another method that has been shown in the scientific literature, or by tests conducted by the generator, to achieve equivalent removal; or (iii) In the case of a container, the inner liner that prevented contact of the commercial chemical product or manufacturing chemical intermediate with the container, has been removed. [45 FR 78529, Nov. 25, 1980, as amended at 47 FR 36097, Aug. 18, 1982; 48 FR 14294, Apr. 1, 1983; 50 FR 1999, Jan. 14, 1985; 51 FR 40637, Nov. 7, 1986; 70 FR 10815, Mar. 4, 2005; 70 FR 53453, Sept. 8, 2005; 75 FR 13002, Mar. 18, 2010]
- ¹⁸ A potential carcinogen.
- ¹⁹ Convert Soil Concentrations to 40 CFR 261.24, Table 1 limits by dividing by 20. https://archive.epa.gov/epawaste/hazard/web/html/faq_tclp.html (visited January 6, 2018).
- ²⁰ 40 CFR §261.24; Table 1—Maximum Concentration of Contaminants for the Toxicity Characteristic.
- ²¹ Concrete and debris removal is necessary to access the RCRA drums and tanks.
- ²² Id.