DEPARTMENT OF

ENVIRONMENTAL CONSERVATION

18 AAC 75

Oil and Other Hazardous Substances

Pollution Control

ARTICLES 3 AND 10 ONLY

As amended through October 27, 2018

Bill Walker
Governor

Larry Hartig
Commissioner

IMPORTANT NOTE TO READER

THE REGULATIONS REPRODUCED HERE HAVE BEEN PROVIDED BY THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION AS A PUBLIC COURTESY. WHILE EVERY EFFORT HAS BEEN MADE TO ASSURE THE ACCURACY OF THE REPRODUCED VERSION, THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION CANNOT GUARANTEE ITS ABSOLUTE ACCURACY. PAPER COPIES OF THE REGULATIONS AS ORIGINALLY FILED BY THE LIEUTENANT GOVERNOR ARE AVAILABLE FROM THE DEPARTMENT OF ENVIRONMENTAL CONSERVATION.

THE REGULATIONS HAVE AN EFFECTIVE DATE OF OCTOBER 27, 2018, ARE IN REGISTER 228, AND WILL APPEAR IN OFFICIAL PUBLISHED FORM IN THE JANUARY 2019 SUPPLEMENT TO THE ALASKA ADMINISTRATIVE CODE.

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Chapter 75. Oil and Other Hazardous Substances Pollution Control.

Article

Editor's notes: Effective 5/14/92, Register 122, the regulations in 18 AAC 75 were comprehensively reorganized and revised. They replace all previous regulations in this chapter and in 18 AAC 20 (Financial Responsibility), which were repealed simultaneously with the adoption of these regulations. The history line at the end of each section does not reflect the history of that provision before the 5/14/92 effective date of this chapter, nor is the section numbering related to the numbering before that date.

Previous amendments to 18 AAC 20 and to this chapter are on file in the Office of the Lieutenant Governor as follows:

Previous amendments to regulations dealing with financial responsibility, which now appear at 18 AAC 75.205 - 18 AAC 75.275, are found at Register 79, 9/9/81; and at Register 103, 8/6/87. Previous amendments to regulations dealing with oil and hazardous substances pollution control are found at Register 45, 4/15/73; Register 62, 4/23/77; Register 63, 9/16/77; Register 66, 4/19/78; Register 79, 9/9/81; Register 94, 5/2/85; Register 103, 8/6/87; Register 110, 7/89; and at Register 115, 8/17/90.

The regulations in 18 AAC 75.300 - 18 AAC 75.396, grouped under Article 3, effective January 22, 1999 and distributed in Register 149, constitute a comprehensive reorganization and revision of material formerly set out at 18 AAC 75.300 - 18 AAC 75.370, which also had been grouped at Article 3. The regulations at 18 AAC 75.300 - 18 AAC 75.396 replace former 18 AAC 75.300 - 18 AAC 75.370, which were repealed simultaneously with the adoption of these regulations. The history line at the end of each section does not reflect the history of the replaced provisions before January 22, 1999. Some section numbers in this revision were used for previous regulations, but current sections are not necessarily related to previous sections with the same section number. The earlier version of 18 AAC 75.300 - 18 AAC 75.370 may be reviewed at the Office of the Lieutenant Governor, and may be found at Register 122, effective May 14, 1992.

Article 3. Discharge Reporting, Cleanup, and Disposal of Oil and Other Hazardous Substances

Section

Editor's note: The regulations in 18 AAC 75.300 – 18 AAC 75.396, grouped under Article 3, effective January 22, 1999 and distributed in Register 149, constitute a comprehensive reorganization and revision of material formerly set out at 18 AAC 75.300 - 18 AAC 75.370, which also had been grouped at Article 3. The regulations at 18 AAC 75.300 - 18 AAC 75.396 replace former 18 AAC 75.300 - 18 AAC 75.370, which were repealed simultaneously with the adoption of these regulations. The history line at the end of each section does not reflect the history of the replaced provisions before January 22, 1999. Some section numbers in this revision were used for previous regulations, but current sections are not necessarily related to previous sections with the same section number. The earlier version of 18 AAC 75.300 - 18 AAC 75.370 may be reviewed at the Office of the Lieutenant Governor, and may be found at Register 122, effective May 14, 1992.

18 AAC 75.300. Discharge or release notification; reporting requirements. (a) Subject to (b), (c), and (g) of this section, a person in charge of a facility or operation shall notify the department by telephone, and immediately afterwards send the department a written notice by facsimile, electronic mail, hand delivery, or first class mail, informing the department about a discharge or release of a hazardous substance at or from the facility or operation as follows:

(1) as soon as the person has knowledge of a

(A) discharge or release of a hazardous substance other than oil;

(B) discharge or release of oil to water; or

(C) discharge or release, including a cumulative discharge or release, of oil in excess of 55 gallons solely to land outside an impermeable secondary containment area or structure; and

(2) within 48 hours after the person has knowledge of a discharge or release, including a cumulative discharge, of oil solely to land

(A) in excess of 10 gallons, but 55 gallons or less; or

(B) in excess of 55 gallons, if the discharge or release is the result of the escape or release of oil from its original storage tank, pipeline, or other immediate container into an impermeable secondary containment area or structure.

(b) A person in charge of a facility or operation shall maintain, and provide to the department monthly, a written record of each discharge or release, including a cumulative discharge or release, of one gallon to 10 gallons of oil solely to land.

(c) If a person in charge of a facility or operation has entered into an agreement with the department, as provided under AS 46.03.755(b) or AS 46.09.010(b), for the periodic reporting of a discharge or release of a hazardous substance, the terms of the agreement replace the applicable requirements of this section for the hazardous substance.

(d) After receiving notice of a discharge or release under (a) of this section, and until containment and cleanup are completed, the department will require interim reports as the department considers necessary to ascertain any threat to human health, safety, or welfare, or to the environment.

(e) Unless the department determines that a written report is not needed for the department to ascertain any threat to human health, safety, or welfare, or to the environment, a written report must be submitted to the department within 15 days after containment and cleanup are completed or, if no cleanup occurs, within 15 days after the discharge or release. The report must be submitted to the department's Anchorage, Fairbanks, or Juneau office, whichever is nearest to the location of the discharge, unless the department specifies otherwise. The report must contain the information specified in (f) of this section.

(f) A report, record, or notification required by this section must contain, as applicable,

(1) the date and time of the discharge or release;

(2) the location of the discharge or release;

(3) the name of the facility or operation;

(4) the name, mailing address, and telephone number of

(A) each responsible person; and

(B) the owner and the operator of the facility or operation;

(5) the type and amount of each hazardous substance discharged or released;

(6) factors that caused or contributed to the discharge or release;

(7) a description of any environmental effects of the discharge or release, or the containment and cleanup, to the extent those effects can be identified;

(8) a description of the containment or cleanup action taken;

(9) the estimated amount of

(A) hazardous substance cleaned up; and

(B) hazardous waste generated;

(10) the date and method of disposal or treatment of the hazardous substance, contaminated equipment, contaminated materials, contaminated soil, and contaminated water;

(11) a description of actions being taken to prevent another discharge or release; and

(12) other information that the department requires to fully assess the cause and impact of the discharge or release, including any sampling reports and a description and estimate of any remaining contamination.

(g) Reporting under this section is not required for a discharge or release

(1) that is authorized by a valid permit issued by the department; or

(2) that is excluded from the definition of “release” under AS 46.03.826(9). (Eff. 1/22/99, Register 149; am 1/30/2003, Register 165; am 9/4/2014, Register 211)

Authority: AS 46.03.020 AS 46.03.745 AS 46.04.070
AS 46.03.050 AS 46.03.755 AS 46.09.010
AS 46.03.710 AS 46.04.020 AS 46.09.020
AS 46.03.740

18 AAC 75.305. Posting of information required. (a) The owner or operator shall display a discharge or release notification placard, provided by the department, that includes telephone numbers of department offices in conspicuous locations on a

(1) tank truck containing more than 500 gallons of a hazardous substance, in addition to that required to operate the vehicle;

(2) tugboat, tank vessel, oil barge, tow boat, or other vessel transporting a hazardous substance as cargo in state waters;

(3) vehicle carrying or towing a hazardous substance other than oil, or more than 500 gallons of oil, as cargo off-road over frozen or unfrozen ground; and

(4) facility that has a total above-ground or underground storage capacity in excess of 1,000 gallons of a hazardous substance.

(b) A person who wants to post a substitute for a placard provided by the department shall submit the proposed placard to the department for approval. The department will approve the substitute if the department determines that the substitute meets the requirements of (a) of this section. A placard approved under this subsection must contain the words: "Form approved by the Alaska Department of Environmental Conservation." (Eff. 1/22/99, Register 149)

Authority: AS 46.03.020 AS 46.04.020 AS 46.09.020
AS 46.03.050 AS 46.09.010 AS 46.09.070
AS 46.03.755

18 AAC 75.310. Scope and duration of initial response actions. (a) Immediately after receiving notice from a person or after otherwise becoming aware of a discharge or release of a hazardous substance to land or waters of the state, a responsible person shall, as required by 18 AAC 75.315, immediately contain and control the discharge or release and seek approval of cleanup and disposal plans to be used for that release. After obtaining approval of cleanup and disposal plans, the responsible person shall perform a cleanup of the discharge or release and dispose of the contaminated material in accordance with those plans.

(b) The department under AS 46.04.020(a), or the commissioner under AS 46.09.020(a), will waive the requirements of (a) of this section if the department or commissioner as appropriate

(1) determines, in consultation with appropriate agencies as provided in AS 46.04.020(a)(1) or AS 46.09.020(a)(1), that containment or cleanup of the discharge or release is technically not feasible; or

(2) determines that the containment or cleanup effort would result in a greater threat to human health, safety, or welfare, or in greater damage to the environment than the discharge or release itself.

(c) Unless relieved under (b) of this section, a responsible person shall immediately begin the initial response actions required by 18 AAC 75.315 and continue until

(1) the department, using the factors set out in 18 AAC 75.315, determines that

(A) the lowest practicable level of contamination has been achieved;

(B) any imminent and substantial threat to human health, safety, or welfare, or to the environment is abated; and

(C) additional action, including site cleanup under 18 AAC 75.325 - 18 AAC 75.390, is not required; or

(2) the department determines, on its own or at the request of a responsible person, that the source of the contamination has abated and that cleanup of residual soil and groundwater contamination should proceed under 18 AAC 75.325 - 18 AAC 75.396.
(Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

18 AAC 75.315. Initial response actions. (a) A responsible person shall investigate, contain, and perform a cleanup of a sudden or recent discharge or release of a hazardous substance

(1) in consultation with the department, or upon notification of a discharge or release under 18 AAC 75.300;

(2) in a manner that does not result in a significantly greater overall threat or damage to human health, safety, or welfare, or to the environment than another alternative, including taking no action; and

(3) until the lowest practicable level of contamination is achieved under (c) of this section.

(b) A person who is not a responsible person and who undertakes an initial response action at a site subject to this section shall comply with this section and 18 AAC 75.320.

(c) For containment and cleanup under this section, the department will determine the lowest practicable level of contamination based on

(1) protection of human health, safety, and welfare, and of the environment;

(2) the nature and toxicity of the hazardous substance, including amount and concentration;

(3) hydrogeological and climatological factors;

(4) the extent to which the hazardous substance has migrated, or is likely to migrate, from the area of original contamination if the hazardous substance remains onsite;

(5) the natural dispersion, attenuation, or degradation of the contamination;

(6) the extent to which residual soil contamination exceeds the cleanup levels in 18 AAC 75.340 and 18 AAC 75.341;

(7) the extent to which groundwater contamination exceeds the groundwater cleanup levels in 18 AAC 75.345;

(8) the current and future use of the groundwater under 18 AAC 75.350; and

(9) the need for an interim removal action under 18 AAC 75.330.

(d) If the department determines that the lowest practicable level of contamination has been achieved under this section, a responsible person is not required to perform additional containment or cleanup. The department will base a determination under this section on the most current and complete information available to the department. The department will require a responsible person to perform additional containment or cleanup if subsequent information indicates that

(1) the level of contamination that remains does not protect human health, safety, or welfare, or the environment; or

(2) the information the department relied upon was invalid, incomplete, or fraudulent. (Eff. 1/22/99, Register 149)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

18 AAC 75.320. Department oversight of containment and cleanup. (a) The department will determine that a responsible person's containment and cleanup efforts are inadequate under 18 AAC 75.315 or 18 AAC 75.325 - 18 AAC 75.396 if the department determines that

(1) the responsible person has not used, or has not adequately used, containment equipment to intercept, concentrate, and collect the hazardous substance in its pattern of movement, unless environmental conditions exceed the operational limitations of the equipment;

(2) the responsible person has not used, or has not adequately used, exclusion equipment to protect a sensitive environmental zone, unless environmental conditions exceed the operational limitations of the equipment;

(3) the area affected by the hazardous substance is increasing at an avoidable rate despite containment and removal activities, unless environmental conditions exceed the operational limitations of the equipment, or unless immediate containment would pose a greater threat to human health, safety, or welfare, or to the environment, than to allow the discharge or release to temporarily spread;

(4) the containment and exclusion equipment is not functioning effectively because of weather or oceanographic conditions, and other equipment is reasonably available that can function effectively in those conditions;

(5) containment, exclusion, and lightering equipment is not deployed and operational as specified in an applicable oil discharge prevention and contingency plan approved under AS 46.04.030 or a nontank vessel plan approved under AS 46.04.055;

(6) major items of cleanup equipment and materials, including booms, skimmers, lightering pumps, sorbent, and storage containers, are not fully operational;

(7) available personnel, equipment, sorbent, or supplies are inappropriate, being mismanaged, or not being used, or additional personnel, equipment, sorbent, or supplies are required but not being provided; or

(8) containment and cleanup have not proceeded in a timely manner that is protective of human health, safety, and welfare, and of the environment.

(b) If the department determines that a responsible person's containment and cleanup efforts do not adequately protect human health, safety, or welfare, or the environment, the department will

(1) direct that responsible person or another responsible person to use additional measures or to cease cleanup activities;

(2) begin cleanup activities, or authorize an agent of the department to begin cleanup activities; or

(3) take a combination of these actions. (Eff. 1/22/99, Register 149; am 11/27/2002, Register 164)

Authority:	AS 46.03.020	AS 46.03.745	AS 46.04.070
	AS 46.03.050	AS 46.03.822	AS 46.08.140
	AS 46.03.710	AS 46.04.020	AS 46.09.020
	AS 46.03.740	AS 46.04.055	

18 AAC 75.325. Site cleanup rules: purpose, applicability, and general provisions. (a) The requirements of 18 AAC 75.325 - 18 AAC 75.390 are referred to in this chapter as the "site cleanup rules". The site cleanup rules establish administrative processes and standards to determine the necessity for and degree of cleanup required to protect human health, safety, and welfare, and the environment at a site where a hazardous substance is located.

(b) The site cleanup rules apply to

(1) a sudden or recent discharge or release of a hazardous substance, if the department determines under 18 AAC 75.310 that application of the site cleanup rules is necessary; or

(2) a release of a hazardous substance caused by past activities.

(c) The site cleanup rules do not apply to

(1) a release from an underground storage tank (UST) subject to AS 46.03.360 - 46.03.450 and 18 AAC 78, except as made applicable expressly by 18 AAC 78; or

(2) an oil and gas reserve pit closure and permitted solid waste storage or disposal facility regulated under 18 AAC 60, 18 AAC 62, or 42 U.S.C. 6901 - 6992k (Solid Waste Disposal Act, as amended by the Resource Conservation Recovery Act).

(d) A responsible person shall investigate, contain, and perform a cleanup of a discharge or release of a hazardous substance unless

(1) the department makes a written determination that a discharge or release does not pose a threat to human health, safety, or welfare, or to the environment and requires no cleanup action according to the information available at the time of the determination; or

(2) the department issues an order under AS 46.04.020(c), or the commissioner issues an order under AS 46.09.020(c) that the responsible person cease cleanup activities.

(e) A person who is not a responsible person and who undertakes a cleanup activity at a site that is subject to the site cleanup rules shall comply with those provisions of the site cleanup rules that are applicable to the particular cleanup activity undertaken.

(f) A responsible person shall

(1) to the maximum extent practicable,

(A) use permanent remedies;

(B) recover free product in a manner that

(i) minimizes the spread of contamination into an uncontaminated area by using containment, recovery, and disposal techniques appropriate to site conditions;

(ii) avoids additional discharge; and

(iii) disposes of the recovered free product in compliance with applicable local, state, and federal requirements;

(C) complete cleanup in a period of time that the department determines to be protective of human health, safety, and welfare, and of the environment;

(D) prevent, eliminate, or minimize potential adverse impacts to human health, safety, and welfare, and to the environment, onsite and offsite, from any hazardous substance remaining at the site; and

(E) evaluate and perform a cleanup of surface soil staining attributable to a hazardous substance;

(2) meet the applicable cleanup levels determined under 18 AAC 75.340 - 18 AAC 75.350; and

(3) provide for long-term care and management of a site as required under the site cleanup rules, including proper operation and maintenance of

(A) cleanup techniques and equipment;

(B) monitoring wells and equipment, if required; and

(C) institutional controls, if required under 18 AAC 75.375

(g) If using method two or method three for determining the applicable soil cleanup levels as described in 18 AAC 75.340 and 18 AAC 75.341, or if applying the groundwater cleanup levels at Table C in 18 AAC 75.345, a responsible person shall ensure that, after completing site cleanup, the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one, reported to one significant figure, across all exposure pathways. Instructions for determining cumulative risk are provided in the department's *Procedures for Calculating Cumulative Risk,* February 1, 2018 and adopted by reference.

(h) If proposing an alternative cleanup level for soil or groundwater, based on a site-specific risk assessment under method four in 18 AAC 75.340(f) or under the provisions of 18 AAC 75.345(b)(2), a responsible person shall ensure that the risk from hazardous substances does not exceed the cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed the cumulative noncarcinogenic risk standard at a hazard index of one, reported to one significant figure, across all exposure pathways. Instructions for determining cumulative risk are provided in the department's *Procedures for Calculating Cumulative Risk*, adopted by reference in (g) of this section.

(i) A responsible person, owner, or operator shall obtain approval before disposing of soil or groundwater from a site

(1) that is subject to the site cleanup rules; or

(2) for which a written determination from the department has been made under 18 AAC 75.380(d)(1) that allows contamination to remain at the site above method two soil cleanup levels under 18 AAC 75.340(a)(2) or groundwater cleanup levels listed in Table C in 18 AAC 75.345(b);

(j) The department will seek public participation regarding activities conducted under the site cleanup rules, using methods that the department determines to be appropriate for seeking public participation.

(k) If a discharge, release, or planned cleanup affects an anadromous fish-bearing stream or lake or an area designated under AS 16.20, activities under the site cleanup rules are subject to coordination with appropriate resource agencies, including the Department of Fish and Game under AS 16.05.871(a) or AS 16.20. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 6/17/2015, Register 214; am 1/1/2016, Register 217; am 11/6/2016, Register 220; am 9/29/2018, Register 227)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.020
AS 46.03.050 AS 46.03.745 AS 46.04.070
AS 46.03.710 AS 46.03.822 AS 46.09.020

Editor's note: The department's *Procedures for Calculating Cumulative Risk*, adopted by reference in 18 AAC 75.325 may be viewed at or obtained from the department's offices in Anchorage, Fairbanks, Juneau, and Soldotna or the department's Internet website at http://dec.alaska.gov/spar/csp/guidance-forms/.

As of Register 166 (July 2003), and acting under AS 44.62.125(b)(6), the regulations attorney made technical changes to 18 AAC 75.325(k), to reflect Executive Order 107 (2003). Executive Order 107 transferred functions related to protection of fish habitat in rivers, lakes, and streams from the Department of Fish and Game to the Department of Natural Resources.

As of Register 179 (October 2006), and acting under AS 44.62.125(b)(6), the regulations attorney made a technical revision to 18 AAC 75.325(c)(1). This change reflects the enactment of sec. 2, ch. 102, SLA 2006, effective August 5, 2006, which repealed AS 46.03.360 and 46.03.363.

As of Register 186 (July 2008), and acting under AS 44.62.125(b)(6), the regulations attorney made technical changes to 18 AAC 75.325(k), to reflect Executive Order 114 (2008). Executive Order 114 transferred functions related to protection of fish habitat in rivers, lakes, and streams from the Department of Natural Resources to the Department of Fish and Game.

18 AAC 75.330. Interim removal actions. (a) The department, or a responsible person as provided in (c) of this section, will perform an interim removal action if the department determines that an interim removal action is necessary under the site cleanup rules to prevent

(1) human or environmental exposure to a hazardous substance at the site; or

(2) migration of a hazardous substance at or from the site.

(b) An interim removal action must, to the maximum extent practicable, contribute to the overall performance of any long-term cleanup action at the site. An interim removal action may

(1) achieve cleanup levels for a portion of the site;

(2) provide for a partial cleanup for all or part of the site, but not achieve cleanup levels; or

(3) provide for a partial cleanup at the site and not achieve cleanup levels, but provide information on how to achieve cleanup levels for the final cleanup action.

(c) An interim removal action may occur at any time during the cleanup process and may be performed by the department or by a responsible person with prior approval of the proposed action. An interim removal action may not be used to delay or supplant the cleanup process.

(d) An interim removal action must be followed by additional cleanup actions at the site unless the department determines that the interim removal action has met the requirements of the site cleanup rules.

(e) An interim removal action taken by the department does not

(1) require the department to take an additional response or cleanup action; or

(2) relieve a person from liability associated with the discharge or release. (Eff. 1/22/99, Register 149)

Authority: AS 46.03.020 AS 46.03.745 AS 46.04.070
AS 46.03.050 AS 46.03.755 AS 46.09.010
AS 46.03.710 AS 46.03.822 AS 46.09.020
AS 46.03.740 AS 46.04.020

18 AAC 75.333. Qualified environmental professionals and qualified samplers. (a) A responsible person shall ensure that a qualified environmental professional

(1) prepares the site characterization work plan required under 18 AAC 75.335(b)(1);

(2) prepares the site characterization report required under 18 AAC 75.335(c)(1);

(3) performs sampling collection required under 18 AAC 75.355(a), or that a qualified sampler performs sampling collection if the department approves the use of a qualified sampler under 18 AAC 75.355(a);

(4) conducts or supervises site cleanup work under 18 AAC 75.360;

(5) prepares the post-treatment sampling and analysis plan under 18 AAC 75.365(a)(1)(C);

(6) prepares the final cleanup report required under 18 AAC 75.380(a);

(7) prepares and signs a report to justify a request for a waiver under 18 AAC 75.390.

(b) For purposes of the site cleanup rules, an individual is a qualified environmental professional if the individual

(1) is an impartial third party;

(2) is qualified to perform site characterization and cleanup activities, including

(A) fate and transport analysis;

(B) remediation design; and

(C) other activities associated with contaminated sites;

(3) actively practices in the field of environmental science or another related scientific field;

(4) has not been found to have falsified environmental data or committed other acts of fraud directly related to environmental work; and

(5) meets one or more of the following minimum educational qualification and experience requirements:

(A) has a four-year undergraduate or a graduate degree from a nationally or internationally accredited postsecondary institution in environmental science or another related scientific field, and has at least one year of professional experience in contaminated site characterization and cleanup activities under the direct supervision of a qualified environmental professional completed after the degree described in this subparagraph was obtained;

(B) has a four-year degree from a nationally or internationally accredited postsecondary institution in any field or a two-year associate degree from a nationally or internationally accredited postsecondary institution in environmental science or another related scientific field, and has at least three years of professional experience in

contaminated site characterization and cleanup activities under the direct supervision of a qualified environmental professional completed after a degree described in this subparagraph was obtained;

(C) is certified as an environmental technician under an apprenticeship program with a registration under 29 C.F.R. Part 29, and has at least three years of professional experience in contaminated site characterization and cleanup activities under the direct supervision of a qualified environmental professional completed after the certification described in this subparagraph was obtained.

(c) For purposes of the site cleanup rules, an individual is a qualified sampler if the individual

(1) is an impartial third party;

(2) collects samples of environmental media for laboratory analysis; in this paragraph, "environmental media"

(A) includes soil, groundwater, and surface water;

(B) does not include air or soil gas;

(3) has not been found to have falsified environmental data or committed other acts of fraud directly related to environmental work;

(4) has successfully completed

(A) applied field work involving environmental sample collection of soil, groundwater, or surface water associated with coursework for a completed degree in environmental science or another related scientific field at a nationally or internationally accredited postsecondary institution; or

(B) an environmental sampling training program recognized by the department; and

(5) has at least three months of experience in environmental sampling under the direct supervision of a qualified environmental professional completed after the training described in (4)(A) or (B) of this subsection was obtained.

(d) In this section, "another related scientific field" includes engineering, geology, physical science, hydrology, biology, and chemistry. (Eff. 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.745 AS 46.04.070
AS 46.03.050 AS 46.03.755 AS 46.09.010
AS 46.03.710 AS 46.03.822 AS 46.09.020
AS 46.03.740 AS 46.04.020

18 AAC 75.335. Site characterization. (a) Before proceeding with site cleanup under the site cleanup rules, a responsible person shall characterize the extent of hazardous substance contamination at the site.

(b) A responsible person shall submit a site characterization work plan to the department for approval before beginning site characterization work. The department will approve the site characterization work plan if the work plan is

(1) prepared by a qualified environmental professional; and

(2) designed, to the maximum extent practicable, to

(A) determine if a discharge or release of a hazardous substance has occurred;

(B) identify each hazardous substance at the site, including the concentration and extent of contamination; this information must be sufficient to determine cleanup options;

(C) identify site characteristics or conditions that could result in ongoing site contamination, including the potential for leaching of in-situ contamination and the presence of leaking barrels, drums, tanks, or other containers;

(D) evaluate the potential threat to human health, safety, and welfare, and to the environment from site contamination;

(E) identify any interim removal action necessary under 18 AAC 75.330;

(F) locate sources of known site contamination, including a description of potential releases into soil, sediment, groundwater, or surface water;

(G) evaluate the size of the contaminated area, including the concentrations and extent of any soil, sediment, groundwater, or surface water contamination;

(H) identify the vertical depth to groundwater and the horizontal distance to nearby wells, surface water, and water supply intakes;

(I) evaluate the potential for surface water run-off from the site and the potential for surface water or sediment contamination; and

(J) identify the soil type and determine if the soil is a continuing source for groundwater contamination.

(c) After completing site characterization work, the responsible person shall submit to the department for approval a site characterization report that

(1) is prepared by a qualified environmental professional;

(2) sets out the information obtained from activities performed in accordance with a site characterization work plan;

(3) sets out the results of sampling and analysis;

(4) demonstrates that the inspections, sampling, and analysis performed adequately characterize the extent of hazardous substance contamination; and

(5) proposes cleanup techniques for the site.

(d) The department will approve the report submitted under (c) of this section if the department determines that the work described in the report and the cleanup techniques proposed are protective of human health, safety, and welfare, and of the environment. The department will, as part of its approval, modify proposed cleanup techniques or require additional cleanup techniques for the site as the department determines to be necessary to protect human health, safety, and welfare, and the environment. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.050 AS 46.03.710 AS 46.03.740 AS 46.03.745 AS 46.03.755 AS 46.04.020 AS 46.04.070 AS 46.09.010 AS 46.09.020

18 AAC 75.340. Soil cleanup levels; general requirements. (a) This section provides the requirements for cleanup levels for hazardous substances in soil. For each site, except as provided in (b) of this section, a responsible person shall propose soil cleanup levels for approval, shall base those cleanup levels upon an estimate of the reasonable maximum exposure expected to occur under current and future site conditions, and shall develop those cleanup levels using one or more of the following methods:

(1) method one for petroleum hydrocarbon-contaminated soil in

(A) a non-Arctic zone as set out in Table A1 of 18 AAC 75.341(a); or

(B) an Arctic zone as set out in Table A2 of 18 AAC 75.341(b);

(2) method two for soil contaminated with

(A) chemicals other than petroleum hydrocarbons as set out in Table B1 of 18 AAC 75.341(c); or

(B) petroleum hydrocarbons as set out in Table B2 of 18 AAC 75.341(d);

(3) method three, as described in (e) of this section, for developing site-specific alternative cleanup levels; or

(4) method four, as described in (f) of this section, for developing site-specific alternative cleanup levels.

(b) Alternative soil cleanup levels developed under method three or method four may not be used at another site without prior approval. If alternative cleanup levels are developed for one site within a facility with multiple similarly contaminated sites, and if the department determines that the use of those cleanup levels at another site within that facility will be protective of human health, safety, and welfare, and of the environment, the department will approve the use of those cleanup levels at the other site.

(c) For methods two, three, and four, a responsible person shall demonstrate that the Arctic zone soil cleanup level, if applicable, is protective of migration to surface water.

(d) The soil cleanup levels provided under method one and method two apply at a contaminated site unless the department develops an alternative cleanup level or approves an alternative cleanup level that the responsible person has proposed under method three or method four. To obtain approval for an alternative cleanup level, a responsible person must demonstrate that an alternative cleanup level proposed under method three or method four is protective of human health, safety, and welfare, and of the environment, and must demonstrate compliance with the applicable institutional control requirements under 18 AAC 75.375. The cleanup level that applies at a site is the most stringent of either the alternative cleanup level or, for a pathway where no alternative cleanup level was calculated, the listed value for a hazardous substance in Table B1 of 18 AAC 75.341(c) or Table B2 of 18 AAC 75.341(d).

(e) Under method three, a responsible person may propose for the department's approval or the department may set an alternative cleanup level for a hazardous substance listed in Table B1 of 18 AAC 75.341(c) or Table B2 of 18 AAC 75.341(d) that modifies the levels for the

(1) migration to groundwater or human health pathway in Table B1 or migration to groundwater or inhalation pathway in Table B2, based on the use of approved site-specific soil data, and the equations set out in the department's *Procedures for Calculating Cleanup Levels*, dated February 1, 2018, and adopted by reference;

(2) migration to groundwater pathway in Table B1 or Table B2 based on approved site-specific soil and groundwater data and an approved fate and transport model that demonstrates that alternative soil cleanup levels are protective of the applicable groundwater cleanup levels under 18 AAC 75.345; or

(3) human health pathway in Table B1 or ingestion or inhalation pathway in Table B2 based on use of commercial or industrial exposure parameters listed in Appendix B of the *Procedures for Calculating Cumulative Risk*, adopted by reference in (1) of this subsection, if the department determines that the site serves a commercial or industrial land use; the department will base a land use determination under this paragraph upon

(A) consultation with the public, including the local zoning authority, if any;

(B) a determination that the site does not serve a residential land use;

(C) a determination that the site will not serve a future residential land use based on consideration of the factors in EPA's *Land Use in the CERCLA Remedy Selection Process*, OSWER Dir. No. 9355.7-04, dated May 25, 1995, adopted by reference; land in an undeveloped area for which it would be difficult to determine a future use pattern is capable of being a residential area, unless demonstrated otherwise; and

(D) consent of each landowner who is affected by the contamination at the site that a cleanup level less stringent than a cleanup level appropriate to residential land use is appropriate for the site.

(f) Under method four, the department will approve a site-specific alternative cleanup level if a responsible person

(1) performs a site-specific risk assessment and submits a risk assessment report to the department for approval, and if the department determines that the alternative cleanup level is protective of human health, safety, and welfare, and of the environment based on the site-specific risk assessment; in performing the risk assessment, a responsible person shall follow the department's *Risk Assessment Procedures Manual*, dated February 1, 2018, and adopted by reference; and

(2) obtains the consent of each landowner who is affected by the contamination at the site that a cleanup level less stringent than a cleanup level appropriate to residential land use is appropriate for the site.

(g) The department will develop a site-specific cleanup level for a hazardous substance not listed under 18 AAC 75.341(c) using the procedures set out in the department's *Risk Assessment Procedures Manual*, adopted by reference in (f)(1) of this section, unless the responsible person demonstrates that a site-specific cleanup level is not necessary to ensure protection of human health, safety, and welfare, and of the environment.

(h) The department will approve less stringent soil cleanup levels subject to any institutional controls required under 18 AAC 75.375, if a responsible person demonstrates that

(1) background concentrations of a hazardous substance in the site area exceed the applicable cleanup level set out in 18 AAC 75.341 for the hazardous substance; or

(2) the limit of quantitation and limit of detection for the hazardous substance exceeds the applicable cleanup level set out in 18 AAC 75.341 for that substance.

(i) The department will require a responsible person to modify a cleanup level under this section or to perform a site-specific analysis of additional site risks if the department determines that

(1) as a result of site conditions or new data, a modification is necessary to protect human health, safety, or welfare, or the environment; or

(2) a site-specific analysis is necessary due to

(A) exposure pathways such as the potential for the accumulation of vapors in buildings or other structures at levels that threaten human health;

(B) sediment contamination;

(C) impacts to ecological receptors;

(D) other site uses such as recreational, agricultural, or subsistence use; or

(E) the presence of sensitive subpopulations who respond biologically to lower levels of exposure to a hazardous substance.

(j) Soil cleanup levels based on

(1) migration of a hazardous substance to groundwater must be attained in the surface soil and the subsurface soil;

(2) human exposure from ingestion of or dermal contact with soil, or inhalation of particulates or a volatile hazardous substance, must be attained in the surface soil and the subsurface soil to a depth of 15 feet, unless an institutional control or site conditions prevent human exposure to the subsurface soil; and

(3) the maximum allowable concentrations for petroleum hydrocarbons described in Table B2 of 18 AAC 75.341(d) must be attained in the surface soil and the subsurface soil.

(k) For a cleanup conducted under methods two and three, a chemical that is detected at one-tenth or more of the Table B1 human health cleanup levels set out in 18 AAC 75.341(c) must be included when calculating cumulative risk under 18 AAC 75.325(g). (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 1/1/2016, Register 217; am 11/6/2016, Register 220; am 9/29/2018, Register 227)

Authority:	AS 46.03.020	AS 46.03.740	AS 46.04.070
	AS 46.03.050	AS 46.03.745	AS 46.09.020
	AS 46.03.710	AS 46.04.020	

Editor's note: The documents adopted by reference in 18 AAC 75.340 may be reviewed at, or requested from, the department's offices in Anchorage, Fairbanks, Juneau, and Soldotna. The documents adopted by reference may also be viewed through the department's Internet website at http://dec.alaska.gov/spar/csp/guidance-forms.

18 AAC 75.341. Soil cleanup levels; tables. (a) If a responsible person uses method one for petroleum hydrocarbons for a non-Arctic zone under 18 AAC 75.340, the soil cleanup levels must be based on Table A1 in this subsection.

TABLE A1. METHOD ONE – PETROLEUM HYDROCARBON SOIL CLEANUP LEVELS IN NONARCTIC ZONES
(See notes to table for further requirements)

Part A: Determine score for each item*

1. Depth to Groundwater		
Less than 5 feet	(10)	
5 feet to 15 feet	(8)	
More than 15 feet to 25 feet	(6)	
More than 25 feet to 50 feet	(4)	
More than 50 feet	(1)	
2. Mean Annual Precipitation		
More than 40 inches	(10)	
More than 25 inches to 40 inches	(5)	
15 inches to 25 inches	(3)	
Less than 15 inches	(1)	
3. Soil Type (Unified Soil Classification)		
Clean, coarse-grained soils	(10)	
Coarse-grained soils with fines	(8)	
Fine-grained soils (low organic carbon)	(3)	
Fine-grained soils (high organic carbon)	(1)	
4. Potential Receptors		
(Select the most applicable category)		
a. Public water system within 1000 feet, or private water system within 500 feet	(15)	
b. Public/private water system within 1/2 mile	(12)	
c. Public/private water system within one mile	(8)	
d. No water system within one mile	(4)	
e. Nonpotable groundwater	(1)	
5. Volume of Contaminated Soil		
More than 500 cubic yards	(10)	
More than 100 cubic yards to 500 cubic yards	(8)	
More than 25 cubic yards to 100 cubic yards	(5)	
10 cubic yards to 25 cubic yards	(2)	
Less than 10 cubic yards	(0)	

*The items to be scored are defined in note 1 to this table.

Part B: Add scores from Part A to determine matrix score and cleanup level

Matrix Score for Each Category	Cleanup Level in mg/kg		
	Gasoline Range Organics	**Diesel Range Organics**	**Residual Range Organics**
Category A: More than 40	50	100	2000
Category B: More than 26 to 40	100	200	2000
Category C: 21-26	500	1000	2000
Category D: Less than 21	1000	2000	2000

Notes to Table A1:
1. The following definitions for items 1 - 5 in Part A apply for purposes of using method one:

a. "depth to groundwater" means the measurement from the lowest point of the zone of soil contamination to the seasonal high groundwater table; a responsible person may not claim a lower matrix score for soil by moving contaminated soil to a higher elevation relative to the groundwater table;

b. "mean annual precipitation" is defined at 18 AAC 75.990;

c. "soil type" means the predominant Unified Soil Classification (USC) soil type between the deepest point of contamination and the seasonal high groundwater table; a responsible person may seek to demonstrate that otherwise coarse-grained soil has an organic carbon content that might enable a lower point classification. Soil types using the USC system are further defined as shown in Figure 1:

Figure 1

SOIL TYPE	UNIFIED SOIL CLASSIFICATIONS
Clean coarse-grained	GW, GP, SW, SP
Coarse-grained with fines	GM, GC, SM, SC, GP-GC, SP-SM, GW-GM, SW-SM, SW-SC
Fine-grained with low organic carbon	ML, CL, HM, CH
Fine-grained with high organic carbon	OL, OH, Pt

d. for the "potential receptors" categories,

(i) "public water system" and "private water system" have the meaning given those terms in 18 AAC 80.1990;

(ii) "nonpotable" means unusable for drinking water due to a water quality condition, such as salinity, that was not caused by or that does not arise from contamination at the site;

e. "volume of contaminated soil" means the total estimated volume of soil that is contaminated above the applicable cleanup level before a responsible person begins a removal or cleanup action.

2. For the “potential receptors” categories, a responsible person shall submit a demonstration supporting the score assigned, including the results of an approved water well survey; the most conservative score must be used to determine the proximity of potential receptors; for example, if a water system is within one-quarter mile, the category "public/private water system within one mile" that would score 8 would be superseded by the category "public/private water system within 1/2 mile" that would score 12.

3. The identity of a released refined petroleum product must be assumed to be unknown unless a responsible person demonstrates that the product is only gasoline, or only a refined nongasoline product; the department will waive the requirement that a product be identified by analysis if a responsible person demonstrates that only one type of product was stored or distributed at the site; the soil cleanup levels in Part B are based on gas chromatographic analytical measurements corresponding to a specific measured range of petroleum hydrocarbons as follows:

a. gasoline range organics: light-range petroleum products such as gasoline, with petroleum hydrocarbon compounds corresponding to an alkane range from the beginning of C_6 to the beginning of C_{10} and a boiling point range between approximately 60^o Centigrade and 170^o Centigrade;

b. diesel range organics: mid-range petroleum products such as diesel fuel, with petroleum hydrocarbon compounds corresponding to an alkane range from the beginning of C_{10} to the beginning of C_{25} and a boiling point range between approximately 170° Centigrade and 400° Centigrade;

c. residual range organics: heavy-range petroleum products such as lubricating oils, with petroleum hydrocarbon compounds corresponding to an alkane range from the beginning of C_{25} to the beginning of C_{36} and a boiling point range between approximately 400° Centigrade and 500° Centigrade.

4. In addition to meeting the soil cleanup levels in Part B, a responsible person shall ensure that the site meets the most stringent standards for benzene, toluene, ethylbenzene, and total xylenes for the applicable exposure pathway in Table B1 in (c) of this section.

(b) If a responsible person uses method one for petroleum hydrocarbons for an Arctic zone under 18 AAC 75.340, the soil cleanup levels must be based on Table A2 in this subsection.

TABLE A2. METHOD ONE - PETROLEUM HYDROCARBON SOIL CLEANUP LEVELS IN THE ARCTIC ZONE

PRODUCT	Cleanup Level in mg/kg		
	Diesel Range Petroleum Hydrocarbons	**Gasoline Range Petroleum Hydrocarbons**	**Residual Range Petroleum Hydrocarbons**
Gasoline	N/A	100	N/A
Diesel	200*	N/A	N/A
Unknown/Crude	200	100	N/A
Residual	N/A	N/A	2000

In this table, "N/A" means "not applicable."

* If a responsible party demonstrates that contamination is due to a diesel spill, that levels of benzene, toluene, ethylbenzene, and total xylene isomers (BTEX) are less than 15 mg/kg, that benzene levels are less than 0.5 mg/kg, and that other site conditions are favorable, and if the department determines that a less stringent level is protective of human health, safety, and welfare, and of the environment, the department will allow a cleanup level of 500 mg/kg for diesel range petroleum hydrocarbons.

The Arctic Zone numeric cleanup levels in this table cover only contamination related to manmade pads and roads. The department will determine the cleanup levels for undisturbed tundra or other undisturbed native vegetation on a site-specific basis, depending upon whether a cleanup action would cause more severe or long-term damage than would the discharge or release alone.

(c) If a responsible person uses method two for chemicals other than petroleum hydrocarbons under 18 AAC 75.340, the soil cleanup levels must be based on Table B1 in this subsection.

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Acenaphthene[7]	83-32-9	nc	6300	4600	3800	37
Acenaphthylene[7,8]	208-96-8	nc	3100	2300	1900	18
Acetone	67-64-1	nc	1.0×10^5; [9]	81000	65000	38
Aldrin	309-00-2	ca	0.67	0.49	0.40	0.0099
Anthracene[7]	120-12-7	nc	31000	23000	19000	390
Antimony (metallic)	7440-36-0	nc	55	41	33	4.6
Arsenic, Inorganic[11]	7440-38-2	ca	12	8.8	7.2	0.20
Barium	7440-39-3	nc	25000	20000	17000	2100
Benz[a]anthracene[7]	56-55-3	m	20	14	12	0.70
Benzaldehyde	100-52-7	nc	770 (3000)[10]	770 (2300)[10]	770 (1800)[10]	0.52
Benzene[7]	71-43-2	ca	16	11	8.1	0.022
Benzo[a]pyrene[7]	50-32-8	m	2.0	1.5	1.2	1.9
Benzo[b]fluoranthene[7]	205-99-2	m	20	15	12	20
Benzo[g,h,i]perylene[7,8]	191-24-2	nc	3100	2300	1900	15000
Benzo[k]fluoranthene[7]	207-08-9	m	200	150	120	190
Benzoic Acid	65-85-0	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	200
Benzyl Alcohol	100-51-6	nc	11000	8200	6700	5.7
Beryllium and compounds	7440-41-7	nc	270	200	170	260
Bis(2-chloroethyl)ether	111-44-4	ca	4.0	2.8	2.1	0.00042
Bis(2-ethylhexyl)phthalate	117-81-7	ca	680	500	410	88
Bromobenzene	108-86-1	nc	160 (410)[10]	160 (290)[10]	160 (215)[10]	0.36
Bromodichloromethane	75-27-4	ca	5.3	3.6	2.6	0.0043
Bromoform	75-25-2	ca	340	240	170	0.10
Bromomethane	74-83-9	nc	15	10	7.4	0.024
Butadiene, 1,3-	106-99-0	ca	1.2	0.86	0.64	0.0012
Butanol, N-	71-36-3	nc	6500	6500	6500	5.3

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2] Human Health[5] (mg/kg)	Under 40 Inch Zone[3] Human Health[5] (mg/kg)	Over 40 Inch Zone[4] Human Health[5] (mg/kg)	Migration to Groundwater[6] (mg/kg)
			(14000)[10]	(10000)[10]	(8300)[10]	
Butyl Benzyl Phthalate	85-68-7	ca	5000	3700	3000	16
Butylbenzene, n-	104-51-8	nc	20 (6800)[10]	20 (5000)[10]	20 (4150)[10]	23
Butylbenzene, sec-	135-98-8	nc	28 (14000)[10]	28 (10000)[10]	28 (8300)[10]	42
Butylbenzene, tert-	98-06-6	nc	36 (14000)[10]	36 (10000)[10]	36 (10000)[10]	11
Cadmium	7440-43-9	nc	120	92	76	9.1
Carbon Disulfide	75-15-0	nc	500 (1600)[10]	500 (1100)[10]	500 (800)[10]	2.9
Carbon Tetrachloride	56-23-5	ca	13	9.1	6.6	0.021
Chlordane	12789-03-6	ca	29	22	17	0.18
Chlordecone (Kepone)	143-50-0	ca	0.95	0.70	0.58	0.0083
Chloroaniline, p-	106-47-8	ca	47	35	29	0.015
Chlorobenzene	108-90-7	nc	180 (370)[10]	180 (250)[10]	180 (180)[10]	0.46
Chloroform	67-66-3	ca	5.8	4.0	2.9	0.0071
Chloromethane	74-87-3	nc	250	170	120	0.61
Chloronaphthalene, Beta-	91-58-7	nc	8400	6200	5100	26
Chlorophenol, 2-	95-57-8	nc	680	510	410	0.71
Chromium(III), Insoluble Salts[12]	16065-83-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]
Chromium(VI)[12]	18540-29-9	m	4.9	3.9	3.2	0.089
Chrysene[7]	218-01-9	m	2000	1500	1200	600
Copper	7440-50-8	nc	5500	4100	3300	370
Cresol, m-	108-39-4	nc	5500	4100	3400	6.1
Cresol, o-	95-48-7	nc	5500	4100	3400	6.2
Cresol, p-	106-44-5	nc	11000	8200	6700	12
Cumene	98-82-8	nc	54 (2500)[10]	54 (1700)[10]	54 (1300)[10]	5.6
Cyanide (CN-)[13]	57-12-5	nc	48	34	26	0.20

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Cyclohexane	110-82-7	nc	77 (14000)[10]	77 (9400)[10]	77 (6700)[10]	150
DDD	72-54-8	ca	3.3	2.5	2.0	0.098
DDE, p,p'-	72-55-9	ca	34	25	20	0.72
DDT	50-29-3	ca	33	24	20	5.1
Dibenz[a,h]anthracene[7]	53-70-3	m	2.0	1.5	1.2	6.3
Dibenzofuran	132-64-9	nc	130	95	77	0.97
Dibromochloromethane	124-48-1	ca	140	110	88	0.0027
Dibromoethane, 1,2- (Ethylene Dibromide)	106-93-4	ca	0.62	0.42	0.31	0.00024
Dibromomethane (Methylene Bromide)	74-95-3	nc	45	31	22	0.025
Dibutyl Phthalate	84-74-2	nc	11000	8200	6700	16
Dichlorobenzene, 1,2-	95-50-1	nc	78 (2300)[10]	78 (1600)[10]	78 (1200)[10]	2.4
Dichlorobenzene, 1,3-[8]	541-73-1	nc	62 (2000)[10]	62 (1400)[10]	62 (1000)[10]	2.3
Dichlorobenzene, 1,4-	106-46-7	ca	31	21	15	0.037
Dichlorobenzidine, 3,3'-	91-94-1	ca	21	16	13	0.056
Dichlorodifluoromethane	75-71-8	nc	220	150	110	3.9
Dichloroethane, 1,1-	75-34-3	ca	67	46	33	0.092
Dichloroethane, 1,2-	107-06-2	ca	8.0	5.5	3.9	0.0055
Dichloroethylene, 1,1-	75-35-4	nc	480	330	240	1.2
Dichloroethylene, 1,2-cis-	156-59-2	nc	270	200	170	0.12
Dichloroethylene, 1,2-trans-	156-60-5	nc	960 (2700)[10]	960 (2000)[10]	960 (1700)[10]	1.3
Dichlorophenol, 2,4-	120-83-2	nc	330	250	200	0.21
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	nc	1200	910	740	0.53
Dichloropropane, 1,2-	78-87-5	nc	25	17	12	0.030
Dichloropropene, 1,3-	542-75-6	ca	30	21	15	0.018
Dieldrin	60-57-1	ca	0.59	0.44	0.36	0.0047
Diethyl Phthalate	84-66-2	nc	88000	66000	54000	60

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Dimethylphenol, 2,4-	105-67-9	nc	2200	1600	1300	3.2
Dimethylphthalate[8]	131-11-3	nc	88000	66000	54000	48
Dinitrobenzene, 1,2-	528-29-0	nc	11	8.2	6.7	0.014
Dinitrobenzene, 1,3-	99-65-0	nc	11	8.2	6.7	0.014
Dinitrobenzene, 1,4-	100-25-4	nc	11	8.2	6.7	0.014
Dinitrophenol, 2,4-	51-28-5	nc	220	160	130	0.34
Dinitrotoluene, 2,4-	121-14-2	ca	30	23	18	0.024
Dinitrotoluene, 2,6-	606-20-2	ca	6.3	4.7	3.8	0.0050
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	nc	270	200	160	0.25
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	nc	270	200	160	0.25
Dioxane, 1,4-	123-91-1	ca	100	73	58	0.012
Diphenylamine	122-39-4	nc	11000	8200	6700	17
Endosulfan (Endosulfan I + Endosulfan II)	115-29-7	nc	820	610	500	9.3
Endrin	72-20-8	nc	33	25	20	0.61
Ethyl Chloride	75-00-3	nc	1400 (29000)[10]	1400 (20000)[10]	1400 (14000)[10]	72
Ethylbenzene[7]	100-41-4	ca	72	49	35	0.13
Ethylene Glycol	107-21-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	110
Fluoranthene[7]	206-44-0	nc	4200	3100	2500	590
Fluorene[7]	86-73-7	nc	4200	3100	2500	36
Formaldehyde	50-00-0	ca	430	290	210	0.011
Heptachlor	76-44-8	ca	2.2	1.6	1.3	0.0076
Heptachlor Epoxide	1024-57-3	ca	1.2	0.86	0.69	0.0019
Hexachlorobenzene	118-74-1	ca	2.8	2.0	1.5	0.0082
Hexachlorobutadiene	87-68-3	nc	3.3 (14)[10]	3.3 (10)[10]	3.3 (7.2)[10]	0.020
Hexachlorocyclohexane, Alpha-	319-84-6	ca	1.5	1.1	0.91	0.0029
Hexachlorocyclohexane, Beta-	319-85-7	ca	5.3	3.9	3.2	0.010
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	ca	9.9	7.4	6.0	0.016

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Hexachlorocyclopentadiene	77-47-4	nc	2.0	1.4	1.0	0.0093
Hexachloroethane	67-72-1	ca	25	17	12	0.018
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	ca	110	79	64	0.027
Hexane, N-	110-54-3	nc	140 (1600)[10]	140 (1100)[10]	140 (750)[10]	130[10]
Hexanone, 2-	591-78-6	nc	380	270	210	0.11
Hydrazine	302-01-2	ca	0.76	0.55	0.40	3.1×10^{-5}
Indeno[1,2,3-cd]pyrene[7]	193-39-5	m	20	15	12	65
Isophorone	78-59-1	ca	10000	7400	6100	2.7
Isopropanol	67-63-0	nc	14000	9500	6800	1.1
Lead and Compounds[14]	7439-92-1	nc	400	400	400	n/a
Manganese	7439-96-5	nc	2900	2700	2000	370
Mercuric Chloride[8]	7487-94-7	nc	41	30	25	3.9
Mercury (elemental)	7439-97-6	nc	3.1 (28)[10]	3.1 (19)[10]	3.1 (14)[10]	0.36
Methanol	67-56-1	nc	1.0×10^5; [9]	1.0×10^5; [9]	1.0×10^5; [9]	54
Methoxychlor	72-43-5	nc	550	410	340	13
Methyl Ethyl Ketone (2-Butanone)	78-93-3	nc	23000 (53000)[10]	23000 (38000)[10]	23000 (30000)[10]	15
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	nc	2200 (69000)[10]	2200 (47000)[10]	2200 (34000)[10]	18
Methyl Mercury	22967-92-6	nc	14	10	8.3	180
Methyl tert-Butyl Ether (MTBE)	1634-04-4	ca	970	670	480	0.40
Methylene Chloride	75-09-2	nc	630	460	360	0.33
Methylnaphthalene, 1-	90-12-0	ca	68 (310)[10]	68 (230)[10]	68 (190)[10]	0.41
Methylnaphthalene, 2-	91-57-6	nc	420	310	250	1.3
Naphthalene[7]	91-20-3	ca	42	29	20	0.038
Nickel Soluble Salts	7440-02-0	nc	2600	2000	1700	340
Nitrobenzene	98-95-3	ca	64	43	31	0.0079

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Nitroglycerin	55-63-0	nc	11	8.2	6.7	0.0082
Nitroguanidine	556-88-7	nc	11000	8200	6700	5.8
Nitrosodimethylamine, N-	62-75-9	m	0.036	0.026	0.020	3.3×10^{-6}
Nitroso-di-N-propylamine, N-	621-64-7	ca	1.4	1.00	0.82	0.00068
Nitrosodiphenylamine, N-	86-30-6	ca	1900	1400	1200	4.6
Nitrotoluene, m-	99-08-1	nc	11	8.2	6.7	0.013
Nitrotoluene, o-	88-72-2	ca	55	41	34	0.024
Nitrotoluene, p-	99-99-0	nc	440	330	270	0.32
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	nc	6700	5000	4100	9.7
Octyl Phthalate, di-N-	117-84-0	nc	1100	820	670	370
Pentachlorophenol	87-86-5	ca	18	13	11	0.0043
Pentaerythritol tetranitrate (PETN)	78-11-5	nc	220	160	130	0.43
Perchlorate and Perchlorate salts	14797-73-0	nc	96	71	58	0.037
Perfluorooctanesulfonic Acid (PFOS)[8]	1763-23-1	nc	2.2	1.6	1.3	0.0030
Perfluorooctanoic Acid (PFOA)[8]	335-67-1	nc	2.2	1.6	1.3	0.0017
Phenanthrene[7,8]	85-01-8	nc	3100	2300	1900	39
Phenol	108-95-2	nc	33000	25000	20000	29
Phosphorus, White	7723-14-0	nc	2.7	2.0	1.7	0.020
Polychlorinated Biphenyls (total)[15]	1336-36-3	ca	1.0	1.0	1.0	n/a
Propyl benzene	103-65-1	nc	52 (5200)[10]	52 (3700)[10]	52 (2800)[10]	9.1
Pyrene[7]	129-00-0	nc	3100	2300	1900	87
Selenium	7782-49-2	nc	680	510	410	6.9
Silver	7440-22-4	nc	680	510	410	11
Strontium	7440-24-6	nc	82000	61000	50000	5600
Styrene	100-42-5	nc	180 (8100)[10]	180 (5700)[10]	180 (4200)[10]	10
TCDD, 2,3,7,8-[16]	1746-01-6	ca	8.2×10^{-5}	6.0×10^{-5}	4.9×10^{-5}	3.9×10^{-6}
Tetrachloroethane, 1,1,1,2-	630-20-6	ca	30	21	15	0.022

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2] Human Health[5] (mg/kg)	Under 40 Inch Zone[3] Human Health[5] (mg/kg)	Over 40 Inch Zone[4] Human Health[5] (mg/kg)	Migration to Groundwater[6] (mg/kg)
Tetrachloroethane, 1,1,2,2-	79-34-5	ca	8.8	6.1	4.4	0.0030
Tetrachloroethylene	127-18-4	nc	68 (140)[10]	68 (95)[10]	68 (69)[10]	0.19
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	nc	270	200	170	2.5
Thallium (Soluble Salts)	7440-28-0	nc	1.4	1.00	0.83	0.19
Toluene[7]	108-88-3	nc	200 (8000)[10]	200 (5800)[10]	200 (4500)[10]	6.7
Toxaphene	8001-35-2	ca	8.6	6.4	5.2	0.72
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	nc	740 (16000)[10]	740 (11000)[10]	740 (7700)[10]	310
Trichlorobenzene, 1,2,3-	87-61-6	nc	110	81	66	0.15
Trichlorobenzene, 1,2,4-	120-82-1	nc	66	45	32	0.082
Trichloroethane, 1,1,1-	71-55-6	nc	360 (160000)[10]	360 (11000)[10]	360 (7800)[10]	32
Trichloroethane, 1,1,2-	79-00-5	nc	2.3	1.6	1.1	0.0014
Trichloroethylene	79-01-6	nc	7.1	4.9	3.5	0.011
Trichlorofluoromethane	75-69-4	nc	980 (41000)[10]	980 (30000)[10]	980 (25000)[10]	41
Trichlorophenol, 2,4,5-	95-95-4	nc	11000	8200	6700	28
Trichlorophenol, 2,4,6-	88-06-2	nc	110	82	67	0.092
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	nc	1100	820	670	0.66
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	nc	880	660	540	0.55
Trichloropropane, 1,2,3-	96-18-4	m	0.089	0.066	0.054	3.1×10^{-5}
Trimethylbenzene, 1,2,4-	95-63-6	nc	43 (400)[10]	43 (280)[10)]	43 (210)[10]	0.61
Trimethylbenzene, 1,3,5-	108-67-8	nc	37 (360)[10]	37 (250)[10]	37 (180)[10]	0.66
Tri-n-butyltin	688-73-3	nc	41	30	25	0.68
Trinitrobenzene, 1,3,5-	99-35-4	nc	3900	2900	2400	15
Trinitrotoluene, 2,4,6-	118-96-7	nc	64	47	39	0.39
Vanadium and Compounds	7440-62-2	nc	680	510	420	1100
Vinyl Acetate	108-05-4	nc	2100	1400	1000	1.1

TABLE B1. METHOD TWO – SOIL CLEANUP LEVELS TABLE (See notes for additional requirements)						
Hazardous Substance	CAS Number[1]	health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Arctic Zone[2]	Under 40 Inch Zone[3]	Over 40 Inch Zone[4]	Migration to Groundwater[6] (mg/kg)
			Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	Human Health[5] (mg/kg)	
Vinyl Chloride	75-01-4	ca	0.69	0.65	0.61	0.00080
Xylenes[7]	1330-20-7	nc	57 (710)[10]	57 (490)[10]	57 (350)[10]	1.5
Zinc and Compounds	7440-66-6	nc	41000	30000	25000	4900
See notes to table for further requirements. “n/a” means not applicable.						

NOTES TO TABLE B1 FOLLOW TABLE B2 IN (d) OF THIS SECTION

(d) If a responsible person uses method two for petroleum hydrocarbons under 18 AAC 75.340, the soil cleanup levels must be based on Table B2 in this subsection.

TABLE B2. METHOD TWO - PETROLEUM HYDROCARBON SOIL CLEANUP LEVELS

Petroleum Hydrocarbon Range	Arctic Zone[2] mg/kg			Under 40 Inch Zone[3]			Over 40 Inch Zone[4]			Maximum Allowable Concentrations[17] mg/kg
	Ingestion (mg/kg)[18]	Inhalation (mg/kg)[19]	Migration to Groundwater (mg/kg)[6]	Ingestion (mg/kg)[18]	Inhalation (mg/kg)[19]	Migration to groundwater (mg/kg)[6]	Ingestion (mg/kg)[18]	Inhalation (mg/kg)[19]	Migration to Groundwater (mg/kg)[6]	
For Laboratory Analysis using AK Methods 101, 102, and 103										
C_6-C_{10} GRO using AK 101	1400	1400	n/a	1400	1400	300	1400	1400	260	1400
C_{10}-C_{25} DRO using AK 102	12500	12500	n/a	10250	12500	250	8250	12500	230	12500
C_{25}-C_{36} RRO using AK 103	13700	22000	n/a	10000	22000	11000	8300	22000	9700	22000
For Laboratory Analysis using AK Aliphatic and Aromatic Fraction Methods 101AA, 102AA, and 103AA										
C_6-C_{10} Aliphatics	1000	1000	n/a	1000	1000	270	1000	1000	240	1000
C_6-C_{10} Aromatics	1000	1000	n/a	1000	1000	150	1000	1000	130	1000
C_{10}-C_{25} Aliphatics	10000	10000	n/a	10000	10000	7200	8300	10000	6400	10000
C_{10}-C_{25} Aromatics	5000	5000	n/a	4100	5000	100	3300	5000	90	5000
C_{25}-C_{36} Aliphatics	20000	20000	n/a	20000	20000	20000	20000	20000	20000	20000
C_{25}-C_{36} Aromatics	4100	10000	n/a	3000	10000	3300	2500	10000	2900	10000

See notes to table for further requirements. “n/a” means not applicable.

Notes to Tables B1 and B2:

If applicable, alternative cleanup levels must be protective of migration to surface water. Concentrations of hazardous substances in soil must be calculated and presented on a per dry weight basis. For volatile organic hazardous substances for which toxicity data are not currently available or calculated levels exceed the calculated saturation concentration, the cleanup level that applies at a site is the calculated saturation concentration determined using the equations set out in the *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340. The cleanup level from Table B1 or B2 that applies at a site is the most stringent of the applicable exposure pathway-specific cleanup levels based on human health, ingestion, inhalation, or migration to groundwater. Where the superscript figure "9" follows the exponent "10^{5}", separated by a semicolon, the figure "9" refers to Note 9.

1. "CAS Number" means the Chemical Abstract Service (CAS) registry number uniquely assigned to chemicals by the American Chemical Society and recorded in the CAS Registry System.

2. "Arctic zone" is defined at 18 AAC 75.990.

3. "Under 40 inch zone" means a site that receives mean annual precipitation of less than 40 inches each year.

4. "Over 40 inch zone" means a site that receives mean annual precipitation of 40 or more inches each year.

5. The "Human Health" exposure pathway is the cumulative exposure pathway through dermal contact, ingestion, and inhalation of volatile and particulate compounds from hazardous substances in the soil but excludes the vapor intrusion pathway of indoor air inhalation.

6. The "Migration to Groundwater" exposure pathway is the potential for hazardous substances to leach to groundwater where they may result in a completed human health exposure pathway through dermal contact, ingestion, or inhalation of contaminants at or above levels listed in Table C at 18 AAC 75.345(b)(1); soil cleanup levels protective of migration to surface water must be determined on a site-specific basis.

7. If using method two or method three, the applicable petroleum hydrocarbon cleanup levels must be met in addition to the applicable chemical-specific cleanup levels for benzene, ethylbenzene, toluene, and total xylenes; the chemical-specific cleanup levels for the polynuclear aromatic hydrocarbons acenaphthene, acenaphthylene, anthracene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[g,h,i]pyrene, chrysene, dibenz[a,h]anthracene, fluoranthene, fluorene, indeno[1,2,3-c,d]pyrene, naphthalene, phenanthrene, and pyrene must also be met unless the department determines that those cleanup levels need not be met to protect human health, safety, and welfare, and the environment.

8. Where one or more toxicological values were unavailable, toxicity values from surrogate compounds or other sources were used as presented in Table 6 in the *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340.

9. The ceiling limit of 100,000 mg/kg is equivalent to a chemical representing 10 percent by weight of the soil sample. At this contaminant concentration and higher, the assumptions for soil contact may be violated (for example, soil adherence and wind-borne dispersion assumptions) due to the presence of the foreign substance itself.

10. This level is based on a soil saturation concentration (Csat) using the equations set out in *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340. The Csat value is listed first, followed by the human health risk-based cleanup level in parentheses. The human health risk-based cleanup level assumptions do not take free product into consideration. In accordance with 18 AAC 75.325(f), free product must be recovered to the maximum extent practicable. Contaminant concentrations above the Csat value trigger the need

to assess the practicability of product recovery; if the department determines product recovery is impracticable, the risk-based cleanup level may be applied as long as the cumulative risk standards are met.

11. Due to the prevalence of naturally occurring arsenic throughout the state, arsenic at a site will be considered background arsenic unless anthropogenic contribution from a source, activity, or mobilization by means of another introduced contaminant is known or suspected.

12. Due to the prevalence of naturally occurring chromium III throughout the state, sample results reported for total chromium detected at a site will be considered background chromium III unless anthropogenic contribution of chromium III or VI from a source, activity, or mobilization by means of another introduced contaminant is known or suspected. The calculated chromium III migration to groundwater cleanup level exceeds 1,000,000 parts per million.

13. Cyanide expressed as free, or physiologically available cyanide.

14. Lead cleanup levels are based on land use; for residential land use, the soil cleanup level is 400 mg/kg. For commercial or industrial land use, as applied in 18 AAC 75.340(e)(3), the soil cleanup level is 800 mg/kg; through an approved site-specific risk assessment, conducted according to the *Risk Assessment Procedures Manual*, adopted by reference in 18 AAC 75.340, approved exposure models may be used to evaluate exposure to a child resident or an adult worker; a responsible person may also propose an alternative cleanup level, through a site-specific risk assessment conducted according to the *Risk Assessment Procedures Manual*, and based on a chemical speciation of the lead present at the site. For soils contaminated with lead more than 15 feet below ground surface, lead cleanup levels will be determined on a site-specific basis.

15. The applicable EPA regulation governing disposal and cleanup of PCB contaminated facilities under 40 C.F.R. 761.61 (PCB remediation waste) may apply to cleanup of polychlorinated biphenyls (PCBs) at a contaminated site. The PCB cleanup levels listed in Table B1 are based on cleanup levels referred to in 40 C.F.R. 761.61 for high occupancy areas with no cap. For unrestricted land use, polychlorinated biphenyls (PCBs) in soil shall be cleaned up to the listed value, unless the department determines that a different cleanup level is necessary as provided in 18 AAC 75.340(i); with the prior approval of the department, PCBs in soil may be cleaned up to

(A) between 1 and 10 mg/kg if the responsible person

(i) caps each area containing PCBs in soil at levels between 1 and 10 mg/kg; for purposes of this Note 15, "caps" means covering an area of PCB contaminated soil with an appropriate material to prevent exposure of humans and the environment to PCBs; to be approved, a cap must be designed and constructed of a material acceptable to the department and of sufficient strength and durability to withstand the use of the surface that is exposed to the environment; within 72 hours after discovery of a breach to the integrity of a cap, the responsible person or the landowner shall initiate repairs to that breach; and

(ii) provides the department within 60 days after completing the cleanup, documentation that the responsible person has recorded a deed notation in the appropriate land records, or on another instrument that is normally examined during a title search, documenting that PCBs remain in the soil, that the contaminated soil has been capped, and that subsequent interest holders may have legal obligations with respect to the cap and the contaminated soil; or

(B) an alternative PCB soil cleanup level developed through an approved site-specific risk assessment, conducted according to the *Risk Assessment Procedures Manual*, adopted by reference at 18 AAC 75.340.

16. This cleanup level is for 2,3,7,8-Tetrachlorordibenzo-*p*-Dioxin (TCDD) only; all cleanup levels for polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF) congeners must be determined on a site-specific basis using the TCDD toxicity equivalent (TEQ) approach described in the *Procedures for Calculating Cumulative Risk,* adopted by reference in 18 AAC 75.325.

17. This level is the concentration of C_6 - C_{10}, C_{10} - C_{25}, or C_{25} - C_{36} petroleum hydrocarbon range in surface and subsurface soil that if exceeded, indicates an increased potential for hazardous substance migration or for risk to human health, safety, or welfare, or to the environment; the level of a petroleum hydrocarbon may not remain at a concentration above the maximum allowable concentration unless a responsible person demonstrates that the petroleum hydrocarbon will not migrate and will not pose a significant risk to human health, safety, or welfare, or to the environment; free product must be recovered as required by 18 AAC 75.325(f).

18. "Ingestion" means a potential pathway of exposure to hazardous substances through direct consumption of the soil.

19. "Inhalation" means a potential pathway to volatile organic hazardous substances in the soil through volatilization, but excludes the vapor intrusion pathway of indoor air inhalation. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 11/6/2016, Register 220; am 9/29/2018, Register 227)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

18 AAC 75.345. Groundwater and surface water cleanup levels. (a) Except as otherwise provided in this section, cleanup of a discharge or release of a hazardous substance to groundwater or surface water must meet the requirements of this section.

(b) Contaminated groundwater must meet

(1) the cleanup levels in Table C if the current use or the reasonably expected potential future use of the groundwater, determined under 18 AAC 75.350, is a drinking water source;

TABLE C. GROUNDWATER CLEANUP LEVELS

Hazardous Substance	CAS Number[1]	Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)	Groundwater Human Health Cleanup Level[2] (micrograms /liter)
Acenaphthene	83-32-9	nc	530
Acenaphthylene[3]	208-96-8	nc	260
Acetone	67-64-1	nc	14000
Aldrin	309-00-2	ca	0.0092
Anthracene	120-12-7	nc	43 (1800)[4]
Antimony (metallic)	7440-36-0	nc	7.8

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Arsenic, Inorganic[5]	7440-38-2	ca	0.52
Barium	7440-39-3	nc	3800
Benz[a]anthracene	56-55-3	m	0.30
Benzaldehyde	100-52-7	nc	190
Benzene	71-43-2	ca	4.6
Benzo[a]pyrene	50-32-8	m	0.25
Benzo[b]fluoranthene	205-99-2	m	2.5
Benzo[g,h,i]perylene[3]	191-24-2	nc	0.26 (600)[4]
Benzo[k]fluoranthene	207-08-9	m	0.80 (25)[4]
Benzoic Acid	65-85-0	nc	75000
Benzyl Alcohol	100-51-6	nc	2000
Beryllium and compounds	7440-41-7	nc	25
Bis(2-chloroethyl)ether	111-44-4	ca	0.14
Bis(2-ethylhexyl)phthalate	117-81-7	ca	56
Bromobenzene	108-86-1	nc	62
Bromodichloromethane	75-27-4	ca	1.3
Bromoform	75-25-2	ca	33
Bromomethane	74-83-9	nc	7.5
Butadiene, 1,3-	106-99-0	ca	0.18
Butanol, N-	71-36-3	nc	2000
Butyl Benzyl Phthalate	85-68-7	ca	160
Butylbenzene, n-	104-51-8	nc	1000
Butylbenzene, sec-	135-98-8	nc	2000
Butylbenzene, tert-	98-06-6	nc	690
Cadmium (Diet)	7440-43-9	nc	9.2
Carbon Disulfide	75-15-0	nc	810
Carbon Tetrachloride	56-23-5	ca	4.6
Chlordane	12789-03-6	ca	0.20
Chlordecone (Kepone)	143-50-0	ca	0.035
Chloroaniline, p-	106-47-8	ca	3.7
Chlorobenzene	108-90-7	nc	78
Chloroform	67-66-3	ca	2.2
Chloromethane	74-87-3	nc	190
Chloronaphthalene, Beta-	91-58-7	nc	750
Chlorophenol, 2-	95-57-8	nc	91

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Chromium(III), Insoluble Salts[6]	16065-83-1	nc	22000
Chromium(VI)[6]	18540-29-9	m	0.35
Chrysene	218-01-9	m	2.0 (250)[4]
Copper	7440-50-8	nc	800
Cresol, m-	108-39-4	nc	930
Cresol, o-	95-48-7	nc	930
Cresol, p-	106-44-5	nc	1900
Cumene	98-82-8	nc	450
Cyanide (CN-)	57-12-5	nc	1.5
Cyclohexane	110-82-7	nc	13000
DDD	72-54-8	ca	0.060
DDE, p,p'-	72-55-9	ca	0.46
DDT	50-29-3	ca	2.3
Dibenz[a,h]anthracene	53-70-3	m	0.25
Dibenzofuran	132-64-9	nc	7.9
Dibromochloromethane	124-48-1	ca	8.7
Dibromoethane, 1,2- (Ethylene Dibromide)	106-93-4	ca	0.075
Dibromomethane (Methylene Bromide)	74-95-3	nc	8.3
Dibutyl Phthalate	84-74-2	nc	900
Dichlorobenzene, 1,2-	95-50-1	nc	300
Dichlorobenzene, 1,3-[3]	541-73-1	nc	300
Dichlorobenzene, 1,4-	106-46-7	ca	4.8
Dichlorobenzidine, 3,3'-	91-94-1	ca	1.3
Dichlorodifluoromethane	75-71-8	nc	200
Dichloroethane, 1,1-	75-34-3	ca	28
Dichloroethane, 1,2-	107-06-2	ca	1.7
Dichloroethylene, 1,1-	75-35-4	nc	280
Dichloroethylene, 1,2-cis-	156-59-2	nc	36
Dichloroethylene, 1,2-trans-	156-60-5	nc	360
Dichlorophenol, 2,4-	120-83-2	nc	46
Dichlorophenoxy Acetic Acid, 2,4-	94-75-7	nc	170
Dichloropropane, 1,2-	78-87-5	nc	8.2
Dichloropropene, 1,3-	542-75-6	ca	4.7
Dieldrin	60-57-1	ca	0.018
Diethyl Phthalate	84-66-2	nc	15000

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Dimethylphenol, 2,4-	105-67-9	nc	360
Dimethylphthalate[3]	131-11-3	nc	16000
Dinitrobenzene, 1,2-	528-29-0	nc	1.9
Dinitrobenzene, 1,3-	99-65-0	nc	2.0
Dinitrobenzene, 1,4-	100-25-4	nc	2.0
Dinitrophenol, 2,4-	51-28-5	nc	39
Dinitrotoluene, 2,4-	121-14-2	ca	2.4
Dinitrotoluene, 2,6-	606-20-2	ca	0.49
Dinitrotoluene, 2-Amino-4,6-	35572-78-2	nc	39
Dinitrotoluene, 4-Amino-2,6-	19406-51-0	nc	39
Dioxane, 1,4-	123-91-1	ca	4.6
Diphenylamine	122-39-4	nc	1300
Endosulfan	115-29-7	nc	100
Endrin	72-20-8	nc	2.3
Ethyl Chloride	75-00-3	nc	21000
Ethylbenzene	100-41-4	ca	15
Ethylene Glycol	107-21-1	nc	40000
Fluoranthene	206-44-0	nc	260 (800)[4]
Fluorene	86-73-7	nc	290
Formaldehyde	50-00-0	ca	4.3
Heptachlor	76-44-8	ca	0.014
Heptachlor Epoxide	1024-57-3	ca	0.014
Hexachlorobenzene	118-74-1	ca	0.098
Hexachlorobutadiene	87-68-3	nc	1.4
Hexachlorocyclohexane, Alpha-	319-84-6	ca	0.072
Hexachlorocyclohexane, Beta-	319-85-7	ca	0.25
Hexachlorocyclohexane, Gamma- (Lindane)	58-89-9	ca	0.42
Hexachlorocyclopentadiene	77-47-4	nc	0.41
Hexachloroethane	67-72-1	ca	3.3
Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	121-82-4	ca	7.0
Hexane, N-	110-54-3	nc	1500
Hexanone, 2-	591-78-6	nc	38
Hydrazine	302-01-2	ca	0.011
Indeno[1,2,3-cd]pyrene	193-39-5	m	0.19 (2.5)[4]
Isophorone	78-59-1	ca	780

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Isopropanol	67-63-0	nc	410
Lead and Compounds[7]	7439-92-1	nc	15
Manganese	7439-96-5	nc	430
Mercuric Chloride[3]	7487-94-7	nc	5.7
Mercury (elemental)	7439-97-6	nc	0.52
Methanol	67-56-1	nc	20000
Methoxychlor	72-43-5	nc	37
Methyl Ethyl Ketone (2-Butanone)	78-93-3	nc	5600
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	108-10-1	nc	6300
Methyl Mercury	22967-92-6	nc	2.0
Methyl tert-Butyl Ether (MTBE)	1634-04-4	ca	140
Methylene Chloride	75-09-2	nc	110
Methylnaphthalene, 1-	90-12-0	ca	11
Methylnaphthalene, 2-	91-57-6	nc	36
Naphthalene	91-20-3	ca	1.7
Nickel Soluble Salts	7440-02-0	nc	390
Nitrobenzene	98-95-3	ca	1.4
Nitroglycerin	55-63-0	nc	2.0
Nitroguanidine	556-88-7	nc	2000
Nitrosodimethylamine, N-	62-75-9	m	0.0011
Nitroso-di-N-propylamine, N-	621-64-7	ca	0.11
Nitrosodiphenylamine, N-	86-30-6	ca	120
Nitrotoluene, m-	99-08-1	nc	1.7
Nitrotoluene, o-	88-72-2	ca	3.1
Nitrotoluene, p-	99-99-0	nc	43
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2691-41-0	nc	1000
Octyl Phthalate, di-N-	117-84-0	nc	22 (200)[4]
Pentachlorophenol	87-86-5	ca	0.41
Pentaerythritol tetranitrate (PETN)	78-11-5	nc	39
Perchlorate and Perchlorate Salts	14797-73-0	nc	14
Perfluorooctanesulfonic Acid (PFOS)[3]	1763-23-1	nc	0.40
Perfluorooctanoic Acid (PFOA)[3]	335-67-1	nc	0.40
Phenanthrene[3]	85-01-8	nc	170
Phenol	108-95-2	nc	5800
Phosphorus, White	7723-14-0	nc	0.40

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Polychlorinated Biphenyls (PCBs)	1336-36-3	ca	0.44
Propyl benzene	103-65-1	nc	660
Pyrene	129-00-0	nc	120
Selenium	7782-49-2	nc	100
Silver	7440-22-4	nc	94
Styrene	100-42-5	nc	1200
Strontium	7440-24-6	nc	12000
TCDD, 2,3,7,8-[8]	1746-01-6	ca	1.2×10^{-6}
Tetrachloroethane, 1,1,1,2-	630-20-6	ca	5.7
Tetrachloroethane, 1,1,2,2-	79-34-5	ca	0.76
Tetrachloroethylene	127-18-4	nc	41
Tetryl (Trinitrophenylmethylnitramine)	479-45-8	nc	39
Thallium (Soluble Salts)	7440-28-0	nc	0.20
Toluene	108-88-3	nc	1100
Toxaphene	8001-35-2	ca	0.71
Trichloro-1,2,2-trifluoroethane, 1,1,2-	76-13-1	nc	10000
Trichlorobenzene, 1,2,3-	87-61-6	nc	7.0
Trichlorobenzene, 1,2,4-	120-82-1	nc	4.0
Trichloroethane, 1,1,1-	71-55-6	nc	8000
Trichloroethane, 1,1,2-	79-00-5	nc	0.41
Trichloroethylene	79-01-6	nc	2.8
Trichlorofluoromethane	75-69-4	nc	5200
Trichlorophenol, 2,4,5-	95-95-4	nc	1200
Trichlorophenol, 2,4,6-	88-06-2	nc	12
Trichlorophenoxyacetic Acid, 2,4,5-	93-76-5	nc	160
Trichlorophenoxypropionic acid, -2,4,5	93-72-1	nc	110
Trichloropropane, 1,2,3-	96-18-4	m	0.0075
Trimethylbenzene, 1,2,4-	95-63-6	nc	56
Trimethylbenzene, 1,3,5-	108-67-8	nc	60
Tri-n-butyltin	688-73-3	nc	3.7
Trinitrobenzene, 1,3,5-	99-35-4	nc	590
Trinitrotoluene, 2,4,6-	118-96-7	nc	9.8
Vanadium and Compounds	7440-62-2	nc	86
Vinyl Acetate	108-05-4	nc	410
Vinyl Chloride	75-01-4	ca	0.19

TABLE C. GROUNDWATER CLEANUP LEVELS			
Hazardous Substance	**CAS Number[1]**	**Health effect that drives risk: carcinogen (ca); noncarcinogen (nc); mutagen (m)**	**Groundwater Human Health Cleanup Level[2] (micrograms /liter)**
Xylenes	1330-20-7	nc	190
Zinc and Compounds	7440-66-6	nc	6000
PETROLEUM HYDROCARBONS			
C_6-C_{10} GRO		nc	2200
C_{10}-C_{25} DRO		nc	1500
C_{25}-C_{36} RRO		nc	1100

Notes to Table C:

1. "CAS Number" means the Chemical Abstract Service (CAS) registry number uniquely assigned to chemicals by the American Chemical Society and recorded in the CAS Registry System.

2. The "Human Health" exposure pathway is the cumulative exposure pathway through dermal contact, ingestion, and inhalation of volatile compounds from hazardous substances in the water.

3. Where one or more toxicological values were unavailable, toxicity values from surrogate compounds or other sources were used as presented in Table 6 from the *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340.

4. This level is set at the compound's solubility concentration using the equations set out in the *Procedures for Calculating Cleanup Levels*, adopted by reference in 18 AAC 75.340. The solubility value is listed first, followed by the human health risk-based cleanup level in parentheses. The human health risk-based cleanup level assumptions do not take free product into consideration. In accordance with 18 AAC 75.325(f), free product must be recovered to the maximum extent practicable. Contaminant concentrations above the solubility value trigger the need to assess the practicability of product recovery; if the department determines product recovery is impracticable, the risk-based cleanup level may be applied as long as the cumulative risk standards are met.

5. Due to the prevalence of naturally occurring arsenic throughout the state, arsenic at a site will be considered background arsenic unless anthropogenic contribution from a source, activity, or mobilization by means of another introduced contaminant is known or suspected.

6. Due to the prevalence of naturally occurring chromium III throughout the state, sample results reported for total chromium detected at a site will be considered background chromium III unless anthropogenic contribution of chromium III or VI from a source, activity, or mobilization by means of another introduced contaminant is known or suspected.

7. The lead cleanup level is taken from EPA's action level for lead in water.

8. This cleanup level is for 2,3,7,8-Tetrachlorodibenzo-*p*-Dioxin (TCDD) only; all cleanup levels for polychlorinated dibenzo-*p*-dioxin (PCDD) and polychlorinated dibenzofuran (PCDF) congeners must be determined on a site-specific basis using the TCDD toxicity equivalent (TEQ) approach described in the *Procedures for Calculating Cumulative Risk*, adopted by reference in 18 AAC 75.325.

(2) an approved cleanup level based on an approved site-specific risk assessment conducted under the *Risk Assessment Procedures Manual* adopted by reference in 18 AAC 75.340;

(3) an alternative cleanup level for a hazardous substance not listed under (1) of this subsection proposed by the responsible party and approved by the department, using the procedures set out in the department's *Risk Assessment Procedures Manual*, adopted by reference in 18 AAC 75.340, unless the responsible person demonstrates that an alternative cleanup level is not necessary to ensure protection of human health, safety, and welfare, and of the environment; or;

(4) an alternative cleanup level for a hazardous substance not listed under (1) of this subsection set by the department using the procedures set out in the department's *Risk Assessment Procedures Manual*, adopted by reference in 18 AAC 75.340.

(c) The department will set a more stringent cleanup level than the applicable level under (b) of this section, if the department determines that a more stringent cleanup level is necessary to ensure protection of human health, safety, or welfare, or of the environment, and based on actual onsite and actual or likely offsite uses of the groundwater that are likely to be affected by the hazardous substance. In making a determination under this subsection, the department may consider

(1) the risks to current or potential future users of the groundwater as a drinking water source, as determined under 18 AAC 75.350;

(2) the presence of sensitive subpopulations who respond biologically to lower levels of exposure to a hazardous substance;

(3) the groundwater use classifications other than for drinking water, as set out under 18 AAC 70.020(a)(1)(A) and 18 AAC 70.050(2);

(4) the primary or secondary maximum contaminant levels in 18 AAC 80.300 for actual or likely drinking water supplies;

(5) a health advisory value developed by EPA's Office of Water; and

(6) the cleanup levels in this section for groundwater contaminated with petroleum; the contamination may not exceed, for each petroleum hydrocarbon range applicable, including the gasoline range, the diesel range, and the residual range,

(A) a threshold odor number (TON) of 1 for odor, as measured by Method 2150B, *Standard Methods for the Examination of Water and Wastewater*, 22nd edition, American Public Health Association (2012), adopted by reference; or

(B) a flavor threshold number (FTN) of 1 for flavor, as measured by Method 2160B, *Standard Methods for the Examination of Water and Wastewater*, adopted by reference in (A) of this paragraph.

(d) Where the department determines that toxicity information is insufficient to establish a cleanup level for a hazardous substance or a pollutant that ensures protection of human health, safety, and welfare, and of the environment, the department may require a responsible person to provide an alternative source of drinking water for the affected parties or implement other institutional controls under 18 AAC 75.375 until a cleanup level is established under (b)(2), (3), or (4) of this section.

(e) Toxic substances in sediment may not cause, and may not be reasonably expected to cause, a toxic or other deleterious effect on aquatic life, except as authorized under 18 AAC 70. For purposes of this subsection, "toxic substances" has the meaning given in 18 AAC 70.990.

(f) The point of compliance where groundwater cleanup levels must be attained is throughout the site from each point extending vertically from the uppermost level of the zone of saturation to the lowest possible depth that could potentially be affected by the discharge or release of a hazardous substance, unless the department approves an alternative point of compliance as part of the cleanup action under 18 AAC 75.360. For the department to approve an alternative point of compliance under this subsection, the

(1) alternative point of compliance must be within the existing groundwater contamination plume; and

(2) cleanup levels established in (b) and (c) of this section must be met at the property boundary in an area where the current use or reasonably expected potential future use of groundwater in the neighboring property is determined to be a source of drinking water, unless a responsible person

(A) demonstrates that attainment of the applicable groundwater cleanup levels is not practicable; and

(B) provides an alternative source of water for affected persons.

(g) Groundwater that is closely connected hydrologically to nearby surface water may not cause a violation of the water quality standards in 18 AAC 70 for surface water or sediment. The department will, in consultation with local, state, and federal officials and the public, establish points of compliance with this subsection, taking into account

(1) groundwater travel time and distance from sources of hazardous substances to surface water;

(2) the contribution of the groundwater to the chemical and physical quantity and quality of the surface water;

(3) organisms living in or dependent upon the groundwater to surface water ecosystems;

(4) climatic, tidal, or seasonal variations;

(5) feasibility of attaining applicable water quality standards to support the designated uses of the surface water;

(6) presence of sediment contamination; and

(7) if conducted for the site, the conclusions of a site-specific risk assessment conducted under the *Risk Assessment Procedures Manual*, adopted by reference in 18 AAC 75.340.

(h) If the groundwater point of compliance is established at or near a property boundary or if groundwater is closely connected hydrologically to a surface waterbody, the department will, if the department determines that sentinel monitoring is necessary to ensure protection of human health, safety, or welfare, or the environment, require a responsible person to develop sentinel monitoring wells that monitor for any hazardous substances likely to migrate to the applicable point of compliance at concentrations that exceed the cleanup levels.

(i) The department will require long-term monitoring if the department determines that monitoring is necessary to ensure protection of human health, safety, or welfare, or of the environment and if groundwater, surface water, soil, or sediment contains residual concentrations of a hazardous substance that exceed the applicable cleanup levels. If long-term monitoring is required under this subsection, a responsible person shall submit a plan and schedule for monitoring as part of the requirements for cleanup operations under 18 AAC 75.360. Unless otherwise approved by the department, a responsible person shall conduct monitoring quarterly for at least one year to establish the concentration trend. The department will evaluate the monitoring program yearly. If the monitoring indicates that the concentration trend

(1) is increasing, the department will require additional follow-up monitoring and assess the need for additional cleanup; or

(2) is stable or decreasing, and that hazardous substance migration is not occurring, the department will decrease or discontinue the monitoring frequency and locations, if the responsible person demonstrates that continued monitoring is not necessary to ensure protection of human health, safety, and welfare, and of the environment.

(j) The department will require groundwater, surface water, soil, or sediment monitoring to estimate contaminant flux rates and to address potential bioaccumulation of each hazardous substance at the site, if the department determines that monitoring is necessary to ensure protection of human health, safety, or welfare, or of the environment. If monitoring is required under this subsection, a responsible person shall submit a plan and schedule for monitoring as part of the cleanup operation requirements under 18 AAC 75.360.

(k) Groundwater monitoring wells must be installed, developed, and decommissioned in accordance with an approved method that is protective of human health, safety, and welfare, and of the environment.

(*l*) For a cleanup conducted under (b)(1) of this section, a chemical that is detected at one-tenth or more of the Table C value must be included when calculating cumulative risk under 18 AAC 75.325(g). (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 10/9/2008, Register 188; am 6/17/2015, Register 214; am 11/6/2016, Register 220; am 9/29/2018, Register 227)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.010
AS 46.03.710 AS 46.04.020 AS 46.09.020

Editor's note: *Standard Methods for the Examination of Water and Wastewater*, adopted by reference in 18 AAC 75.345, may be purchased from the American Water Works Association at http://www.awwa.org/store.aspx or by contacting the organization at service@awwa.org or (800) 926-7337. The document also may be viewed at the department's Anchorage, Fairbanks, Juneau, and Soldotna offices.

18 AAC 75.350. Groundwater use. Subject to 18 AAC 75.345(c), groundwater at the site is considered to be a drinking water source unless a responsible person demonstrates or the department determines that

(1) the groundwater is not

(A) used for a private or public drinking water system;

(B) within the zone of contribution of an active private or public drinking water system; or

(C) within a recharge area for a private or public drinking water well, a wellhead protection area, or a sole source aquifer;

(2) the groundwater is not a reasonably expected potential future source of drinking water, based on an evaluation of

(A) the availability of the groundwater as a drinking water source, including depth to groundwater, the storativity and transmissivity of the aquifer, the presence of permafrost, and other relevant information;

(B) actual or potential quality of the groundwater, including organic and inorganic substances, and as affected by background, saltwater intrusion, and known or existing areawide contamination;

(C) the existence and enforceability of institutional controls described in 18 AAC 75.375 or municipal ordinances or comprehensive plans that prohibit or limit access to the groundwater for use as drinking water;

(D) land use of the site and neighboring property, using the factors in EPA's *Land Use in the CERCLA Remedy Selection Process*, adopted by reference in 18 AAC 75.340;

(E) the need for a drinking water source and the availability of an alternative source; and

(F) whether the groundwater is exempt under 40 C.F.R. 146.4, revised as of July 1, 1997, and adopted by reference; and

(3) the groundwater affected by the hazardous substance will not be transported to groundwater that is a source of drinking water, or that is a reasonably expected potential future source of drinking water, in concentrations in the receiving groundwater that exceed the groundwater cleanup levels; in reviewing the demonstration required under this paragraph, the department will consider

(A) the areal extent of the affected groundwater;

(B) the distance to any existing or reasonably anticipated future water supply well;

(C) the likelihood of an aquifer connection due to well construction practices in the area where the site is located;

(D) the physical and chemical characteristics of the hazardous substance;

(E) the hydrogeological characteristics of the site;

(F) the presence of discontinuities in the affected geologic stratum at the site;

(G) the local climate;

(H) the degree of confidence in any predictive modeling performed; and

(I) other relevant information; the department will request additional information if the department determines that the information is necessary to protect human health, safety, or welfare, or the environment. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

18 AAC 75.355. Sampling and analysis. (a) Unless the department determines that final confirmation sampling is not needed to meet the requirements of the site cleanup rules, a responsible person shall submit a sampling and analysis plan for approval under 18 AAC 75.360, and after implementing the plan, shall submit the analytical sampling results collected to the department. If approved in the sampling and analysis plan, sample collection for soil or water may be performed by a qualified sampler when a qualified environmental professional is not available. Based on the results of the analyses, a responsible person shall demonstrate compliance with the site cleanup rules.

(b) A responsible person and the owner or operator of an offsite or portable treatment facility under 18 AAC 75.365 shall ensure that the collection, interpretation, and reporting of data, and the required sampling and analysis is conducted or supervised by a qualified environmental professional.

(c) If a hazardous substance is suspected at the site because of empirical evidence or prior analysis, but is not detected or is detected at a concentration below the limit of quantitation, and the limit of quantitation is higher than the cleanup level for that substance,

(1) the department will determine the responsible person to have attained the cleanup level if the limit of quantitation or limit of detection is equal to or no greater than the limit of quantitation or limit of detection achieved by a laboratory approved for that method by the department under 18 AAC 78.800 – 18 AAC 78.815; and

(A) repealed 9/29/2018; or

(B) repealed 9/29/2018;

(2) if the department determines that additional action is necessary to ensure protection of human health, safety, or welfare, or of the environment, the department will require one or more of the following:

(A) use of a surrogate measure to estimate the concentration of the hazardous substance;

(B) use of a specialized sample collection or analytical method to improve the accuracy, precision, limit of detection, or limit of quantitation for the hazardous substances at the site; or

(C) monitoring to ensure that the concentration of the hazardous substance does not exceed quantitatable levels; and

(3) and if the department determines that an improved analytical method or other responsive action is necessary to ensure protection of human health, safety, or welfare, or of the environment, the department will, before site closure and if the site is in a monitoring stage, periodically consider whether improved analytical methods should be used at the site and will require the use of an improved analytical method or other responsive action.

(d) Analysis for petroleum contamination must follow the applicable Alaska methods for petroleum hydrocarbons referred to in Table 1 of Chapter 2 of the *Underground Storage Tanks Procedures Manual*, dated March 22, 2017. Table 1 of Chapter 2 and Appendices C and D of the *Underground Storage Tanks Procedures Manual*, dated March 22, 2017 are adopted by reference.

(e) Laboratory analysis under the site cleanup rules must be performed by a laboratory approved by the department under 18 AAC 78.800 - 18 AAC 78.815. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 6/17/2015, Register 214; am 9/29/2018, Register 227)

Authority: AS 44.46.025 AS 46.03.710 AS 46.04.020
AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020

Editor's note. The document adopted by reference in 18 AAC 75.355 may be viewed at or obtained from the department's offices in Anchorage, Fairbanks, Juneau, and Soldotna, or the department's Internet website at http://dec.alaska.gov/spar/csp/guidance-forms.

18 AAC 75.360. Cleanup operation requirements. A responsible person shall ensure that site cleanup is conducted or supervised by a qualified environmental professional. A responsible person shall submit each of the following elements for approval before work on that element begins, and for additional approval if a modification to an element is anticipated:

(1) a schedule for conducting field work, monitoring, cleanup, and submittal of interim and final cleanup reports;

(2) a sampling and analysis plan that meets the requirements of 18 AAC 75.355;

(3) a waste management plan for handling, transporting and disposing of investigation-derived wastes, including

(A) purged water from a boring or monitoring well;

(B) cuttings, mud, and other wastes from well or boring installation and development; and

(C) contaminated equipment and materials;

(4) a cleanup plan that includes

(A) provisions for the cleanup of soil and groundwater contaminated at levels exceeding the applicable cleanup levels determined under the site cleanup rules;

(B) detailed specifications for each cleanup technique that the department has approved under 18 AAC 75.335(c) - (d);

(C) provisions for minimizing hazardous substance migration to previously unaffected areas;

(D) provisions for transporting contaminated soil as a covered load in compliance with 18 AAC 60.015; and

(E) provisions for the disposal of contaminated soil and groundwater, including the location and method of disposal;

(5) a list of chemical additives proposed for use and their potential effects on

(A) the hazardous substances at the site; and

(B) human health, safety, and welfare, and the environment;

(6) a site control plan, if necessary to protect human health, safety, or welfare, or the environment, including engineering measures, such as the installation of caps and liners, and provisions for restricting access, such as the use of fences, signs, or other barriers;

(7) a demonstration that site work and the cleanup action will comply with the air quality standards and requirements of 18 AAC 50;

(8) a plan for ensuring that contaminated soil does not come in contact with uncontaminated soil during the cleanup process, except under an approved cleanup plan under this subsection or an approved operations plan under 18 AAC 75.365;

(9) a nondomestic wastewater system plan under 18 AAC 72.600, if the cleanup operation requires construction, alteration, installation, modification, or operation of a nondomestic wastewater treatment works or disposal system; and

(10) the additional elements required under 18 AAC 75.365, as applicable;

(11) for ex-situ cleanup techniques,

(A) provisions for containment and handling of leachate, if leachate is produced;

(B) provisions for storing contaminated soil in compliance with the requirements of 18 AAC 75.370;

(C) if using a hot asphalt batch plant, written certification by a registered engineer that processes incorporating contaminated soils meet current industry standards for asphalt paving; and

(D) if combining contaminated soil with asphalt for the purpose of cold asphalt recycling;

(i) a pavement structure design study for incorporating the excavated material; the study must be certified by a registered engineer;

(ii) the leaching assessment or model proposed for use in determining hazardous substance migration; and

(iii) results of the approved hazardous substance leaching assessment or model, referenced under (ii) of this subparagraph; those results must demonstrate that hazardous substance concentrations in the soil will not migrate;

(E) if using bioremediation, a detailed description of

(i) cultured microbes, unless using an indigenous microbe population;

(ii) electron acceptor and nutrient source for microbes;

(iii) the expected rate of biodegradation;

(iv) intermediate and final breakdown products;

(v) type and amount of contamination;

(vi) any potential adverse effect on human health, safety, or welfare, or on the environment; and

(vii) other information requested by the department; the department will request additional information if it determines that the information is necessary to ensure protection of human health, safety, or welfare, or of the environment;

(F) if using solidification, a solidification report that includes

(i) a demonstration that hazardous substance concentrations in the solidified material will not migrate;

(ii) results of structural testing on the solidified material to demonstrate that the solidified material has an unconfined compressive strength of 2,000 psi or more after 28 days;

(iii) results of leachability testing of the solidified material; and

(iv) specifications for the ratio of the mass of contaminated soil to the mass of reagent;

(G) if using soil contaminated with petroleum hydrocarbons or metals as a base for a physical barrier,

(i) a demonstration that the contaminated soil that is used for the base will be blended with uncontaminated soil only if necessary to meet design specifications;

(ii) a physical barrier design study, certified by a registered engineer;

(iii) the leaching assessment or model proposed for use in determining hazardous substance migration;

(iv) results of the approved leaching assessment or model referenced under (iii) of this subparagraph; those results must demonstrate that hazardous substance concentrations in the soil will not migrate;

(v) a demonstration that the base for a physical barrier will use no more than 18 vertical inches of material containing contaminated soil;

(vi) a demonstration that the contaminated zone will be compacted to 95 percent or more of the maximum density as specified in American Society for Testing and Materials (ASTM) D 1557-07, *Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort*, updated November 2007 and adopted by reference or ASTM D 4253-00, *Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table*, updated March 2006 and adopted by reference;

(vii) a demonstration that the material containing contaminated soil will be placed in a zone directly beneath the final base course with at least 18 inches of impervious pavement extending beyond the horizontal limit of the material containing contaminated soil;

(viii) a demonstration that at least six feet will separate the seasonal high groundwater point from the lowest point of material containing contaminated soil; and

(ix) as-built drawings, certified by a registered engineer, that show the final location of material containing contaminated soil; and

(12) for in-situ cleanup techniques,

(A) a site monitoring plan showing proposed locations of monitoring wells;

(B) a hydrogeologic description of the site, including

(i) soil and sediments present;

(ii) stratigraphy;

(iii) aquifer characteristics, including groundwater gradient, confining layers, perched water, permeability, and aquifer transmissivity;

(iv) percolation rates from precipitation; and

(v) other relevant factors;

(C) results of hydrogeologic modeling performed to address capture zones, effects of hydraulic loading, and plume migration; and

(D) if using bioremediation, a demonstration of compliance with (11)(E) of this section. (Eff. 1/22/99, Register 149; am 10/9/2008, Register 188; am 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.020
AS 46.03.050 AS 46.03.745 AS 46.04.070
AS 46.03.710 AS 46.03.822 AS 46.09.020

Editor's note: The ASTM methods adopted by reference in 18 AAC 75.360 may be reviewed at the department's Anchorage, Fairbanks, Juneau, and Soldotna offices, and may be obtained from the ASTM International, Publications Department, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959; telephone (610) 832-9585; fax (610) 832-9555.

As of Register 204 (January 2013), the regulations attorney made a technical revision under AS 44.62.125(b)(6), to 18 AAC 75.360(4)

18 AAC 75.365. Offsite or portable treatment facilities. (a) A person who owns or operates an offsite or portable treatment facility shall

(1) obtain approval of an operations plan before that person accepts or treats contaminated soil; the department will approve the plan if the department determines that the operations proposed in the plan are protective of human health, safety, and welfare, and of the environment; a plan submitted under this paragraph must include

(A) a facility diagram that shows the location of

(i) each soil treatment, storage, and transportation area;

(ii) major roads within or bordering the site or facility; and

(iii) monitoring wells, surface water, water supply wells, facility boundaries, and public or private buildings within 500 feet of the facility boundary;

(B) a detailed process description, including a discussion of

(i) air, water, and solid waste process streams;

(ii) startup and shutdown procedures;

(iii) maximum process flow rate;

(iv) air pollution control equipment;

(v) water treatment systems;

(vi) the projected maximum time necessary for the treatment method to achieve soil cleanup levels for contaminated soil; and

(vii) a detailed description of any additive to be used;

(C) a post-treatment sampling and analysis plan prepared by a qualified environmental professional in accordance with 18 AAC 75.355(b) to verify that the applicable cleanup levels have been met;

(D) provisions for complete containment of the contaminated soil before, during, and after treatment until the contaminated soil meets the applicable cleanup levels; alternatively, if the treatment process, such as landfarming or landspreading, will not contain the contaminated soil, the person who owns or operates the offsite or portable treatment facility must demonstrate that there will be no uncontrolled leachate from the treatment area;

(E) for an offsite treatment facility classified as a Category C or Category D facility, as described in the department's *Operation Requirements for Soil Treatment Facilities*, dated March 15, 2013, engineering plans and engineering record drawings for contaminated soil and water containment structures; the *Operation Requirements for Soil Treatment Facilities*, dated March 15, 2013, is adopted by reference; and

(F) site monitoring procedures that will measure for secondary contamination at the treatment facility;

(2) if the facility is a Category C or Category D facility, as described in the *Operation Requirements for Soil Treatment Facilities*, adopted by reference in (1) of this subsection, submit the following to the department before the owner or operator accepts or treats contaminated soil:

(A) proof of a performance bond or other approved means of fiscal responsibility that will provide the department with a source of funds to clean up contaminated soils that have been received for treatment if the facility operator fails to treat the contaminated soils in accordance with this chapter; a performance bond must be executed by an insurance company licensed in the state and include a bond amount that will cover cleanup of the contaminated soils at the treatment facility; the bond shall be based on

(i) the quantity of contaminated soil allowed at the facility specified in the facility’s approved operation plan; and

(ii) the cost per ton for treating contaminated soil at that facility location; and

(B) proof of pollution liability insurance that will provide the department with a source of funds to clean up secondary contamination at the facility property that is caused by the soil treatment facility during soil treatment operations;

(3) perform confirmation sampling of treated soil in accordance with a sampling and analysis plan approved under this subsection to verify that applicable cleanup levels have been met;

(4) submit to the department an assessment of background contamination at the facility before initial startup of the treatment facility; and

(5) submit to the department within 90 days after terminating operation of the treatment facility, a closure assessment demonstrating that secondary contamination did not occur at the facility; if secondary contamination did occur at the facility, the owner or operator of the portable treatment facility shall perform a cleanup of the contamination by in-situ or ex-situ treatment within two years after terminating operation.

(b) If the owner or operator of an offsite or portable treatment facility fails to process soils to the department's satisfaction in accordance with the operations plan approved under (a)(1) of this section, the department will withdraw approval under (a)(1) of this section, and that owner or operator may not process or receive contaminated soil.

(c) For purposes of this section

(1) "engineering plans" means a set of plans approved and sealed by a registered engineer;

(2) "engineering record drawings" means the approved original plans prepared for construction and department approval under (a)(1) of this section, revised to reflect how the containment structure or system was constructed or installed, and sealed by a registered engineer;

(3) "facility" has the meaning given in AS 46.03.900; "facility" includes the land, structures, and equipment associated with treatment of contaminated soil;

(4) "offsite or portable treatment facility" has the meaning given in the *Operation Requirements for Soil Treatment Facilities*, adopted by reference in (a)(1) of this section;

(5) "owner or operator" has the meaning given to "owner" and "operator" in AS 46.03.826;

(6) "performance bond" means a written agreement between the owner or operator and the department guaranteeing performance of the obligations covered by the agreement;

(7) "registered engineer" means a professional engineer registered to practice in the state under AS 08.48. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 1/30/2003, Register 165; am 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

Editor's note: The department's *Operation Requirements for Soil Treatment Facilities,* adopted by reference in 18 AAC 75.365(a)(1), may be viewed at or obtained from the department's offices in Anchorage, Fairbanks, Juneau, and Soldotna, or the department's Internet website at http://dec.alaska.gov/spar/csp/guidance-forms.

18 AAC 75.370. Soil storage and disposal. (a) Unless the department approves the activity in question as protective of human health, safety, and welfare, and of the environment, a responsible person may not blend contaminated soil with uncontaminated soil and shall

(1) segregate contaminated soil based on

(A) the intended cleanup alternatives; and

(B) the specific hazardous substance present;

(2) store contaminated soil

(A) 100 feet or more from surface water, a private water system, or a fresh water supply system that uses groundwater for a use designated in 18 AAC 70.020(a)(1)(A) and 18 AAC 70.050(2); and

(B) 200 feet or more from a water source serving a community water system, a non-transient non-community water system, or a transient non-community water system, as defined in 18 AAC 80.1990;

(3) place contaminated soil on a liner or on or within another impermeable surface that prevents soil and groundwater beneath the liner from becoming contaminated;

(4) place petroleum-contaminated soil on a liner that meets the minimum specifications for the testing methods set out in Table D of this section;

TABLE D. BOTTOM LINER SPECIFICATIONS

Method	Coated Fabric	Extruded Fabric
Short-term storage of petroleum-contaminated soil (less than 180 days)		
Cold crack (ASTM D 2136-02(2012), updated 2012)	-60° Fahrenheit	-60° Fahrenheit
Black carbon content (ASTM D 1603-14, updated 2014)	two percent or greater	two percent or greater
Tensile strength (ASTM D 751-06(2011), updated 2011)	125 pounds (warp)	N/A
Mullen burst (ASTM D 751-06(2011), updated 2011)	250 pounds per square inch (psi)	N/A
One inch tensile strength (ASTM D 882-12, updated August 2012)	N/A	25 pounds (warp)
One inch elongation MD (machine direction)	N/A	550 percent
Nominal thickness	10 mil	10 mil
Oil resistance (ASTM D 471-12a, updated December 2012)	No signs of deterioration and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73° Fahrenheit	No signs of deterioration and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73° Fahrenheit
Long-term storage of petroleum-contaminated soil (180 days to two years)		
Cold crack (ASTM D 2136-02(2012), updated 2012)	-60° Fahrenheit	-60° Fahrenheit
Black carbon content (ASTM D 1603-12, updated May 2012)	two percent or greater	two percent or greater
Tensile strength (ASTM D 751-06(2011), updated 2011)	300 pounds (warp)	N/A
Mullen burst (ASTM D 751-06(2011), updated May 2011)	500 pounds per square inch (psi)	N/A
One inch tensile strength (ASTM D 882-12, updated August 2012)	N/A	45 pounds (warp)
One inch elongation MD (machine direction)	N/A	625 percent
Nominal thickness	20 mil	20 mil
Oil resistance (ASTM D 471-12a, updated December 2012)	No signs of deterioration and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73° Fahrenheit	No signs of deterioration and more than 80 percent retention of tensile and seam strength after immersion for 30 days at 73° Fahrenheit
The ASTM International methods referred to in this table are adopted by reference. "N/A" means not applicable.		

(5) place nonpetroleum contaminated soil on a liner compatible with the type of hazardous substance, and meet the general strength and thickness requirements of Table D;

(6) cover and protect the contaminated soil stockpile from weather with no less than a six-mil, reinforced polyethylene liner or its equivalent, with the edge of the cover lapped over the bottom liner to prevent water running through the soil; and

(7) inspect and maintain the contaminated soil stockpile regularly to ensure that the cover remains intact and that the soil and any liquid leachate derived from the soil is contained.

(b) A responsible person, owner, or operator shall obtain approval before moving or disposing of soil subject to the site cleanup rules. (Eff. 1/22/99, Register 149; am 8/27/2000, Register 155; am 10/9/2008, Register 188; am 6/17/2015, Register 214; am 11/6/2016, Register 220)

Authority: AS 46.03.020 AS 46.03.740 AS 46.04.070
AS 46.03.050 AS 46.03.745 AS 46.09.020
AS 46.03.710 AS 46.04.020

Editor's note: The ASTM International methods adopted by reference in Table D of 18 AAC 75.370(a) may be reviewed at the department's Anchorage, Fairbanks, Juneau, and Soldotna offices, or may be obtained from the ASTM International, Publications Department, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, Pennsylvania 19428-2959; telephone (610) 832-9585; fax (610) 832-9555 or www.astm.org.

As of Register 215 (October 2015), the regulations attorney made technical corrections under AS 44.62.125(b)(6), to 18 AAC 75.370(a), Table D.

18 AAC 75.375. Institutional controls. (a) The department will, after consultation with each landowner of the site, determine that the use of an institutional control is necessary, on a site-specific basis, if the department determines that controls are required to ensure

(1) compliance with an applicable cleanup level;

(2) protection of human health, safety, or welfare, or the environment; or

(3) the integrity of site cleanup activities or improvements.

(b) Institutional controls include

(1) the requirement for and maintenance of physical measures, such as fences and signs, to limit an activity that might interfere with cleanup or result in exposure to a hazardous substance at the site;

(2) the requirement for and maintenance of engineering measures, such as liners and caps, to limit exposure to a hazardous substance;

(3) restrictive covenants, easements, deed restrictions, or other measures that would be examined during a routine title search, and that limit site use or site conditions over time or provide notice of any residual contamination; and

(4) a zoning restriction or land use plan by a local government with land use authority.

(c) The use of institutional controls must, to the maximum extent practicable, be

(1) appurtenant to and run with the land so that the control is binding on each future owner of the site; and

(2) maintained by each responsible person or owner of the site.

(d) If the department determines any of the following are necessary to protect human health, safety, or welfare, or the environment, the department will require that institutional controls be designed to accomplish one or more of the following:

(1) prohibit activities on the site that might interfere with the site cleanup, operation and maintenance, monitoring, or other response actions;

(2) prohibit activities that might result in the release of a hazardous substance that was contained as a part of the site cleanup activities;

(3) require written notice to the department of any proposal to use the site in a manner that is inconsistent with a restrictive covenant or other measure described in (b)(3) of this section; and

(4) grant the department and its designated representatives the right to enter the property at reasonable times to evaluate compliance with the institutional control, including the right to take samples, inspect any cleanup actions taken at the site, and inspect records relating to the operation and maintenance of the institutional control.

(e) If the department determines that financial assurance is necessary to ensure protection of human health, safety, or welfare, or of the environment, the department will require a responsible person to provide financial assurance sufficient to cover costs of operation and maintenance, including compliance monitoring and corrective measures, for any institutional control.

(f) If the concentrations of all residual hazardous substances remaining at the site are subsequently determined to be below the levels that allow for unrestricted use, the department will approve elimination of the institutional control. (Eff. 1/22/99, Register 149; am 10/9/2008, Register 188)

Authority: AS 46.03.020 AS 46.03.050 AS 46.03.710 AS 46.03.740 AS 46.03.745 AS 46.04.020 AS 46.04.070 AS 46.04.110 AS 46.09.060 AS 46.09.070

18 AAC 75.380. Final reporting requirements and site closure. (a) A responsible person shall submit a written final cleanup report to the department for each site undergoing cleanup under the site cleanup rules. The report must be prepared by a qualified environmental professional.

(b) The written report required by (a) of this section must contain, as applicable,

(1) the date and time of the discharge or release;

(2) the location of the discharge or release, including latitude and longitude coordinates;

(3) the name and physical address of the site, facility, or operation;

(4) the name, mailing address, and telephone number of the owner and of the operator of the site, facility, or operation;

(5) the type and amount of each hazardous substance discharged or released;

(6) a description of environmental damage caused by the discharge, release, or containment, to the extent the damage can be identified;

(7) a demonstration that the free product was recovered in compliance with 18 AAC 75.325(f)(1)(B) and that provides, at a minimum, the following information:

(A) the estimated amount, type, and thickness of free product observed or measured in wells, boreholes, and excavations;

(B) the type of free product recovery system used;

(C) whether a discharge or release has occurred or will occur at the site or offsite during the recovery operation and where the discharge or release occurred or will occur;

(D) the type of treatment applied to, and the effluent quality resulting or expected from, any substance that has been discharged or released or will be discharged or released;

(E) whether a discharge or other permit was required under local, state, or federal law and if each required permit was obtained;

(F) the date, location, and method of disposal of the recovered free product, dissolved phase product, or contaminated soil; and

(G) whether free product remains at the site, and, if so, the estimated quantity;

(8) a summary of each applicable soil and groundwater cleanup level approved under the site cleanup rules and a description of the factors used in determining each applicable cleanup level;

(9) a description of cleanup actions taken, including

(A) a demonstration that cleanup was conducted in accordance with the elements, including modifications to the elements, approved under 18 AAC 75.360;

(B) sampling reports and a description of the soil and groundwater sampling protocol and sampling locations;

(C) a summary of the laboratory reports for the final verification samples collected at the site; the laboratory or a responsible person shall keep those reports and make them available to the department upon request for at least 10 years after submission of the summary to the department;

(D) a detailed explanation of what was done if a sample exceeded the applicable required cleanup level;

(E) a demonstration that contaminated soil and groundwater were stored, treated, and disposed of in an approved manner;

(F) an estimate of the extent of any remaining residual contamination, above and below the applicable cleanup levels;

(G) a demonstration that surface soil staining was evaluated and that a cleanup of that staining was performed;

(H) whether permits were required under local, state, or federal law and if each required permit was obtained;

(I) confirmation that any hazardous waste generated was stored, treated, or disposed of in compliance with 42 U.S.C. 6901 - 6992k (Solid Waste Disposal Act, as amended by Resource Conservation Recovery Act), as amended through January 6, 2003 and adopted by reference; and

(J) other information requested by the department, as the department determines necessary to ensure protection of human health, safety, or welfare, or of the environment;

(10) a demonstration of compliance with applicable institutional control requirements under 18 AAC 75.375.

(11) cumulative risk calculations.

(c) The department will determine final compliance with the

(1) applicable soil cleanup levels, based on sampling results from onsite contaminated soil and from contaminated soil moved offsite for treatment or disposal, calculated and presented on a per dry weight basis and based on the maximum concentrations detected, unless the department approves an appropriate statistical method, in which case compliance will be based on the mean soil concentration at the 95th percent upper confidence limit; approval of a statistical method will be based on

(A) the number and location of samples taken;

(B) whether large variations in hazardous substance concentrations relative to the mean concentration exist; and

(C) whether a large percentage of concentrations are below the method detection limit; and

(2) groundwater cleanup levels, based on an analysis of unfiltered groundwater samples unless a responsible person demonstrates that a filtered sample provides a more representative measure of groundwater quality; the department will determine compliance based on the maximum concentrations of a hazardous substance detected in the final confirmation samples; before closure, the size of the dissolved plume must be steady state or shrinking and concentrations of the hazardous substance must be decreasing.

(d) After reviewing the final cleanup report submitted under this section, if the department determines that

(1) a site has been adequately characterized under 18 AAC 75.335 and has achieved the applicable requirements under the site cleanup rules, the department will issue a written determination that the cleanup is complete, subject to a future department determination that the cleanup is not protective of human health, safety, or welfare, or of the environment; or

(2) the cleanup and applicable institutional controls are not protective of human health, safety, or welfare, or of the environment, the department will, as necessary to ensure protection of human health, safety, or welfare, or of the environment, require a responsible person to conduct additional actions that meet the requirements of the site cleanup rules. (Eff. 1/22/99, Register 149; am 10/9/2008, Register 188; am 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.050 AS 46.03.710 AS 46.03.740 AS 46.03.745 AS 46.03.755 AS 46.04.020 AS 46.04.070 AS 46.09.010 AS 46.09.020

18 AAC 75.385. Appeals. A person aggrieved by a final department decision 18 AAC 75.380 or a final department decision revoking an approval under the site cleanup rules may request informal review under 18 AAC 15.185 or may request an adjudicatory hearing under 18 AAC 15.195 - 18 AAC 15.340. (Eff. 1/22/99, Register 149; am 7/11/2002, Register 163; am 1/30/2003, Register 165; am 11/7/2017, Register 224)

Authority: AS 46.03.020 AS 46.35.090 AS 46.04.890

18 AAC 75.390. Waiver or modification. (a) Except as provided in (b) of this section, and if the department determines that a waiver or modification will be protective of human health, safety, and welfare, and of the environment, the department will waive or modify the site cleanup rules based on a review of the quantity or concentration of the discharge or release, soil and groundwater conditions, surface water and topography, geology, water and land use, construction methods and materials, and any other human health or environmental factor important to the evaluation. A responsible person seeking a waiver or modification of a provision of the site cleanup rules under this section shall submit a written report to justify the request and to demonstrate that the waiver or modification is protective of human health, safety, and welfare, and of the environment. A qualified environmental professional shall prepare and sign the report submitted under this section.

(b) For purposes of the site cleanup rules, the department will waive on a site-specific basis the requirement in 18 AAC 75.333(b)(1) that a qualified environmental professional be an impartial third party or the requirement in 18 AAC 75.333(c)(1) that a qualified sampler be an impartial third party if

(1) a responsible person, or if the waiver is for an offsite or portable treatment facility under 18 AAC 75.365, a responsible person, owner, or operator

(A) who seeks a waiver from 18 AAC 75.333(b)(1) demonstrates that work performed will be conducted or supervised by an objective individual who meets the requirements of 18 AAC 75.333(b)(2) - (5);

(B) who seeks a waiver from 18 AAC 75.333(c)(1) demonstrates that work performed will be conducted or supervised by an objective individual who meets the requirements of 18 AAC 75.333(c)(2) - (5); and

(C) submits

(i) a written request for a waiver;

(ii) the resume of the person qualified to conduct or supervise the work to be performed, showing relevant education, vocational training, related work experience, and any special training, license, certificate, or registration held by that person; and

(iii) a description of the supervisory and organizational structure related to the person identified in (ii) of this subparagraph; and

(2) the department determines that a waiver is protective of human health, safety, and welfare, and of the environment, and that strict compliance with the impartial third party requirement is not practicable. (Eff. 1/22/99, Register 149; am 6/17/2015, Register 214)

Authority: AS 46.03.020 AS 46.03.745 AS 46.09.010
AS 46.03.050 AS 46.03.755 AS 46.09.020
AS 46.03.710 AS 46.04.070

18 AAC 75.395. Interference with cleanup prohibited. A person may not interfere with, hinder, or obstruct the containment or cleanup of a hazardous substance conducted under this chapter. This prohibition does not apply to the United States Coast Guard or EPA. (Eff. 1/22/99, Register 149)

Authority: AS 46.03.020 AS 46.04.070 AS 46.09.020
AS 46.04.020

18 AAC 75.396. Local control. Subject to AS 29.35.020, AS 46.04.110, and AS 46.09.060, the requirements of 18 AAC 75.300 - 18 AAC 75.390 do not preempt local control that is as stringent as, or more stringent than, those requirements, and that is consistent with a regional master plan prepared under AS 46.04.210. (Eff. 1/22/99, Register 149)

Authority: AS 46.03.020 AS 46.04.210 AS 46.09.060
AS 46.04.110

Article 10. General Provisions.

Section

18 AAC 75.905. Falsification prohibited. No person may falsely state information submitted under AS 46.03, AS 46.04, 46.09, or this chapter. (Eff. 5/14/92, Register 122)

Authority: AS 46.03.020 AS 46.03.790 AS 46.04.070

18 AAC 75.910. Cost recovery. (a) In order to implement the provisions of AS 46.03.760(d), AS 46.03.822, AS 46.04.010 and AS 46.08.070, the department will complete and maintain documentation to support its response actions and to form the basis for cost recovery.

(b) Each person who is liable under AS 46.03.760, AS 46.03.822, AS 46.04.020, or AS 46.09.020 is liable for response costs that the department or this state incurs. Response costs are costs reasonably attributable to the site or incident and may include costs of direct activities, support costs of direct activities, and interest charges for delayed payments. Response costs include the costs of direct investigation, containment and cleanup, removal, and remedial actions associated with the incident or site undertaken by the department or its contractors, as well as the costs of oversight by the department of those activities involving the incident or site undertaken by a person other than the department. Response costs include legal costs incurred by the department concerning a site or incident, and include potential responsible party searches, obtaining site access, causal investigations, cleanup orders and agreements, cost recovery actions, and enforcement actions.

(c) The department will charge an hourly rate based on direct staff costs plus support costs. The department will on a fiscal year basis use the following formula for computing hourly personnel rates by job class:

(1) Hourly rate = DSC + DSC(AICR), where DSC means direct staff costs described in (2) of this subsection and AICR means the agency indirect cost rate described in (3) of this subsection;

(2) direct staff costs (DSC) are the average cost of hours worked per job class directly on an incident or site, including salaries, retirement plan benefits, health care benefits, and leave and holiday benefits required by law to be paid to, or on behalf of employees; direct staff costs do not include costs associated with responding to a public records request, preparing or reviewing invoices or answering questions pertaining to invoices, responding to governor, media, or legislative requests for information, responding to public inquiries concerning the site or incident with the exception of inquiries during a large response, internal or external training presentations or case studies, prospective purchaser agreements, policy or regulatory interpretation or discussion, or activities completed for training purposes;

(3) agency direct costs are the costs of facilities, communications, personnel, fiscal, and other statewide and agency-wide services that re not directly attributable to a project; the agency indirect cost rate (AICR) used is the agency indirect rate expressed as a percentage, approved by the United States Environmental Protection Agency acting as the department's federal cognizant agency, or by a successor federal cognizant agency, for each fiscal year.

(d) The department will assign a unique code to each incident or site for the purposes of tracking all state costs incurred. When the department requests payment of response costs, it will provide an itemized statement documenting the costs incurred. The department will bill a liable party for response costs on a periodic basis as costs are incurred.

(e) The department will charge interest on past due costs incurred as the result of a release or threatened release. Interest for costs incurred in a calendar year accrues at a rate equal to three percentage points above the 12th Federal Reserve District discount rate in effect on January 2 of the year in which the cost is incurred. Unless otherwise agreed by the department and the responsible party, interest begins to accrue on the date a cost is billed. The department may agree to waive interest if payment of the costs is made not later than 60 days after the billing date for the costs.

(f) A person receiving a cost recovery invoice may seek informal review of a disputed invoice by contacting the commissioner's designee not later than 30 days after receiving an invoice. Failure to pay invoices presented by the department may result in the department filing cost recovery liens under AS 46.08.075 and referring the matter to an attorney general for collection of response costs, interest, and legal costs.

(g) In consultation with the Department of Law, the department will consider a person's ability to pay response costs if payment of the costs would cause an undue financial hardship to the person. The department may allow for payment of response costs over time. The department may reduce the amount of response costs to be paid by a person by the amount that would create an undue financial hardship. In order to establish an undue financial hardship, the person must provide and authorize release of sufficient financial information to the department to clearly demonstrate that, in the determination of the department, payment of the response costs would deprive the person of ordinary and necessary assets or cause the person to be unable to pay for ordinary and necessary business expenses or ordinary and necessary living expenses. Under AS 40.25.120, the department will maintain non-public financial information as confidential to the extent the information qualifies as confidential business information, trade secrets, or confidential personal information.

(h) In this section, unless the context requires otherwise,

(1) "costs"

(A) means any money expended by the department in response to a release or threatened release of oil or a hazardous substance; in this subparagraph, "hazardous substance," "oil," and "release" have the meanings given in AS 46.03.826;

(B) includes the cost of response personnel, response equipment, necessary support services, additional supplies, overhead, contractors, travel-related expenses, oversight, administrative support, and legal services;

(2) "incident" means a release or discharge of oil or a hazardous substance from a facility or vessel or the substantial threat of a release or discharge of oil or a hazardous substance from a facility or vessel; in this paragraph, "facility," "hazardous substance," "oil," "release," and "vessel" have the meaning given in AS 46.03.826;

(3) "site" means a contaminated site or leaking underground storage tank site subject to the site cleanup rules under 18 AAC 75.325 – 18 AAC 75.390 or to site assessment and corrective action under 18 AAC 78. (Eff. 5/8/2016, Register 218)

Authority: AS 40.25.120 AS 46.03.826 AS 46.08.070
AS 46.03.020 AS 46.04.010 AS 46.08.075
AS 46.03.760 AS 46.04.020 AS 46.09.020
AS 46.03.822 AS 46.04.070

18 AAC 75.990. Definitions. Unless the context indicates otherwise, in this chapter

(1) "accumulation" means the action or process that causes or results in the gradual increase in the quantity, concentration, or type of hazardous substance over time;

(2) "approval" means written approval by the department;

(3) "approved" means approved in writing by the department;

(4) "Arctic zone" means areas north of latitude 68° North; and area south of that latitude will be considered an "Arctic zone" on a site-specific basis, based on a demonstration that the site is underlain by continuous permafrost;

(5) "area of public concern" means a geographic area that, in the department's judgment, deserves special protection from an oil discharge, including

(A) an area of unique cultural value, historical significance, or scenic importance;

(B) an area of substantial residential or public recreational value or opportunity;

(C) an area where fish hatcheries or other facilities primarily dependent upon the use of potentially affected water are located;

(D) an area significantly used for commercial, sport, or subsistence hunting, fishing, and gathering; and

(E) an area where concentrations of terrestrial or marine mammals or bird populations primarily dependent on the marine environment are located;

(6) "background concentration" means the concentration of a hazardous substance that is consistently present in the environment or in the vicinity of a site and that is naturally present or is the result of human activities unrelated to a discharge or release at the site;

(7) "barge" means oil barge;

(8) "barrel" has the meaning given in AS 46.04.900;

(9) "best available technology" means the best proven technology that satisfies the provisions of 18 AAC 75.425(e)(4) and 18 AAC 75.445(k);

(10) "bioremediation" means a remediation method that decreases the concentration of a hazardous substance in soil through biological action;

(11) "capacity" means storage capacity;

(12) "carcinogen" means

(A) a substance that is expected to cause cancer in nonhuman life; or

(B) for human health purposes, a substance that meets the criteria of the descriptors "Carcinogenic to Humans" or "Likely to be Carcinogenic to Humans according to EPA's *Guidelines for Carcinogen Risk Assessment*, EPA/630/P-03/001F (March 2005), adopted by reference;

(13) "carcinogenic" means of or relating to a carcinogen;

(14) "cargo volume" means storage capacity;

(15) "catastrophic oil discharge" has the meaning given in AS 46.04.900;

(16) "catch tank" means the container that collects well fluids, muds, and oil from drilling;

(17) "cleanup" means efforts to mitigate environmental damage or a threat to human health, safety, or welfare resulting from a hazardous substance , and includes removal of a hazardous substance from the environment, restoration, and other measures that are necessary to mitigate or avoid further threat to human health, safety, or welfare, or to the environment;

(18) "cleanup level" means the concentration of a hazardous substance that may be present within a specified medium and under specified exposure conditions without posing a threat to human health, safety, or welfare, or to the environment;

(19) "commercial or industrial land use" means a use of real property or a portion of a property for other than human habitation or a purpose with a similar potential for human exposure; "commercial or industrial land use" includes manufacturing; industrial research and development; utilities; dry cleaning facilities; commercial warehouse operations; lumber yards; retail gas stations; auto service stations; auto dealerships; equipment repair and service stations; professional offices, such as for lawyers, architects, or engineers; real estate or insurance offices; medical or dental offices and clinics; financial institutions; publicly-owned office buildings; a retail business where the principal activity is the sale of food or merchandise; personal service establishments, such as health clubs, barbershops, beauty salons, mortuaries, and photographic studios; churches; motels or hotels; and property restricted to commercial or industrial use by a legally enforceable zoning ordinance or specific deed restriction; for purposes of this paragraph,

(A) "medical and dental offices and clinics" does not include hospitals;

(B) "churches" does not include churches that provide day care or school services other than during normal worship services; and

(C) "motels and hotels" does not include motels or hotels that allow month-by-month residence;

(20) "contain" means to surround a discharge or release of a hazardous substance with booms, berms, dikes, or other barriers to prevent the further spread of the discharge or release;

(21) "contaminant" means a hazardous substance;

(22) "contaminated groundwater" means groundwater containing a concentration of a hazardous substance that exceeds the applicable cleanup level determined under the site cleanup rules;

(23) "contaminated soil" means soil containing a concentration of a hazardous substance that exceeds the applicable cleanup level determined under the site cleanup rules;

(24) "control" means to stop, restrict, or deflect the movement of a discharge;

(25) "cuttings" means rock chips or soil produced during the process of drilling a well or boring;

(26) "degradation" means a process by which a chemical is reduced to a less complex form;

(27) "demonstrate" means to prove through documentation or other evidence to the department's satisfaction;

(28) "demonstration" means proof through documentation or other evidence to the department's satisfaction;

(29) "department" means the Department of Environmental Conservation;

(30) "deposit" means to place, set down, or leave behind material;

(31) "deposition" means a placing, setting down, or leaving behind of material;

(32) "discharge" has the meaning given in AS 46.04.900, except that, as used in this chapter, "discharge" applies only to an unpermitted discharge into the environment;

(33) "dispersant" means a chemical agent used to enhance the breakup of discharged oil into droplets, promoting mixing of oil into the water column and accelerating dilution and degradation rates;

(34) "ecological receptor" means a

(A) member or local population of plant or animal species in the geographic area of the site; and

(B) habitat on or adjacent to the site;

(35) "environmentally sensitive area" means a geographic area that, in the department's determination, is especially sensitive to change or alteration, including

(A) an area of unique, scarce, fragile, or vulnerable natural habitat;

(B) an area of high natural productivity or essential habitat for living organisms;

(C) an area of unique geologic or topographic significance that is susceptible to a discharge;

(D) an area needed to protect, maintain, or replenish land or resources, including floodplains, aquifer recharge areas, beaches, and offshore sand deposits;

(E) a state or federal critical habitat, refuge, park, wilderness area, or other designated park, refuge, or preserve; and

(F) repealed 4/8/2012;

(36) "EPA" means the United States Environmental Protection Agency;

(37) "estuarine" means of or relating to an estuary;

(38) "estuary" means a semi-enclosed, waterbody with a free connection with the sea and within which seawater is measurably diluted with freshwater derived from land drainage;

(39) repealed 12/30/2006;

(40) "exploration facility" has the meaning given in AS 46.04.900;

(41) "ex-situ" means as applied to soil or groundwater moved from its original place, excavated, removed, or recovered from the ground;

(42) "facility" or "facility or operation" means any offshore or onshore structure, improvement, vessel, vehicle, land, enterprise, endeavor, or act; "facility" or "facility or operation" includes an oil terminal facility, tank vessel, oil barge, pipeline, railroad tank car, railroad, and an exploration or production facility;

(43) "free product" means a concentration of a hazardous substance that is present as a nonaqueous phase liquid; for purposes of this paragraph, a "nonaqueous phase liquid" is a liquid that is not dissolved in water;

(44) "freshwater wetlands" means environments characterized by rooted vegetation that is partially submerged either continuously or periodically by surface freshwater with less than .5 parts per thousand salt content and not exceeding three meters in depth;

(45) "fugitive dust" means particulate matter that has become airborne;

(46) "groundwater" means

(A) water in the zone of saturation; or

(B) water beneath the surface of the soil, for purposes of evaluating whether the water will act as a transport medium for hazardous substance migration;

(47) "hazard index" means the sum of the hazard quotients attributable to noncarcinogenic hazardous substances with similar critical endpoints;

(48) "hazardous substance" has the meaning given in AS 46.03.826;

(49) "hazardous waste" means waste within the scope of 18 AAC 62.020;

(50) "hazard quotient" means the ratio of the exposure point value to the reference dose for the hazardous substance;

(51) "impermeable" means using a layer of material that is of sufficient thickness, density, and composition to produce a maximum permeability for the substance being contained of 1×10^{-7} centimeters per second at the maximum anticipated hydrostatic pressure, and that is sufficient to contain a discharge or release until it is detected and cleaned up;

(52) "inside waters of Southeast Alaska" includes all those marine waters lying inside the boundary line established in 42 Federal Register 35791 (July 11, 1977);

(53) "in-situ" means as applied to soil or groundwater in its original place, unmoved, unexcavated, or remaining in the subsurface;

(54) "institutional control" means a measure taken to limit, prohibit, or protect against an activity that could

(A) interfere with the integrity of contaminated site cleanup activities or improvements designed to encapsulate or control residual contamination; or

(B) result in human or environmental exposure to a hazardous substance;

(55) "landfarming" means spreading contaminated soil in a thin layer on the surface of the ground so that biological activity can be enhanced by the addition of nutrients, mechanical aeration, the addition of water, adjustment of pH, and similar activities;

(56) "landspreading" means spreading contaminated soil in a thin layer on the surface of the ground, relying mainly on aeration and unenhanced biological action to perform remediation;

(57) "lightering" means the pumping or transferring of oil from the cargo compartment of a vessel, barge, storage tank, or container to a different vessel, barge, storage tank, or container;

(58) “liquefied petroleum gas” means natural gas converted to a liquid state by pressure and cooling, including butane, propane, and other light ends which at 70 degrees Fahrenheit and atmospheric pressure revert to the gaseous state;

(59) “local government” means any borough, city, town, village, or other political subdivision of the state or any Indian tribe or authorized tribal organization; "local government" includes any rural community or unincorporated town or village;

(60) “local population” means a group of plants, animals, or other organisms of the same species that live together and breed within a given habitat;

(61) “major discharge” means a discharge of oil

(A) over 10,000 gallons on inland waters;

(B) over 100,000 gallons on coastal waters; or

(C) in any amount that results in a release that

(i) might require evacuation or sheltering of nearby residents or businesses; or

(ii) causes a serious environmental threat;

(62) “marine waters” means all saltwater environments, including saltwater wetlands, estuaries, and the intertidal zone;

(63) “mean annual precipitation” means the measurement of average yearly rainfall and the water equivalent of snowfall; this measurement may be obtained from the nearest weather station;

(64) “mechanical response method” means the use of containment booms, skimmers, and other apparatus and equipment required for mechanical containment and removal of a discharge or release;

(65) “method detection limit” means the minimum concentration of an analyte that can be measured and reported with 99 percent confidence that the concentration is greater than zero, determined from an analysis of a sample in a given matrix containing the analyte;

(66) “mineral oil” means a highly-refined petroleum distillate used as an insulating and cooling media for electrical transformers and other electrical equipment;

(67) “mobility” means freedom of particles to move in random motion or under the influence of fields or forces;

(68) repealed 12/30/2006;

(69) “noncarcinogen” means a hazardous substance with adverse health effects on humans other than cancer;

(70) “noncarcinogenic” means of or relating to a noncarcinogen;

(71) “noncrude oil” means a petroleum product derived from crude oil;

(72) “oil” has the meaning given in AS 46.04.900;

(73) “oil barge” has the meaning given in AS 46.04.900;

(74) “oil spill primary response action contractor,” for purposes of 18 AAC 75.425 and 18 AAC 75.445, has the meaning given in 18 AAC 75.500(a).

(75) repealed 12/30/2006;

(76) “oil terminal facility” has the meaning given in AS 46.04.900 and includes vessels classified as oil terminal facilities under 18 AAC 75.280;

(77) “oily waste” means any material, including water, that has been contaminated by or mixed with petroleum in other than naturally occurring circumstances;

(78) “open burning” means the burning of any material so that the products of combustion are emitted directly into the ambient air without passing through a stack or flare;

(79) “open water” means marine waters below mean low low water and freshwaters of the state, excluding wetlands and the wetland or shoreline perimeter of lakes, rivers, and streams;

(80) “operator” has the meaning given in AS 46.04.900;

(81) “owner or operator” means the owner or operator of a facility or operation that is subject to the requirements of AS 46.04.030, 46.04.040, 46.04.055, or this chapter;

(82) “permafrost” means soil or other earth material with a temperature that remains below 32 degrees Fahrenheit for two or more years;

(83) “persistence” means the length of time that a compound, once introduced into the environment, remains in the environment in a similar function or structure;

(84) “persistent product” has the meaning give in AS 46.04.900;

(85) “person” has the meaning given in AS 46.04.900;

(86) “person in charge,” in addition to the person causing or permitting a discharge, includes

(A) for a vessel, the master;

(B) for a vehicle, the operator; and

(C) the owner or person exercising a possessory interest in the facility or operation at the time of the discharge or release, unless the possessory interest is being exercised solely for the purpose of providing a place of residence for the person;

(87) "physical barrier" means a concrete or asphalt surface that

(A) is impermeable to water;

(B) is designed, constructed, and placed in accordance with industry standards; and

(C) provides enough support thickness, layering, and life to prevent compromising the structural integrity of the material;

(88) "pipeline" has the meaning given in AS 46.04.900;

(89) "plan" means an oil discharge prevention and contingency plan approved under this chapter; this paragraph does not apply to 18 AAC 75.300 – 18 AAC 75.396;

(90) "plan holder" means an applicant who has received department approval for an oil discharge prevention and contingency plan or nontank vessel plan and who is responsible for compliance with the plan as approved;

(91) "plume" means a visible or measurable discharge or release of a hazardous substance from a given point of origin;

(92) "ppm" means parts per million;

(93) "practicable" means capable of being designed, constructed, and implemented in a reliable and cost-effective manner, taking into consideration existing technology, site location, and logistics in light of overall project purposes; "practicable" does not include an alternative if the incremental cost of the alternative is substantial and disproportionate to the incremental degree of protection provided by the alternative as compared to another lower cost alternative;

(94) repealed 9/29/2018;

(95) "Prince William Sound" includes all marine waters lying inside the boundary line established in 42 Federal Register 35791 (July 11, 1977);

(96) "Prince William Sound towing package" means a towing gear assembly that consists of

(A) 400 feet of 2-1/4 inch tow reaching wire;

(B) 720 feet of six-inch polypropylene floating pickup line;

(C) one floating pickup buoy; and

(D) a "D" shackle, 2-1/4 inches in diameter, with a 4-1/8 inch jaw opening, and a breaking strain of 55 tons, to connect the floating line to the tow reaching wire;

(97) "private drinking water system" has the meaning given "private water system" in 18 AAC 80.1990;

(98) "production facility" has the meaning given in AS 46.04.900;

(99) "public drinking water system" has the meaning given "public water system" in 18 AAC 80.1990;

(100) repealed 6/17/2015;

(101) "realistic maximum response operating limitation" means the upper limit of a combination of environmental factors that might occur at a facility or operation beyond which an operator would be unable to mount a mechanical response to a discharge event;

(102) "reference dose" means the concentration of a hazardous substance via daily exposure through a specified exposure route for the human population, including sensitive subpopulations, that is likely to be without an appreciable risk of deleterious noncarcinogenic effects over the period of exposure;

(103) "registered engineer" means a professional engineer who is registered under AS 08.48.171 - 08.48.265;

(104) "release" has the meaning given in AS 46.03.826;

(105) "residential land use" means the use of property for dwellings such as single-family homes, multi-family apartments, children's homes, and nursing homes; because of the similarity of exposure potential and the sensitive nature of the potentially exposed population, "residential land use" includes uses of property for day care facilities, educational facilities, hospitals, playgrounds, and similar facilities; "residential land use" includes property restricted to residential use by a legally enforceable zoning ordinance or specific deed restriction; vacant land that is not zoned or deed-restricted for commercial or industrial land use will be considered residential unless demonstrated otherwise;

(106) "resource agencies" means the Department of Environmental Conservation, the Department of Natural Resources, and the Department of Fish and Game;

(107) "response planning standard" means a planning standard against which the department evaluates the adequacy of an oil discharge prevention and contingency plan or nontank vessel plan as described in 18 AAC 75.400 - 18 AAC 75.496; a "response planning standard" does not mean a cleanup level that a plan holder is required to achieve under 18 AAC 75.300 - 18 AAC 75.396;

(108) "responsible person" means a person who is required under AS 46.04.020 or AS 46.09.020 to contain or perform a cleanup of a discharge or release of a hazardous substance;

(109) "risk assessment" mean a determination of potential health effects including effects of contaminant exposure through inhalation, ingestion, dermal absorption, and other means, and the assessment of risk to human health and the environment from contaminants remaining in the land, air or water as a result of a release;

(110) "saltwater wetlands" means coastal areas along sheltered shorelines characterized by halophytic hydrophytes and macroalgae extending from extreme low tide to an area above extreme high tide that is influenced by sea spray or tidally induced water table changes;

(111) repealed 6/17/2015;

(112) "sensitive gauging system" means the best demonstrated available gauging technology at the time of tank construction or substantial reconstruction, or initial gauging system installation;

(113) repealed 12/30/2006;

(114) "significant change" means

(A) a change in operational readiness or removal from designated storage of significant equipment or materials;

(B) a management or ownership change resulting in new chain-of-command or lead response personnel;

(C) a change in response contractors;

(D) a change in spill control or cleanup strategies; or

(E) any factor that significantly alters or reduces the ability of the plan holder to respond according to the provisions of the approved contingency plan or nontank vessel plan;

(115) "site" means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership;

(116) "site cleanup rules" means the provisions of 18 AAC 75.325 - 18 AAC 75.390;

(117) "soil" means an unconsolidated geologic material, including clay, loam, loess, silt, sand, gravel, tills, or a combination of these materials;

(118) "sole source aquifer" means an aquifer that is needed to supply 50 percent or more of the drinking water for that area for which there are no reasonably available alternative sources if the aquifer becomes contaminated;

(119) "solidification" means the mixing of an additive into contaminated soil to immobilize the hazardous substances in the soil;

(120) "state waters" means waters of the state;

(121) "storage capacity" means,

(A) for a tank vessel or oil barge, either

(i) the maximum amount of oil that the vessel can legally carry as cargo while in state waters;

(ii) the amount certified by the American Bureau of Shipping, by the United States Coast Guard under a Certificate of Inspection, or by an equivalent society or agency in a foreign country; or

(iii) a lesser amount than the amount in (i) or (ii) of this subparagraph, upon proof and verification to the department's satisfaction;

(B) for an oil storage tank, the full physical volume of the tank;

(C) for a facility, the full physical volume of the oil storage tanks with storage capacities of 1,000 gallons and greater and the piping at that facility;

(D) for a nontank vessel, the full physical volume of all fuel tanks, lube oil tanks, hydraulic oil tanks, day tanks, slop/sludge tanks, waste oil tanks, and bilge tanks on the vessel; and

(E) for a train, the totally physical volume of all railroad tank cars in the train;

(F) for piping, the full physical volume of the piping;

(122) "storativity" means the volume of water that a permeable aquifer unit will absorb or expel from storage per unit surface area per unit change in head;

(123) "subsurface soil" means soil that is more than two feet below the surface;

(124) "sufficiently impermeable" means, for a secondary containment system, that its design and construction has the impermeability necessary to protect groundwater from contamination and to contain a discharge or release until it can be detected and cleaned up; for design purposes for tanks constructed after May 1992, "sufficiently impermeable" means using a layer of natural or manufactured material of sufficient thickness, density, and composition to produce a maximum permeability for the substance being contained of 1×10^{-6} cm per second at a maximum anticipated hydrostatic pressure, unless the department determines that an alternate design standard protects groundwater from contamination and contains a discharge or release until detection and cleanup;

(125) "supervise" means to

(A) take direct responsibility for preparing reports or making interpretations regarding field data;

(B) exercise onsite control over all work that requires assessment, investigation, characterization, reporting, or interpretation, including

(i) selection of the number, location, or depth of sample points in soil, groundwater, surface water, or stockpiles;

(ii) location, placement, or supervision of construction or completion of monitoring or remediation wells;

(iii) description of site characteristics, soil characteristics, or geological characteristics in field notes that will be used in the report submitted by a responsible person;

(iv) duties required to be performed under the site cleanup rules other than those strictly limited to the physical act of sample collection and transport; and

(v) collection of final verification samples; and

(C) exercise onsite or offsite control over routine tasks associated with the physical act of sample collection and transportation;

(126) "surety" includes a surety bond;

(127) "surface soil" means soil that extends no more than two feet below the surface;

(128) "surface water" means waters of the state naturally open to the atmosphere, including rivers, lakes, reservoirs, streams, impoundments, and seas;

(129) "tank vessel" has the meaning given in AS 46.04.900;

(130) "technology" means equipment, supplies, other resources, and related practices;

(131) "total xylene isomers" means the sum of ortho-xylene, meta-xylene, and para-xylene concentrations;

(132) "toxicity index" means the number equal to the sum of the toxicity quotient numbers attributable to systemic toxic effects with similar critical endpoints for similarly responding ecological species;

(133) "toxicity quotient" means the ratio of the exposure point value to the ecological benchmark value;

(134) "transmission pipeline" means a pipeline through which crude oil moves in transportation, including line pipe, valves, and other appurtenances connected to line pipe, pumping units, and fabricated assemblies associated with pumping units; "transmission pipeline" does not include gathering lines, flow lines, or facility oil piping;

(135) "transmissivity" means the rate at which water is transmitted through a unit width of an aquifer or confining bed under a hydraulic gradient of one;

(136) "ultimate disposal" means disposal into or upon the waters or the surface or subsurface land of the state;

(137) "vessel" has the meaning given in AS 46.04.900; and

(138) "volatile organic" means an organic (carbon-containing) compound that evaporates or volatilizes readily at room temperature; in addition, for the purposes of 18 AAC 75.340 and 18 AAC 75.341, volatile organics are compounds that have a Henry's Law constant, unitless, greater than 0.0001, that are liquids at soil temperatures, and that have a molecular weight of less than 200;

(139) "waters of the state" has the meaning given in AS 46.04.900;

(140) "wellhead protection area" means a three dimensional land surface and subsurface zone surrounding a water supply well or wellfield that encompasses the volume of materials through which water will move to the well;

(141) "nonpersistent product" has the meaning given in AS 46.04.900;

(142) "nontank vessel" has the meaning given in AS 46.04.900; as used in the definition of "nontank vessel" in AS 46.04.900, "gross registered tons" means "applicable gross tons" or "gross tonnage" as determined by the United States Coast Guard under 33 C.F.R. 138.30

(143) "P&I club" means a protection and indemnity association;

(144) "railroad tank car" has the meaning given in AS 46.04.900;

(145) "train" has the meaning given in AS 46.04.900;

(146) "working day" means a day other than Saturday, Sunday, or a state holiday;

(147) repealed 4/8/2012;

(148) repealed 3/23/2017;

(149) "incident command system" means the incident management organization described in the National Interagency Incident Management System Incident Command System;

(150) "incident management team services" means those services described in the National Interagency Incident Management System Incident Command System;

(151) "National Interagency Incident Management System Incident Command System" means the command system followed by the National Interagency Incident Management System, as modified for oil spills, and set out in the

(A) United States Department of Homeland Security, United States Coast Guard's *Incident Management Handbook*, COMDTPUB P3120.17A, as revised as of August 2006 and adopted by reference; and

(B) *Alaska Incident Management System Guide for Oil and Hazardous Substance Response*, Revision 1 as revised as of November 2002 and adopted by reference;

(152) "nontank vessel cleanup contractor" means an oil spill primary response action contractor who is, or intends to be, obligated under contract or membership agreement to provide resources or equipment to contain, control, and perform cleanup of an oil discharge under an approved nontank vessel plan issued under AS 46.04.055;

(153) "nontank vessel incident management team" means an oil spill primary response action contractor who is, or intends to be, obligated under contract to provide incident management services under an approved nontank vessel plan issued under AS 46.04.055;

(154) "nontank vessel plan" means an oil discharge prevention and contingency plan covering a nontank vessel;

(155) "qualified individual"

(A) means an individual with the qualifications, duties, and authority of a qualified individual under 33 C.F.R. 155.1026; the provisions of 33 C.F.R. 155.1026, as revised as of July 1, 2001, are adopted by reference; and

(B) does not mean a

(i) qualified environmental professional described in 18 AAC 75.333(b) or

(ii) qualified sampler described in 18 AAC 75.333(c);

(156) "region of operation" means, with respect to

(A) an oil discharge prevention and contingency plan other than a nontank vessel plan, a region established under 18 AAC 75.495; and

(B) a nontank vessel plan, a region established under 18 AAC 75.496;

(157) "regional citizens' advisory council" means an entity established under 33 U.S.C. 2732(d);

(158) "response planning facilitator" means an oil spill primary response action contractor who provides services as described in 18 AAC 75.428 to the holder of an approved nontank vessel plan issued under AS 46.04.055;

(159) "streamlined plan" means a nontank vessel plan submitted under 18 AAC 75.421 and meeting the requirements of 18 AAC 75.426 and 18 AAC 75.456, as applicable;

(160) repealed 3/23/2017;

(161) "railroad" means a non-highway ground transportation system that runs on rails and transports railroad tank cars; "railroad" includes trains, locomotives, railroad tank cars, rolling stock, railroad tracks, and associated facilities and operations;

(162) "annual average daily oil production volume" means the average oil production volume from a common reservoir to a common production facility based on the highest annual volume produced by a well at the facility during the previous calendar year divided by the number of days in the year, expressed as barrels per day;

(163) "blowout contingency plan" means a written, site-specific description of the procedures, methods, equipment, personnel, logistics, and activities that will be employed to regain control of an uncontrolled flow of oil, gas, drilling mud, and other substances from an exploration or production well;

(164) "subarea contingency plan" means a regional master oil and hazardous substance discharge prevention and contingency plan approved under AS 46.04.210.

(165) “aboveground oil storage tank,” for the purposes of 18 AAC 75.065, 18 AAC 75.066, and 18 AAC 75.075, means a container, including a storage and surge tank, that is used to store bulk quantities of oil and that has a capacity of greater than 10,000 gallons; “aboveground oil storage tank” does not include a process pressure vessel or underground storage tank within the meaning of AS 46.03.450;

(166) “allision” means when a vessel comes into contact with a fixed object, including piers, rocks, platforms or other objects, whether manmade or naturally occurring, with sufficient force to incur damage to the vessel;

(167) “cathodic protection” means a technique to prevent corrosion of a metal surface by making that surface the cathode of an electrochemical cell through the application of either galvanic anodes or impressed current;

(168) “corrosion” means the deterioration of metal from the loss of positively charged metal ions from the metal surface into an electrolyte;

(169) “corrosion expert” means a person who

(A) by reason of thorough knowledge of the physical sciences and the principles of engineering and mathematics acquired through professional education and related practical experience, is qualified to engage in the practice of corrosion control on buried metal piping and metal tanks, and

(B) is accredited or certified as being qualified by NACE International as a corrosion specialist, cathodic protection specialist, or is a registered engineer with education and experience in corrosion control of buried metal piping systems and metal tanks;

(170) “double-walled shop-fabricated aboveground oil storage tank” means a shop-fabricated aboveground oil storage tank with a surrounding containment tank fully enclosing a sealed interstitial space of a capacity less than 100 percent of the storage tank capacity and preventing visual inspection of the inner tank;

(171) "facility oil piping" means piping and associated fittings, including all valves, elbows, joints, flanges, pumps, and flexible connectors, originating from or terminating at

(A) an aboveground oil storage tank regulated under 18 AAC 75.065 or 18 AAC 75.066 up to the:

(i) union of the piping with a fuel dispensing system;

(ii) marine header;

(iii) fill cap or fill valve;

(iv) forwarding pump used to transfer oil between facilities, between adjacent pump stations, or between a pressure pump station and a terminal or breakout tank; or

(v) first flange or connection within a tank truck loading, loading rack containment area; or

(B) an exploration or production well, up to the:

(i) choke or valve interconnection with a flowline: or

(ii) first valve or flange inside a processing unit boundary**;**

(172) "field-constructed aboveground oil storage tank" means a welded metal aboveground oil storage tank erected on site where it will be placed in service;

(173) "flowline" means

(A) piping and associated fittings, including all valves, elbows, joints, flanges, pumps and flexible connectors,

(i) containing liquid oil;

(ii) located at a production facility; and

(iii) that is installed or used for the purpose of transporting oil between a well pad or marine structure used for oil production and the interconnection point with a transmission pipeline; and

(B) includes all piping between interconnections, including multi-phase lines and process piping, except

(i) facility oil piping; and

(ii) transmission pipelines;

(174) "installation" means an aboveground oil storage and surge tanks and associated operational appurtenances, including secondary containment systems, integral piping, overfill protection devices, and associated leak detection equipment;

(175) "marine structure"

(A) means an assembly that is

(i) permanently or temporarily attached to the seabed;

(ii) used by an exploration or production facility:

(B) includes mobile offshore drilling units, prefabricated offshore platforms, and artificial islands;

(176) "permanent unloading areas" means unloading areas routinely used for transfer operations; "permanent unloading areas" does not include areas used for short-term emergency response, seasonal usage, or short-term temporary usage to meet unusual operational demands:

(177) "pipe" or "piping" means any hollow cylinder or tube used to convey oil;

(178) "placed in service" means commencement of operational use, either after initial construction or installation or

(A) for field-constructed aboveground oil storage tanks, after the date of return to service after reconstruction as defined by American Petroleum Institute's (API) *Tank Inspection, Repair, Alteration, and Reconstruction*, 3rd Edition, December 2001, and Addendum 1, September 2003, (API 653) adopted by reference, or after the date of return to service after being removed from service in accordance with 18 AAC 75.065(o); or

(B) for facility oil piping, after the date of return to service after being removed from service in accordance with 18 AAC 75.080(o); or

(C) for flow lines, after the date of return to service after being removed from service in accordance with 18 AAC 75.047(f).

(179) "qualified cathodic protection tester" means a person who is accredited or certified as being qualified as, at a minimum, CP1-CP Tester by NACE international.

(180) "self-diked aboveground oil storage tank" mean a shop-fabricated aboveground oil storage tank with integral secondary containment of a minimum capacity of at least 100 percent of the capacity of the tank.

(181) "shop-fabricated aboveground oil storage tank" means an oil storage tank that is constructed at a tank manufacturer's plant and transported to a facility for installation.

(182) "vaulted shop-fabricated aboveground oil storage tank" means a shop-fabricated aboveground oil storage tank that is placed within a discrete secondary containment vault system at or below grade.

(183) "DRO" or "diesel range organics" means mid-range petroleum products, including diesel fuel, with petroleum hydrocarbon compounds corresponding to an alkane range from the beginning of n-decane (C_{10}) to the beginning of n-pentacosane (C_{25}) and with a boiling point range between approximately 170 – 400 degrees Celsius;

(184) "GRO" or "gasoline range organics" means light range petroleum products; including gasoline, with petroleum hydrocarbon compounds corresponding to the alkane range from the beginning of n-hexane (C_6) to the beginning of n-decane (C_{10}) and with a boiling point range between approximately 60 – 170 degrees Celsius;

(185) "PCBs" means polychlorinated biphenyls;

(186) "RRO" or "residual range organics" means heavy range petroleum products, including lubricating oils, with petroleum hydrocarbon compounds corresponding to an alkane range from the beginning of n-pentacosane (C_{25}) to the beginning of n-hextriacontaine (C_{36}) and a boiling point range between approximately 400 – 500 degrees Celsius;

(187) "qualified environmental professional" means an individual described in 18 AAC 75.333(b);

(188) "qualified sampler" means an individual described in 18 AAC 75.333(c);

(189) "zone of saturation" means the zone

(A) that is below the water table; and

(B) where permanently or seasonally all interstices are filled with water.

(190) "application package" means the documents required by 18 AAC 75.408(a)(1) – (3) to be included in the application submittal;

(191) "application package is complete" means that the applicant has provided the information necessary for the department to review and evaluate the plan using the criteria established under 18 AAC 75.445 for oil discharge prevention and contingency plans;

(192) "major amendment" means a proposed change to a plan that the department has determined will be reviewed under 18 AAC 75.455 after considering the factors under 18 AAC 75.415(a);

(193) "minor amendment" means a proposed change to a plan that the department has determined will not be reviewed under 18 AAC 75.455 after considering the factors under 18 AAC 75.415(a) and that is not a routine plan update under 18 AAC 75.415(b);

(194) "request for additional information" means a request for an applicant by the department for additional information necessary for an application package to be complete;

(195) "sufficient for review" means that the application package contains the information necessary to begin the public review of the plan including the information identified in

(A) 18 AAC 75.408;

(B) 18 AAC 75.425(e)(1) – (5) for oil discharge prevention and contingency plans; and

(C) supporting documentation as requested by the department.

(196) "mutagen" means a hazardous substance capable of inducing change to genetic material;

(197) "mutagenic" means of or relating to a mutagen;

(198) "sensitive subpopulation" means a group of individuals that is at increased risk of some adverse health even or outcome after exposure to a contaminant.

(199) "limit of detection" is the smallest concentration of a substance that must be present in a sample in order to be detected at the detection limit with 99% confidence.

(200) "limit of quantitation"

(A) means the smallest concentration that produces a quantitative result with known and recorded precision and bias; and

(B) is set at or above the concentration of the lowest initial calibration standard and within the calibration range. (Eff. 5/14/92, Register 122; am 9/25/93, Register 127; am 4/4/97, Register 142; am 4/11/97, Register 142; am 1/22/99, Register 149; am 8/27/2000, Register 155; am 10/28/2000, Register 156; am 11/27/2002, Register 164; am 12/14/2002, Register 164; am 1/30/2003, Register 165; am 8/8/2003, Register 167; am 5/26/2004, Register 170; am 12/30/2006, Register 180; am 10/9/2008, Register 188; am 4/8/2012, Register 202; am 9/4/2014, Register 211; am 6/17/2015, Register 214; am 4/16/2016, Register 218; am 11/6/2016, Register 220; 3/23/2017, Register 221; am 7/1/2017, Register 222; am 9/29/2018, Register 227)

Authority:

AS 46.03.020	AS 46.03.755	AS 46.04.055
AS 46.03.050	AS 46.03.822	AS 46.04.070
AS 46.03.710	AS 46.04.020	AS 46.08.140
AS 46.03.740	AS 46.04.030	AS 46.09.010
AS 46.03.745	AS 46.04.035	AS 46.09.020

Editor's Note: The publications adopted by reference in 18 AAC 75.990 may be reviewed at the department's offices in Anchorage, Fairbanks, or Juneau, or may be obtained directly from the appropriate publisher. The mailing address, telephone number, facsimile number, and website, if available, for each publisher are as follows: American Petroleum Institute (API), 1220 L Street NW, Washington, DC 20005-4070; telephone (202) 682-8000; fax (303) 397-2740; website: http://www.api.org.