

1301:7-9-16 PETROLEUM CONTAMINATED SOILS.

(A) Purpose and scope.

For the purpose of prescribing rules pursuant to divisions (A)(2) and (E) of section 3737.88 of the Revised Code, the fire marshal hereby adopts this rule governing the storage, treatment, and disposal of petroleum contaminated soils arising from a release or suspected release from underground storage tanks containing petroleum. This rule is adopted by the fire marshal in accordance with Chapter 119. of the Revised Code and shall not be considered a part of the "Ohio State Fire Code." The following petroleum UST systems are exempted from this rule:

- (1) Any UST system holding hazardous wastes listed or identified under Chapter 3745-51 of the Administrative Code, or a mixture of such hazardous waste and petroleum;
- (2) Any wastewater treatment tank system that is part of a wastewater treatment facility regulated under section 402 or 307(B) of the Federal Water Pollution Control Act (33 U.S.C.A. 1251 and following);
- (3) Equipment or machinery that contains petroleum for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- (4) Any petroleum UST system whose capacity is one hundred ten gallons or less;
- (5) Any UST system that contains a *de minimis* concentration of petroleum;
- (6) Any emergency spill or overflow containment UST system used for petroleum products that is expeditiously emptied after use.

(B) Definitions.

For purposes of this rule:

- (1) "Confined treatment area or process" is where petroleum contaminated soils are treated above ground within a discrete, confined area (that may or may not be covered), and petroleum constituents are intended to be reduced or removed through use of biological degradation, chemical reaction, physical removal, or any combination thereof.
- (2) "Designated facility" means an area of land not open to the public that is owned by, or under lease or contract to, the owner or operator of a UST system that is used by said owner or operator to store or treat petroleum contaminated soils generated at one or more of its UST sites.
- (3) "Disposal" means to abandon or discard.

- (4) "Excavated soils" mean soils removed from the surface or subsurface in conjunction with a suspected release as that term is defined in paragraphs (C)(33) to (C)(33)(c) of rule 1301:7-9-13 of the Administrative Code; in conjunction with a release as that term is defined in paragraphs (C)(25) to (C)(25)(c) of rule 1301:7-9-13 of the Administrative Code; or in conjunction with the permanent abandonment, permanent removal, or replacement of a UST system pursuant to rule 1301:7-9-12 of the Administrative Code.
- (5) "Hazardous waste" has the same meaning as set forth in Chapter 3745-51 of the Administrative Code.
- (6) "Land treatment" is where petroleum contaminated soils are tilled into the top layer of uncontaminated soils that have a minimum natural organic content or organic content enhanced by additives to facilitate microbiological activity.
- (7) "Licensed disposal facility" means a facility that has obtained such permits or licenses as this or another state may require to accept materials for permanent burial or destruction, including petroleum contaminated soils.
- (8) "Off-site" means not "on-site".
- (9) "On-site" means located on the same parcel of land as the UST system that generated petroleum contaminated soils or any parcel of land contiguous thereto that is owned or under the control of the owner or operator of said UST system. Property separated by a public or private right of way or easement shall be considered contiguous.
- (10) "Petroleum contaminated soils" mean soils that contain petroleum in concentrations that exceed one or more of the chemical of concern concentrations listed for soils in the table found in paragraph (D)(1) of this rule.
- (11) **APPM@** means part per million.
- (12) "Re-use" means to use a material for:
 - (a) The same purpose for which it was used originally;
 - (b) A different purpose for which the generator of the material receives compensation upon transfer to another party; or
 - (c) Another purpose having commercial value to the generator or a recipient of the material.

- (13) "Soils" mean solid and semi-solid earthen materials or backfill consisting of sand, dirt, rocks, stones, or gravel and any debris contained therein at the time of excavation.
- (14) "Storage" means to accumulate, collect, or stockpile excavated soils or petroleum contaminated soils on-site or off-site.
- (15) "Treatment" means use of any method, process, or technique other than storage or disposal designed to remove or reduce one or more constituent(s) from petroleum contaminated soils.
- (16) "Treatment season" means the period of each year between April first and October thirty-first.
- (17) "Treatment zone" means the area upon or within which petroleum contaminated soils have been placed for purposes of treatment.

(C) Characterization, sampling, and analysis.

- (1) Characterization of excavated soils.
 - (a) Upon excavation of soils, the owner or operator shall determine whether the excavated soils are hazardous wastes. Excavated soils that are hazardous wastes shall be managed in accordance with the applicable provisions of Chapters 3745-52 through 3745-69 of the Administrative Code rather than Chapter 1301:7-9 of the Administrative Code.
- (2) Sampling and analysis of excavated soils.
 - (a) Except as provided in paragraph (C)(2)(b) of this rule, excavated soils shall be sampled within forty-eight hours of completion of excavation. Sampling shall be conducted in accordance with the procedures set forth in rule 1301:7-9-17 of the Administrative Code.
 - (b) Excavated soils that are not stored on-site but are shipped directly to a licensed disposal facility following excavation shall be sampled prior to shipment to the extent required by the licensed disposal facility receiving the soils. Samples collected prior to shipment shall be analyzed for the parameters specified by and in accordance with the procedures required by the receiving licensed disposal facility. Persons arranging for off-site transport and transporters of excavated soils that qualify as "hazardous materials" also must comply with Federal Hazardous Material Transportation Rules, 49 C.F.R. Parts 171-179. Prior to shipment, additional analyses may be necessary to determine whether excavated soils are "hazardous materials".

(D) Re-use of excavated soils.

- (1) If excavated soils sampled and analyzed in accordance with the applicable paragraph of paragraphs (C) to (C)(2)(b) of this rule do not exceed the following action levels for any chemical(s) of concern, the excavated soils may be used for any lawful purpose as the owner or operator may decide. This paragraph shall not be interpreted as authorizing use of such soils for purposes prohibited or otherwise restricted by any applicable federal, state, or local laws and regulations.

Chemical of Concern	Action Level
Benzene	.015 PPM
Toluene	5.86 PPM
Ethyl-Benzene	7.11 PPM
Total Xylenes	72.4 PPM
Methyl Tertiary Butyl Ether (MTBE)	.053 PPM
Benz (A) - anthracene	5.50 PPM
Benzo (A) - pyrene	.550 PPM
Benzo (B) - fluoranthene	5.50 PPM
Benzo (K) - fluoranthene	1.97* PPM
Chrysene	1.27* PPM
Dibenz (A, H) - anthracene	.550 PPM
Indeno (1, 2, 3 - CD) pyrene	.150* PPM
Naphthalene	127* PPM

*These values are calculated saturation values in sand/gravel soil.

- (2) If excavated soils sampled in accordance with the applicable paragraph of paragraphs (C) to (C)(2)(b) of this rule do not exceed the site-specific action levels calculated pursuant to rule 1301:7-9-13 of the Administrative Code, the excavated soils may be deposited in the original excavation without further treatment. Following deposit, the soils shall be covered with a minimum of one foot of clean fill.

- (3) After written notice to the fire marshal, excavated soils that exceed the site specific action levels calculated pursuant to rule 1301:7-9-13 of the Administrative Code may be deposited in the original excavation for the purpose of remediation in accordance with the corrective action requirements of rule 1301:7-9-13 of the Administrative Code.
- (4) Soils at a UST site that exceed the site-specific action levels calculated pursuant to rule 1301:7-9-13 of the Administrative Code but are not excavated may be remediated in place in accordance with the corrective action requirements of rule 1301:7-9-13 of the Administrative Code.
- (5) The bureau chief may approve the re-use of excavated soils in lieu of or in conjunction with, the treatment requirements of this rule on a case-by-case basis where such re-use will provide a benefit to the citizens of Ohio and not cause harm to human health or the environment. The owner or operator may make a request in writing to the bureau chief describing the proposed re-use. Should the bureau chief approve the request, the bureau chief may impose such terms or conditions, including treatment of the excavated soils prior to re-use, that the bureau chief deems necessary to assure that the proposed re-use will not harm human health or the environment.

(E) On-site storage of excavated soils.

- (1) Excavated soils remaining on-site shall be stored as follows:
 - (a)(i) In portable containers that are free of holes or other damage that may allow a release of material, are secured with lids or covers to prevent infiltration of rainwater, are individually labeled with the words: "non-hazardous soils or backfill. May contain soils contaminated by petroleum products", and a date using a label of uniform size and appearance as approved by the fire marshal; or
 - (ii) In stockpiles protected by a synthetic cover that prevents infiltration from rainwater or run-off of soils and by berms or other devices that divert run-on of storm water. A twenty-four hour, once in ten year rain event shall be used to design such controls.
- (b) During storage, stockpiles shall be placed on an asphalt pad, concrete pad, compatible synthetic liner having a minimum thickness of four mils, or another material specifically approved by the bureau chief that minimizes leaching of contaminants. Synthetic liners shall be installed with overlaps of not less than twelve inches and shall be free of rips, tears, or other damage. Excavated soils shall be placed on the liner in a manner that insures liner integrity. A temporary fence or other barriers or devices shall be placed so as to deter unauthorized entry to storage areas.

- (2) The owner or operator of the UST site used for storage shall inspect all storage areas monthly for damage to or unauthorized removal of, drums, drum lids, labels, covers, berms, fences, other barriers, or signs used to deter unauthorized entry. A written log of such inspections shall be maintained and made available to the fire marshal or his designated representative for review within twenty-four hours of receipt of a request for inspection. Within forty-eight hours of discovery of damage or receipt of notice from the fire marshal or his designated representative that damage has occurred, the owner or operator shall confirm whether damage has occurred, initiate such repairs as necessary to return the storage area to compliance with this rule, and place in the inspection log a description of the damage found and actions taken.
- (3) Petroleum contaminated soils may be stored on-site in portable containers for a period not to exceed one hundred eighty days from the date soils are first placed in the containers.
- (4) Petroleum contaminated soils may be stored on-site in a stockpile for a period not to exceed ninety days from the date soils first were placed in the stockpile.
- (5) The owner or operator shall maintain for one year a record of the estimated volume of the excavated soils being stored and the date the soils were first placed in containers or a stockpile.

(F) Off-site transportation of excavated soils and related documentation.

- (1) Prior to the off-site shipment of excavated soils, the owner or operator shall prepare a delivery record on a form prescribed by the fire marshal. The delivery record shall list the bureau of underground storage tank regulations incident number and identify the destination of the shipment. The owner or operator of the UST site or agent thereof shall sign the delivery record at the time of shipment. Following delivery, the transporter shall sign the record and return it to the owner or operator, who shall retain the record for a period of five years. The record shall be made available for inspection during normal working hours upon twenty-four hours advance notice by the fire marshal or his designated representative.
- (2) Existing federal, state, and local transportation laws and regulations shall continue to apply to the shipment of petroleum contaminated soils. This rule or any part thereof is not intended to displace or revise such laws and regulations.

(G) Temporary off-site staging areas.

- (1) Petroleum contaminated soils from one or more UST site(s) owned or under the control of the same owner or operator may be transported from the UST site to an

off-site staging area and stored for a period not to exceed ninety days from date of excavation prior to further management. The off-site staging area must be owned or under the control of the owner or operator of the UST site(s) that generated the petroleum contaminated soils.

- (2) Petroleum contaminated soils delivered to a staging area shall be stored in accordance with the requirements of paragraphs (E) to (E)(2) and (E)(5) of this rule.
- (3) Prior to further transport of the petroleum contaminated soils from the staging area, the owner or operator shall add the date of transport and destination to the delivery record required by paragraph (F)(1) of this rule.

(H) Disposal of petroleum contaminated soils.

- (1) Excavated petroleum contaminated soils shall not be disposed on-site or off-site without first being treated to reduce constituents in accordance with the methods and standards established by this rule, unless the soils are disposed of in a licensed disposal facility.

(I) Treatment of petroleum contaminated soils.

- (1) On-site treatment.
 - (a) Petroleum contaminated soils that are not returned to the original excavation for treatment, treated off-site, or transported to a licensed disposal facility shall be treated on-site using standards and one or more of the methods described in paragraphs (I)(1)(b) to (I)(1)(f)(ii) of this rule.
 - (b) General standards for on-site treatment.
 - (i) Except as otherwise provided in this rule, the following standards and criteria shall apply to all on-site treatment of petroleum contaminated soils and shall be complied with by the owner or operator:
 - (a) On-site treatment shall be used only for soils containing petroleum products listed within analytical groups 1, 2 and 3 of table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code;
 - (b) Written notification which contains the following information shall be submitted to the fire marshal prior to commencement of on-site treatment:

- (i) Name, address, and telephone number of the owner or operator of the UST site;
 - (ii) Address of the UST site;
 - (iii) A map of the UST site which accurately depicts the property boundaries, street locations, above ground structure(s), the UST system(s) including the number of tanks, adjacent properties and their use, any known water wells located on the site, any known monitoring wells located on the site, any utilities uncovered as part of the excavation process, and the locations(s) of any other known UST system(s) or portions thereof known to have been permanently abandoned or permanently removed;
 - (iv) A brief description of the treatment method to be used; and
 - (v) The following written statement signed by the owner or operator and sworn to or acknowledged by the owner or operator before a notary public:

"I state under penalty of perjury that to the best of my knowledge and belief the on-site treatment at the UST site described above has and shall be conducted in accordance with all the applicable provisions of Chapter 1301:7-9 of the Administrative Code, including but not limited to rules 1301:7-9-16 and 1301:7-9-17 of the Administrative Code.";
- (c) Within twenty-four months of commencement of on-site treatment, the owner or operator shall demonstrate through sampling that the treated soils do not exceed the action levels for constituent concentrations listed for soils in the table found in paragraph (D)(1) of this rule. This time period may be extended through an application to the bureau chief in which the owner or operator demonstrates that the treatment system has attained significant progress toward applicable clean-up levels and additional time is necessary to complete treatment;
 - (d) Petroleum contaminated soils treated using an on-site treatment method shall be located in a treatment zone located:

- (i) At least five feet from any property boundary of the UST site;
 - (ii) Outside of any twenty-five year floodplain, as shown on the applicable federal emergency management agency map, or by computation, if such a map is unavailable;
 - (iii) At least twenty-five feet from an open drainage ditch, storm water sewer inlet, perennial stream, river, pond, or lake;
 - (iv) At least twenty feet from roadways measured from the edge of the roadway nearest the treatment zone;
 - (v) At least fifty feet from an off-site domicile, unless the treatment zone is covered or a written waiver of this set-off distance has been obtained from the owner of the domicile on a form prescribed by the fire marshal; and
 - (vi) In compliance with applicable wellhead or water supply protection ordinances enacted prior to the date of filing of notification pursuant to paragraphs (I)(1)(b)(i)(b) to (I)(1)(b)(i)(b)(v) of this rule;
- (e) Petroleum contaminated soils treated using an on-site treatment method and such treatment zones shall meet the following generic operational requirements and the specific requirements listed for each specific on-site treatment method:
- (i) Use of the treatment zone shall be limited to treatment of petroleum contaminated soils generated on-site;
 - (ii) Air contaminant source or wastewater discharge permits required by Chapters 3745-31 and 3745-33 of the Administrative Code shall be obtained prior to starting treatment;
 - (iii) The owner or operator shall inspect the treatment zone monthly and maintain a written log of the results of each inspection. These results shall be maintained for a period of five years and shall be made available to the fire marshal or his designated representative for

review within twenty-four hours of receipt of a request for inspection. The owner or operator shall take measures to correct those items noted in the monthly inspection report as requiring repair or replacement or any item for which the owner or operator has received written notice from the fire marshal or his designated representative that repair or replacement is warranted. A description of the repair and date of completion shall be entered into the written log;

- (iv) Access to the treatment zone shall be restricted against unauthorized access and signs shall be posted near the treatment zone notifying persons of treatment activity and warning against disturbance of soils, or equipment; and
- (v) Treatment zones that are not being sampled as part of a remedial action plan approved pursuant to rule 1301:7-9-13 of the Administrative Code shall be sampled and analyzed within ninety to one hundred twenty days after installation, within ten to twelve months after installation, and within twenty-two to twenty-four months after installation for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group. Data received from a sampling event shall be submitted to the fire marshal within fifteen days of receipt of the final results. If the sampling results submitted to the fire marshal do not demonstrate the expected reductions for the treatment method used, the owner or operator shall meet promptly with the fire marshal or his designated representative to discuss the results and present an action plan proposing methods to accelerate treatment. If the fire marshal disapproves of the revised plan, the fire marshal shall describe in writing the reasons for disapproval and offer to meet with the owner or operator. In the event the owner or operator is unwilling to revise the plan in accordance with fire marshal's recommendations, the fire marshal may issue such orders as may be authorized by law.

- (c) One-time land farming.

- (i) One-time land farming is a type of land treatment that is approved for on-site treatment of certain petroleum contaminated soils.
- (ii) The following standards and criteria shall apply to all on-site treatment of petroleum contaminated soils using one-time land farming, rather than the standards and criteria set forth in paragraphs (I)(1)(b) to (I)(1)(b)(i)(e)(v) of this rule:
 - (a) Petroleum contaminated soils treated using on-site one-time land farming shall only contain petroleum products listed within analytical groups 1, 2 and 3 of table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code;
 - (b) Petroleum contaminated soils to be applied to the treatment zone shall not exceed one thousand five hundred cubic yards in total volume and shall not have chemical of concern concentrations that exceed the following:

(i)	Benzene	35.0 PPM;
(ii)	Toluene	109 PPM;
(iii)	Ethylbenzene	32.0 PPM;
(iv)	Total Xylenes	165 PPM;
(v)	Methyl Tertiary Butyl Ether (MTBE)	75.0 PPM;
(vi)	Benz (A) - anthracene	7.50 PPM;
(vii)	Benzo (A) - pyrene	3.30 PPM;
(viii)	Benzo (B) - fluoranthene	3.69 PPM;
(ix)	Benzo (K) - fluoranthene	1.97 PPM;
(x)	Chrysene	1.27 PPM;
(xi)	Dibenz (A, H) - anthracene	18.9 PPM;
(xii)	Indeno (1, 2, 3, - CD) pyrene	.150 PPM; and
(xiii)	Naphthalene	127 PPM;
 - (c) The treatment zone shall be located:
 - (i) At least one hundred feet from an open drainage ditch, storm water sewer inlet, perennial stream, river, pond, or lake;
 - (ii) At least fifty feet from an off-site domicile, unless a written waiver of this set-off distance has been obtained from the owner of the off-site domicile on a

form prescribed by the fire marshal;

- (iii) Outside of any twenty-five year floodplain, as shown on the applicable federal emergency management agency map, or by computation, if such a map is unavailable;
 - (iv) Outside of a sensitive area, as defined in rule 1301:7-9-09 of the Administrative Code, except that the distance from a private water supply well or developed spring not located on-site shall be one hundred feet rather than fifty feet, unless the owner or operator makes a demonstration to the satisfaction of the bureau chief that the one-time land farming which is proposed will not adversely impact the groundwater;
 - (v) In compliance with applicable wellhead or water supply protection ordinance enacted prior to the date of filing of notification pursuant to paragraph (I)(1)(c)(ii)(d)(iii) to (I)(1)(c)(ii)(d)(iii)(E) of this rule;
 - (vi) At least one hundred feet in any direction from another treatment zone;
 - (vii) In an area with a mean average depth to groundwater of at least ten feet. If any drinking water wells are located within two thousand feet of the treatment zone, the mean average depth to groundwater shall be calculated using the well logs on file with the Ohio department of natural resources for wells located within two thousand feet of the treatment zone, otherwise, the depth to groundwater shall be determined using available regional groundwater data from the United States geological service, Ohio department of natural resources, or Ohio environmental protection agency; and
 - (viii) Outside of any area with drainage tiles, unless the drainage tiles beneath the area to be used as the treatment zone have been purged.
- (d) The treatment zone shall be operated as follows:
- (i) Spreading of petroleum contaminated soils shall occur

between April first and September thirtieth:

- (ii) Between October first and March thirty-first, petroleum contaminated soils intended to be treated by one-time land farming shall be stored in accordance with paragraphs (E) to (E)(2) and (E)(5) of this rule;
- (iii) Written notification shall be submitted to the fire marshal prior to commencement of the on-site one-time land farming treatment and shall contain the following information:
 - (A) Name, addresses, and telephone number of the owner or operator of the UST site;
 - (B) Address of the UST site;
 - (C) A map of the UST site which accurately depicts the property boundaries, street locations, above ground structure(s), the UST system(s) including the number of tanks, adjacent properties and their use, any known water wells located on the site, any known monitoring wells located on the site, any utilities uncovered as part of the excavation process, and the locations(s) of any other known UST system(s) or portions thereof known to have been permanently abandoned or permanently removed.
 - (D) A brief description of the treatment method to be used; and
 - (E) The following written statement signed by the owner or operator and sworn to or acknowledged by the owner or operator before a notary public:

"I state under penalty of perjury that to the best of my knowledge and belief the on-site treatment at the UST site described above has and shall be conducted in accordance with all the applicable provisions of Chapter 1301:7-9 of the Administrative Code, including but not

limited to rules 1301:7-9-16 and 1301:7-9-17 of the Administrative Code.";

- (iv) A buffer strip consisting of at least fifty feet of dense vegetated ground shall separate the treatment zone used for one-time land farming from down-gradient perennial streams, rivers, ponds or lakes;
 - (v) The application rate of petroleum contaminated soils shall not exceed four inches in depth in any part of the treatment zone;
 - (vi) During application, petroleum contaminated soils shall be tilled into the top six inches of soil at the treatment zone;
 - (vii) Soils in the treatment zone being land farmed shall have an organic content of not less the three per cent by weight following application. Only substances that have been approved in advance by the bureau chief may be added to the tilled petroleum contaminated soils to enhance organic content or biodegradation. The rate of application of such substances shall be that specified by the bureau chief; and
 - (viii) Immediately following the application of the petroleum contaminated soils, the disturbed area of the treatment zone shall be seeded to produce a dense vegetative cover. This vegetation shall not be harvested as food for humans or animals or used for grazing for twenty-four months following application of the petroleum contaminated soils, unless prior to April first of the second year, the owner or operator using the treatment zone has demonstrated through a testing program approved by the bureau chief that no petroleum contaminants remain in the soils.
- (e) At any time the fire marshal or his designated representative directs, the owner or operator shall do the following:
- (i) Divide the treatment zone into four areas of approximately equal surface area;

- (ii) A grab sample shall be collected from the center of each sampling area described in paragraph (I)(1)(c)(ii)(e)(i) of this rule at least twelve to twenty-four inches below the surface;
 - (iii) The four grab samples collected pursuant to paragraph (I)(1)(c)(ii)(e)(ii) of this rule shall be composited;
 - (iv) The composited sample required by paragraph (I)(1)(c)(ii)(e)(iii) of this rule shall be analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that were treated in the treatment zone;
 - (v) Data received from the sampling and analysis required by paragraphs (I)(1)(c)(ii)(e)(i) to (I)(1)(c)(ii)(e)(iv) of this rule shall be submitted to the fire marshal within fifteen days of receipt of the final results; and
 - (vi) If the sampling results submitted to the fire marshal pursuant to paragraph (I)(1)(c)(ii)(e)(v) of this rule do not demonstrate that the soil sample does not exceed the action levels for constituent concentration listed for soils in the table found in paragraph (D)(1) of this rule, the owner or operator shall meet promptly with the fire marshal or his designated representative to discuss the results and present an action plan proposing methods to accelerate treatment. If the fire marshal disapproves of the revised plan, the fire marshal shall describe in writing his reasons for disapproval and offer to meet with the owner or operator. In the event the owner or operator is unwilling to revise the plan in accordance with fire marshal's recommendations, the fire marshal may issue such orders as may be authorized by law and may rescind the "no further action" letter issued for the treatment zone in question pursuant to paragraph (K)(3) of this rule.
- (d) Multiple application land farming.
- (i) Multiple application land farming is a type of treatment that is

approved for on-site treatment of certain petroleum contaminated soils.

- (ii) In addition to the standards and criteria set forth in paragraphs (I)(1)(b) to (I)(1)(b)(i)(e)(v) of this rule, an owner or operator shall comply with all of the requirements of paragraphs (I)(1)(d)(iii) to (I)(1)(d)(viii)(c) of this rule when treating petroleum contaminated soils at a designated facility operating as a multiple application land farming site which accepts such soils on more than one occasion or from more than one UST site.
- (iii) To operate a designated facility in accordance with this paragraph the owner or operator shall design and construct the facility to meet all of the following requirements:
 - (a) Soil profiles to groundwater or a depth of twenty feet, whichever comes first, shall be determined either by obtaining existing profiles from the soil conservation service or by conducting an on-site investigation. At a minimum the soil profiles shall include:
 - (i) Classification in accordance with the unified soil classification system; and
 - (ii) Estimated permeability based upon the unified soil classification system's classification in inches per hour;
 - (b) The top four inches of soil of the treatment zone shall have an organic content of at least three per cent;
 - (c) The depth to groundwater shall be at least fifteen feet;
 - (d) Outside of any area with drainage tiles, unless the drainage tiles beneath the area to be used as the treatment zone have been plugged;
 - (e) The horizontal plane of the treatment zone shall not exceed six per cent slope unless the owner or operator can demonstrate to the bureau chief's satisfaction that design controls will be used that will give the treatment zone run-on, run-off, and erosion controls at least as safe as a treatment zone that does not exceed six per cent slope on the horizontal plane;
 - (f) Seventy-five per cent of the upper four feet of soil shall have

a permeability of less than two inches per hour; and

- (g) Surface water run-on and run-off shall be retarded by the use of the following:
 - (i) On the up-gradient side a vegetative buffer strip fifty feet wide measured from the edge of the treatment zone; and
 - (ii) On the down-gradient side a vegetative buffer strip fifty feet wide measured from the edge of the treatment zone; or
 - (iii) Any method or technique approved by the bureau which provides a similar amount of retardation as the required vegetative buffer strips.

- (iv) The application of petroleum contaminated soils at a designated facility operated in accordance with this paragraph shall comply with all of the following:
 - (a) Petroleum contaminated soils shall be incorporated or mixed into existing soils or organic matter as follows:
 - (i) Between April first and October thirty-first only, provided the soil is not frozen;
 - (ii) By tilling no more than four inches of the petroleum contaminated soils into the top four to six inches of soil or additional organic matter;
 - (iii) No trash, debris, municipal sludge, or industrial sludge is included in or mixed into the petroleum contaminated soils; and
 - (iv) If used, nitrogen shall not exceed two hundred pounds per acre per treatment year;

 - (b) By incorporating or mixing no more than one thousand five hundred cubic yards of petroleum contaminated soils into the soil or organic matter within a single treatment zone unless the treatment zone is separated by vegetative buffer strips on all sides of no less than eighty feet measured from each side of the treatment zone and any additional treatment zone and each

treatment zone is monitored separately in accordance with this rule;

- (c) Petroleum contaminated soils delivered to a designated facility during the treatment season which are not otherwise stored in accordance with paragraphs (G) to (G)(3) of this rule, shall be incorporated or mixed into the soil within seven days of its delivery or, in the event weather conditions do not permit effective application, as soon as is practicable, but in no event later than thirty days after its delivery; and
- (d) Petroleum contaminated soils delivered to a designated facility between November first and March thirty-first, or at any time after October twenty-fifth, and the petroleum contaminated soils cannot be applied, or at any time after October first and the weather conditions do not permit effective application, shall be stored in accordance with paragraphs (E) to (E)(2) and (E)(5) of this rule until the next treatment season and be applied as soon as is practicable;
- (v) Once petroleum contaminated soils are applied at a designated facility operated in accordance with this paragraph, the designated facility shall be managed as follows:
 - (a) No crops grown upon any treatment zone may be utilized for human or livestock consumption until the fire marshal issues a "no further action" letter in regard to the soils placed in the specific treatment zone;
 - (b) No additional application of petroleum contaminated soils shall be made in any treatment zone until the fire marshal issues a "no further action" letter in regard to the soils placed in the specific treatment zone or otherwise approves an additional application;
 - (c) If groundwater is located at a depth of forty-five feet or less, a minimum of three monitoring wells shall be installed as close as physically possible to the treatment zone; to the depth of the groundwater table, auger refusal, or a groundwater confining layer, whichever shall be encountered first; to monitor the groundwater below the treatment zone as follows:
 - (i) One hydraulically up-gradient; and

- (ii) Two hydraulically down-gradient.

However, no more than two monitoring wells shall be required between adjacent treatment zones; and

- (d) The treatment zone shall be tilled to a minimum depth of six inches at least bi-monthly during the treatment season, commencing with the date of application and, in each new treatment season, commencing with the month of April;
- (vi) The treatment zone shall be sampled until the fire marshal issues a "no further action letter" as follows:
 - (a) Groundwater samples from each of the monitoring wells installed pursuant to this paragraph shall be obtained and analyzed in accordance with the methods specified in paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group when the wells are installed and once during April and October thereafter;
 - (b) When petroleum contaminated soils are applied after August first, no sampling is required until the following treatment season;
 - (c) At a minimum, soil sampling shall be conducted once a year during the treatment season;
 - (d) Soil samples shall be collected and analyzed pursuant to the requirements of rule 1301:7-9-17 of the Administrative Code, except that the soil samples shall be obtained from six to ten inches below the surface; and
 - (e) An additional soil sample shall be taken two feet below the surface at the location of the highest field-screened sample from the treatment zone. If all field-screened readings are below detection limits, the additional soil sample shall be obtained from the center of the treatment zone;
- (vii) A report shall be submitted to the fire marshal no later than December fifteenth of each and every year, until the fire marshal issues a "no further action" letter in regard to the petroleum contaminated soils placed in a specific treatment zone, containing the following information:

- (a) The cover of the report shall contain the fire marshal's incident number(s) assigned to the UST site(s) from which the petroleum contaminated soils applied or stored at the designated facility were generated;
 - (b) The results of all soil and groundwater samples required to be obtained pursuant to paragraphs (I)(1)(d)(vi) to (I)(1)(d)(vi)(e) of this rule;
 - (c) The location of the designated facility, a diagram showing the number of and location of any treatment zone(s) located at the designated facility, for each treatment zone the fire marshal's incident number(s) assigned to the UST site(s) from which the petroleum contaminated soils applied or stored at the designated facility were generated, the amount of any unapplied petroleum contaminated soils stored at the designated facility and a description of the manner in which it is stored, the date(s) of the delivery and application of the petroleum contaminated soils, and for each treatment zone identified, an indication of whether further treatment is needed;
 - (d) A copy of the written log(s) maintained by the owner or operator indicating the results of the monthly inspections required pursuant to paragraph (I)(1)(b)(i)(e)(iii) of this rule; and
 - (e) If further treatment is not required for a treatment zone, a specific request for a "no further action" letter and the reasons justifying the issuance of same for that treatment zone;
- (viii) If during the operation of a designated facility the groundwater below the facility becomes contaminated as a result of the multiple application land farming treatment by an intrusion of petroleum or any of its constituents which exceed the action levels for groundwater in paragraph (I)(3)(d)(i) of rule 1301:7-9-13 of the Administrative Code, the owner or operator shall do all of the following:
- (a) Cease all additional applications of petroleum contaminated soils until otherwise instructed by the fire marshal;
 - (b) Notify the fire marshal within twenty-four hours of the discovery of the groundwater contamination; and

- (c) Perform immediate corrective action in accordance with the requirements of rule 1301:7-9-13 of the Administrative Code.
- (e) Confined treatment area or process.
- (i) Confined treatment area or process is approved for on-site treatment of petroleum contaminated soils.
 - (ii) In addition to the standards set forth in paragraphs (I)(1)(b) to (I)(1)(b)(i)(e)(v) of this rule, an owner or operator shall comply with all of the requirements of paragraphs (I)(1)(e)(iii) to (I)(1)(e)(iii)(h) of this rule when treating petroleum contaminated soils at a designated facility operating as a confined treatment area or process site.
 - (iii) To operate a designated facility in accordance with this paragraph the owner or operator shall design, construct, and operate the facility to meet all the following requirements:
 - (a) Petroleum contaminated soils shall be placed on a synthetic liner having a minimum thickness of six mils with a minimum of twelve inch seam overlays, on an asphalt pad, or on a concrete pad that minimizes leaching from the treatment zone. The bureau chief may approve a substitute material from those listed in this paragraph;
 - (b) The treatment zone shall be designed and operated to enhance volatilization and promote biodegradation;
 - (c) Tilling of the treatment zone is prohibited unless the owner or operator can demonstrate to the bureau chief's satisfaction that the liner will remain undamaged;
 - (d) Any cover shall be a synthetic liner having a minimum thickness of six mils and be secured to provide cover for the duration of the treatment;
 - (e) Treatment zones that are not covered with a top cover shall be designed to prevent the uncontrolled discharge of soils or contaminants;
 - (f) A twenty-four hour, once in ten year rain event shall be used for purposes of designing run-on and run-off controls;

- (g) All soil samples collected shall be collected pursuant to the requirements contained in rule 1301:7-9-17 of the Administrative Code; and
- (h) If the treatment zone is located on a synthetic liner that is placed on top of soil, one soil sample shall be collected from within the top two feet of soil in the center of the treatment zone prior to the placing of the petroleum contaminated soils on the synthetic liner and analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that will be placed on this synthetic liner. Upon completion of the treatment, one soil sample shall be collected from within the top two feet of the treatment zone where the synthetic liner has been breached, if the synthetic liner has not been breached, the one soil sample shall be collected from within the top two feet of soil in the middle of the treatment zone. The post-treatment soil sample shall be analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-0-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that were treated in the treatment zone. The results of the pre-treatment and post-treatment soil analysis required by this paragraph shall be submitted to the fire marshal.

- (f) Alternate on-site treatment methods.

On-site treatment methods other than those specified in this rule may be used if the owner or operator:

- (i) Demonstrates to the bureau chief that the alternate on-site treatment method is at least as safe and effective as those allowed by this rule; and
- (ii) Obtains written approval from the bureau chief to use the alternate on-site treatment method before the actual implementation of such treatment method. If the alternate on-site treatment method is approved by the bureau chief, the owner or operator shall comply with any conditions imposed by the bureau chief on its use.

- (2) Off-site treatment.

- (a) Petroleum contaminated soils that are not returned to the original excavation for treatment, treated on-site, or transported to a licensed disposal facility shall be treated off-site using standards and one or more of the methods described in paragraphs (I)(2)(b) to (I)(2)(f)(ii) of this rule.
- (b) General standards for off-site treatment.
 - (i) Except as otherwise provided in this rule, the following standards and criteria shall apply to all off-site treatment of petroleum contaminated soils and shall be complied with by the owner or operator:
 - (a) Written notification which contains the following information shall be submitted to the fire marshal prior to commencement of off-site treatment:
 - (i) Name, address, and telephone number of the owner or operator of the UST site;
 - (ii) Address of the UST site(s);
 - (iii) Address of the off-site location where the off-site treatment will take place;
 - (iv) A map of the off-site location where the off-site treatment will take place which accurately depicts the property boundaries, street locations, above ground structure(s), any UST system(s) including the number of tanks, adjacent properties and their use, any known water wells located on the treatment location, any known monitoring wells located on the treatment location, and the locations(s) of any other known UST system(s) or portions thereof known to have been permanently abandoned or permanently removed from the treatment location;
 - (v) A brief description of the treatment method to be used; and
 - (vi) The following written statement signed by the owner or operator and sworn to or acknowledged by the owner or operator before a notary public:

"I state under penalty of perjury that to the best of my knowledge and belief the off-site treatment at the

"I state under penalty of perjury that to the best of my knowledge and belief the off-site treatment at the

location described above has and shall be conducted in accordance with all the applicable provisions of Chapter 1301:7-9 of the Administrative Code, including but not limited to rules 1301:7-9-16 and 1301:7-9-17 of the Administrative Code.";

- (b) Within twenty-four months of commencement of off-site treatment, the owner or operator shall demonstrate through sampling that the treated soils do not exceed the site specific action levels for chemical(s) of concern as calculated pursuant to rule 1301:7-9-13 of the Administrative Code for the applicable analytical group. This time period may be extended through an application to the bureau chief in which the owner or operator demonstrates that the treatment system has attained significant progress toward applicable clean-up levels and additional time is necessary to complete treatment;
- (c) Petroleum contaminated soils treated using an off-site treatment method shall be located in a treatment zone located:
 - (i) Outside of any twenty-five year floodplain, as shown on the applicable federal emergency management agency map, or by computation, if such a map is unavailable;
 - (ii) At least fifty feet from an open drainage ditch, storm water sewer inlet, perennial stream, river, pond, or lake;
 - (iii) At least twenty feet from roadways measured from the edge of the roadway nearest the treatment zone;
 - (iv) Outside of an area that is zoned residential, and at least one hundred feet from a domicile located on property other than that of the designated facility, unless a written waiver of this set-off distance has been obtained from the owner of the domicile on a form prescribed by the fire marshal; and
 - (v) In compliance with applicable wellhead or water supply protection ordinances enacted prior to the date of filing of notification pursuant to paragraphs (I)(2)(b)(i)(a) to (I)(2)(b)(i)(a)(vi) of this rule; and

- (d) Petroleum contaminated soils treated using an off-site treatment method and such treatment zones shall meet the following generic operational requirements and the specific requirements listed for each specific off-site treatment method:
- (i) Use of the treatment zone shall be limited to treatment of petroleum contaminated soils;
 - (ii) Air contaminant source or wastewater discharge permits required by Chapters 3745-31 and 3745-33 of the Administrative Code shall be obtained prior to starting treatment;
 - (iii) The owner or operator shall inspect the treatment zone monthly and maintain a written log of the results of each inspection. These results shall be maintained for a period of five years and shall be made available to the fire marshal or his designated representative for review within twenty-four hours of receipt of a request for inspection. The owner or operator shall take measures to correct those items noted in the monthly inspection report as requiring repair or replacement or any item for which the owner or operator has received written notice from the fire marshal or his designated representative that repair or replacement is warranted. A description of the repair and date of completion shall be entered into the written log;
 - (iv) Access to the treatment zone shall be restricted against unauthorized access and signs shall be posted near the treatment zone notifying persons of treatment activity and warning against disturbance of soils, or equipment; and
 - (v) Treatment zones that are not being sampled as part of a remedial action plan approved pursuant to rule 1301:7-9-13 of the Administrative Code shall be sampled and analyzed within ninety to one hundred twenty days after installation, within ten to twelve months after installation, and within twenty-two to twenty-four months after installation for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the

applicable analytical group. Data received from a sampling event shall be submitted to the fire marshal within fifteen days of receipt of the final results. If the sampling results submitted to the fire marshal do not demonstrate the expected reductions for the treatment method used, the owner or operator shall meet promptly with the fire marshal or his designated representative to discuss the results and present an action plan proposing methods to accelerate treatment.

If the fire marshal disapproves of the revised plan, the fire marshal shall describe in writing his reasons for disapproval and offer to meet with the owner or operator. In the event the owner or operator is unwilling to revise the plan in accordance with the fire marshal's recommendations, the fire marshal may issue such orders as may be authorized by law.

(c) One-time land farming.

(i) One-time land farming is a type of land treatment that is approved for off-site treatment of certain petroleum contaminated soils.

(ii) The following standards and criteria shall apply to all off-site treatment of petroleum contaminated soils using one-time land farming, rather than the standards and criteria set forth in paragraphs (I)(2)(b) to (I)(2)(b)(i)(d)(vi) of this rule:

(a) Petroleum contaminated soils treated using off-site one-time land farming shall only contain petroleum products listed within analytical groups 1, 2 and 3 of table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code;

(b) Petroleum contaminated soils to be applied to the treatment zone shall not exceed one thousand five hundred cubic yards in total volume and shall not have chemical of concern concentrations that exceed the following:

(i)	Benzene	35.0 PPM;
(ii)	Toluene	109 PPM;
(iii)	Ethylbenzene	32.0 PPM;
(iv)	Total Xylenes	165 PPM;
(v)	Methyl Tertiary Butyl Ether (MTBE)	75.0 PPM;
(vi)	Benz (A) - anthracene	7.50 PPM;
(vii)	Benzo (A) - pyrene	3.30 PPM;

(viii)	Benzo (B) - fluoranthene	3.69 PPM;
(ix)	Benzo (K) - fluoranthene	1.97 PPM;
(x)	Chrysene	1.27 PPM;
(xi)	Dibenz (A, H) - anthracene	18.9 PPM;
(xii)	Indeno (1, 2, 3, - CD) pyrene	.150 PPM; and
(xiii)	Naphthalene	127 PPM;

- (c) The treatment zone shall be located:
- (i) At least one hundred feet from an open drainage ditch, storm water sewer inlet, perennial stream, river, pond, or lake;
 - (ii) At least fifty feet from an off-site domicile, unless a written waiver of this set-off distance has been obtained from the owner of the off-site domicile on a form prescribed by the fire marshal;
 - (iii) Outside of any twenty-five year floodplain, as shown on the applicable federal emergency management agency map, or by computation, if such a map is unavailable;
 - (iv) Outside of a sensitive area, as defined in rule 1301:7-9-09 of the Administrative Code, except that the distance from a private water well or developed spring not located on the same property as the treatment zone shall be one hundred feet rather than fifty feet, unless the owner or operator makes a demonstration to the satisfaction of the bureau chief that the one-time land farming which is proposed will not adversely impact the groundwater;
 - (v) In compliance with applicable wellhead or water supply protection ordinance enacted prior to the date of filing of notification pursuant to paragraphs (I)(2)(c)(ii)(d)(iii) to (I)(2)(c)(ii)(d)(iii)(F) of this rule;
 - (vi) At least one hundred feet in any direction from another treatment zone;
 - (vii) In an area with a mean average depth to groundwater of at least ten feet. If any drinking water wells are located within two thousand feet of the treatment

zone, the mean average depth to groundwater shall be calculated using the well logs on file with the Ohio department of natural resources for wells located within two thousand feet of the treatment zone, otherwise, the depth to groundwater shall be determined using available regional groundwater data from the United States geological service, Ohio department of natural resources, or Ohio environmental protection agency; and

- (viii) Outside of any area with drainage tiles, unless the drainage tiles beneath the area to be used as the treatment zone have been plugged.
- (d) The treatment zone shall be operated as follows:
 - (i) Spreading of petroleum contaminated soils shall occur between April first and September thirtieth:
 - (ii) Between October first and March thirty-first, petroleum contaminated soils intended to be treated by one-time land farming shall be stored in accordance with paragraphs (E) to (E)(2) and (E)(5) of this rule;
 - (iii) Written notification shall be submitted to the fire marshal prior to commencement of the off-site one-time land farming treatment and shall contain the following information:
 - (A) Name, addresses, and telephone number of the owner or operator of the UST site;
 - (B) Address of the UST site;
 - (C) Address of the off-site location where the off-site one-time land farming treatment will take place;
 - (D) A map of the off-site location where the off-site one-time landfarming treatment will take place which accurately depicts the property boundaries, street locations, above ground structure(s), any UST system(s) including the number of tanks, adjacent properties and their

use, any known water wells located on the treatment location, any known monitoring wells located on the treatment location, and the locations(s) of any other known UST system(s) or portions thereof known to have been permanently abandoned or permanently removed from the treatment location.

(E) A brief description of the treatment method to be used; and

(F) The following written statement signed by the owner or operator and sworn to or acknowledged by the owner or operator before a notary public:

"I state under penalty of perjury that to the best of my knowledge and belief the off-site treatment at the location described above has and shall be conducted in accordance with all the applicable provisions of Chapter 1301:7-9 of the Administrative Code, including but not limited to rules 1301:7-9-16 and 1301:7-9-17 of the Administrative Code.";

(iv) A buffer strip consisting of at least fifty feet of dense vegetated ground shall separate the treatment zone used for one-time land farming from down-gradient perennial streams, rivers, ponds or lakes;

(v) The application rate of petroleum contaminated soils shall not exceed four inches in depth in any part of the treatment zone;

(vi) During application, petroleum contaminated soils shall be tilled into the top six inches of soil at the treatment zone;

(vii) Soils in the treatment zone being land farmed shall have an organic content of not less the three percent by weight following application. Only substances that have been approved in advance by the bureau chief may be added to the tilled petroleum contaminated soils to enhance organic content or biodegradation.

The rate of application of such substances shall be that specified by the bureau chief; and

- (viii) Immediately following the application of the petroleum contaminated soils, the disturbed area of the treatment zone shall be seeded to produce a dense vegetative cover. This vegetation shall not be harvested as food for humans or animals or used for grazing for twenty-four months following application of the petroleum contaminated soils, unless prior to April first of the second year, the owner or operator using the treatment zone has demonstrated through a testing program approved by the bureau chief that no petroleum contaminants remain in the soils.
- (e) At any time the fire marshal or his designated representative directs, the owner or operator shall do the following:
 - (i) Divide the treatment zone into four areas of approximately equal surface area;
 - (ii) A grab sample shall be collected from the center of each sampling area described in paragraph (I)(2)(c)(ii)(e)(i) of this rule at least twelve to twenty-four inches below the surface;
 - (iii) The four grab samples collected pursuant to paragraph (I)(2)(c)(ii)(e)(ii) of this rule shall be composited;
 - (iv) The composited sample required by paragraph (I)(2)(c)(ii)(e)(iii) of this rule shall be analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that were treated in the treatment zone;
 - (v) Data received from the sampling and analysis required by paragraphs (I)(2)(c)(ii)(e)(i) to (I)(2)(c)(ii)(e)(iv) of this rule shall be submitted to the fire marshal within fifteen days of receipt of the final results; and
 - (vi) If the sampling results submitted to the fire marshal pursuant to paragraph (I)(2)(c)(ii)(e)(v) of this rule do

not demonstrate that the soil sample does not exceed the site specific action levels for chemical(s) of concern calculated pursuant to rule 1301:7-9-13 of the Administrative Code for the applicable analytical group, the owner or operator shall meet promptly with the fire marshal or his designated representative to discuss the results and present an action plan proposing methods to accelerate treatment. If the fire marshal disapproves of the revised plan, the fire marshal shall describe in writing his reasons for disapproval and offer to meet with the owner or operator. In the event the owner or operator is unwilling to revise the plan in accordance with fire marshal's recommendations, the fire marshal may issue such orders as may be authorized by law and may rescind the "no further action" letter issued for the treatment zone in question pursuant to paragraph (K)(3) of this rule.

- (d) Multiple application land farming.
 - (i) Multiple application land farming is a type of treatment that is approved for off-site treatment of certain petroleum contaminated soils.
 - (ii) In addition to the standards and criteria set forth in paragraphs (I)(2)(b) to (I)(2)(b)(i)(d)(v) of this rule, an owner or operator shall comply with all of the requirements of paragraphs (I)(2)(d)(iii) to (I)(2)(d)(viii)(c) of this rule when treating petroleum contaminated soils at a designated facility operating as a multiple application land farming site which accepts such soils on more than one occasion or from more than one UST site.
 - (iii) To operate a designated facility in accordance with this paragraph the owner or operator shall design and construct the facility to meet all of the following requirements:
 - (a) Soil profiles to groundwater or a depth of twenty feet, whichever comes first, shall be determined either by obtaining existing profiles from the soil conservation service or by conducting an on-site investigation. At a minimum the soil profiles shall include:
 - (i) Classification in accordance with the unified soil classification system; and

- (ii) Estimated permeability based upon the unified soil classification system's classification in inches per hour;
- (b) The top four inches of soil of the treatment zone shall have an organic content of at least three per cent;
- (c) The depth to groundwater shall be at least fifteen feet;
- (d) Outside of any area with drainage tiles, unless the drainage tiles beneath the area to be used as the treatment zone have been plugged;
- (e) The horizontal plane of the treatment zone shall not exceed six per cent slope unless the owner or operator can demonstrate to the bureau chief's satisfaction that design controls will be used that will give the treatment zone run-on, run-off, and erosion controls at least as safe as a treatment zone that does not exceed six per cent slope on the horizontal plane;
- (f) Seventy-five per cent of the upper four feet of soil shall have a permeability of less than two inches per hour;
- (g) Surface water run-on and run-off shall be retarded by the use of the following:
 - (i) On the up-gradient side a vegetative buffer strip fifty feet wide measured from the edge of the treatment zone; and
 - (ii) On the down-gradient side a vegetative buffer strip fifty feet wide measured from the edge of the treatment zone; or
 - (iii) Any method or technique approved by the bureau which provides a similar amount of retardation as the required vegetative buffer strips; and
- (h) The treatment zone shall be located outside of a sensitive area, as defined in rule 1301:7-9-09 of the Administrative Code, except that the distance from a private water well or developed spring not located on the same property as the treatment zone shall be one hundred feet rather than fifty feet,

unless the owner or operator makes a demonstration to the satisfaction of the bureau chief that the off-site multiple application land farming will not adversely impact the groundwater.

- (iv) The application of petroleum contaminated soils at a designated facility operated in accordance with this paragraph shall comply with all of the following:
 - (a) Petroleum contaminated soils shall be incorporated or mixed into existing soils or organic matter as follows:
 - (i) Between April first and October thirty-first only, provided the soil is not frozen;
 - (ii) By tilling no more than four inches of the petroleum contaminated soils into the top four to six inches of soil or additional organic matter;
 - (iii) No trash, debris, municipal sludge, or industrial sludge is included in or mixed into the petroleum contaminated soils; and
 - (iv) If used, nitrogen shall not exceed two hundred pounds per acre per treatment year;
 - (b) By incorporating or mixing no more than one thousand five hundred cubic yards of petroleum contaminated soils into the soil or organic matter within a single treatment zone unless the treatment zone is separated by vegetative buffer strips on all sides of no less than eighty feet measured from each side of the treatment zone and any additional treatment zone and each treatment zone is monitored separately in accordance with this rule;
 - (c) Petroleum contaminated soils delivered to a designated facility during the treatment season which are not otherwise stored in accordance with paragraphs (G) to (G)(3) of this rule, shall be incorporated or mixed into the soil within seven days of its delivery or, in the event weather conditions do not permit effective application, as soon as is practicable, but in no event later than thirty days after its delivery; and
 - (d) Petroleum contaminated soils delivered to a designated facility

between November first and March thirty-first, or at any time after October twenty-fifth, and the petroleum contaminated soils cannot be applied, or at any time after October first and the weather conditions do not permit effective application, shall be stored in accordance with paragraphs (E) to (E)(2) and (E)(5) of this rule until the next treatment season and be applied as soon as is practicable;

- (v) Once petroleum contaminated soils are applied at a designated facility operated in accordance with this paragraph, the designated facility shall be managed as follows:
 - (a) No crops grown upon any treatment zone may be utilized for human or livestock consumption until the fire marshal issues a "no further action" letter in regard to the soils placed in the specific treatment zone;
 - (b) No additional application of petroleum contaminated soils shall be made in any treatment zone until the fire marshal issues a "no further action" letter in regard to the soils placed in the specific treatment zone or otherwise approves an additional application;
 - (c) If groundwater is located at a depth of forty-five feet or less, a minimum of three monitoring wells shall be installed as close as physically possible to the treatment zone; to the depth of the groundwater table, auger refusal, or a groundwater confining layer, whichever shall be encountered first; to monitor the groundwater below the treatment zone as follows:
 - (i) One hydraulically up-gradient; and
 - (ii) Two hydraulically down-gradient.
- (d) The treatment zone shall be tilled to a minimum depth of six inches at least bi-monthly during the treatment season, commencing with the date of application and, in each new treatment season, commencing with the month of April;
- (vi) The treatment zone shall be sampled until the fire marshal issues a "no further action letter" as follows:

However, no more than two monitoring wells shall be required between adjacent treatment zones; and

- (a) Groundwater samples from each of the monitoring wells installed pursuant to this paragraph shall be obtained and analyzed in accordance with the methods specified in paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group when the wells are installed and once during April and October thereafter;
 - (b) When petroleum contaminated soils are applied after August first, no sampling is required until the following treatment season;
 - (c) At a minimum, soil sampling shall be conducted once a year during the treatment season;
 - (d) Soil samples shall be collected and analyzed pursuant to the requirements of rule 1301:7-9-17 of the Administrative Code, except that the soil samples shall be obtained from six to ten inches below the surface; and
 - (e) An additional soil sample shall be taken two feet below the surface at the location of the highest field-screened sample from the treatment zone. If all field-screened readings are below detection limits, the additional soil sample shall be obtained from the center of the treatment zone;
- (vii) A report shall be submitted to the fire marshal no later than December fifteenth of each and every year, until the fire marshal issues a "no further action" letter in regard to the petroleum contaminated soils placed in a specific treatment zone, containing the following information:
- (a) The cover of the report shall contain the fire marshal's incident number(s) assigned to the UST site(s) from which the petroleum contaminated soils applied or stored at the designated facility were generated;
 - (b) The results of all soil and groundwater samples required to be obtained pursuant to paragraphs (I)(2)(d)(vi) to (I)(2)(d)(vi)(e) of this rule;
 - (c) The location of the designated facility, a diagram showing the number of and location of any treatment zone(s) located at the designated facility, for each treatment zone the fire marshal's

incident number(s) assigned to the UST site(s) from which the petroleum contaminated soils applied or stored at the designated facility were generated, the amount of any unapplied petroleum contaminated soils stored at the designated facility and a description of the manner in which it is stored, the date(s) of the delivery and application of the petroleum contaminated soils, and for each treatment zone identified, an indication of whether further treatment is needed;

- (d) A copy of the written log(s) maintained by the owner or operator indicating the results of the monthly inspections required pursuant to paragraph (I)(2)(b)(i)(d)(iii) of this rule; and
 - (e) If further treatment is not required for a treatment zone, a specific request for a "no further action" letter and the reasons justifying the issuance of same for that treatment zone;
- (viii) If during the operation of a designated facility the groundwater below the facility becomes contaminated as a result of the multiple application land farming treatment by an intrusion of petroleum or any of its constituents which exceed the site specific action levels for chemical(s) of concern in groundwater calculated pursuant to rule 1301:7-9-13 of the Administrative Code, the owner or operator shall do all of the following:
- (a) Cease all additional applications of petroleum contaminated soils until otherwise instructed by the fire marshal;
 - (b) Notify the fire marshal within twenty-four hours of the discovery of the groundwater contamination; and
 - (c) Perform immediate corrective action in accordance with the requirements of rule 1301:7-9-13 of the Administrative Code.
- (e) Confined treatment area or process.
- (i) Confined treatment area or process is approved for off-site treatment of petroleum contaminated soils.
 - (ii) In addition to the standards set forth in paragraphs (I)(2)(b) to (I)(2)(b)(i)(d)(v) of this rule, an owner or operator shall comply with all of the requirements of paragraphs (I)(2)(e)(iii) to (I)(2)(e)(iv)(i)(ii)

of this rule when treating petroleum contaminated soils at a designated facility operating as a confined treatment area or process site.

- (iii) Petroleum contaminated soils treated using an off-site confined treatment area or process shall be located in a treatment zone located outside of a sensitive area, as defined in rule 1301:7-9-09 of the Administrative Code, unless the owner or operator makes a demonstration to the satisfaction of the bureau chief that the off-site confined treatment area or process will not adversely impact the groundwater.
- (iv) To operate a designated facility in accordance with this paragraph the owner or operator shall design, construct, and operate the facility to meet all the following requirements:
 - (a) Petroleum contaminated soils shall be placed on a synthetic liner having a minimum thickness of six mils with a minimum of twelve inch seam overlays, on an asphalt pad, or on a concrete pad that minimizes leaching from the treatment zone. The bureau chief may approve a substitute material from those listed in this paragraph;
 - (b) The treatment zone shall be designed and operated to enhance volatilization and promote biodegradation;
 - (c) Tilling of the treatment zone is prohibited unless the owner or operator can demonstrate to the bureau chief's satisfaction that the liner will remain undamaged;
 - (d) Any cover shall be a synthetic liner having a minimum thickness of six mils and be secured to provide cover for the duration of the treatment;
 - (e) Treatment zones that are not covered with a top cover shall be designed to prevent the uncontrolled discharge of soils or contaminants;
 - (f) A twenty-four hour, once in ten year rain event shall be used for purposes of designing run-on and run-off controls;
 - (g) All soil samples collected shall be collected pursuant to the requirements contained in rule 1301:7-9-17 of the Administrative Code;

- (h) If the treatment zone is located on a synthetic liner that is placed on top of soil, one soil sample shall be collected from within the top two feet of soil in the center of the treatment zone prior to the placing of the petroleum contaminated soils on the synthetic liner and analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that will be placed on this synthetic liner. Upon completion of the treatment, one soil sample shall be collected from within the top two feet of the treatment zone where the synthetic liner has been breached, if the synthetic liner has not been breached, the one soil sample shall be collected from within the top two feet of soil in the middle of the treatment zone. The post-treatment soil sample shall be analyzed for the parameters listed in table 1 of paragraph (H)(1)(b) of rule 1301:7-0-13 of the Administrative Code for the applicable analytical group associated with the petroleum contaminated soils that were treated in the treatment zone. The results of the pre-treatment and post-treatment soil analysis required by this paragraph shall be submitted to the fire marshal; and
- (i) If groundwater is located at a depth of twenty feet or less, a minimum of three monitoring wells shall be installed as close as physically possible to the treatment zone to the depth of the groundwater table, auger refusal, or a groundwater confining layer, whichever shall be encountered first, to monitor the groundwater below the treatment zone as follows:
- (i) One hydraulically up-gradient; and
 - (ii) Two hydraulically down-gradient. However, no more than two monitoring wells shall be required between adjacent treatment zones. Groundwater samples from each of the monitoring wells shall be collected and analyzed before treatment begins and after treatment is completed in accordance with the methods specified in paragraph (H)(1)(b) of rule 1301:7-9-13 of the Administrative Code.

(f) Alternate off-site treatment methods.

Off-site treatment methods other than those specified in this rule may be used if the owner or operator:

- (i) Demonstrates to the bureau chief that the alternate off-site treatment method is at least as safe and effective as those allowed by this rule; and
- (ii) Obtains written approval from the bureau chief to use the alternate off-site treatment method before the actual implementation of such treatment method. If the alternate off-site treatment method is approved by the bureau chief, the owner or operator shall comply with any conditions imposed by the bureau chief on its use.

(J) Reporting.

After disposal of petroleum contaminated soils or following completion of treatment of such soils in accordance with the methods authorized by this rule, the owner or operator of the UST site(s) that generated the petroleum contaminated soils shall submit a report to the fire marshal describing the steps taken by the owner or operator to manage petroleum contaminated soils generated at the owner's or operator's UST site(s). The report shall include all results of samples required to be collected pursuant to this rule.

(K) No further action.

The fire marshal shall issue a "no further action" letter to the owner or operator regarding the petroleum contaminated soils associated with the owner or operator's UST site upon a satisfactory demonstration of one of the following:

- (1) The petroleum contaminated soils were disposed in accordance with this rule;
- (2) After treatment pursuant to this rule, the petroleum contaminated soils do not exceed one or more of the site specific action levels for chemical(s) of concern as calculated pursuant to rule 1301:7-9-13 of the Administrative Code for the applicable analytical group; or
- (3) If the petroleum contaminated soils were treated using the treatment method of one-time land farming pursuant to this rule, that a vegetative cover has been established on the treatment zone.

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