

## Responses to Comments – Draft Rule Revisions

In April 2016, BUSTR released for public comment a draft set of revisions to its rules. Comments were accepted through June 3, 2016. BUSTR has carefully considered the comments received and has made a number of changes to the text of many of the draft rule revisions. Responses to the comments are found below.

Key to Commenters:

RMSC	Remediation Management Services Company
Flynn	Flynn Environmental, Inc.
IWM	IWM Consulting Group, LLC
Arcadis	Arcadis U.S., Inc.
OPMCA	Ohio Petroleum Marketers and Convenience Store Association
Speedway	Speedway LLC
ATC	ATC Group Services, LLC
AFS	Advanced Fuel Systems/Modern American Safety Training*

\*Note that the comments from AFS were received in November 2015, prior to the release of the draft revisions and therefore relate to the language of the existing 2011/2012 rules, not to the proposed text. AFS's comments are italicized in this document.

### Rule 01

No comments received.

### Rule 02

#### **(B)(22)**

**Comment:** It is recognized that this revised definition is intended to copy the definition under the federal UST rules; however, the current definition in the Ohio rules was changed in 2005 to provide a method for documenting the presence of free product. Aside from the definition in the federal rules, what are the issues driving this change? Under this revised definition the presence of sheen in an excavation or on groundwater will be considered free product requiring the implementation of free product removal under 1301:7-9-13(3)(a). A sheen in an excavation or on groundwater is not always an indication of a regulated substance release. This definition should not be changed. If this definition is to remain then revisions will be required under 1301:7-9-13(G) and other areas of this rule. (OPMCA)

**Response:** BUSTR's main purpose for changing the definition of "free product" is to achieve greater consistency with the federal rule definition in 40 CFR Part 280.12. BUSTR still intends to use a free product thickness of 0.01-foot as the measurement for terminating free product recovery activities at most corrective action sites. Therefore,

the 0.01-foot thickness has been added to the criteria listed in OAC 1301:7-9-13 (G)(3)(f).

However, there are some releases which occur within a Sole Source Aquifer or near the drinking water extraction well of a Drinking Water Source Protection Area (DWSPA). Therefore, a secondary purpose for changing the definition of “free product” is to allow BUSTR the ability to require owners/operators to continue free product recovery activities (beyond the 0.01-foot thickness) at certain release sites.

BUSTR does not intend that the presence of a sheen in an excavation will be considered free product requiring implementation of free product recovery under OAC 1301:7-9-13 (G)(3)(a) or requiring a Site Check under OAC 1301:7-9-13 (F). Therefore, BUSTR intends to clarify this issue in the following ways:

- BUSTR intends to revise OAC 1301:7-9-12 (G)(1)(i) to include the term “measurable”.
- BUSTR intends to revise the definition of “physical discovery” in OAC 1301:7-9-13 (C)(20) to include the term “measurable”.
- BUSTR intends to revise the Technical Guidance Manual to clarify the notion that “free product” is a measurable, separate phase liquid, which does not include a “sheen” observed in an excavation cavity or in a containment sump.

**(B)(31)**

**Comment:** The addition of these additional components may add a significant burden to the UST owner/operator and the permitting system. For example, what constitutes a cathodic protection component? Would the replacement of a rectifier require a permit? Why are shear valves included here? Shear valves are not part of the underground piping. Is BUSTR intending to regulate shear valves as part of the UST system? What is the reason for adding the replacement of flex hoses within a sump back into the permitting process? This was done to facilitate worn hose replacement before a release has occurred. It also recognized that these hoses were in containments designed to contain and alarm if a release were to occur. Is the real issue here that certain repairs or component replacements should be accomplished by a certified installer rather than obtaining a permit? (OPMCA)

**Response:** Permits serve to ensure work is performed on UST systems by Certified UST Installers in a manner consistent with BUSTR regulations. Permits give notification of work on UST systems so that BUSTR may carry out its statutory mission and investigate events that cause releases.

Over the past several years, BUSTR noticed work on shear valves and flex lines that was improperly performed leading to releases. Both BUSTR and U.S. EPA view shear valves as regulated. An unacceptably high number of releases occur at tank tops and under dispensers. To address this concern, BUSTR will more closely monitor work activities in these locations using the permit process and by using Certified UST Installers. Also, new federal rules state the replacement of connecting piping equipment (including shear valves and flex lines) may trigger retrofitting requirements for under dispenser containments. To help monitor this activity, BUSTR moved the replacement of shear valves and flex lines under the modification definition.

Upon further review, BUSTR decided to leave ‘cathodic protection components’ under the definition of routine maintenance for this round of rule changes. It is possible that future concerns involving internal and external corrosion may evolve to the point to justify the need for a modification permit for cathodic protection work.

BUSTR is concerned about the damaging effects of water in USTs that is contributing to interior corrosion of UST system components. Overall, a greater effort needs to be made to minimize the intrusion of water into UST systems. BUSTR noticed spill prevention equipment (i.e., spill buckets) installed to meet the December 1998 upgrade deadline are degrading and are contributing to water intrusion into USTs as well as releases into the environment. To address this concern, BUSTR will more closely monitor work on spill prevention equipment using the permit process and by using Certified UST Installers. Also, new federal rules require tightness testing of newly installed spill buckets within one year of installation and existing spill buckets every three years. To help monitor this activity, BUSTR moved spill prevention equipment under the modification definition.

**(B)(32)**

**Comment:** Racing fuel could be leaded gasoline, nitromethane, methanol, ethanol, nitrous. This appears to have been done solely to address the addition of EDB and EDC to the list of chemicals of concern. Rather than adding racing fuel as an example under motor fuel, additional explanation should be provided in 1301:7-9-13(H)(1). (OPMCA)

**Response:** BUSTR’s main purpose for changing the definition of “motor fuel” is to achieve greater consistency with the federal rule definition in 40 CFR Part 280.12. The addition of the term “racing fuel” to the definition was necessary because it is used in rule 1301:7-9-13 and is otherwise undefined. With respect to the commenter’s concern that nonpetroleum racing fuels could become regulated via this definition, BUSTR notes that the definition of “motor fuel” begins with the phrase “a complex blend of hydrocarbons typically used in the operation of a motor engine, such as....”. Because nitromethane, methanol, and ethanol are not considered “a complex blend of hydrocarbons”, they would not meet this definition. Further, nitrous oxide is a gas at standard temperature and pressure, and would not be regulated by BUSTR.

**(B)(53)**

**Comment:** See comments for 1301:7-9-02(B)(31) above. (OPMCA)

**Response:** Permits serve to ensure work is performed on UST systems by Certified UST Installers in a manner consistent with BUSTR regulations. Permits give notification of work on UST systems so that BUSTR may carry out its statutory mission and investigate events that cause releases.

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dispenser containments. To help monitor this activity, BUSTR moved the replacement of shear valves and flex lines under the modification definition.

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BUSTR is concerned about the damaging effects of water in USTs that is contributing to interior corrosion of UST system components. Overall, a greater effort needs to be made to minimize the intrusion of water into UST systems. BUSTR noticed spill prevention equipment (i.e., spill buckets) installed to meet the December 1998 upgrade deadline are degrading and are contributing to water intrusion into USTs as well as releases into the environment. To address this concern, BUSTR will more closely monitor work on spill prevention equipment using the permit process and by using Certified UST Installers. Also, new federal rules require tightness testing of newly installed spill buckets within one year of installation and existing spill buckets every three years. To help monitor this activity, BUSTR moved spill prevention equipment under the modification definition.

**(B)(XX) “Change of product”**

**Comment:** The proposed definition for change of product is overly broad. Is a change from conventional diesel to conventional kerosene or a change from regular unleaded to mid-grade unleaded or a change from B2 to B5 to be considered a change of product? The issue under the federal UST rules is to provide notification (280.32) when a change in product occurs that would require a demonstration of compatibility. 280.32 requires notification when “switching to a regulated substance containing greater than 10 percent ethanol, greater than 20 percent biodiesel, or any other regulated substance identified by the implementing agency.” Such a broad definition could also significantly and unreasonably expand the requirements for permits (1301:7-9-10(C)(1) and notification (1301:7-9-04(F)). (OPMCA)

**Response:** The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent.

**Rule 03**

No comments received.

**Rule 04**

**Paragraph (F)**

**Comment:** See comments for 1301:7-9-02(B)(XX) “Change of product”, above.

**Response:** The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent.

## **Rule 05**

No comments received.

## **Rule 06**

### **General**

**Comment:** It would be substantially easier for an owner/operator to determine the inspection requirements if they were addressed in one location rather than spread throughout the rule. As will be discussed later, the reference to the various specific applicable codes of practices should be provided in the section where they would apply and for the most part should be permissive rather than mandated. Also the reference to “codes of practice” (the plural) might be more appropriately listed as “a code of practice” (singular). As written in many case it could be interpreted that you need to look at all available codes of practice to comply. (OPMCA)

**Response:** The BUSTR rules are modeled after the federal regulations; and as such, a number of inspection requirements are spread out in different parts of the rule. If the inspection requirements for all of the various components were addressed in one location rather than being addressed in their respective sections, then the reader would lose the benefit of understanding the inspection requirements in context. Also, the BUSTR rules represent several generations of rules going back to the early 1990s. One of the issues of greatest concern when amending the BUSTR rules is to segregate ‘new’ requirements from ‘existing’ requirements whenever possible. Otherwise, confusion may arise when trying to determine the requirements that apply to grandfathered UST systems. BUSTR intends to provide a guidance document that groups all of the inspection requirements together. This should assist owners who prefer a consolidated inspection list. In addition, BUSTR adjusted the way codes of practice are listed in the rules so that specific codes are listed in the sections where they apply. Other codes of practice may be used to comply with the rules, though you are no longer obligated to look at all of the codes of practice every time.

### **Paragraph (A)**

**Comment:** The list of exempted UST systems is redundant to exempt and partially exempted UST systems listed under 1301:7-9-01(D) and (E). Waste water treatment tank systems would appear to apply to both exempt systems regulated under the Clean Water Act and partially exempt systems not regulated under the Act. This list of exemptions should be deleted. (OPMCA)

**Response:** The list of exemptions was deleted. Also, paragraph (F) of rule 1301:7-9-01 of the Administrative Code was modified to better clarify the partially exempted tank systems still subject to corrosion protection requirements.

(B)(1)(d)

**Comment:** The change from the term “owner(s) and/or operator(s)” needs to be carefully considered in this and other rules. For example, in this section does the change to “owners and operators” require both the owner and operator to jointly make a demonstration or can one or the other make the demonstration. Under 1301:7-9-06(B)(1)(f) if only one or the other makes the election does this section apply? This was not an issue under the current language since “and/or” could be interpreted as one or the other or both. The change throughout this rule to “owner(s) and operator(s)” makes all decisions and compliance a joint responsibility. This change in language needs to be reviewed and changed back to “owner(s) and/or operator(s)” or specifically to “owner(s) and operator(s)” or “owner(s) or operator(s)” as appropriate. This comments applies to all areas of this rule where the term “and/or” has been replaced with “and”. (OPMCA)

**Response:** This change was made to increase consistency within BUSTR’s rules. The “owners and operators” language has been part of the closure and corrective action rules since the inception of the program. BUSTR has always interpreted this as meaning that while both owners and operators are responsible for compliance, it may be accomplished by either. A joint demonstration of compliance is not required. New paragraph (G) was added to rule 1301:7-9-01 of the Administrative Code clarifying that where an obligation under any of BUSTR’s rules falls on owners and operators, compliance may be achieved by either party. In the event of noncompliance, both are responsible. Additionally, similar language was added to paragraph (A) of both rule 1301:7-9-06 and -07 in order to emphasize this point.

With respect to the commenter’s citation of 1301:7-9-06 (B)(1)(f), BUSTR agrees that the use of “and” is not appropriate, and it is changed to “or” to clearly reflect that the choice to equip a UST system beyond regulatory requirements may be made by either the owner or operator. Prior to formal proposal of these revisions, BUSTR will review rules 1301:7-9-06 and -07 to determine any other such provisions that address decisions (and not compliance) and will amend them in a similar fashion.

**(C)(1)(c)(i)**

**Comment:** We are not aware of UST manufacturers that certify tank liners. This would be particularly difficult for tank manufacturers that are no longer manufacturing tanks (e.g., Owens Corning). The requirement for certification should be deleted. (OPMCA)

**Response:** Given the poor performance of lined USTs in the past, BUSTR is committed to ensuring all future lining activity (for either USTs or containment sumps) is performed in accordance with more rigorous standards. With this in mind, lining activity shall be performed in accordance with recommended practices and in accordance with manufacturer’s instructions. BUSTR recognizes Containment Solutions as the successor to Owens Corning.

**Comment:** (Recommend revised text) The addition of internal lining in the field to UST systems for purposes ~~other than for cathodic protection is allowed of meeting compatibility requirements or in combination with cathodic protection of sacrificial anodes or impressed current is allowed.~~ Internal lining of a UST in the field cannot be applied as the sole means of cathodic protection. Owners and operators shall comply with any conditions imposed by the state fire marshal on the use of internal lining. (i) Owners and

operators shall obtain approval from the manufacturer of the UST prior to the addition of internal lining. All lining activity shall be performed by a person certified by the manufacturer to perform the lining of the UST. (Speedway)

**Response:** In keeping with previous BUSTR regulations, the addition of lining to any metallic USTs to meet corrosion protection requirements is no longer allowed. This includes any combination of lining with traditional methods of corrosion protection. Existing metallic USTs that are lined may continue to operate provided they comply with the performance criteria identified in BUSTR rules. The addition of a lining to non-metallic USTs is allowed provided all criteria are met including obtaining approval from the manufacturer of the UST.

(C)(4)(c)

**Comment:** *Recommend new text. "Existing UST systems installed prior to March 1, 2011 that are single wall construction shall be required to pass an ullage test once every three years." Reasoning: Traditional tightness testing will not reveal any problems with leakage at risers and at points above the testing fuel level. (AFS)*

**Response:** BUSTR has not seen a pattern of releases that justifies the periodic testing of the ullage space of single wall USTs. If a problem occurs in the ullage space, it rarely causes an immediate release.

(C)(6)(b)(i)

**Comment:** This should refer to paragraph (C)(6)(b). (OPMCA)

**Response:** The reference was changed.

(C)(7)(d) & (C)(7)(d)(i)

**Comment:** (Recommend revised text) (C)(7)(d) indicated that "all of the equipment need to connect a dispenser", but (C)(7)(d)(i) lists the components with a "or" indicating that any one single component is replaced, modified or undergoes a major repair would trigger the requirement to install a new containment. Speedway is requesting that (C)(7)(d)(i) be revised to read: "The equipment necessary to connect the dispenser to the underground storage tank system includes check valves, shear valves, unburied risers, ~~or~~ flexible connectors, ~~or~~ **and** other transitional components that are underneath the dispenser and connect the dispenser to the underground piping." (Speedway)

**Response:** The language was changed.

(C)(8)

**Comment:** This is an overly broad requirement. Does this mean that a demonstration of compatibility in accordance with (D)(9)(a) is required for every tank currently in existence as required even if it is storing fuel blends of E10 (conventional motor fuel) or lower or B20 or lower? Conventional fuels are considered to be compatible with existing UST systems. What happens if an existing UST system storing conventional motor fuel cannot meet the demonstration requirements for every component of the system? Is the issue the inspection

under (D)(9)(b)? If an existing UST system is storing an alternative blend (E-85), is the owner/operator required to obtain a permit and submit documentation of compatibility? The compatibility requirement is difficult enough (if not impossible) for existing UST systems considering higher blend ethanol fuels. There needs to be some direction on what is required for existing UST systems. Should this be limited to existing UST systems storing blends greater than E10 or B20? (OPMCA)

**Response:** The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent.

**(D)(2)(c)**

**Comment:** *Recommended revised text. “~~Owners and operators~~ An individual having a current BUSTR underground tank installer license shall inspect all accessible UST and piping components at least once a year for evidence of degradation and shall ~~correct~~ notify the owner of any deficiencies that could cause a release or prevent release detection equipment from working properly. At a minimum, USTs and piping shall be monitored for any visible corrosion, peeling, cracking or excessive distortion of the UST and piping components UST’s, piping, spill prevention, and overfill prevention systems and equipment shall be inspected and tested to assure that they are operational and all sumps opened to ensure that no escaped product is present in the sumps.” Reasoning: Owners and operators do not have the training and qualifications required to open sumps, and remove and operate overfill prevention and leak detection equipment and to properly evaluate the findings. The existing regulation does not meet EPA 2015 requirements for annual testing of release detection equipment and opening of sumps and overfill prevention equipment. (AFS)*

**Response:** For permit related activities, BUSTR intends to maintain the current process using Certified UST Installers and UST Inspectors. For most operational and maintenance requirements, BUSTR does not intend to limit who may perform these activities provided they can demonstrate they followed manufacturer’s requirements or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

**(D)(2)(d)(ii)**

**Comment:** Who determines what constitutes a “qualified cathodic protection tester”? Is this comparable to 40 CFR 280.214 (Subpart J) Class B Operators? (Speedway)

**Response:** The terms ‘cathodic protection tester’ and ‘corrosion expert’ are defined in rule 1301:7-9-02 of the Administrative Code. Class B Operators are not automatically viewed as ‘cathodic protection testers’. Class B Operators may obtain training from a third party such as National Association of Corrosion Engineers (NACE) and/or Steel Tank Institute (STI) thus demonstrating they have the education and experience that meets the definition of ‘cathodic protection tester’. Owners and operators may also utilize a ‘corrosion expert’ as defined in 1301:7-9-02(B)(15) of the Administrative Code to conduct evaluations.

**(D)(2)(d)(v)**

**Comment:** The requirement that all of the codes of practices listed in this section “shall” be used to demonstrate the adequacy of the cathodic protection system is overly onerous. The term “shall be used to demonstrate” should be replaced with “may use one of the following practices to demonstrate.” This is consistent to the way U.S. EPA incorporates codes of practices in the federal UST regulations by stating that “the following codes of practice may be used to comply with...” The mandating of multiple codes of practice is an issue in a number of places in this rule and others. If a code of practice is to be mandated, one should be selected and mandated rather than mandating a list of redundant and possible conflicting codes. For flexibility, an approach similar to U.S. EPA should be taken. (OPMCA)

**Response:** The proposed rule language was changed to “the following codes of practice may be used to comply with...”

**(D)(3)**

**Comment:** The inclusion of “including ‘connected piping’ as defined in Rule 1301:7-9-02 of the Administrative Code” is redundant since connected piping is defined as underground piping including valves, elbows, joints, flanges, and flexible connectors through which regulated substances flow. What is the significance of this change? What component is intended to be included that is not already included? A change suggests that there is something that currently is not included that would now be included under this revised language. (OPMCA)

**Response:** The language was deleted.

**(D)(3)(a)**

**Comment:** What other type of piping is there than man-made non-metallic piping? This should just refer to non-metallic piping unless there is a specific type of piping that is not man made. (OPMCA)

**Response:** The reference to ‘man-made’ was removed.

**(D)(3)(a)(ii)**

**Comment:** While U.S. EPA references NFPA codes, the Ohio Fire Code is based on the International Fire Code (IFC). It would make more sense to reference the Ohio Fire Code to be consistent with other requirements that UST owners/operators are subject to under the Ohio Fire Code; particularly since all of these codes are jointly mandated under this provision. See comments for 1301:79-06(D)(2)(d)(v), above. (OPMCA)

**Response:** Similar to the language found in Section 102.10 of the Ohio Fire Code, owners are required to comply with both the Ohio Fire Code and BUSTR regulations. If similar requirements are in conflict, then the BUSTR regulations shall apply. However, the enforcement pathways allowed under the BUSTR regulations are different from the Ohio Fire Code. For this reason, it is important keep as many UST requirements as possible within the BUSTR regulations. Otherwise, jurisdictional confusion will arise if a UST violation is identified, though the only way to cite the violation is through the Ohio Fire Code enforcement pathway. Thus, to avoid compromising enforcement cases, the NFPA standards need to be referenced within the BUSTR regulations.

**(D)(3)(b)(ii)**

**Comment:** See comments for 1301:7-9-06(D)(3)(a)(ii), above. (OPMCA)

**Response:** Similar to the language found in Section 102.10 of the Ohio Fire Code, owners are required to comply with both the Ohio Fire Code and BUSTR regulations. If similar requirements are in conflict, then the BUSTR regulations shall apply. Of importance, the enforcement pathways allowed under the BUSTR regulations are different from the Ohio Fire Code. For this reason, it is important keep as many UST requirements as possible within the BUSTR regulations. Otherwise, jurisdictional confusion will arise if a BUSTR UST violation is identified, though the only way to cite the violation is through the Ohio Fire Code enforcement pathway. Thus, to avoid compromising enforcement cases, the NFPA standards need to be referenced within the BUSTR regulations.

**(D)(3)(e)**

**Comment:** See comments for 1301:7-9-06(D)(3), above. In addition, ancillary equipment can be more than just pipe. Consider “Piping, including vent piping, and ancillary equipment shall not be configured...” (OPMCA)

**Response:** The language was changed and the reference to connected piping was removed.

**(D)(4)(c)**

**Comment:** See previous comments related to mandated codes of practices. Which of the referenced codes apply? How does an owner/operator determine what additional requirements are to be complied with in addition to the requirements of the rule? (OPMCA)

**Response:** To minimize confusion, the codes of practice referenced in rule 1301:7-9-06(D)(4)(c) of the Administrative Code were deleted. The codes of practice listed in the previous section (rule 1301:7-9-06(D)(3)(c) of the Administrative Code) sufficiently describe the requirements that apply.

**(D)(4)(d)(ii)**

**Comment:** This statement needs clarification. Is the intention to make sure that mechanical connections used to repair a pipe are not buried? Turning this sentence around would help such that the requirement is to make the connection in accordance with the manufacturer or code of practice. Since both would not allow a buried mechanical connection. You could still reference the use of a sump where a mechanical or unacceptable buried connection is used. (OPMCA)

**Response:** The language was changed to reference the manufacturer’s requirements or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

**(D)(5)**

**Comment:** The term “containment systems” is not defined. This section is dealing with containment sumps. The term “containment systems” should be changed to “containment sumps” which is now a defined term. (OPMCA)

**Response:** The term was changed to ‘containment sump’ throughout the chapter.

**(D)(6)**

**Comment:** The term “containment equipment” is not defined. This section is dealing with inspection of containment sumps and not the entire secondary containment system which could include the interstitial space of a double walled UST. The term “containment equipment” should be changed to “containment sumps” which is now a defined term. (OPMCA)

**Response:** The term was changed to ‘containment sump’ throughout the chapter.

**(D)(6)(a) and (D)(6)(b)**

**Comment:** The term “containments” is not defined. This section is dealing with inspection of containment sumps and not the entire secondary containment system which could include the interstitial space of a double walled UST. The term “containments” should be changed to “containment sumps” which is now a defined term. (OPMCA)

**Response:** The term was changed to ‘containment sump’ throughout the chapter.

**(D)(6)(b)**

**Comment:** Remove 1301:7-9-06(D)(6)(b)(iii), as OAC 1301:7-9-09 has been rescinded. (Speedway)

**Response:** Paragraph (D)(6)(b)(iii) of rule 1301:7-9-06 of the Administrative Code relates to the addition of containment sumps when dispensers are installed or replaced on existing UST systems. This paragraph is not affected by the rescission of rule 1301:7-9-09 of the Administrative Code (i.e., the Sensitive Area rule).

**Comment:** 1301:7-9-06(C)(1)(a) states: “Existing USTs installed prior to May 16, 2011, are not required to be equipped to meet the new UST secondary containment requirements of paragraph (B)(1) of this rule unless the USTs undergo work pursuant to paragraph (C)(7)(a) of this rule”. This appears to be in conflict with 1301:7-9-06(D)(6)(b)(i).

Recommend defining USTs as “Hazardous Material and Petroleum UST systems” to avoid any confusion in interpretation. Please consider updating 1301:7-9-06(D)(6)(b)(i) by replacing “after March 1, 2005” with “after May 16, 2011” to maintain consistency. (Speedway)

**Response:** No change is intended for paragraph (D)(6)(b)(i) of rule 1301:7-9-06 of the Administrative Code. BUSTR required the use of secondarily contained piping with containments sumps as of March 1, 2015. Later, BUSTR required USTs installed after May 16, 2011, to be secondarily contained. Paragraph (C)(1)(a) of rule 1301:7-9-06 of

**the Administrative Code is specific to underground storage tanks (USTs); not to UST systems. In order to avoid confusion, language was added to paragraph (C)(1)(a) of rule 1301:7-9-06 of the Administrative Code to make it more clear that this paragraph applies just to the tank portion of USTs.**

**(D)(6)(c)**

**Comment:** The term “double wall containment equipment” is not defined. As discussed in prior comments related to 1301:7-9-06(D)(6), the term “containment equipment” should be changed to “containment sumps”. (OPMCA)

**Response:** The term was changed to ‘containment sumps’ throughout the chapter.

**Comment:** Remove the word “equipment” and replace with “sump” to maintain constancy. (Speedway)

**Response:** The term was changed to ‘containment sumps’ throughout the chapter.

**(D)(6)(d)**

**Comment:** Please clarify if internal lining can be considered instead of replacing cracked or damaged secondary containment sumps. (Speedway)

**Response:** Given the poor performance of lined USTs in the past, BUSTR is committed to ensuring all future lining activity (for either USTs or containment sumps) is performed in accordance with more rigorous standards. With this in mind, lining activity shall be performed in accordance with recommended practices and in accordance with manufacturer’s instructions. The addition of a lining to containment sumps is allowed provided all criteria are met including obtaining approval from the manufacturer of the containment sump.

**(D)(6)(d)(i)**

**Comment:** We are not aware of containment sump manufacturers that certify tank liners or are willing to approve the lining of a sump. This would be particularly difficult for manufacturers that are no longer manufacturing sumps. The requirement for approval and certification should be deleted. (OPMCA)

**Response:** Given the poor performance of lined USTs in the past, BUSTR is committed to ensuring all future lining activity (for either USTs or containment sumps) is performed in accordance with more rigorous standards. With this in mind, lining activity shall be performed in accordance with recommended practices and in accordance with manufacturer’s instructions. The addition of a lining to containment sumps is allowed provided all criteria are met including obtaining approval from the manufacturer of the containment sump.

**(D)(8)(c)**

**Comment:** Can a 40 CFR 280.214 (Subpart J) Class B Operator complete these inspections? Does SFM have a completed form they will require to document the spill and overfill prevention equipment inspections? (Speedway)

**Response:** “Walkthrough inspections” may be performed by any party designated by owners and operators. They do not have to be Class B Operators. New paragraph (E)(4) of rule 1301:7-9-06 of the Administrative Code was added to more clearly identify components subject to ‘walkthrough inspections’. Also, a draft form is available for review. For other operational and maintenance requirements (that are not directly associated with walkthrough inspection), BUSTR does not intend to limit who may perform these activities provided they can demonstrate they followed manufacturer’s requirements or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

**(D)(9)(a)**

**Comment:** There needs to be some discussion on how the compatibility demonstration will be implemented. The number of components that will require this demonstration can be large. What happens if you cannot make a demonstration for every component? Are there critical components such as the tank and piping and other components that may not be so critical? (OPMCA)

**Response:** The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent.

**Components that cannot demonstrate compatibility should be replaced.**

**(D)(9)(b)**

**Comment:** This provision should be deleted. Annual inspections are already required. What is the difference between this section and 1301:7-9-06(D)(2)(c) and other inspections required in other sections of this rule? If you have to make a demonstration that the equipment is compatible, what is the purpose of this annual inspection for non-compatibility? How do you determine something is non-compatible? What are signs of non-compatibility? What provisions of API 1626 provide information on identifying signs of non-compatibility? The API document is focused on the installation or conversion of UST systems for ethanol and other alternative fuel use. (OPMCA)

**Response:** The paragraph was deleted.

**Comment:** Request SFM clarify the “visually inspect” requirement for Ethanol damage. Equipment made from steel normally rust outside the presence of ethanol. Can the SFM define what “signs of non-compatibility” should be checked and documented under this subpart. (Speedway)

**Response:** The paragraph was deleted. It was redundant to paragraph 1301:7-9-06(D)(2)(c) of the Administrative Code.

**(D)(9)(d)**

**Comment:** See comments on 1301:7-9-02(B)(XX) “Change of product”, above. (OPMCA)

**Response:** Paragraph (D)(9)(d) was deleted. The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent. As a result, only UST systems switching to higher percentages of ethanol and biodiesel will need to obtain a permit.

**(D)(9)(d)(i)**

**Comment:** In addition to the confusion over what constitutes a change of product, if you do not need an inspector, installer, or tightness test why do you need a permit? There is a need for notification and permitting for changes that would affect the compatibility of the UST system, but these requirements for systems where compatibility is not an issue are unnecessary paperwork. Further, in order to meet the requirements for no permit, the owner/operator would need to make a compatibility demonstration to start with, given the broad nature of the definition of the “change in product” term. (OPMCA)

**Response:** Paragraph (D)(9)(d)(i) was deleted. The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent. As a result, only UST systems switching to higher percentages of ethanol and biodiesel will need to obtain a permit.

**(E)(1)**

**Comment:** A very broad requirement that covers every aspect of the UST system. Is this really needed? Do you really need 1301:7-9-06(E)(1) and 1301:7-9-06(E)(2)? Several other issues to consider:

- 1) 1301:7-9-06(E)(1)(b) – See comments on 1301:7-9-06(E)(3). There needs to be guidance on what codes of practice are applicable to the requirements of this rule. The reference to a mandated list of codes places a significant burden on the owner/operator to determine what is needed to comply.
- 2) 1301:7-9-06(E)(1)(c) – Aren’t requirements determined by the state fire marshal, the requirements of this and other rules or does this just apply to alternative methods?

This provision should simply state that all UST systems shall be properly designed, constructed, installed, modified, repaired, operated and maintained in accordance with the requirements of this rule. (OPMCA)

**Response:** The rule language was changed to say ‘...in accordance with the requirements of this rule’. The previously proposed BUSTR rules language closely follows similar federal language; though, changes have been made to simplify the language without a loss of meaning. Also, the proposed rules were changed to more clearly identify the applicable codes of practice.

**(E)(2)**

**Comment:** A very broad requirement that covers every aspect of the UST system. Is this really needed? Do you really need both 1301:7-9-06(E)(1) and 1301:7-9-06(E)(2)? What

about the certified installer? Wasn't the purpose of that program to insure proper design, construction, installation, modification, and repair? The rule provides significant guidance on how to design, construct, install, modify, repair, operate and maintain a UST system. This provision should simply state that all UST systems shall be properly designed, constructed, installed, modified, repaired, operated and maintained in accordance with the requirements of this rule. (OPMCA)

**Response:** The proposed rule language was changed to clarify who may perform activities on UST systems. 'Walkthrough inspections' may be performed by any party designated by owners and operators. For permit related activities, BUSTR intends to maintain the current process using Certified UST Installers and UST Inspectors. For most operational and maintenance requirements, BUSTR does not intend to limit who may perform these activities provided they can demonstrate they followed manufacturer's requirements or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

**(E)(3)**

**Comment:** Mandating a laundry list of codes of practices without providing specific applicability can be onerous for an owner/operator. U.S. EPA does not mandate codes of practice, but rather provides codes of practice as guidance for compliance with the requirements in the rule. In addition to the concern with the mandatory requirement for these practices, several other issues need to be addressed:

- 1) 1301:7-9-06(E)(3)(b) – API 2200-15 is a pipeline standard that is focused on major pipeline repairs. While there are provisions that may be applicable to a repair of petroleum UST system piping, it should not be mandated.
- 2) 1301:7-9-06(E)(3)(d) and (e) – As mentioned in our comments on 1301:7-9-06(D)(3)(a)(ii) while U.S. EPA references NFPA codes since the Ohio Fire Code is based on the International Fire Code (IFC), it would make more sense to reference the Ohio Fire Code to be consistent with other requirements that UST owners/operators are subject to under the Ohio Fire Code.
- 3) 1301:7-9-06(E)(3)(h) – Mandating RP900-08 presents a number of problems. First, the document is currently being revised, specifically to address the changes in the federal UST regulations. The updated practice should be completed before the year-end and should be referenced. Second, this practice goes beyond the requirements that are outlined in this rule. Is the intention to require the owner/operator to comply with all of the provisions of this practice including the daily, monthly, and yearly inspections and completion of the 10 pages of forms that are included in this practice? 1301:9-7-06 does not provide specific language or requirements for documentation for monthly walk-through inspections as outlined in 280.36. Is reference to this practice intended to address this requirement? Regardless of the intention of referencing this practice, it should not be included in this list of practices which for the most part are related to installation, repair, and modification.
- 4) 1301:7-9-06(E)(3)(h) – Similar to RP900-08, RP1200-12 is currently undergoing revision to address changes in the federal rule. The updated practice should be completed before the yearend and should be referenced.

- 5) How is “as applicable” determined? What codes apply where or do all the codes apply everywhere? An owner/operator would need to search through all of these codes to determine which codes have provisions that apply to a particular component of a UST installation and then make a determination which is more protective. This was not a big issue under the existing rule since the codes referenced were a shorter list specific to installation, modification, and repair. (OPMCA)

**Response:** The proposed rule language was changed to “The following codes of practice may be used to comply with this rule:”. This change resolves the concern of determining which of the many codes of practice may be applicable or with concerns relating to codes of practice that may be more stringent than state and federal requirements as well as with codes of practice that may not fully apply to UST systems (e.g., pipelines). Also, as previously discussed in comments relating to paragraph (D)(3)(a)(ii) of Rule 1301:7-9-06 of the Administrative Code, the NFPA standards need to be referenced within the BUSTR regulations in order to minimize jurisdictional confusion with the Ohio Fire Code.

**(E)(4)(a)**

**Comment:** This provisions references a walkthrough inspection which is not anywhere else in this rule with the exception of 1301:7-9-06(F) related to airport hydrant systems and field constructed tanks which references the requirements under the federal UST regulations for these UST systems. What are the walkthrough inspection requirements? (OPMCA)

**Response:** New paragraph (E)(4) of rule 1301:7-9-06 of the Administrative Code was added to more clearly delineate the walkthrough inspection requirements

**(E)(4)(d)**

**Comment:** Records of operation and maintenance are not always maintained at the UST site. In recognition of this, owners/operators have been provided with more time than 24-hours to provide access to records that were not maintained at the location. (OPMCA)

**Response:** The language was changed to “one business day”. Records are important during release investigations, and BUSTR needs the ability to obtain records without delay. As a matter of policy, BUSTR gives owners a reasonable amount of time to provide records during non-release situations. When performing normal compliance inspections, BUSTR currently gives owners a generous 30 days to provide records.

**Comment:** Remove the phrase “twenty-four hours” and replace with “one business day” to allow for requests that occur on Fridays of the work week. (Speedway)

**Response:** The language was changed to “one business day”. Records are important during release investigations, and BUSTR needs the ability to obtain records without delay. As a matter of policy, BUSTR gives owners a reasonable amount of time to provide records during non-release situations. When performing normal compliance inspections, BUSTR currently gives owners a generous 30 days to provide records.

**Rule 07**

## General

**Comment:** It would be substantially easier for an owner/operation to determine the inspection requirements if they were addressed in one location rather than spread throughout the rule. There is also a relationship between inspection requirements under 1301:7-9-06 and this rule that should be considered. Also the reference to “codes of practice” (the plural) might be more appropriately listed as “a code of practice” (singular). As written, in many cases it could be interpreted that you need to look at all available codes of practice to comply. (OPMCA)

**Response:** The BUSTR rules are modeled after the federal regulations; and as such, a number of inspection requirements are spread out in different parts of the rule. If the inspection requirements for all of the various components were addressed in one location rather than being addressed in their respective sections, then the reader would lose the benefit of understanding the inspection requirements in context. Also, the BUSTR rules represent several generations of rules going back to the early 1990s. One of the issues of greatest concern when amending the BUSTR rules is to segregate ‘new’ requirements from ‘existing’ requirements whenever possible. Otherwise, confusion may arise when trying to determine the requirements that apply to grandfathered UST systems. BUSTR intends to provide a guidance document that groups all of the inspection requirements together. This should assist owners who prefer a consolidated inspection list. In addition, BUSTR adjusted the way codes of practice are listed in the rules so that specific codes are listed in the sections where they apply. Other codes of practice may be used to comply with the rules, though the rule language was changed so you are no longer obligated to review and comply with all of the codes of practice every time.

## Paragraph (A)

**Comment:** The list of exempted UST systems is redundant to exempt and partially exempted UST systems listed under 1301:7-9-01(D) and (E). Waste water treatment tank systems would appear to apply to both exempt systems regulated under the Clean Water Act and partially exempt systems not regulated under the Act. This list of exemptions should be deleted. (OPMCA)

**Response:** The list of exemptions was deleted.

## (B)(10)

**Comment:** This should reference paragraph (D)(9) of 1301:7-9-06. (OPMCA)

**Response:** The reference was changed.

## (C)(1)(d)

**Comment:** *Recommend new text. “A licensed UST Installer or CUSTI shall physically inspect and certify in writing any dispenser shear valve, piping, and containment sump assembly that has been activated due to a dispenser impact or other damage prior to it being repaired or returned to service. A third-party line and shear valve test must be performed prior to restoration of service.” Reasoning: Shear valves that have been activated due to impact or dispenser damage may currently be repaired by unlicensed technicians who are not*

*qualified to properly determine if the shear valve and associated components have sustained unseen damage that may result in a release. (AFS)*

**Response:** The term ‘modification’ was changed in paragraph (B)(31) of rule 1301:7-9-02 of the Administrative Code to include work on shear valves (any portion). Over the past several years, BUSTR noticed work on shear valves and flex lines that was improperly performed leading to releases. An unacceptably high number of releases occur at tank tops and under dispensers. To address these concerns, BUSTR will more closely monitor work activities in these locations using the permit process and by using Certified UST Installers. Also, U.S. EPA added language to the federal rules clarifying the replacement of connecting piping equipment (including shear valves and flex lines) that may trigger retrofitting requirements for under dispenser containments and sensors. To monitor this activity, BUSTR moved the replacement of shear valves and flex lines under the modification permit activity.

**(C)(11)**

**Comment:** This should reference paragraph (D)(9) of 1301:7-9-06. This is an overly broad requirement. Does this mean that a demonstration of compatibility in accordance with (D)(9)(a) is required for every release detection system currently in existence as required even if the UST is storing fuel blends of E10 (conventional motor fuel) or lower or B20 or lower? Conventional fuels are considered to be compatible with existing UST systems. What happens if an existing release detection system in a UST system storing conventional motor fuel cannot meet the demonstration requirements for the system? If an existing release detection system is in a UST system storing an alternative blend (E85), is the owner/operator required to obtain a permit and submit documentation of compatibility? The compatibility requirement is difficult enough (if not impossible) for existing systems considering higher blend ethanol fuels. There needs to be some direction on what is required for existing release detection. Should this be limited to existing release detection systems in UST systems storing blends greater than E10 or B20? (OPMCA)

**Response:** The reference was changed. Also, the proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent. Components that cannot demonstrate compatibility should be replaced.

**(D)(1)(c)(v)**

**Comment:** The term qualified person should be defined. It is used several times in this rule and needs to be addressed for each occurrence. It appears that the criteria for a qualified person is addressed in paragraph (G)(2) of this rule. What is the purpose of the reference to (G)(1)? It is also unclear from the description whether a certified installer would be considered a qualified person. Is that handled by the reference to the state fire marshal? Why not just reference the certified installer as a qualified person? (OPMCA)

**Response:** The proposed rule language was changed to identify the persons recognized to perform annual evaluations of equipment for automatic tank gauging.

**(D)(1)(e)(iv)**

**Comment:** Does the threshold value referenced in this provision refer to the threshold value described in 1310:7-9-07(D)(1)(iii)? If not, what is the threshold value? (OPMCA)

**Response:** Yes, the threshold value described in paragraph (D)(1)(e)(iii) in rule 1301:7-9-07 of the Administrative Code is 0.1 gph. The rule language was changed to clearly state this.

**(D)(3)(c)**

**Comment:** What criteria will SFM require to denote an individual as a “qualified person”? Will the requirements under 40 CFR 280.214 (Subpart J) Class B Operators suffice? (Speedway)

**Response:** The proposed rule language was changed to identify the persons recognized to perform annual evaluations of equipment. In some cases, a Class B Operator may be qualified.

**(D)(6)**

**Comment:** This provision is redundant to 1301:7-9-07(B)(10) and 1301:7-9-07(C)(11). (OPMCA)

**Response:** The paragraph was deleted.

**(D)(6)(a)**

**Comment:** See comments on 1301:7-9-06(D)(9)(b) and (d), above. (OPMCA)

**Response:** The paragraph was deleted.

**(E)(3)**

**Comment:** This provision references a walkthrough inspection which is not anywhere else in this rule with the exception of 1301:7-9-07(H) related to airport hydrant systems and field constructed tanks which references the requirements under the federal UST regulations for these UST systems. What are the walkthrough inspection requirements? (OPMCA)

**Response:** Paragraph (E)(3) was changed to include a reference to paragraph (E)(4) of rule 1301:7-9-06 of the Administrative Code. New paragraph (E)(4) of rule 1301:7-9-06 of the Administrative Code was added to more clearly delineate the walkthrough inspection requirements including requirements for release detection. The walkthrough inspection requirements are nearly identical to the checks required by federal regulations.

**(F)(1)(b)**

**Comment:** Does the statement “as listed in this rule” refer to (G)(3)? If so, why not reference (G)(3) or the appropriate provisions directly? This statement is also in several other provisions of the rule that should be addressed in these provisions. (OPMCA)

**Response:** The language was changed to reference paragraphs (G)(1) to (G)(3) of rule 1301:7-9-07 of the Administrative Code. The reference is intended to give owners a

**wider range of options when performing tightness test such as in cases where the testing methodology is still evolving.**

**(G)(1)**

**Comment:** A very broad requirement. Is this really needed? Do you really need 1301:7-9-06(G)(1) and 1301:7-9-06(G)(2)? Several other issues to consider:

- 1) 1301:7-9-06(G)(1)(b) – See comments on 1301:7-9-06(E)(3). There needs to be guidance on what codes of practice are applicable to the requirements of this rule. The reference to a mandated list of codes places a significant burden on the owner/operator to determine what is needed to comply.
- 2) 1301:7-9-06(G)(1)(c) – Aren't requirements determined by the state fire marshal, the requirements of this and other rules or does this just apply to alternative methods?

This provision should simply state that all release detection and tightness testing methods shall be properly designed, constructed, installed, modified, repaired, operated and maintained in accordance with the requirements of this rule. (OPMCA)

**Response:** The rule language was changed to state “...in accordance with the requirements of this rule”. The previously proposed BUSTR rules language closely follows similar federal language; though, changes have been made to simplify the language without a loss of meaning. Also, the proposed rules were changed to more clearly identify the applicable codes of practice.

**(E)(2)** ← as written; BUSTR believes commenter intended (G)(2)

**Comment:** A very broad requirement. Is this really needed? Do you really need both 1301:7-906(G)(1) and 1301:7-9-06(G)(2)? What about the certified installer? Wasn't the purpose of that program to insure proper design, construction, installation, modification, and repair? The rule provides significant guidance on how to design, construct, install, modify, repair, operate and maintain a UST system. This provision should simply state that all release detection and tightness testing methods shall be properly designed, constructed, installed, modified, repaired, operated and maintained in accordance with the requirements of this rule. (OPMCA)

**Response:** The proposed rule language was changed to clarify who may perform activities on UST systems. ‘Walkthrough inspections’ may be performed by any party designated by owners and operators. For permit related activities, BUSTR intends to maintain the current process using certified UST installers and UST inspectors. For most operational and maintenance requirements, BUSTR does not intend to limit who may perform these activities provided they can demonstrate they followed manufacturer’s instructions or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

**(G)(3)**

**Comment:** RP1200-12 is currently undergoing revision to address changes in the federal rule. The updated practice should be completed before the year-end and should be referenced. In addition, there could be differences in the testing methods outlined by the

three documents referenced, a requirement to use the most protective approach will likely exclude methodologies that are perfectly acceptable, but not the most protective. There needs to be a discussion about appropriate testing methodologies where alternatives exist. (OPMCA)

**Response:** The proposed rule language was changed to “The following codes of practice may be used to comply with this rule:...” This change resolves the concern of determining which of the many codes of practice may be applicable or with concerns relating to codes of practice that may be more stringent than state and federal requirements.

**(G)(4)**

**Comment:** If all work is required to be overseen by a certified installer does this mean that a qualified person or person recognized as proficient that is not a certified installer must be supervised by a certified installer or be a certified installer? (OPMCA)

**Response:** Paragraph (G)(4) was moved to paragraph (G)(2)(a). The rule language was changed to clarify the scenarios where persons with special qualifications are required versus scenarios where certified UST installers and inspectors are required versus other activities where any person designated by the owner and operator may maintain the UST system.

**Rule 09**

**General**

**Comment:** See comments concerning identification of boundaries of sole source aquifer for 1301:7-9-12 and 1301:7-9-13. (OPMCA)

**Response:** See BUSTR responses to the comments at OAC 1301:7-9-12 (I)(1)(c) and OAC 1301:7-9-13 (I)(2)(c)(ii).

**Rule 10**

**(C)(f)** ← as written; BUSTR believes commenter intended (C)(1)(f)

**Comment:** Both the inclusion of work related to change of product and the addition of additional flex hoses and shear valves significantly increase the requirements for permits. See comments on 1301:7-9-02(B)(XX) “Change of product” and 1301:7-9-02(B)(31) above. (OPMCA)

**Response:** The proposed rule language was changed to focus on scenarios where ethanol content is greater than ten percent and biodiesel contents is greater than twenty percent. As a result, only UST systems switching to higher percentages of ethanol and biodiesel will need to obtain a permit.

**Rule 11**

**(H)(5)**

**Comment:** *Recommend new text. "Tightness testing of underground storage tanks and underground lines shall be performed by a licensed UST Installer who is also trained and certified by the testing apparatus manufacturer to be proficient in its operation." Reasoning: Tank tightness testers routinely break the integrity of the fuel storage system below the shear valve. Tank tightness testers routinely block the operation of working tank vents. Many tightness testers perform minor repairs and replace line leak detectors during their testing activities. Many tightness testers pull the magnetostrictive probe during testing activities. Improper reinstallation and verification of proper operation can invalidate ATG leak detection ability. All surrounding states currently require licensing of tightness testers. (AFS)*

**Response:** BUSTR rules currently require the presence of certified UST installers during tightness tests associated with permit related activities. For non-permit activities, BUSTR does not intent to require the presence of a certified UST installer every time work is performed on an UST system. Paragraph (E) of rule 1301:7-9-06 and paragraph (G) of rule 1301:7-9-07 of the Administrative Code were amended to minimize confusion as to who is qualified to perform work on UST systems. In cases where a certified UST installer is not required, owners and operators are still obligated to use personnel who follow manufacturer's instructions or codes of practice developed by nationally recognized associations or independent testing laboratories or other industry best practices.

#### **Rule 12**

##### **(E)(6)(b)**

**Comment:** This provision is confusing. If a UST is out-of-service for more than 90-days, an out-of-service permit must be obtained. The rule allows a UST system to be out-of-service for up to one year unless an extension has been granted. The language in this provision refers to requesting an out-of-service permit which should have already been granted after 90-days out-of-service. Both paragraphs (i) and (ii) should only refer to a renewal permit. The reference to an out-of-service permit should be removed from both of these paragraphs. If the intention is to address tanks that have been out of service for more than one year, but a permit was not obtained, than the language should be adjusted or a new section added to reflect that circumstance. (OPCMA)

**Response:** This provision is limited to tanks that do not meet the performance standards. In these cases, BUSTR would allow the owner/operator to request a retroactive out-of-service permit, or renewal permit, if a Closure Assessment is performed prior to that request. BUSTR extended the action dates from thirty to ninety days.

##### **(G)(1)(b)**

**Comment:** API Standard 2015 (reaffirmed 2006) (Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks) is applicable to safe entry of above ground storage tanks. It is not applicable to underground storage tanks. API 2016 is a companion document to Standard 2015. Have these documents been reviewed for their applicability to UST systems? (OPCMA)

**Response:** In order minimize redundancy, API 2015 and API 2016 have been deleted from the BUSTR regulations. American Petroleum Institute Standard 2015-2006, Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks and American

**Petroleum Institute Standard 2016-2006, Guidelines and Procedures for Entering and Cleaning Petroleum Storage Tanks are currently listed in the federal regulations (40 CFR 280.71) as acceptable for use for permanent removal activities of underground storage tanks. API 2015 was listed in prior federal regulations, and API 2016 is referenced in the federal rules for the first time. To minimize redundancy, API 1604-2010, Closure of Underground Petroleum Storage Tanks will remain in this section of the BUSTR regulations (as it happens, API 2015 is referenced within API 1604).**

**(I)(1)(c)**

**Comment:** With the elimination of 1301:7-9-09, how are the boundaries of a sole source aquifer going to be defined? (OPCMA)

**Response:** Sole source aquifers and their boundaries are developed via a petition process administered by the U.S. EPA. The maps showing the sole source aquifers and their boundaries can be obtained from the Ohio EPA, similar to that of the Drinking Water Source Protection Areas (DWSPA). The process for obtaining these maps will be detailed in the new Technical Guidance Manual.

**(I)(2)(d)(ii)**

**Comment:** Is the purpose of the additional sample to generate more samples or a better distribution of samples along the piping run? The primary objective is to determine if a release has occurred, so the highest field screening reading would provide that information. If you don't believe that the highest field screening reading represents the highest potential concentration in soil, more than one sample may be appropriate. You might want to consider one or two additional samples, but not one for every five. On a large site this could be a large number of samples. (OPCMA)

**Response:** There were two reasons for the change. At typical gas station sites, BUSTR found inconsistencies in how consultants interpreted "piping run excavation" and found by reviewing numerous closure reports that there is a difference in the number of samples that were submitted for lab analysis. The ratio of one analytical sample per five field screening samples allowed for more consistency among consultants, and the one-to-five ratio correlated well with previous closure assessments at typical gas stations.

**The second reason for this change is to address sites with exceedingly long piping runs, such as large truck stops. Under the previous rule, one sample would have been submitted for all piping runs regardless of length. BUSTR felt that this was inadequate.**

**Comment:** Historically, the interpretation was analysis was required for a minimum of one sample per trench, with intersections being considered a separate trench. As such, if multiple trenches were present at a site, at least one sample would be submitted per trench. With the wording of the draft rule, the "per piping run" language will be deleted and it appears sample submittal for analysis will be based on the total number of piping samples at the site rather than per trench. As such, it would seem possible if a site had multiple piping runs, and all piping runs had a release, all piping samples could theoretically be submitted from a single trench (if those were the samples with the highest field screening readings). This scenario would be more likely if a large release occurred from one trench, but the end result would be

smaller releases from other piping trenches could go undetected. Altering the language to include a 20% submittal ratio of piping samples sounds fine for the reasons you have specified, but would it not be prudent to also require a minimum of one sample per trench with the highest field screening reading (if such samples are not already submitted as part of the proposed 1 per 5 rule)? (IWM)

**Response:** In addition to the response above, BUSTR acknowledges that there may have been areas where a release occurred, but the soil samples were not submitted for lab analysis in the past. We also acknowledge that piping trench samples may be concentrated in areas of a significant release, but with the slightly increased number of samples analyzed, these areas are more likely to now be identified.

**(I)(2)(e)**

**Comment:** The added language for when monitoring wells and soil borings are to be installed is redundant. The rule already requires a closure assessment under 1301:7-9-12(I)(1). If the issue is to provide a time frame for the installation of the monitoring wells and soil borings, then that is all that is needed. The challenge in placing a time frame for the work to commence is defining the date that the closure assessment was required to be conducted. (OPCMA)

**Response:** The language was changed here and at 1301:7-9-12(J)(1) to specify when the samples are to be collected as well as when the report is due. The change at 1301:7-9-12(I)(2)(e) was added to establish time frames for when Closure Assessment sampling must occur in cases of a closure-in-place, change in service or out-of-service tanks. The due date for the submittal of the Closure Assessment Report established in 1301:7-9-12(J)(1) is now 90 days for the date the samples are required to be collected.

**(I)(2)(i)**

**Comment:** It is recommended the OAC 1301:7-9-12(I)(2)(i) be revised to the following language:

If an UST system or portion of the UST system was permanently removed, closed-in-place, or underwent a change-in-service on or after September 1, 1992 and a closure assessment was not conducted in accordance with the closure assessment rules in effect at the time or a closure assessment report was not submitted, the state fire marshal may direct the owner or operator to collect soil and groundwater samples by ~~installing~~ advancing a minimum of three soil borings ~~and monitoring wells~~ in the area most likely to contain chemical(s) of concern above action levels. If groundwater is encountered monitoring wells will be installed in the soil borings. The soil borings and monitoring wells shall be installed and sampled in accordance with paragraphs (H)(1)(d)(ii) of rule 1301:7-9-13 of the Administrative Code. Soil boring and monitoring well locations shall be selected to ensure the evaluation of soil and groundwater surrounding the UST system and be biased towards areas most likely to contain chemical(s) of concern. (ATC)

**Response:** BUSTR accepts the change in language proposed. Paragraphs (H)(1)(d)(ii) of rule 1301:7-9-13 of the Administrative Code specify the depth to which soil borings must be installed and the criteria for installation of monitoring wells. BUSTR feels that the proposed language does not contradict the existing regulations cited and the new language clarifies the intent of the Rule.

**(I)(4)(b), Table 1**

**Comment:** The dibenz(a,h)anthracene action level in GW of 0.000092 ppm will be difficult for the lab to meet. Could the action level be raised to 0.00011 ppm? (Flynn)

**Response:** The action levels were established to be consistent with the Ohio EPA VAP action levels (OAC 3745-300-08). This approach has been used in previous rule sets. Action levels are risk based and not based on the laboratory method detection levels. Upon discussions with analytical laboratories, this action level is achievable.

**(I)(4)(c)**

**Comment:** Information supporting the revisions of the action levels and addition of chemicals of concern should be provided for review as part of the rule review process. (OPCMA)

**Response:**

**Concerning the revised action levels:**

Recall that action levels are developed using default values for exposure parameters, soil parameters, building parameters, groundwater and atmospheric parameters, and for chemical, physical and toxicological properties of the chemicals of concern. The parameters, default values, equations and algorithms are fully described in Appendix F of BUSTR's Technical Guidance Manual. The exposure parameters, soil parameters, building parameters, and the groundwater and atmospheric parameters used in the action level spreadsheets have not changed from the 2012 rule.

To update the action levels, BUSTR obtained chemical, physical and toxicological properties for the chemicals of concern from the 2015 Ohio EPA's Voluntary Action Program Chemical Information Database and Applicable Regulatory Standards (CIDARS). The 2015 CIDARS data were then incorporated into BUSTR's spreadsheets to develop the new action levels.

See the accompanying table ([Reference Table of Physical and Chemical Properties](#)) which presents the relevant data from the [2015 CIDARS](#) database.

**Concerning the addition of chemicals of concern:**

Two lead scavengers were added, namely 1,2-dibromoethane (EDB) and 1,2-dichloroethane (EDC). These two chemicals were added based on the U.S. EPA memorandum on lead scavengers dated May 21, 2010.

Two petroleum chemicals, 1,2,4-trimethylbenzene and naphthalene were added to analytical group 1 (light distillates). Both of these chemicals were added for several reasons, including their relative abundance in light distillate petroleum products, lower VAP-CIDARS cleanup standards (including direct contact and Unrestricted Potable Use Standards) compared to previous versions of CIDARS data, and the fact that several other states in U.S. EPA Region 5 require their analysis. In addition, naphthalene has recently been listed as a possible human carcinogen.

## **Rule 13**

### **(B)(2)(b)**

**Comment:** Please define “fails to meet a compliance deadline while conducting corrective action”. Does this only pertain to a site that is currently out of compliance, or does this apply to sites that have missed a compliance deadline in the past? (Arcadis)

**Response:** BUSTR intends this to apply sites that are currently out of compliance or fail to meet a compliance deadline in the future. It would not apply to sites that had compliance issues in the past.

### **(C)(11)**

**Comment:** See comments above on the definition of free product in 1301:7-9-02(B)(22). There is not a need to redefine free product in this rule unless there is a different meaning intended. This definition should be deleted. (OPCMA)

**Response:** In addition to BUSTR’s discussion of the definition of “free product” in response to comments on rule 1301:7-9-02(B)(22), BUSTR notes that a few of the definitions in rule 2 (“free product”, “overfill”, “release”, and “spill”) are indeed repeated, verbatim, in paragraph (C) of this rule. This has been done since the 2005 version of BUSTR’s rules as a matter of convenience for installers, inspectors, and consultants.

### **(C)(34)(a)(ii)(b)**

**Comment:** For clarity what is meant by a defective system equipment or component? Would it be better to say “Any defective UST system component that is the source of the leak is immediately repaired or replaced?” (OPCMA)

**Response:** The change was made as suggested.

### **(C)(34)(b)(ii)**

**Comment:** See comments on 1301:7-9-13(C)(34)(a)(ii)(b), above. (OPCMA)

**Response:** This portion of the definition of suspected release deals with unusual operating conditions and not necessarily a leak. Therefore, BUSTR does not feel that the change in language is appropriate here.

### **(C)(34)(c)**

**Comment:** Why would this be different than 1301:7-9-13(C)(34)(a)(ii)? If free product is the liquid that is in the interstitial space and meets the requirements of that provision, would it still be a release? Further, if free product is contained in the containment sump and the sump is demonstrated to be tight is it a suspected release? The revisions in (C)(34) are confusing and may need some revision. Also, the use of the proposed revised definition for free product could result in a sheen on water in a containment sump being considered a suspected release. (OPCMA)

**Response:** This portion of the definition of suspected release deals with the discovery of free product in containment in a non-alarm setting. 1301:7-9-13(C)(34)(a)(ii) concerns free product found in containment during an alarm condition.

If free product is found in a containment sump, it is considered a suspected release. If the containment sump passes a hydrostatic tightness test, then the event is disproved.

As addressed above, BUSTR intends to revise the Technical Guidance Manual to clarify the notion that “free product” is a measurable, separate phase liquid, which does not include a “sheen” observed in an excavation cavity or in a secondary containment sump.

**(F)(2)(c)**

**Comment:** This seems to conflict with (C)(34)(a) since liquid in an interstitial space could be excepted from a suspect release. Also, the use of the proposed revised definition for free product could result in a sheen on water in a containment sump being considered a suspected release requiring test of the containment sump. (OPCMA)

**Response:** BUSTR does not believe there is a conflict between (C)(34)(a) and (F)(2)(c). The event would not be considered a suspected release if the liquid in the interstice is associated with the monitoring system (e.g., brine). The presence of free product or water in the interstice requires that a tightness test be completed to determine if a release occurred.

As addressed above, BUSTR intends to revise the Technical Guidance Manual to clarify the notion that “free product” is a measurable, separate phase liquid, which does not include a “sheen” observed in an excavation cavity or in a secondary containment sump.

**(G)(3)(a)**

**Comment:** The proposed revised definition for free product could result in the requirement for the implementation of free product recovery when a sheen is present. Further this section require removal to the maximum extent practicable while 1301:7-9-13(G)(3)(c) and (f) require removal to one one-hundredth of a foot. (OPCMA)

**Response:** BUSTR’s main purpose for changing the definition of “free product” is to achieve greater consistency with the federal rule definition in 40 CFR Part 280.12. BUSTR still intends to use a free product thickness of 0.01-foot as the measurement for terminating free product recovery activities at most corrective action sites. Therefore, the 0.01-foot thickness has been added to the criteria listed in OAC 1301:7-9-13 (G)(3)(f).

However, there are some releases which occur within a Sole Source Aquifer or near the drinking water extraction well of a Drinking Water Source Protection Area (DWSPA). Therefore, a secondary purpose for changing the definition of “free product” is to allow BUSTR to require owners/operators to continue free product recovery activities (beyond the 0.01-foot thickness) at certain release sites.

BUSTR does not intend that the presence of a sheen in an excavation will be considered free product requiring implementation of free product recovery under OAC 1301:7-9-

**13 (G)(3)(a) or requiring a Site Check under OAC 1301:7-9-13 (F). Therefore, BUSTR intends to clarify this issue in the following ways:**

- **BUSTR intends to revise OAC 1301:7-9-12 (G)(1)(i) to include the term “measurable”.**
- **BUSTR intends to revise the definition of “physical discovery” in OAC 1301:7-9-13 (C)(20) to include the term “measurable”.**
- **BUSTR intends to revise the Technical Guidance Manual to clarify the notion that “free product” is a measurable, separate phase liquid, which does not include a “sheen” observed in an excavation cavity or in a secondary containment sump.**

**(H)(1)(c)(i)**

**Comment:** As clarification, essentially all gasoline is blended with alcohol. Analytical Group 1 would include unleaded gasoline, leaded gasoline, gasoline alcohol blends greater than 10%, racing gasoline, and aviation gasoline. (OPCMA)

**Response:** “Gasoline blended with alcohol” was added to reflect the federal definition of “motor fuel”.

**(H)(1)(c), Table 1**

**Comment:** Naphthalene was added to the list of volatile constituents of interest. While naphthalene may be a constituent of gasoline, our comment is based more on the basis for the toxicity values used in the development of the screening levels.

U.S. EPA published a hierarchy for risk assessors to follow when selecting toxicity values. The U.S. EPA’s Integrated Risk Information System (IRIS) is the first recommended source of toxicity data, followed by other U.S. EPA Tier 2 sources whose toxicity values have not gone through the stringent process developed by the IRIS program. Then, there are Tier 3 sources, such as the California Environmental Protection Agency (CalEPA) which can be used in a risk assessment. In the case of naphthalene, available information indicates that U.S. EPA headquarters does not believe naphthalene is carcinogenic to humans through the inhalation route. Historically, data indicated that there was the potential for naphthalene to induce carcinogenic effects in laboratory animals. However, current scientific research demonstrates that this is not a relevant pathway for human health. Thus, it is unlikely that U.S. EPA will publish an inhalation unit risk factor in the near future. Therefore, basing the naphthalene screening levels on the cancer endpoint rather than the noncancer endpoint using toxicity values derived by U.S. EPA, is overly conservative. It is recommended that the screening levels be based on the noncancer toxicity values. (Arcadis)

**Response:** All of the BUSTR action levels were established to be consistent with the Ohio EPA VAP action levels (OAC 3745-300-08) and using the chemical, physical and toxicological properties listed in the 2015 CIDARS database. This approach has been used in previous rule sets.

**See the attached table (Reference Table of Physical and Chemical Properties) which presents the relevant data from the 2015 CIDARS database, which is also attached.**

**Comment:** Would it be possible to allow the analysis of EDB and EDC using lab method 504.1? This would reportedly provide adequate results at significantly less cost. (Flynn)

**Response:** Upon request, BUSTR does accept alternate methodologies provided they meet the required method detection levels, U.S. EPA procedures and QA/QC criteria. This is not a change to current BUSTR policy. A note regarding this has been added to Table 1 in OAC 1301:7-9-13.

**Comment:** This table introduces 1,2 – Dibromoethane (EDB) and 1,2 – Dichloroethane (EDC), which are lead scavengers listed as probable human carcinogens, as chemicals of concern for UST systems that were in service prior to January 1, 1996 that provided automotive gasoline, and all USTs containing aviation gasoline, racing fuel, and used oil. Below is a link to a document entitled *The US Experience with the Phasedown of Lead in Gasoline* (Newell, Rogers, 2003), which references United States Environmental Protection Agency (USEPA) and other sources and tracks the reduction and elimination of lead and associated scavengers.

<http://web.mit.edu/ckolstad/www/Newell.pdf>

Leaded gasoline was banned by the US Clean Air Act for sale in on road vehicles on January 1, 1996. However, there is significant documentation that the reduction of leaded gasoline (and associated scavengers EDB and EDC) in the United States began in the 1970s. July 4, 1974 as car manufacturers were required to design fuel inlets and apply “Unleaded Gasoline Only” labels to comply with mandatory requirements for catalytic converters for model year vehicles starting in 1975. Throughout the 1970s and early/mid-1980s, refiners were subject to the phasing out leaded gasoline, which included conditions for large and small refineries and “banking” of lead rights.

- October 1, 1979, large refiners had to reduce their quarterly production average to no more than 0.5 grams per gallon (gpg). This 0.5 gpg was the average lead concentration among the total gasoline output of refiners (leaded and unleaded products).
- November 1, 1982, leaded gasoline had to meet the standard of 1.1 grams per leaded gallon (gplg).
- July 1, 1985, leaded gasoline had to meet the standard of 0.5 gplg.
- January 1, 1986, leaded gasoline had to meet the standard of 0.1 gplg, however inter-refinery averaging and lead banking was still permitted.
- January 1, 1988, all refineries must comply with 0.1 gplg, regardless of size and lead banking prohibited.

By January 1, 1988, unleaded gasoline was approximately 85% of the Total US production (including aviation and racing fuels) and presumably much higher for retail, on-road sales. In addition, by 1988, the lead content in the leaded products was set at 0.1 gplg. **(Original comments include graphs that represent these trends.)**

Given the low ratio of leaded fuels and the 0.1 gplg restriction that was enacted on January 1, 1988, we would like BUSTR to consider adjusting the date of the requirement to consider EDC and EDB as chemicals of concern for automotive gasoline USTs that were in service prior to January 1, 1988 instead of January 1, 1996.

In addition, a strong argument can be made that numerous UST systems were installed after 1988 and before 1996 as owner/operators complied with the 1988 U.S. EPA UST compliance rules and other federal and state rules that followed. These tanks installed from 1988 to 1996 would have been installed at motor fuel dispensing facilities that did not dispense unleaded gasoline. (ATC)

**Response:** BUSTR received several comments regarding the proposed addition of 1,2-dibromoethane (EDB) and 1,2-dichloroethane (EDC) to the list of chemicals of concern for analytical group 1. These two chemicals were added based on the [U.S. EPA memorandum on lead scavengers](#) dated May 21, 2010, a copy of which is attached. It appears that the Stakeholder comments submitted to BUSTR do not disagree with whether or not the lead scavengers should be added as chemicals of concern to analytical group 1, but rather question the justification of BUSTR's proposed 1996 usage date.

After reviewing the stakeholder comments, as well as additional information from U.S. EPA, state environmental agencies, and other published literature sources concerning the use of lead scavengers in gasoline, BUSTR has decided to revise the draft rules that were proposed in March 2016.

Specifically, BUSTR plans to categorize USTs into three groups, based on dates of installation, as follows:

1. For USTs installed prior to January 1, 1988, all closure assessment and corrective action samples (soil and groundwater) shall be analyzed for both lead scavenger chemicals.
2. For USTs installed between January 1, 1988 and January 1, 1996, BUSTR intends to require laboratory analyses for EDB and EDC at some, but not all, UST sites. Sites will be identified based on their proximity to (and therefore the potential to contaminate) a drinking water resource. For example, EDB and EDC analysis may be required if the UST site has an on-site potable water well, or is in a DWSPA, or is within the boundary of a Sole Source Aquifer. At this time, BUSTR has not decided whether to require EDB and EDC analysis for closure assessment samples for this group of USTs.
3. For USTs installed on or after January 1, 1996, laboratory analyses will not be required for either EDB or EDC.

Note that the three groups listed above only apply to on-road automotive gasoline USTs. As proposed in the March 2016 draft rules, testing for EDB and EDC shall be required for all USTs containing aviation gasoline, racing fuel, and used oil. Finally, BUSTR intends to discuss the issues related to lead scavengers with Stakeholders before finalizing these rules.

**(H)(1)(c), Table 1, Notes**

**Comment:** Information supporting the addition of chemicals of concern should be provided for review as part of the rule review process. For lead scavengers, while leaded gasoline was officially banned under the clean air act in January 1996, the sale of leaded gasoline decreased with the introduction of the catalytic converters in cars manufactured after 1975. By the late 1980's most retail sites had stopped the sale of leaded gasoline. U.S. EPA in its memo on the topic recommends sampling for lead scavengers for UST systems that are storing racing gasoline and aviation gasoline. In addition, it recommends sampling for lead scavengers for UST systems installed prior to 1986. For the period of 1986 to 1996 they recommend sampling based on the history of the UST system and threats to drinking water. (OPCMA)

**Response:** BUSTR understands that the phase-out process of leaded gasoline began in the mid-1970s and culminated in January 1996 with the total prohibition against leaded gasoline for on-road vehicles. However, during the early years of this phase-out process there was still a significant amount of leaded gasoline stored in UST systems. It was not until January 1, 1988, that all refineries were required to comply with a standard of 0.1 grams of lead per gallon.

As stated in a previous response, BUSTR has decided to revise the draft rules that were proposed in March 2016. Specifically, BUSTR plans to categorize USTs into three groups, based on dates of installation, as follows:

1. For USTs installed prior to January 1, 1988, all closure assessment and corrective action samples (soil and groundwater) shall be analyzed for both lead scavenger chemicals.
2. For USTs installed between January 1, 1988, and January 1, 1996, BUSTR intends to require laboratory analyses for EDB and EDC at some, but not all, UST sites. Sites will be identified based on their proximity to (and therefore the potential to contaminate) a drinking water resource. For example, EDB and EDC analysis may be required if the UST site has an on-site potable water well, or is in a DWSPA, or is within the boundary of a Sole Source Aquifer. At this time, BUSTR has not decided whether to require EDB and EDC analysis for closure assessment samples for this group of USTs.
3. For USTs installed on or after January 1, 1996, laboratory analyses will not be required for either EDB or EDC.

Note that the three groups listed above only apply to on-road automotive gasoline USTs. As proposed in the March 2016 draft rules, testing for EDB and EDC shall be required for all USTs containing aviation gasoline, racing fuel, and used oil. Finally, BUSTR intends to discuss the issues related to lead scavengers with Stakeholders before finalizing these rules.

**Comment:** I had a specific question for you on how you came up with the date in Note 5 requiring evaluation of lead scavenger compounds for tanks put into automotive fueling service before January 1, 1996. Lead phase out started to occur in the 1970s. Once the automotive companies introduced catalytic systems on to passenger cars, organic bound lead had to be gone from the automotive passenger car fueling pool otherwise the catalyst would

be poisoned and rendered useless. With the absence of lead in gasoline, the lead scavengers would no longer be needed and would have been removed from the fuel additive package. Please advise on the basis for the date in note 5. (RMSC)

**Response:** BUSTR understands that the phase-out process of leaded gasoline began in the mid-1970s and culminated in January 1996 with the total prohibition against leaded gasoline for on-road vehicles. However, during the early years of this phase-out process there was still a significant amount of leaded gasoline stored in UST systems. It was not until January 1, 1988, that all refineries were required to comply with a standard of 0.1 grams of lead per gallon.

As stated in a previous response, BUSTR has decided to revise the draft rules that were proposed in March 2016. Specifically, BUSTR plans to categorize USTs into three groups, based on dates of installation, as follows:

1. For USTs installed prior to January 1, 1988, all closure assessment and corrective action samples (soil and groundwater) shall be analyzed for both lead scavenger chemicals.
2. For USTs installed between January 1, 1988, and January 1, 1996, BUSTR intends to require laboratory analyses for EDB and EDC at some, but not all, UST sites. Sites will be identified based on their proximity to (and therefore the potential to contaminate) a drinking water resource. For example, EDB and EDC analysis may be required if the UST site has an on-site potable water well, or is in a DWSPA, or is within the boundary of a Sole Source Aquifer. At this time, BUSTR has not decided whether to require EDB and EDC analysis for closure assessment samples for this group of USTs.
3. For USTs installed on or after January 1, 1996, laboratory analyses will not be required for either EDB or EDC.

Note that the three groups listed above only apply to on-road automotive gasoline USTs. As proposed in the March 2016 draft rules, testing for EDB and EDC shall be required for all USTs containing aviation gasoline, racing fuel, and used oil. Finally, BUSTR intends to discuss the issues related to lead scavengers with Stakeholders before finalizing these rules.

(I)(2)(c)(ii)

**Comment:** With the elimination of 1301:7-9-09, how are the boundaries of a sole source aquifer going to be defined? (OPCMA)

**Response:** As defined in 1301:7-9-02, "Sole source aquifer" means any aquifer which has been so designated by the administrator of the U.S. EPA pursuant to section 1424(e) of the Safe Drinking Water Act (42 U.S.C.A. 300h, as amended through January 16, 2014).

The maps showing the sole source aquifers and their boundaries can be obtained from the Ohio EPA, similar to that of the Drinking Water Source Protection Areas (DWSPA). The process for obtaining these maps will be detailed in the new Technical Guidance Manual.

**Comment:** Please define “sole source aquifer” as well as a mechanism for the owner/operator to know if a site is located within a sole source aquifer. (Arcadis)

**Response:** See above response.

**(J)(1)**

**Comment:** Information supporting the revisions of the Delineation levels should be provided for review as part of the rule review process. (OPCMA)

**Response:** The Delineation Levels listed in OAC 1301:7-9-13 (J)(1) were developed using the same assumptions, parameters, default values, equations and algorithms used in developing the Tier 1 Action Levels listed in OAC 1301:7-9-13. Soil Delineation levels were chosen from the lowest action level from the following pathways: soil to indoor air, soil to non-drinking water, and direct contact. Groundwater delineation levels were calculated by dividing the groundwater to indoor air action level by a factor of 10. If the calculated groundwater delineation level is less than the groundwater ingestion number (e.g., xylenes), the groundwater ingestion number was used. The delineation levels are not risk-based and may not be revised.

Tier 1 action levels and Delineation levels are developed using default values for exposure parameters, soil parameters, building parameters, groundwater and atmospheric parameters, and for chemical, physical and toxicological properties of the chemicals of concern. The parameters, default values, equations and algorithms are fully described in Appendix F of BUSTR’s Technical Guidance Manual. The exposure parameters, soil parameters, building parameters, and the groundwater and atmospheric parameters used in the action level spreadsheets have not changed from the 2012 rule.

For the updated action levels, BUSTR obtained chemical, physical and toxicological properties for the chemicals of concern from the 2015 Ohio EPA’s Voluntary Action Program Chemical Information Database and Applicable Regulatory Standards (CIDARS). The 2015 CIDARS data were then incorporated into BUSTR’s spreadsheets to develop the new action levels.

See the accompanying table (Reference Table of Physical and Chemical Properties) which presents the relevant data from the 2015 CIDARS database.

**(J)(3)**

**Comment:** Information supporting the revisions of the Action levels should be provided for review as part of the rule review process. In particular, consideration should be given to the procedures outlined in the U.S. EPA Technical Guide for Addressing Petroleum Vapor Intrusion at Leaking Underground Storage Tank Sites and the ITRC Petroleum Vapor Intrusion - Fundamentals of Screening, Investigation, and Management. These documents recognize the effects of biodegradation of petroleum hydrocarbons and provide exclusion criteria for the vapor intrusion exposure pathway. If this is not considered as part of the Tier 1 process, it should be incorporated into the Tier 2 process. (OPCMA)

**Response:** BUSTR understands that there have been significant advances in recent years regarding the vapor intrusion pathway, and that there are several guidance documents available.

To remain consistent with Ohio EPA, BUSTR has decided to use the chemical, physical and toxicological properties for the chemicals of concern from the 2015 Ohio EPA's Voluntary Action Program Chemical Information Database and Applicable Regulatory Standards (CIDARS).

Concerning biodegradation, BUSTR already considers biodegradation for several pathways. Tier 1 action levels already include biodegradation in the soil leaching to drinking water pathway, and Tier 2 evaluations can include biodegradation in the groundwater migration pathway using the BUSTR-screen fate and transport model. BUSTR does not plan to alter the Tier 1 and Tier 2 evaluation processes to account for possible biodegradation of petroleum vapors. However, in the Tier 3 Evaluation process, BUSTR has already considered several Tier 3 Workplans that address the vapor intrusion issue, and BUSTR plans to improve and expand those options in the upcoming revisions to our Technical Guidance Manual.

**Comment:** Action levels for the soil to indoor/outdoor air pathway have slightly increased, and groundwater to indoor/outdoor air have decreased, which is assumed to be based on updated toxicity data using the BUSTR spreadsheet based on the Johnson and Ettinger model. Several studies have indicated that the risk associated with the volatilization to indoor and outdoor pathways are overly conservative based on conservative attenuation factors that do not take biodegradation in the vadose zone into account. Below is a link to the Interstate Technology and Regulatory Council (ITRC) Vapor Intrusion documents section that contains guidance including the *Vapor Intrusion Pathway: Investigative Approaches for Typical Scenarios (A Supplement to VI-1, January 2007)* (ITRC, October, 2013) regarding the evaluation of the vapor intrusion (VI) pathway including screening, characterization, modeling and sampling.

<http://www.itrcweb.org/Guidance/ListDocuments?topicID=28&subTopicID=39>

The link to Appendix F of the above referenced document is included below. Several empirical studies were completed by USEPA and others to determine a "screening distance" between the source (whether dissolved phase or free product) and the bottom of buildings located above these sources.

[http://www.itrcweb.org/PetroleumVI-Guidance/#Appendix%20F.%20Technical%20Information%20to%20Support%20Site%20Screening.htm# TableF1](http://www.itrcweb.org/PetroleumVI-Guidance/#Appendix%20F.%20Technical%20Information%20to%20Support%20Site%20Screening.htm#TableF1)

Results of this compilation of studies are tabulated from Appendix F (ITRC, 2013) below. Results indicate a strong correlation of the screening distances for dissolved phase and free product sources, approximately five feet and 13 feet, respectively, regardless of soil type. The benzene source concentrations used in this evaluation vary between 1.0 to 15.0 parts per million (ppm). This range includes concentrations just below the proposed most conservative BUSTR indoor air action level groundwater to indoor air pathway, to an order of magnitude higher. **(Original comments included a table summarizing screening distance studies, copied from appendix, linked to above)**

Appendix H of this ITRC document includes a listing of several VI models (empirical, analytical and numerical). Generally speaking, approximately less than 10% of BUSTR sites require cleanup or further corrective action where VI is the driving pathway. The referenced ITRC document compiles several studies, which indicate that the VI pathway has been historically overly conservative when action levels are calculated with models that do not take vadose zone biodegradation and over conservative attenuation factors. In addition, the screening distances developed indicate that dissolved benzene sources in excess of five feet from the base of the building will not result in petroleum indoor air infiltration problems. BUSTR should consider the following options as part of the five-year review process:

- 1) Recalculation of indoor air action levels using an alternative analytical model provided in Appendix H of ITRC, 2013.
- 2) Implementation of “source to basement screening distances” using a base concentration for each chemical of concern. (ATC)

**Response:** See BUSTR’s previous response to the (J)(3) comment above.

### Various provisions regarding TPH

**Comment:** A review of the draft rules indicates that there is no change in the soil action levels for each distillate fractions of TPH per BUSTR soil type (page 37 BUSTR Draft Rule 13 March 2016). While TPH can be a useful tool to evaluate potential for soil saturation and general petroleum impact, the application of these values as steadfast action levels within a risk-based corrective action (RBCA) program is counter intuitive and in many cases counterproductive. The initial argument would be to eliminate TPH as a chemical of concern altogether.

New chemicals of concern are being introduced into BUSTR’s RBCA program based on toxicity/cancer risk and their presence in petroleum products. The addition of chemicals of concern for analysis, evaluation, and potential cleanup based on their overall risk as new toxicity data become available is how a RBCA based program should work, but it could be argued that to include TPH as a chemicals of concern with equal weight as other specific chemicals of concern removes the risk assessment element of the program. Many release sites will go through BUSTR corrective action and all chemicals of concern in soil and groundwater will be determined to be below the developed SSTLs, but TPH will be present at concentrations above the action levels.

BUSTR does provide different avenues for TPH evaluation under a Tier 3 Evaluation such as the development of a 95% upper confidence limit (UCL), surrogate volatile organic compounds/semi-volatile compounds (VOC/SVOC) analysis, and TPH Fractionation in the 2012 BUSTR Technical Guidance Manual (TGM). However, experience has shown that the surrogate and fractionation analysis is very costly (analytical costs and labor intensive) and is overly conservative. The 95% UCL can be successful, however, the implementation and interpretation of this option varies between coordinators and the definition of the “Source Area” in many cases leads to overly conservative results.

Perhaps this is an issue that needs further clarification and refinement in the upcoming TGM, rather than within Rule 13 itself. For sites where there is free product and/or additional

specific chemicals of concern that are being addressed under a remedial action, to clean up TPH at the same time is not a major concern. However, for sites where all specific chemicals of concern have been determined to be below site specific target levels (SSTLs) or reduced to below SSTLs, there is no free product, and TPH is the last chemical of concern remaining that is driving further Tier 3 work or remediation, the cost/effort to evaluate/remediate TPH does not seem very effective or worthwhile. Lastly, there is a consensus in the environmental industry that the majority of TPH remaining after elimination of free product and RBCA is typically residual and not mobile.

The language in the 2012 TGM states that soil removal and remediation be considered first before engaging other options for TPH evaluation (including an environmental covenant option). We would like BUSTR to consider the following options regarding TPH:

- 1) Elimination of TPH as chemical of concern from Rule 13.
- 2) Preparation of standard language regarding TPH for use in an environmental covenant (similar to the existing stock language for potable use, land use, and basement restrictions). This could include identifying the TPH area of concern, the statement that all specific chemicals of concern have been determined to be at safe levels, and a provision stating that all soils encountered during any future excavation must be sampled, analyzed and treated as petroleum contaminated soil (PCS).
- 3) Revision of the Tier 3 options for evaluating TPH. The reliability and cost prohibitive nature of the fractionation and surrogate analysis makes these options impractical in most cases. While the 95% UCL is a good indicator of a site-wide TPH concentration, coordinator interpretation of the source area and limiting non-detect or lower concentration values from the data set make the results overly conservative in many cases. This is especially true for sites where TPH is the only remaining chemical of concern to address prior to NFA and when the concentrations exist in a relatively small and well defined area of the site.
- 4) Removal of the language in the new TGM stating that excavation and remediation of TPH must be evaluated prior to other options. Since this caveat is not required for any other specific chemical of concern or pathway, it is unclear why TPH should be evaluated at this standard under a RBCA program. (ATC)

**Response: BUSTR understands that the Action Levels for TPH are not risk-based, and that addressing TPH contamination at some UST sites may be problematic. BUSTR also understands that there are some UST sites where free product is not present and where the concentrations of all other chemicals of concern are below Action Levels or risk-based SSTLs. As stated by the comment above, BUSTR's Technical Guidance Manual describes three approaches for addressing excess TPH contamination, namely TPH fractionation, surrogate analysis, and statistical analysis.**

**Many UST sites have used the statistical analysis approach to demonstrate that although one or more soil samples contain TPH above the applicable Action Level, if the overall TPH concentration in the source area is acceptable then those sites have received "no further action" status based on that statistical approach. In addition, several sites have used the fractionation or surrogate analysis approaches to demonstrate that the**

risks associated with the detected TPH chemicals do not present an unacceptable risk, and those sites have also received “no further action” status. However, there have also been several UST sites that have failed the statistical approach, the fractionation approach, and/or the surrogate approach. Therefore, the amount of TPH at these UST sites is excessive and presents an unacceptable amount of risk, which demonstrates that TPH does present a risk-based problem at some UST sites.

For all Tier 3 Work Plans using any of these three approaches, BUSTR attempts to maintain consistency using a team approach by discussing the Tier 3 details in a group setting consisting of most BUSTR staff, and formulating a consensus decision. These discussions typically include sampling locations, number of samples, exposure pathways, lab methods, toxicity data, and many other factors. Although imperfect, BUSTR believes that using a team approach has improved consistency within the bureau for addressing TPH and most/all Tier 3 Work Plans.

In conclusion, BUSTR does not plan to eliminate TPH as a chemical of concern, and BUSTR believes that the three approaches described in the TGM should continue to be available to owners/operators because they have proven useful at some UST sites in the past.

In addition, BUSTR plans to evaluate whether environmental covenants should be allowed at more sites to address TPH concentrations that exceed Action Levels. This will likely include evaluating which exposure pathways must be restricted and whether there are any site-specific issues (e.g., size of the UST site, size of the area impacted by TPH contamination, nearby land use, etc.) that should be considered when using a covenant to eliminate TPH contamination. However, at this time, BUSTR believes that excavation, remediation and risk-based calculations of TPH should be considered first (before a covenant). Environmental covenants are used for other chemicals only to eliminate specific pathways where the risk-based concentrations are known.

#### **Rule 14**

No comments received.

#### **Rule 15**

No comments received.

#### **Rule 16**

##### **(D)(1)**

**Comment:** Information supporting the revisions of the Reuse Action levels should be provided for review as part of the rule review process. (OPCMA)

**Response:** The Re-use Action Levels listed in OAC 1301:7-9-16 for petroleum contaminated soil (PCS) were developed using the same assumptions, parameters, default values, equations and algorithms used in developing the Tier 1 Action Levels listed in OAC 1301:7-9-13. See response for comment concerning Rule 12, paragraph (I)(4)(c) for further description of action level development.

The PCS Re-use levels are set at the lowest concentration from the direct contact pathway, and the soil migration pathways. (The dilution/attenuation factor of 10 was removed from the soil leaching to drinking water pathway.)

### **Rule 17**

No comments received.

### **Rule 18**

No comments received.

### **Rule 19**

#### **(D)(6)**

**Comment:** Speedway is transitioning to electronic filing for their Class C operators. Unfortunately, due to limitation of the programming of the database, they are not able to have the Class C certificates hand signed under this system. Speedway would like to language adjusted so that the signature requirements is not required. (Speedway)

**Response:** Paragraph (D)(3)(f) of rule 1301:7-9-19 of the Administrative Code requires owners to use a form designated by the state fire marshal for Class C operators. This form requires the signature of the Class C operator and serves as proof of completion of the training. For Class A/B operators, the rule requires the sponsor of training to maintain attendance sheets to serve as proof of completion of training; however, in the case of Class C operators, often the owner provides the training. As a result, there is no third party verification step for Class C operators, and there is a legitimate concern by BUSTR that Class C forms could be improperly filled out, hence the reason Class C operators are required to sign the form.

#### **(D)(7)**

**Comment:** *Recommend new text. "Individuals holding Class A and Class B UST Operator Certificates shall take and pass a biennial refresher class not less than 6 hours in duration." Reasoning: Knowledge and training fade with time. Many states require that A/B/C operators be retrained on a regular basis. Ohio currently requires refresher training every two years for many of its professional licenses and certifications including Barbers and Cosmetologists who require 8 hours refresher training on on-numbered years. A mistake at a barber shop will not usually affect the environment or fire safety. (AFS)*

**Response:** Federal regulations do not mandate refresher training except in special cases of non-compliance. BUSTR intends to mirror the federal regulations in this regard and not require refresher training.