

State Approaches to Managing Institutional Controls and Ensuring Long-Term Protectiveness at Leaking Underground Storage Tank (LUST) Sites

FINAL REPORT



May 2015

**ASTSWMO LUST Task Force
Tanks Subcommittee**

**1101 17th Street, NW, Suite 707
Washington, DC 20036
<http://astswmo.org>**

ACKNOWLEDGEMENTS

This report was prepared by the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) Tanks Subcommittee's LUST Task Force, with assistance from the U.S. Environmental Protection Agency (EPA) Office of Underground Storage Tanks (OUST) under Cooperative Agreement US-83537701. The views expressed in this document are those of the ASTSWMO LUST Task Force and its members, and do not necessarily reflect the policy or legal position of U.S. EPA or the ASTSWMO Board of Directors.

ASTSWMO is an organization supporting the environmental agencies of the States and Territories (States). ASTSWMO's mission is to enhance and promote effective State and Territorial programs and to affect relevant national policies for waste and materials management, environmentally sustainable practices, and environmental restoration. The LUST Task Force represents the unique concerns of State LUST Programs responsible for oversight, investigation, and remediation of releases of controlled substances from underground storage tanks (USTs). It serves as a liaison between State and Territorial LUST Programs and the U.S. EPA, and acts as a clearinghouse for distributing technical information and ideas among State LUST regulatory officials.

ASTSWMO thanks the following Task Force members for their participation in development of this report:

Stephen Reuter (NM), Task Force Chair
Dorothy Malaier (AL), Task Force Vice-Chair
Richard Spiese (VT)
John Giese (VA)
Lee Osborn (IA)
Paul Zahn (UT)
Wayne Pudney (AZ)
Russ Olsen (WA)

The LUST Task Force would like to thank the States that participated in providing information to ASTSWMO and helped make this document possible:

Region 1: Connecticut, Maine, New Hampshire, Vermont
Region 3: District of Columbia, Maryland, Pennsylvania, Virginia, West Virginia
Region 4: Alabama, Florida, Kentucky, North Carolina, South Carolina, Tennessee
Region 5: Indiana
Region 6: Oklahoma, Texas
Region 7: Iowa, Kansas, Missouri, Nebraska
Region 8: Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Region 9: Arizona, California, Guam, Hawaii
Region 10: Alaska, Idaho, Washington

TABLE OF CONTENTS

INTRODUCTION	3
SUMMARY OF RESPONSES	4
Institutional Controls Questions.....	4
1. Does your State use Institutional Controls to close LUST sites?.....	4
2. How many times have Institutional Controls been used to help close LUST sites in your State? If less than 100%, when are they needed and when are they not needed (where is the line)?.....	5
3. How does your Agency manage the Institutional Controls to ensure they are effective and remain in-place after the site has closed (e.g. monitoring, periodic inspections, one call centers)?	7
4. Does your agency or another agency track Institutional Controls over time?	10
5. If you are tracking Institutional Controls, where do you get funding? Briefly explain.	11
6. What types of Institutional Controls are used?	12
7. Does your State have any guidance, templates or other IC-related tools to share? If so, please include links to them.	13
8. Does your State use Institutional Controls at active gas stations. If yes, please briefly explain how and when they are used.	15
Long Term Protectiveness Questions.....	16
1. Does your State close LUST sites with contamination above unrestricted use/residential level?	16
2. If yes to question 1, please provide an estimate of the number of sites (if possible).....	17
3. Do you take steps to ensure long-term protectiveness of LUST sites closed with contamination above unrestricted use/residential levels (e.g. additional monitoring, periodic reviews, use of institutional controls (engineered or administrative), data available via the internet, etc.)? If yes to question 3, please briefly describe your approach.	18
4. Who are your key stakeholders when it comes to tracking and sharing information about the protectiveness of your controls/measures taken at these sites (e.g. general public, local governments, community groups/neighborhood associations, other State agencies, city planners, real estate and land developers, etc.)?	21
5. Does your State have any guidance, templates, outreach, or tools to share relating to long term protectiveness? If so, please include links to them.....	22
APPENDIX A: ARIZONA DEQ PROCESS FOR TRACKING ICs	A-1

INTRODUCTION

Many States have used institutional controls (ICs), both physically engineered and administrative, to manage their active caseload and effectively reduce their LUST site backlog. ICs are commonly used as part of an overall corrective action remedy at sites where contamination cannot be addressed by conventional means. These controls are typically designed to minimize the potential for exposure to contamination remaining at a site by imposing use restrictions and providing mechanisms to inform key stakeholders of the risk the contamination may present.

Questions have arisen regarding the protectiveness of ICs, and State practices for maintaining, tracking and evaluating ICs at LUST sites. In other words, how do we ensure that LUST sites that have achieved “cleanup completed” remain protective of human health and the environment now and into the future?

In 2014, the ASTSWMO LUST Task Force began discussions with States and U.S. EPA to gain a better understanding of the approaches States use to apply and manage ICs, and ensure the long-term protectiveness of remedies at LUST sites. In April 2014, the LUST Task Force sent a two-part request for information consisting of 14 questions to the LUST programs in all 50 States, five territories, and the District of Columbia (States) in order to determine how States are managing ICs and ensuring long-term protectiveness of closed LUST sites. The States responding to the request identified and provided practices, tools, and successes in managing ICs, and provided a catalyst for future discussions concerning the use of these types of controls and the long-term stewardship of closed LUST sites.

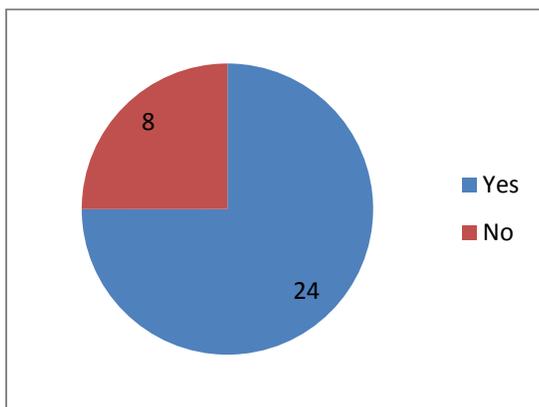
ASTSWMO received information from 35 States, which is summarized in this report. In addition, the State of Arizona provided an outline of their process for tracking and managing ICs (Appendix A).

SUMMARY OF RESPONSES

Below is a summary of the responses received for each of the 14 questions by the 32 States that participated.

Institutional Controls Questions

1. Does your State use Institutional Controls to close LUST sites?



Thirty two (32) States responded to this question. Twenty four (24) States responded “Yes” to using ICs to close LUST sites. Eight (8) States responded “No” to using ICs to close LUST sites. If a State responded “No”, they were asked to skip the remainder of the IC questions and move to the next series of questions specific to long-term protectiveness.

States responding “Yes”:

- Alabama
- Alaska
- Arizona
- California
- Connecticut
- District of Columbia
- Florida
- Hawaii
- Iowa
- Indiana
- Maine
- Maryland
- Missouri
- Montana
- Nebraska
- New Hampshire
- North Carolina\
- Pennsylvania
- Tennessee
- Texas
- Utah
- Vermont
- Washington
- West Virginia

States responding “No”:

- Colorado
- Guam
- Kansas
- Oklahoma
- South Carolina
- South Dakota
- Virginia
- Wyoming

2. How many times have Institutional Controls been used to help close LUST sites in your State? If less than 100%, when are they needed and when are they not needed (where is the line)?

Twenty (20) States responded to these questions. Responses are provided in the Table 1 below.

Table 1

State	Number of times ICs used	When are ICs needed and when are they not needed?
Alabama	56	From 1988 to May 2009, the use of ICs was voluntary. From May 2009 to August 2012, if a LUST closure did not meet an unrestricted land use standard (soil or groundwater contamination above risk-based initial screening levels), then an environmental covenant was required. After May 2012 LUST closures were not required to use ICs when an unrestricted land use standard was not met. Since May 2012, Alabama started issuing “No Further Action with Conditions”. LUST sites now receive these letters to document recommended property use restrictions when contamination above risk based initial screening levels is left in-place.
Alaska	25% in past 3 years	
Arizona	Currently tracking 44 (does not include historical number of sites)	
California	40	Rarely used, only voluntary.
District of Columbia	9	
Hawaii	50% of all LUST cases closed	ICs needed when contamination is left in-place above action levels, but not a current threat to human health and environment.
Iowa		The RBCA process is used Iowa. Responsible parties/site owners may elect to use an IC to address certain at-risk receptor types/pathways. Using only an IC may or may not close a site because some at-risk receptor types/pathways cannot be addressed with an IC.
Indiana	Over 1,000	ICs are used 100% of the time for off-site contamination. For on-site, ICs are used when contamination is above residential closure standard. The Institutional Control Policy Evaluation Panel is used to evaluate difficult sites.
Maine		Deed notices are only used when providing long-term drinking water treatment system on private well or 3 rd party damage claim from UST discharge.
Maryland		Selective use only based on site specific risks and closure requirements. No formal standards. Responsible party generally proposes ICs in a corrective action measure.
Missouri	51	Used as part of a corrective action.
Montana	None yet	Montana’s law directs them to implement ICs when the LUST closure involves residual groundwater contamination above State standards.

State	Number of times ICs used	When are ICs needed and when are they not needed?
Nebraska	Approx. 20	Responsible Parties may propose their use and/or staff may recommend engineering controls.
New Hampshire	5	They are used when contaminated soil cannot be remediated, but poses a direct contact risk. ICs cannot be used to close a site with groundwater contamination.
North Carolina	4000	A Notice of Residual Petroleum is needed if a site is being closed that has soil contamination over the Residual Maximum Soil Contaminant Concentrations, a health risk level, and/or groundwater contamination is above the State standard.
Pennsylvania	Approx. 5%	ICs are used when sites are closed with residual soil contamination. Regulations provide a process for creating, documenting and assuring the enforceability of restrictions.
Texas	Less than 5%	ICs are needed to limit the installation of water wells.
Utah	16	They are used when contamination left in-place creates a probable current or future potential risk.
Vermont	186	ICs are used when contamination is left in-place above standards.
West Virginia	20-30 times	The use of ICs are strictly voluntary and used when sites are closed using risk based standards.

3. How does your Agency manage the Institutional Controls to ensure they are effective and remain in-place after the site has closed (e.g. monitoring, periodic inspections, one call centers)?

Responses Summary:

Twenty one (21) States responded to this question. A summary of responses is provided below and individual responses are provided in Table 2.

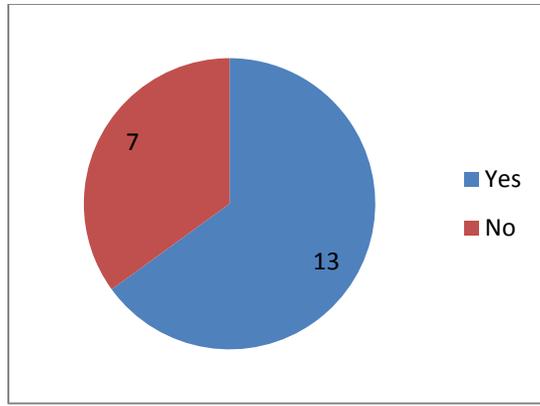
- Alabama, the District of Columbia, Iowa, and Texas do not specifically monitor or track ICs. Alabama, the District of Columbia, and Texas added that information concerning the site specific ICs can be found in LUST files.
- Nine States reported inspection and/or review of sites with ICs are performed in order to determine if they are still properly maintained. Alaska and Connecticut indicated they perform limited or periodic inspections, while Hawaii reported they perform yearly inspections. Missouri inspections are performed by their Long Term Stewardship Unit. Montana and Washington conduct Five Year Reviews on sites with ICs to determine whether they are still in-place. In West Virginia, project managers and Licensed Remediation Specialist (hired by property owner) conduct the inspections. New Hampshire has implemented an annual certification program for ICs. Florida is evaluating creating an audit program of ICs.
- California indicated information on ICs can be found on the internet using their GeoTracker website. The District of Columbia plans to add IC information into their GIS and Google Earth software.
- Several States indicated ICs are reported on the deed of the property. This serves to notify future land owners that ICs were required as a condition of closure and need to be maintained. Pennsylvania and Maryland reported when Environmental Covenants are attached to the deed, reporting is required of land owners regarding changes to conditions that affect the IC.
- Alaska, District of Columbia, Missouri, Vermont and Indiana reported they track ICs in a database.
- Two States reported having staff specifically assigned to track closed sites where ICs are used. Missouri has created a Long Term Stewardship Unit to track and inspect ICs which have been placed at UST and AST sites. The West Virginia Legislature is considering creating the West Virginia Land Stewardship Corporation (non-profit) to provide for long-term safeguarding of remediated sites using institutional and engineering controls.
- Utah and West Virginia use their States utility location system (one call system) to receive notification when an excavator is planning to dig at a site that may have an IC. The project manager is notified by the service prior to any excavation, and may contact the excavator to discuss the site specific controls.

Table 2

State	How are ICs managed after site is closed?
Alabama	Information concerning the ICs are in the LUST file, however it is not tracked or actively monitored. However, if they become aware of changes to site conditions, the new information is evaluated and the LUST site may be re-opened if necessary.
Alaska	All sites with ICs are monitored by staff. Depending upon the site conditions this monitoring may include contacting the responsible party/land owner to verify site conditions have not changed and at some sites periodic inspections. Database information concerning the contamination is current and available to the public.
Arizona	Annual updates are required from the property owner. Site inspections occur annually.
California	State Water Board tracks ICs/deed restrictions, which are posted on GeoTracker (State Web site).
Connecticut	Conduct limited inspections of sites with Environmental Land Use Restrictions.
District of Columbia	Sites with ICs are not monitored or tracked. Database does list sites with ICs on their website. IC information and record of Deed is also maintained in LUST case file, and other DC government authorities and registries. They plan to add ICs to their GIS and Google Earth software. If they become aware of changes to site conditions, the new information is evaluated and the LUST site may be re-opened if necessary. The case manager will follow up with inspections and contact RP concerning unauthorized land use change or breaches of the IC requirements.
Florida	The petroleum program is currently evaluating an audit program for ICs.
Hawaii	ICs are managed by annual inspections (by State or property owner) and deed restrictions/environmental covenants.
Indiana	The Office of Land Quality (IDEM) has established an IC Registry to track ICs. State project managers track them and county health departments are notified of the restrictions and may monitor these sites.
Iowa	An IC management process has not yet been developed.
Maryland	No post-closure monitoring typically performed. If an Environmental Covenant is used (using UECA), monitoring would be performed as specified in the Covenant.
Missouri	The Dept. of Natural Resources has created a Long Term Stewardship Unit to track and inspect ICs. The ICs have been input into a database and site inspections are planned.
Montana	Montana current has not used ICs to close LUST site, however they have a business process to review ICs every 5 years. If they are found to not be in place, the site can be reopened.
Nebraska	ICs are not tracked.
New Hampshire	Activity use restrictions are tracked. There is an annual certification program.
North Carolina	The Notice of Residual Petroleum states the site cannot be used for a daycare, residence, school, etc., unless it was already a residential property. The restriction of groundwater states a water supply well cannot be installed. The No Further Action letter requires the responsible party to advise the Department of changes that may affect the land use of the site.
Pennsylvania	Environmental Covenants with are filed with county recorded and attached to deed. Covenants cannot be terminated except as specified in the covenant. Covenants required self-reporting of landowner or occurrence of an event. Covenants are enforceable by local governments and the State.
Texas	Information concerning ICs is in LUST file, but not tracked in database. Closed sites are not actively monitored. Closure letters inform the responsible party of criteria used to close site and if an IC was required. If their agency becomes aware of changes to site conditions, the new information is evaluated and the LUST site may be re-opened if necessary.

State	How are ICs managed after site is closed?
Utah	LUST sites with ICs are tracked using a one-stop utility locator. They receive an email when an excavator plans on digging in the area. A notice is sent to excavator outlining where the contamination is located and any controls. Site visits are not made to check if ICs remain in-place.
Vermont	ICs information is kept in their database. A notice to the Land Record is used in most cases. If a deed restriction is used, the land owner is required to notify if action is taken, as noted in the Notice.
Washington	5 year reviews are conducted.
West Virginia	The Office of Environmental Remediation project manager's conduct inspections for tracking. Project managers (PMs) are notified when potential excavations are nearby sites with Land Use Covenants (LUCs) by West Virginia's one-call system and an outside contractor (Terradex, Inc.). Legislature is considering creating the West Virginia Land Stewardship Corporation (non-profit) to provide for long-term safeguarding of remediated sites using institutional and engineering controls. PMs inspect sites with LUCs in place prior to July 2009. After that date, the inspections required by the LUC are conducted by a Licensed Remediation Specialist and are the responsibility of the property owner. The inspection form is included in the Final Report.

4. Does your agency or another agency track Institutional Controls over time?



Twenty (20) States responded to this question. Seven (7) States responded that they did not track ICs over time, while thirteen (13) States indicated they do track them, to varying degrees. Responses are provided in Table 3.

Table 3

State	ICs tracked over time?
Alabama	Yes for those sites that have environmental covenant recorded. No for all other LUST sites.
Alaska	Yes, Alaska DEC.
Arizona	Yes
California	Yes
District of Columbia	Little or no tracking, unless site conditions changes. They evaluate site condition changes to determine if site needs to be reopened.
Hawaii	Inspections are tracked by their agency. Deed restrictions/environmental covenants are tracked by the Bureau of Conveyances when a property transaction takes place.
Indiana	No. The responsible parties establish that the plume is shrinking or at least stable.
Maryland	Engineered ICs are not tracked. If an environmental covenant is used, it is documented on the deed.
Missouri	A Long Term Stewardship Unit was just created and they will begin inspections soon.
Montana	Yes, Five Year Reviews.
Nebraska	No
New Hampshire	Yes, however yet to be developed.
North Carolina	Track the date that sites have Land Use Restrictions recorded with the Register of Deeds on their database.
Pennsylvania	Maintain a registry of covenants (called "PA's Activity and Use Limitations Registry") on their website.
Tennessee	No
Texas	No
Utah	No
Vermont	No
West Virginia	Yes

5. If you are tracking Institutional Controls, where do you get funding? Briefly explain.

Fourteen (14) States responded to this question. A summary of responses is provided below and individual responses are provided in Table 4.

- Alaska, District of Columbia, Maryland, and Pennsylvania responded they used some combination of State and federal funds to track ICs.
- California, Montana, and Utah use State funding to track ICs.
- In Arizona, the fees collected from the parties applying for Declaration of Use Restrictions are used to inspect the sites on a yearly basis.
- Indiana, North Carolina, and New Hampshire indicated they do not receive any additional funding to track ICs. Indiana further mentions that their agency struggles with the lack of funding given the number of sites (>1000) that they are tracking.
- North Carolina indicated additional funding is not necessary because they only track the date when the land use restriction is recorded with the Register of Deeds, using their database.

Table 4

State	Source of funding for tracking ICs
Alaska	Combination of State funds and Federal grants.
Arizona	Receives funding through fees collected from parties applying for Declaration of Use Restriction.
California	UST cleanup fund.
District of Columbia	EPA LUST Grants and local (UST Revenue) Funding.
Hawaii	Normal operating budget.
Indiana	Tracking ICs is an unfunded mandate.
Maryland	State and EPA funding.
Missouri	LUST Trust Funding.
Montana	State Petro Fund.
New Hampshire	No additional funding.
North Carolina	Only track date that the Notice of Residual Petroleum was recorded, so no funding is needed.
Pennsylvania	Tank registration fees, federal grants and Underground Indemnification Storage Tank Fund (state financial assurance fund).
Utah	State Funding.
West Virginia	Federal 128a monies and LUST Grants are used for tracking and inspection of Land Use Controls.

6. What types of Institutional Controls are used?

Twenty four (24) States responded to this question. State responses are provided in Table 5.

Table 5

State	Types of ICs used
Alabama	Almost all are restricting or preventing installation of water wells through deed notices and/or restrictive covenants.
Alaska	Most common is notice of environmental contamination filed with property deed. Also use administrative IC "Signed Contaminated Sites Agreement", signed by responsible party agreeing to comply with site specific ICs. Rarely used are conservation easement, equitable servitude and compliance order by consent.
Arizona	Declaration of Environmental Use Restriction (DEUR) that is attached to property. There are two types of DEURs-engineering and institutional.
California	Deed restrictions.
Connecticut	Environmental Land Use Restriction; Deed Notice.
District of Columbia	Land use controls with Deed Restrictions, usually restricting residential use and only allowing commercial/industrial use.
Florida	Restrictive Covenants and municipal ordinances for groundwater.
Hawaii	Deed restrictions/environmental covenants, passive/active venting systems, caps, and vapor barriers.
Indiana	Environmental Restrictive Covenants attached to deeds; Environmental Restrictive Ordinance imposed by municipalities; and engineered ICs.
Iowa	Local ordinances are used as ICs for groundwater ingestion pathways. Under specified conditions an environmental covenant may be used as an IC.
Maine	Deed notices used when providing long-term drinking water treatment systems on a contaminated private well or as part of 3 rd party damage claim resulting for a LUST.
Maryland	Environmental Covenants, Consent Orders (non-engineering ICs); Vapor barriers, Capping, Sub-slab venting systems (engineered ICs).
Missouri	Restrictive covenant prohibiting installation of a well and deed notices.
Montana	Would consider any engineering control, institutional control, or site condition that would eliminate an exposure pathway.
Nebraska	One or two deed restrictions. Ordinances prohibiting installation of new wells (20 times).
New Hampshire	Deed Restrictions, and Activity and Use Restrictions.
North Carolina	A land use restriction is used, called a Notice of Residual Petroleum which is needed if a site is being closed that has soil contamination over the Residual Maximum Soil Contaminant Concentrations, a health risk level, and/or groundwater contamination is above the State standard. For soil contamination, the site can only be used for industrial/commercial use. Groundwater cannot be used as a water supply and water supply wells are prohibited to be installed or operated.
Pennsylvania	Use a combination of engineering and non-engineering controls on a site-specific basis.
Tennessee	Land use restrictions and engineering controls.
Texas	Deed notices and/or restrictive covenants almost always restricting or preventing installation of water wells.
Utah	Voluntary Environmental Covenants (attached to deed) and engineering controls.
Vermont	Almost exclusively Notice to the Land Record, but some Deed Restrictions are used.
Washington	Environmental Covenants, interagency agreements and other legal instruments.
West Virginia	Groundwater use restrictions; residential use restrictions; fencing; vapor barriers; Capping; and restrictions on excavation without proper health and safety plans.

7. Does your State have any guidance, templates or other IC-related tools to share? If so, please include links to them.

Twenty (20) States responded to this question. State responses are provided in Table 6.

Table 6

State	Does your State have any guidance, templates or other IC-related tools to share?
Alabama	The Uniform Environmental Covenants Program regulations are located in Division 335-5, found at www.adem.state.al.us . Select Alabama Environmental Regulations and Laws, and select Division 5 regulations. The fees are located in Fee Schedule J of the Division 1 regulations.
Alaska	Site Closure memorandum: http://dec.alaska.gov/spar/csp/guidance/Closure%20memorandum%207%2024%2009-final.pdf IC Guidance http://dec.alaska.gov/spar/csp/guidance/2011%20Final%20IC%20Guidance.pdf
Arizona	This link also provides a link to Arizona Revised Statutes regarding Restrictions on Property Use (Arizona Revised Statutes (ARS) § 49- 151 through § 49 - 159). http://www.azdeq.gov/environ/waste/cleanup/deur.html
California	https://geotracker.waterboards.ca.gov/deed_restrictions.asp
Connecticut	http://www.ct.gov/deep/cwp/view.asp?a=2715&q=438254&deepNav_GID=1626
District of Columbia	No, mention of this is made in our DC UST Regulations 20 DCMR Chapter 62-DCRBCA Guidance Chapter 6.3 and in our SOPs. We do have an institutional Control NFA letter template.
Florida	http://www.dep.state.fl.us/waste/quick_topics/publications/wc/csf/icpg.pdf http://www.dep.state.fl.us/waste/categories/brownfields/pages/ICR.htm
Hawaii	http://www.hawaiidoh.org/tgm.aspx Chapter 19.7 is the short IC guidance we refer to. The guidance is not comprehensive and we make other decisions in the interest of human health and the environment on a case by case basis.
Indiana	https://myshare.in.gov/idem/olq/workgroups/icprogram/default.aspx https://extranet.idem.in.gov/standards/docs/sops/olq/P-005-OLQ-X-XX-12-S-R0.pdf
Iowa	http://www.iowadnr.gov/insidednr/regulatoryland/undergroundstoragetanks/leakingundergroundtanks/environmentalcovenant.aspx http://www.iowadnr.gov/insidednr/regulatoryland/undergroundstoragetanks/groundwaterprofessionals/gwpbulletinboard.aspx .
Maryland	No

Missouri	http://www.pstif.org/apps/sample_deed_restriction_9513.pdf
Montana	ICs are discussed under Petroleum Mixing Zone (PMZ) closure in our technical guidance document on release closure. http://www.deq.mt.gov/LUST/downloadables/techguide9/TGD_9A_Final_4_16_12.pdf
New Hampshire	http://des/nh/gov/organization/commissioner/pip/forms/waste/documents/aur_self_cert.doc
North Carolina	In North Carolina, the statutes that pertain to the Land Use restrictions and Notice of Residual Petroleum for USTs are NCGS 143B-279.9 and 143B-279.11. The instructions and format for the NRP can be found at the following address: http://portal.ncdenr.org/web/wm/ust/guidance#NORP
Pennsylvania	Environmental covenant templates are available at: http://www.portal.state.pa.us/portal/server.pt/community/pa_ueca/21548
Texas	The use of ICs is covered in our PST rules at 30TAC334.205 and 334.206. A model IC is provided at 30TAC334.208.
Utah	Utah provides a search engine and list to help identify sites that have environmental covenants: http://www.eqedocs.utah.gov/Default.aspx?SSName=DERR_UST_EC Utah also provides a template for environmental covenants, which can be used by responsible parties: http://www.undergroundtanks.utah.gov/docs/ICTemplate.pdf
Vermont	We have a notice template but it's not on line, we would have to send.
West Virginia	http://www.dep.wv.gov/dlr/oer/voluntarymain/Documents/LUC%20template%20VRA%209-10.zip

8. Does your State use Institutional Controls at active gas stations. If yes, please briefly explain how and when they are used.

Eight States responded to this question.

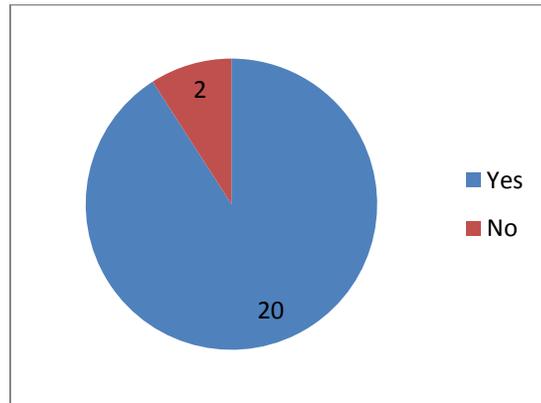
Alaska, Arizona, Maryland, Iowa, North Carolina and Utah indicated the uses of ICs have been used at active gas stations and open LUST sites:

- Alaska indicated the use of ICs are rarely used, however they are becoming more commonly used to provide protectiveness during remediation.
- Iowa indicated that ICs may be used at both RBCA Tier 1 and Tier 2 levels. Both active and inactive sites are subject to completing a RBCA evaluation and therefore may use ICs. Under specified conditions, an environmental covenant, which limits the risk of exposure to contaminated soil and/or groundwater, may be used as an IC to restrict future activities at a site. An environmental covenant may also be used in combination with other ICs or technological controls.
- North Carolina places a land use restriction (called Notice of Residual Petroleum) on the property of open LUST sites prior to a property transaction, when residual contamination of above their standards. Maryland uses ICs on active stations as needed to mitigate the risk to human health and the environment.

Pennsylvania and Hawaii responded ICs are generally only used at closed LUST sites.

Long Term Protectiveness Questions

1. Does your State close LUST sites with contamination above unrestricted use/residential level?



Twenty two (22) States responded to this question. Twenty (20) States responded “Yes,” they closed LUST sites with contamination above unrestricted use and/or residential levels, while two (2) States responded “No,” they do not close sites above these levels. If a State responded “No”, they were asked to skip to question 3.

States responding “Yes”:

- Alabama
- Alaska
- Arizona
- California
- Colorado
- Connecticut
- Idaho
- Indiana
- Iowa
- Kentucky
- Maryland
- Nebraska
- North Carolina
- North Dakota
- Oklahoma
- Pennsylvania
- South Dakota
- Utah
- Vermont
- Virginia

States responding “No”:

- Guam
- Wyoming

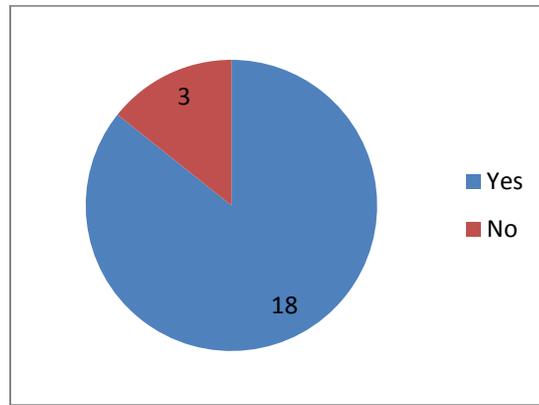
2. If yes to question 1, please provide an estimate of the number of sites (if possible).

Nineteen (19) States responded to this question. State responses are provided in Table 7.

Table 7

State	Number of LUST sites closed above unrestricted use/residential levels.
Alabama	All sites are evaluated using risk-based corrective action standards, so all sites have some contamination remaining.
Alaska	Estimate approximately 5% (250 sites) LUST sites are closed with ICs have contamination above direct contact levels.
Arizona	50 LUST sites.
California	
Colorado	100's of sites.
Connecticut	None yet, but getting close to closing sites with Environmental Land Use Restrictions.
Idaho	Greater than 50%.
Indiana	Approximately 700 LUST sites were closed using Environmental Restrictive Covenants since 2000.
Iowa	Not easily accessible.
Kentucky	Not tracked.
Maryland	Sites are routinely closed with residual impacts that exceed relevant residential or non-residential standards. The standards are only one of many factors considered when evaluating overall risk.
Nebraska	Not sure, but estimate 100s to 1000s.
North Carolina	Over 4000 LUST sites.
North Dakota	Approximately 25%.
Oklahoma	Not tracked.
Pennsylvania	Over past 2 years, 198 out of 1,202 total closures (17%).
South Dakota	The majority of closed sites.
Utah	1387
Vermont	188 out of 943 closures.

3. Do you take steps to ensure long-term protectiveness of LUST sites closed with contamination above unrestricted use/residential levels (e.g. additional monitoring, periodic reviews, use of institutional controls (engineered or administrative), data available via the internet, etc.)? If yes to question 3, please briefly describe your approach.



Twenty one (21) States responded to this question. Eighteen (18) States responded “Yes,” they took steps to ensure long term protectiveness of closed LUST sites with contamination above unrestricted use and/or residential levels, while three (3) States responded “No.” Responses are provided below in Table 8.

Table 8

State	Ensure long-term protectiveness of LUST sites?	Briefly describe your approach
Alabama	Yes	Inspections every 3-5 years for sites with environmental covenants. Sites closed with “No Further Action with Conditions” letters do not have any routine inspections after the letter is issued.
Alaska	Yes	Goal is to ensure long term protectiveness of ICs on all sites no matter what the contaminant concentration. All sites with ICs require some sort of follow-up which can vary from calls to RP/landowner to determine if site conditions have changed, to onsite inspections. Database is kept current, so that the public can access site information.
Arizona	Yes	A Declaration of Environmental Use Restriction is attached to property deeds where contamination is above unrestricted/residential use. If institutional or engineering controls are used, yearly monitoring and reporting are required.
California	Yes	Site data can be found on GeoTracker website and is available to land use agencies and the public. Deed restrictions may be used when the regulatory agency determines it is necessary.
Colorado	Yes	LUST site documents are available on the internet. Sites above risk based screening levels are flagged.

State	Ensure long-term protectiveness of LUST sites?	Briefly describe your approach
Connecticut	Yes	The public has access to the “List of Potentially Contaminated Sites”, which contains information concerning the status of any Environmental Land Use Restrictions. The public can call if they need clarification.
Guam	Yes	Corrective action plans, additional monitoring and periodic reviews.
Idaho	Yes	If site closed with IC, responsible party is required to submit year compliance reports to assure institutional controls are still in-place. The online Facility Mapper lists sites with environmental controls. Also, use one-call center to inform excavators when contamination is present.
Indiana	Yes	Currently no requirements for additional monitoring or periodic reviews. Sites with unrestricted use are listed on the Institutional Controls Registry website. An IC layer is also available on the State-wide GIS Map.
Iowa	Yes	Some sites are closed with institutional controls and engineered controls, but are not monitored in the future. When a No Further Action letter is issued, it must be recorded with the county and is part of the property record.
Kentucky	No	Sites with significant contamination mass are not closed.
Maryland	Yes	Generally no monitoring required after closure. Closure documentation acknowledges residual impacts may exist, and soil may need to be properly managed if exposed. Land use change may require re-evaluation of risk.
Nebraska	No	RBCA evaluation is very conservative, so confident there is no risk under existing conditions.
North Carolina	No	When site is closed, additional monitoring is not required. NFA letter requires RP to advise them of changes that may affect the land use of the site.
North Dakota	Yes	Basic site information is available on the internet. Files can be reviewed in the office. Working on scanning file information, and making it available on the internet.
Oklahoma	Yes	Use a combination of measures, including: (1) direct public notice letters to affected or potentially affected adjacent property owners, municipalities, public utilities, etc.; and, (2) Engineered controls, such as plugging impacted wells, replacement of wells, installing vapor barriers. State law requires environmental risks need to be disclosed when residential property is transferred. State assumes environmental risks are discovered by environmental site assessments for commercial properties.
Pennsylvania	Yes	Registry, review of reports and complaint investigation.
South Dakota	Yes	All closed sites are scanned and available if requested. In the process of developing an interactive map which will allow the user to access all scanned files.

State	Ensure long-term protectiveness of LUST sites?	Briefly describe your approach
Utah	Yes	All LUST file information and documents can be accessed on the web using an interactive map. LUST sites closed using Environmental Covenants and certain other LUST sites use on-call center to inform excavators when contamination is present.
Vermont	Yes	A Notice to the Land Record is placed on property deeds with the Town Clerk in the Town Land Book and can never be removed. A new Notice would need to be placed over the old one for it to be superseded. Also, sites with ICs are posted on the database, which is available on the internet.
Virginia	Yes	GIS and database information for all LUST cases are available on the internet. Also provide monthly list of release sites to the State health department.

4. Who are your key stakeholders when it comes to tracking and sharing information about the protectiveness of your controls/measures taken at these sites (e.g. general public, local governments, community groups/neighborhood associations, other State agencies, city planners, real estate and land developers, etc.)?

Twenty one (21) States responded to this question. Most respondents indicated that anyone interested in the site is considered a key stakeholder and information is available either in their site files or on the Internet. Individual responses are provided below in Table 9.

Table 9

State	Who are your key stakeholders?
Alabama	No Further Actions letters are issued to tank owner and the property owner. Release files can be viewed by the public on the website.
Alaska	General public, prospective purchasers, financing institutions, title companies, real estate and other state agencies.
Arizona	This information is available to all interested parties.
California	Closure notifications are sent to adjacent landowners and occupants, water districts, and building departments.
Colorado	Anyone can access the information on the Internet.
Connecticut	When an Environmental Land Use Restriction (ELUR) is recorded on the land records, a notification is sent to: Chief Administrative officer; chairman of the municipal planning, zoning or planning and zoning commissioner; local director of health; any person who submitted comments on the ELUR.
Guam	Local government, other State agencies, real estate and land developers.
Hawaii	Key stakeholders have been the general public, community groups, other State agencies, and land developers when asked.
Idaho	State insurance fund, and anyone interested in the site can access the site information on the internet.
Indiana	The general public, local governments, water utilities real estate developers, etc. may use their IC Registry. Local Health Dept. is copied on No Further Action letters.
Iowa	Mechanisms are not in place to track and share protectiveness information. We sometimes receive inquiries and updates on the status of a site from the general public, consultants, local governments, other state agencies, planners, and developers.
Kentucky	All stakeholders listed above (in question).
Maryland	All stakeholders listed above (in question).
Nebraska	Cleanup and decision files are open to the public
North Carolina	NFA is sent to the local health director, the chief admin. officer of each political jurisdiction in which the contamination occurs, all property owners and occupants within or contiguous to the contaminated area and where the contamination is expected to migrate.
North Dakota	All stakeholders listed above (in questions).
Oklahoma	Adjacent property owners, municipalities, utility companies, Oklahoma Dept. of Transportation, Oklahoma Dept. of Environmental Quality, Oklahoma Water Resources Board, real estate and land developers.
Pennsylvania	Local governments, real estate professionals, and general public.
South Dakota	Anyone interested in the site. Mostly consultants, developers, realtor and banks.
Utah	Anyone interested in a certain site can access the LUST file on Departments website using the interactive map.
Vermont	Buyers and sellers of the land, and the general public.

5. Does your State have any guidance, templates, outreach, or tools to share relating to long term protectiveness? If so, please include links to them.

Eleven (11) States responded “Yes” to this question. State responses are provided in Table 10.

Table 10

State	Does your State have any guidance, templates, outreach, or tools to share relating to long term protectiveness?
Alabama	The environmental covenant regulations (that are currently optional for UST releases) can be located at http://www.adem.alabama.gov/alEnviroRegLaws/files/Division5.pdf .
Alaska	At this point no, other than the guidance links provided above in #7. Site closure memorandum http://dec.alaska.gov/spar/csp/guidance/Closure%20memorandum%207%2024%2009-final.pdf IC Guidance http://dec.alaska.gov/spar/csp/guidance/2011%20Final%20IC%20Guidance.pdf
Arizona	Arizona Administrative Code R18-7-208 – contains link to rule requiring Declaration of Environmental Use Restrictions: http://www.azsos.gov/public_services/Title_18/18-07.htm Arizona DEQ webpages – contains links to statutes and rules related Declaration of Environmental Use Restrictions. Links to templates and tools are within these webpages, also: http://www.azdeq.gov/environ/waste/cleanup/deur.html http://www.azdeq.gov/environ/waste/cleanup/deur_exhibits.html#a
Connecticut	The public has access to the "List of Potentially Contaminated Sites" and can call if they need clarification. The Department is currently developing a program to provide better access to ELUR information.
Guam	None to share at this time.
Indiana	Remediation Closure Guide (RCG), http://www.in.gov/idem/6683.htm ; RCG, Section 12, Remedy Selection and Implementation, http://www.in.gov/idem/files/remediation_closure_guide_sect_12.pdf ; Remediation Program Guide (RPG), http://www.in.gov/idem/6726.htm ; Institutional Controls website, http://www.in.gov/idem/5959.htm .
North Carolina	In North Carolina, the statutes that pertain to the Land Use restrictions and Notice of Residual Petroleum for USTs are NCGS 143B-279.9 and 143B-279.11. The instructions and format for the NRP can be found at the following address: http://portal.ncdenr.org/web/wm/ust/guidance#NORP
Pennsylvania	http://www.portal.state.pa.us/portal/server.pt/community/pa_ueca/21548

State	Does your State have any guidance, templates, outreach, or tools to share relating to long term protectiveness?
Utah	<p>Our interactive map: http://enviro.deq.utah.gov/</p> <p>Environmental Covenant template: http://www.environmentalresponse.utah.gov/ust/docs/11Nov/USTtemplate%20owner872013-2.pdf</p> <p>Environmental Covenants completed in the State: http://eqedocs.utah.gov/SpecialSrchs.aspx?SSName=DERR_UST_EC</p>
Vermont	<p>Database: http://www.anr.state.vt.us/wmid/ Investigation and Remediation of Contaminated Properties Procedure, page 84. Deed Restriction on page 85.</p> <p>http://www.anr.state.vt.us/dec/wastediv/sms/smsgdint.htm</p>
Virginia	Yes

APPENDIX A: ARIZONA DEQ PROCESS FOR TRACKING ICs

- Used for sites that are above residential cleanup standards (Tier 1 levels or site specific determined levels), but below non-residential standards
- Agency has forms on the website for the Declaration of Environmental Use Restriction (DEUR) of which there are two types – Land use restriction and/or engineering control
- Processing and maintaining DEURs are funded by fees
- Property owner fills out paperwork; Arizona DEQ reviews and approves; Property Owner records the DEUR with the County Recorder's Office. The DEUR runs with the land (not the owner – meaning if the property changes hands, the DEUR is still there)
- DEURs have Annual Reporting requirements (Arizona DEQ sends out letters every year)
- Arizona DEQ inspects the sites on a yearly basis
- To release the DEUR, the property owner can enter our Voluntary Remediation Program and demonstrate that the chemicals of concern are below residential standards.