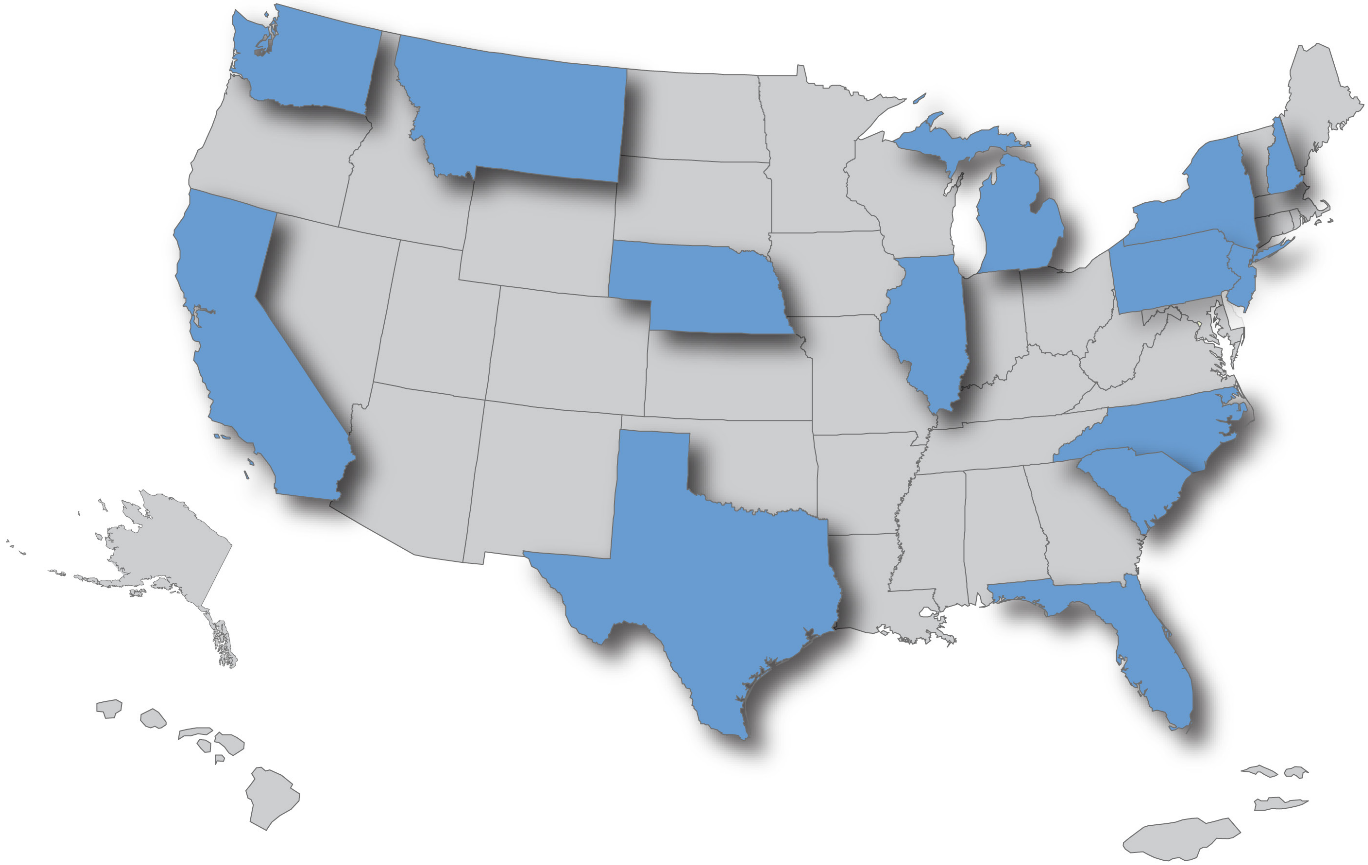
United States Environmental Protection Agency

The National LUST Cleanup Backlog:

A Study of Opportunities



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Appendix A: Data Compilation and Analytic Methodology

Data Compilation and Organization

The goals of the Phase 2 backlog study were to characterize the national backlog, explain its persistence, and identify opportunities for its reduction. To achieve these goals, OUST relied on data provided by 14 participating states. Beginning in April 2008, OUST contacted the states' UST program staff to discuss and compile information on all sources of electronic data related to the management of LUST releases. State staff began submitting the requested data in early 2009. Data sources included state databases, reports, spreadsheets, and other documents. All available data fields related to LUST releases were catalogued and evaluated to determine data completeness and applicability to attributes of interest. State managers generally reported that data are maintained in greater detail within paper files and acknowledged that not all data are tracked in the databases.

Data sets for federally-regulated LUSTs were organized and standardized by OUST to develop final data sets suitable for analysis and comparison within and across states. All data standardization was discussed with staff in each state to ensure that data were not misinterpreted. The number of cumulative releases, closed releases, and open releases were compared with the totals reported in EPA's *FY 2008 End of Year* and *FY 2009 Mid-Year Activity* reports to determine whether the correct subset had been identified. All data were confirmed with state staff and any inconsistencies were addressed or otherwise noted.

Analytic Approaches

OUST employed statistical methods to analyze available data and characterize the backlog in each state. Open releases were analyzed based on release age and stage of cleanup.

Age of Release

For closed releases, age was calculated as the difference between the date of cleanup completion (i.e., the closure date) and the confirmed release date. For open releases, age was calculated as the difference between the date that a state provided the data and the confirmed release date. These data, therefore, provide a snapshot of the backlog as of spring or summer 2009, depending on when each state provided its data.

Stage of Cleanup

A LUST release progresses through four stages of cleanup: Confirmed Release, Site Assessment, Remediation, and Closure. For this analysis, these four stages were used to assess what OUST considers the "cleanup pipeline." Analyses based on the stage of cleanup aimed to identify any clear bottlenecks in this pipeline.

The methods for tracking the cleanup progress of a LUST release differ among states and can be grouped into two main types: tracking of release status (e.g., active remediation) and tracking of release events (e.g., remedial design received). States that track release status typically record one status for each release. In collaboration with each state, OUST matched these data entries to one of the four stages of cleanup. States that track release events provided historical records of correspondence and other events related to releases along with the dates on which the events occurred. These records were queried to identify the most recent event and to identify any event indicating that a release had progressed into a subsequent cleanup stage. Each participating state reviewed the number of releases classified into each stage of cleanup.[1]

Descriptive Statistical Analyses

Descriptive statistics were used to characterize each of the 14 participating states' backlogs and the national backlog. Primary methods of backlog characterization included the distribution of releases by stage of cleanup and the median age of releases. Additional release attributes were analyzed within age and stage classifications and results were discussed within each section of the report.

Analytic Tree Method

For each state, data attributes were analyzed using the analytic tree method. The analytic tree method was used to identify underlying patterns that would not otherwise be apparent among these large datasets. Age of release and media contaminated were used as the dependent variables in separate tree analyses for

1 The Chapter Notes section of each state report presents the classification method used in each state.

each state. These analyses were included in six state reports where clear patterns emerged: Montana, North Carolina, New Jersey, New York, Pennsylvania, and Texas. For states where informative patterns were not identified, the results of the analytic tree method were not included in those state reports.

The analytic tree method is an exploratory data analysis technique for uncovering structure in large data sets by building a tree that assigns cases (e.g., releases) into discrete groups. Multiple tree models were analyzed for all 14 states. This method can be used for:

- Screening large numbers of variables that have the potential to influence backlog distribution (e.g., distribution of backlog among media types) or cleanup speed (i.e., age of releases), and selecting a useful subset of variables for use in building more refined tree models.
- Merging categorical variables and recoding continuous variables into discrete groups based on the underlying structure in the data set with minimal loss of information.
- Identifying relationships that pertain only to specific subgroups of releases and specifying these in a tree. For example, a release's priority might only have a significant influence on its age if it is a state fund site. This relationship between priority and release age would remain hidden in the data set if releases were not first grouped into a subset of only state fund releases.
- Stratifying releases into groups for which specific actions can be targeted.

For categorical variables, such as priority code, the tree-building process will seek to merge similar code categories based on the underlying structure in the data set. For example, if there are four original priority code categories used by a state (priority 1, 2, 3, and 4), the tree-building process might merge these four categories into two (priority 1 and 2 merged into "priority <=2" and priority 3 and 4 merged into "priority >2") because the underlying structure in the data set suggests that priority 1 and 2 are not significantly different in how they influence backlog distribution or cleanup speed (same for priority 3 and 4).

For continuous variables, such as confirmed release date, the tree-building process will recode the continuous values into discrete categories based on the underlying structure in the data set. For example, the original confirmed release date might be recoded into four time periods during a tree-building process because the underlying structure in the data set suggests that these four time periods are significantly different in how they influence backlog distribution or cleanup speed.

Tree-Growing Methods

There are several tree-growing methods, including CHAID, CRT, and QUEST:

- CHAID (Chi-squared Automatic Interaction Detection): At each step, CHAID chooses the independent (predictor) variable that has the strongest interaction with the dependent variable. Categories of each predictor are merged if they are not significantly different with respect to the dependent variable.
- CRT (Classification and Regression Tree): CRT splits the data into segments that are as homogeneous as possible with respect to the dependent variable. A terminal node in which all cases have the same value for the dependent variable is a homogeneous, "pure" node.
- QUEST (Quick, Unbiased, Efficient Statistical Tree): This method avoids the other methods' bias in favor of predictors with many categories. QUEST can be specified only if the dependent variable is nominal.

For a classification-type problem (with a categorical dependent variable such as backlog distribution among media types), all three methods can be used to build a tree for prediction. For a regression-type problem (with a continuous dependent variable such as release age), the QUEST algorithm is not appropriate, so only CHAID and CRT can be used. Therefore, for this study, CHAID and CRT are more applicable than QUEST.

CHAID will build non-binary trees that tend to be "wider." CHAID often yields many terminal nodes connected to a single branch, which can be conveniently summarized in a simple two-way table with multiple categories for each variable or dimension of the table. Therefore, CHAID is well-suited for identifying "pockets of releases" for this study. For example, it might yield a split on the variable Age, dividing that variable into three categories (e.g., "< 7 years old," "7-12 years old," and "> 12 years old") and groups of releases belonging to those categories that are different with respect to the frequencies of media contaminated (e.g., releases that are 7 years of age or younger might have disproportionately more unknown contamination, releases that are older than 12 years might have disproportionately more groundwater contamination, and releases that are in between might have disproportionately more soil contamination). CRT, on the other hand, will always yield binary trees, which might not provide sufficient resolutions.

For this study, CHAID was a more suitable tree-growing method than CRT or QUEST.

Tree-Building Algorithm: CHAID

The basic algorithms that are used to construct non-binary trees (CHAID) are the Chi-square test and the F-test. The Chi-square test is used to determine the best next split at each step for classification problems (with categorical dependent variables such as backlog distribution among media types) while the F-test is used for regression-type problems (with continuous dependent variables such as site age). Specifically, the tree-building algorithm proceeds as follows:

- Preparing predictors: The first step is to create categorical predictors out of any continuous predictors (e.g., age and cleanup cost) by dividing the respective continuous distributions into a number of categories with an approximately equal number of observations. For categorical predictors, the categories are pre-defined (e.g., priority code and media type).

In this study, this method allowed for a simultaneous assessment of continuous and categorical variables with a minimized loss of information, which had been a significant limitation of other classification methods (e.g., discriminant analysis).[2]

- Merging categories: The next step is to cycle through the predictors to determine for each predictor the pair of (predictor) categories that is least significantly different with respect to the dependent variable; for classification problems (where the dependent variable is categorical as well), the algorithm will compute a Chi-square test; for regression problems (where the dependent variable is continuous), it will compute an F-test. If the respective test for a given pair of predictor categories is not statistically significant as defined by an alpha-to-merge value (default set to p=0.05), then it will merge the respective predictor categories and repeat this step (i.e., find the next pair of categories, which now might include previously-merged categories). If the respective test for the pair of predictor categories is statistically significant, then it will compute a Bonferroni-adjusted p-value for the set of categories for the respective predictor.

For this study, it is in this step that "binning" of predictor variables occurred (e.g., the original four categories of priority code might have been merged into two categories, based on how they related to site age).

- Selecting the split variable: The next step is to choose the split, the predictor variable with the smallest adjusted p-value (i.e., the predictor variable that will yield the most significant split). If the smallest adjusted p-value for any predictor is greater than a pre-defined alpha-to-split value (default set to p=0.05), then no further splits will be performed, and the respective node is a terminal node.

For this study, it is in this step that "pockets of releases" were identified and each individual release received a group affiliation (i.e., terminal node number).

Tree Validation and Risk Estimate

Validation enables an assessment of how well the tree structure generalizes to a larger population. Two validation methods are available: cross-validation and split-sample validation. Cross-validation produces a single, final tree model, and is less sensitive to the size of the data set. This method is more suitable for this analysis. Cross-validation divides the sample into a number of subsamples, or folds (default to ten subsamples, or folds). Tree models are then generated, excluding the data from each subsample in turn. The first tree is based on all of the cases (i.e., LUST releases) except those in the first sample fold, the second tree is based on all of the cases except those in the second sample fold, and so on. For each tree, misclassification risk is estimated by applying the tree to the subsample excluded in generating it. The misclassification risk estimate for the final tree is then calculated as the average of the risks for all of the trees.

The risk estimate provides some measure of how well a tree performs (e.g., does it misclassify 10 percent of the releases, 20 percent of the releases, or more than 20 percent of the releases?). For a continuous dependent variable (e.g., release age), the misclassification risk estimate needs a little work to provide a meaningful interpretation:

- the total variance equals the within-node (error) variance plus the between-node (explained) variance;
- the within-node variance is the risk estimate value (x);
- the total variance (y) is the variance for the dependent variables before consideration of any independent (predictor) variables, which is the variance at the root node (variance equals the squared standard deviation displayed at the root node);
- the proportion of variance due to error (unexplained variance) is x/y; and
- the proportion of variance explained by the tree is 1 – x/y.

Potential Issues Related to the Analytic Tree Method

It is important to note that results from an analytic tree still require interpretation. It is not uncommon that certain splits or terminal nodes are interpreted as being more important than others in a final tree. Multiple analytic trees for all 14 states

2 The classic CHAID algorithms can accommodate both continuous and categorical predictors. However, in practice, it is not uncommon to combine such variables into analysis of variance (ANOVA)/covariance (ANCOVA)-like predictor designs with main effects or interaction effects for categorical and continuous predictors.

were carefully evaluated in the context of the state's program history, program characteristics, data limitations, and risk estimate. Trees with unacceptable risk estimates or uninformative models were omitted from the reports.

DATA ATTRIBUTES OF INTEREST

Data related to the following release attributes were analyzed by age of release and stage of cleanup.

Media Contaminated

The type of media contaminated by each release was documented electronically by most participating states. Some states use a series of "yes/no" data fields to indicate the types of media contaminated, while other states use a variety of entries in a single data field. Several states did not have clear data sources regarding media contamination, so the data were classified based on priority code descriptions and other sources. OUST worked with participating states to classify the data. State-specific classifications are referenced in the Chapter Notes section of the state reports.

For the purposes of this analysis, releases were categorized into four media types: groundwater, soil, other, and unknown. Releases with any groundwater contamination were categorized as "groundwater." Releases with soil-only contamination indicated were categorized as "soil." Releases with any other combination of media (e.g., surface water or vapor) were categorized as "other." Releases categorized as "unknown" include both releases for which the media contaminated is truly unknown and releases for which there were no data available in state databases but for which information is known to the state in paper files.

Release Priority

Eight states in this study use a formalized priority system to determine the order in which cleanups receive state funding and oversight: Florida, Michigan, Montana, Nebraska, New Jersey, North Carolina, South Carolina, and Texas. The use of prioritization in participating states ranged from informal, case manager-driven actions to formalized rankings based on calculated receptor risks. Florida, North Carolina, and South Carolina have statutes directing resources toward only the releases that pose the highest risk. Data varied among states and included ranking of numerical scores or categorical priority classes (e.g., high, medium, or low). Any necessary data manipulation to classify releases into priority categories was discussed with agency staff in each state and is referenced in the Chapter Notes section of each state report.

Cleanup Financing

Data provided by states relating to cleanup financing included a variety of data fields, including status of state fund eligibility, amount of public dollars spent on cleanup, and type of private financing for a release. Releases classified as "unknown" might be eligible for state funding. "Other" indicates those releases that will not be financed by a state fund. These releases might or might not have a private FR mechanism. In some cases, the data field pertained to a facility as a whole rather than an individual release, and rules were developed to apply the facility-level data to individual releases. Refer to the Cleanup Financing section of each state report for state-specific analyses.

Responsible Party/Affiliated Party

Data tracked in state databases generally included the names of RPs, the names of potentially responsible parties (e.g., a past facility owner), or the names of current facility owners. For the purposes of the Phase 2 backlog study, the names tracked in the state databases were assumed to be RPs unless the state or state database specified otherwise. APs were determined based on obvious owner names affiliated with certain industries. RP names related to state or local governmental departments were designated as "government RPs." RPs without clear affiliations were designated as "unknown."

Additional Data Attributes

OUST requested several additional data attributes from the participating states (Table A1). These attributes were analyzed when available. In some cases the data provided could not be analyzed because a state provided data for a subset of releases or for only those releases that have been closed. In addition, some states advised against analyzing certain provided data that is not updated regularly in the state database. State-specific data attributes are discussed within each state report.

Table A1. Data Requested from Participating States

Attribute	Data Element	CA	FL	IL	MI	MT	NC	NE	NH	NJ	NY	PA	SC	TX	WA
Release Attributes															
Release Age	Release date, release reported date, or release discovery date	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Closure date	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Location	Latitude/longitude	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Media Contaminated	Media contaminated	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y
Type of Contaminant	Contaminants of concern	P	P	N	N	N	N	N	N	N	P	P	N	N	P
	Presence of ethylene dibromide (EDB)	N	N	N	N	N	N	N	Y	N	N	P	N	N	N
	Presence of methyl tertiary butyl ether (MTBE)	N	P	P	Y	N	P	P	Y	N	Y	Y	N	P	P
Type of Remediation	Treatment technology	P	N	P	P	N	P	N	N	N	N	P	P	P	P
	Active/passive remediation	P	N	N	Y	N	P	N	Y	N	N	P	Y	Y	P
Ownership/ Affiliation	Site owner/RP	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N
Recalcitrant Party	Sites with recalcitrant RPs	N	N	P	N	P	P	N	P	Y	N	P	N	Y	N
Orphan	Orphan cleanups	N	P	N	P	N	N	Y	NA[1]	N	NA[2]	N	N	N	P
Program Attributes															
Cleanup Priority	LUST cleanup priority	NA[3]	Y	NA[3]	Y	Y	Y	Y	NA[3]	Y	N	NA[3]	Y	Y	NA[3]
Resources Directed Toward Cleanup	Sites per case manager	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
	Spending per site	P	P	Y	N	Y	P	P	P	P	N	N	Y	P	P
	Dollars spent for program administration	N	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Enforcement Activity	Sites with free product	Y	N	N	N	N	P	N	N	N	N	N	N	P	N
	Sites under enforcement actions	N	N	P	N	N	N	N	N	N	N	P	N	Y	N
Policy Toward Site Closure	Sites closed with institutional or engineering controls	P	P	Y	Y	N	Y	P	P	Y	N	N	N	N	P
Mechanism of Financial Responsibility	Type of FR mechanism financing site cleanup	N	P	N	P	N	N	P	N	P	N	N	N	P	N
	State fund eligibility/state funding	Y	Y	Y	Y	Y	Y	P	Y	P	Y	Y	Y	Y	NA[4]
Policies Supporting Property Transactions	Voluntary cleanup program	N	N	P	N	N	N	Y	N	P	N	N	N	P	Y
	Property transactions occurred or pending LUST cleanup	N	N	N	N	Y	Y	N	N	P	N	N	P	N	N

Y Data obtained, analyzed, and evaluated in the report.
P Data provided but not evaluated in the report, due to either poor data quality, incompleteness, or a lack of informative patterns. See state-specific reports for more information.
N Data not provided.
NA Not applicable.

1. There are no orphan releases in New Hampshire.
2. New York Department of Environmental Conservation does not consider any release to be orphan and has a proactive enforcement arm looking for RPs.
3. State does not use a LUST prioritization system.
4. Washington State does not use state funds for cleanups.
5. Data were not available to distinguish between the Confirmed Release and Site Assessment stages.
6. Data not tracked by lead office/agency/district.

Attribute	CA	FL	IL	MI	MT	NC	NE	NH	NJ	NY	PA	SC	TX	WA
Additional Data														
Stage of cleanup	Y	Y	Y	Y	Y	Y	Y	Y[5]	Y	N	Y	Y	Y	Y[5]
Site-specific cleanup standards	N	N	N	N	N	P	N	N	N	N	Y	P	N	N
Operating business at site	N	P	N	N	N	N	N	N	N	N	N	N	N	N
Lead office/agency/district	Y	P	Y	Y	NA[6]	Y	NA[6]	NA[6]	NA[6]	Y	Y	N	N	Y

Y Data obtained, analyzed, and evaluated in the report.
P Data provided but not evaluated in the report, due to either poor data quality, incompleteness, or a lack of informative patterns. See state-specific reports for more information.
N Data not provided.
NA Not applicable.
1. There are no orphan releases in New Hampshire.
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6. Data not tracked by lead office/agency/district.

DATA SOURCES

End of Year UST Performance Measures

EPA collects and publishes data from states and territories regarding UST performance measures, including information such as the releases reported, cleanups initiated, and cleanups completed. EPA's End of Year FY 2006 UST Performance Measures was used to select the 14 states participating in the Phase 2 study and to compare the performance of these states with the remaining 42 states and territories. UST Performance Measures data were not used for further analysis due to the availability of raw data from state databases.

Data Comparison and Validation

A comparison of the Phase 2 and UST Performance Measures data found several discrepancies that further validated OUST's use of original state data. For example, due to states' ongoing corrections to previously reported data, the UST Performance Measures differ significantly from the data from the state databases. In three instances, the UST Performance Measures data indicated a state achieved a negative number of closures. Due to ongoing adjustments by states, the closure date or release date might not be accurately reflected in the UST Performance Measures. Therefore, the Phase 2 data from state databases is considered more reliable for age-based analyses.

A comparison of the 2008 cleanup backlog from each data source found the overall numbers to be similar (Table A2). However, the two data sources differed by more than 15 percent in three states: California, Florida, and Illinois. In each case, the discrepancy was pursued and clarified with the state: California's database did not include releases at DOD facilities at the time of the comparison; Florida reports the number of facilities, not individual releases, in its UST Performance Measures reporting; and Illinois tracks and reports federally-regulated tanks differently than OUST's definitions.

ASTWMO Data

Additional data were obtained from the publicly-available ASTSWMO Tanks Subcommittee publications, including the State Funds Task Force *State Fund Surveys*: www.astswmo.org/Pages/Policies_and_Publications/Tanks.htm. Data are based on a survey conducted by the Vermont Department of Environmental Conservation. No explanation of data is included in the reports, and it is acknowledged in the survey that the data are only as accurate as responses provided by the states.

Table A2. Comparison of Cleanup Backlog in 2008 as Reported by States and Calculated from Phase 2 Data

Attribute	CA	FL	IL	MI	MT	NC	NE	NH	NJ	NY	PA	SC	TX	WA
EOY 2008 Data	11,481	13,927	6,840	9,183	1,090	5,810	1,806	769	4,146	2,443	3,368	3,072	3,033	1,935
Phase 2 Data (approximately March 2009)	9,504	16,397	8,641	9,121	1,198	6,429	1,835	764	4,332	2,438	3,314	3,078	3,007	2,017

Additional Data

Administrative Budgets

The administrative budgets available to state programs might affect states' ability to oversee and complete cleanups, but data were not suitable for comparative analyses due to differences in state program structures and type of budget provided. For example, the Texas Commission on Environmental Quality provided an estimate that includes approximately $1 million for a privatization contract, while New York's spending data include the administration of all petroleum releases, not just LUSTs, and include federal LUST grant data (Table A3). In addition, states did not provide the budgets for the same FY. This study was therefore unable to relate states' administrative budgets to the rate of closure or size of backlog.

Staff Workload

The number of staff available to manage LUST cases might affect states' ability to oversee and complete cleanups, but data were not suitable for comparative analyses due to differences in state programs. The data available were typically either an estimate provided by state staff or calculated based on a comparison between the number of program managers listed in the database and the number of open releases. For example, the New York Department of Environmental Conservation (NY DEC) reported that each project manager is responsible for only 22 open releases whereas the North Carolina Department of Environment and Natural Resources reported each manager is assigned 275 open releases (Table A4). This significant difference can be attributed to NY DEC's program structure in which case managers work on both LUST and non-LUST contamination. In addition, the Nebraska Department of Environmental Quality reported a caseload of 85 releases per case manager; this estimate only includes active cases and does not include the additional 1,000 inactive releases for which no case manager is assigned. Due to these confounding factors the releases per case manager were not compared to state backlogs.

Table A3. State Administrative Budgets[3]

State	IL	MI	MT	NC	NE	NH	NJ	NY	PA	SC	TX	WA
FY 2007	-	-	-	$4.0 million	$1.0 million	-	$5.3 million	$2.3 million	-	-	$3.5 million	-
FY 2008	$4.8 million	$1.7 million	$1.0 million	-	-	$1.8 million	-	-	$2.7 million	$3.4 million	-	$1.2 million

Table A4. Number of Open Cases per Project Manager, by State[4]

	CA	FL	IL	MI	MT	NC	NE	NH	NJ	NY	PA	SC	TX	WA
Number of Open LUST Cases	-	52	122	141	136	275	85	90	93	22	116	197	30	184

3 No data were received for California or Florida.
4 Data were not available for California.

State Baseline Cleanup Standards for Groundwater Contamination

Table A5 details the specific groundwater cleanup standards for benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds in the 14 participating states.

Table A5. State Baseline Cleanup Standards for Groundwater

State	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	Source
CA	0.001	0.15	0.3	1.75	www.cdph.ca.gov/certlic/drinkingwater/Documents/Lawbook/DWRegBook2008_03_09a.pdf
FL	0.001	1	0.7	10	www.dep.state.fl.us/legal/Rules/waste/62-777/62-777_TableI_GroundwaterCTLs.pdf
IL	0.005	1	0.7	10	www.ipcb.state.il.us/documents/dsweb/Get/Document-38408/
MI	0.005	0.79	0.074	0.28	www.michigan.gov/documents/deq/deq-rrd-OpMemo_1_283544_7.pdf
MT	0.005	1	0.7	10	deq.mt.gov/wqinfo/standards/default.mcpx
NC	0.001	1	0.55	0.53	ncrules.state.nc.us/ncac/title%2015a%20-%20environment%20and%20natural%20resources/chapter%2002%20-%20environmental%20management/subchapter%20l/subchapter%20l%20rules.pdf
NE	0.005	1	0.7	10	www.deq.state.ne.us/Publica.nsf/0/66fdec793aefc4b286256a93005b8db8/$FILE/RBCA_GD_MAY_2009.pdf
NH	0.005	1	0.7	10	des.nh.gov/organization/commissioner/legal/rules/documents/env-or600.pdf
NJ	0.001	0.6	0.7	7	www.state.nj.us/dep/wms/bwqsa/docs/njac79C.pdf
NY	0.0007	0.005	0.005	0.005	www.dec.ny.gov/regs/4590.html
PA	0.005	1	0.7	10	www.pacode.com/secure/data/025/chapter250/subchapCtoc.html
SC	0.005	1	0.7	10	www.scdhec.gov/environment/lwm/forms/RBCA_01.pdf
TX	0.005	1	0.7	10	www.tceq.state.tx.us/remediation/trrp/trrppcls.html
WA	0.005	1	0.7	1	apps.leg.wa.gov/WAC/default.aspx?cite=173-200&full=true