
Statement of Estimated Regulatory Cost (SERC) for Chapter 62-761 Florida Statutes AST/UST Regulations

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For:
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Statement of Estimated Regulatory Costs for the Proposed Changes to
Chapter 62-761, F.A.C.
Underground and Above Ground Storage Tank
System Regulations

Ia. Introduction and Background Information

The first petroleum storage tanks were installed in Florida at the beginning of the century and during the first decades their number increased relatively slowly. Over the past several decades, the industry supplying oil and other commercial chemical substances have expanded rapidly as they served the growing industrial needs of the state. As the amounts and categories of stored industrial materials continued to grow so also did the number of aboveground tanks (AST) and underground storage tanks (UST) storing these large amounts of hazardous materials.

Petroleum discharges from AST and UST systems through leaks and spills have increased tremendously over the past several decades although the frequency has diminished in the past three years. Discharges have captured the attention of society and its environmental management professionals because of their significant adverse effects on the environment, human health, and the high cost of cleaning them up. The term “site rehabilitation” is used among the professionals working in the storage tanks systems field to describe the activities related to cleaning up discharges from storage tanks to soils, ground-waters and surface waters.

The inordinate adverse consequences of these discharges on the natural environment and human health and safety are the principal stimuli prompting the Federal Government and Florida to institute regulatory standards governing the storage of petroleum and other pollutants in USTs and ASTs. The special sensitivity of Florida’s fragile ecosystems and almost complete reliance on ground water for human consumption lend even more urgency to protecting the State’s precious and finite ground water supplies. Changes in technology and enhancements in new understanding of these risks and measures to

reduce these risks are some of the reasons why the Florida Department of Environmental Protection has recently proposed Rule Chapters 62-761 and 62-762 of the Florida Administrative Code.

Existing standards currently govern a number of AST and UST tank procedures related to tank construction, piping systems, leak detection (monitoring) methods, and their operation, maintenance and repair. This analysis has made every effort to distinguish between the existing requirements and those now proposed.

This analysis also identifies where the proposed rule *clarifies existing standards* (as different from establishing new standards). The same is true of the associated economic impacts. Every effort has been made to clarify *existing from new* State regulatory economic costs (and benefits).

SUMMARY OF ECONOMIC IMPACT

Chapter 120, F.S., requires that the Department make:

(A) A good faith estimate of the number of individuals and entities likely to be required to comply with the rule, together with a general description of the types of individuals likely to be affected by the rule. The individuals or corporations required to comply with the proposed rules are those that own or operate active underground storage tanks (USTs) and aboveground storage tanks (ASTs) in Florida. The Department of Environmental Protection (DEP) database indicates that there are currently 18,007 ASTs and 38,676 USTs active in Florida. The general type of persons affected by the proposed rules are those that own and operate storage tank systems such as petroleum marketers, utilities, boat fueling facilities and other industrial applications where regulated substances are transported, stored or consumed.

(B) A good faith estimate of the cost to the agency, and to any other state and local government entities, of implementing and enforcing the proposed rule, and any

anticipated effect on state or local revenues. The DEP does not anticipate any additional costs to implement the proposed amendments. The DEP staff indicates existing staffing levels across the state are sufficient to carry out the new directives proposed in the rules. No substantial new revenue sources are proposed in the rules, with the exception of potential increases in revenues that may result from collecting fees from Federal UST owners and operators on an as needed basis.

(C) A good faith effort of the transactional costs likely to be incurred by individuals and entities, including local government entities, required to comply with the requirements of the proposed rules. As used in this paragraph, “transactional costs” are direct costs that are readily ascertainable based upon standard business practices, and include filing fees, the cost of obtaining a license, the cost of equipment required to be installed or used or procedures required to be employed in complying with the proposed rules, additional costs incurred, and the cost of monitoring and reporting. Estimated statewide costs on the estimated 56,684 storage tank systems calculated to comply with this proposed rule averages \$65 million in equipment, labor and other related costs.

(D) An analysis of the impact on small businesses as defined by Section 288.703, F.S., and an analysis of the impact on small counties and small cities as defined by Section 120.52, F.S. The proposed rules will have no discernible effects on small counties or small cities. Data throughout the report are provided for costs for various parties by scale of business. Specific costs on small business as defined in Section 288.703, F.S., are not expected to be very considerable.

(E) Any additional information that the agency determines may be useful. Expenditures from the Inland Protection Trust Fund for site rehabilitation of petroleum contaminated sites has totaled almost \$1.6 billion over the past decade. The proposed rule amendments are expected to significantly reduce the number of new discharges into the environment, reducing the future economic burden of remediating UST and AST petroleum discharges and associated water quality and other environmental degradation and mitigation costs.

Any person who wishes to provide information regarding the statement of estimated regulatory costs, or to provide a proposal for a lower cost regulatory alternative must do so in writing within 21 days of this notice.

Data Acquisition and Data Problems

Much of the data used for this research is a subset of the databases that the Department of Environmental Protection maintains for tracking the quantity and characteristics of storage tank systems in the state. These databases also provide profiles of the AST/UST discharges. The level of state funding of the site rehabilitation activities is yet another part of these databases.

While these data sets are the most comprehensive and reliable inventory and profile of AST/UST systems in the State, they also have some limitations. We note throughout the analysis where these data limitations may apply. The reporting requirements and historic standards of voluntary compliance render some of these data sets incomplete. For example, some of the forms required from AST/UST operators have not been accurately completed or accurately updated by the owners and operators. Irrespective of some of these potential data problems, the existing DEP data sets are the most extensive and accurate sources of information currently available in Florida and serve as a firm foundation for this economic assessment.

1.B. Statement of Estimated Regulatory Cost Requirements

Section 120.541(2), Florida Statutes (FS) identifies the required components for a Statement of Estimated Regulatory Cost (SERC). Section 120.54 (3) (b) (1), F.S., encourages the preparation of a SERC. Section 120.545 (1) (j), F.S., requires that the rule or revision must not impose regulatory costs upon the regulated entity which could be reduced by the adoption of a lower cost alternative and provides for such an alternative to be submitted in response to a rule. Section 120.54, (a) F.S., provides for substantially affected persons to submit to a lower cost alternative. If a proposal for a lower cost alternative is submitted, the FDEP is then directed to prepare a SERC, evaluate the proposed alternative, and either adopt the

alternative or give reasons why it was not adopted. Presumably, the intent of this provision is to ensure that the FDEP has access to, and has received information about potential lower cost ways of complying with the statute to which the proposed rule revision applies. At this writing, no such proposal to the proposed rule, Chapter 62-761, F.A.C., Underground and Above Ground Storage Tank System Regulations has been submitted to the FDEP. Components required by Section 120.541 (2), F.S., to be included in the Statement of Estimated Regulatory Costs are:

- (a) A good faith estimate of the cost to the agency, and to any other state and local governmental entities of implementing and enforcing the proposed rule, and any anticipated effect on state or local revenues.
- (b) A good faith estimate of the number of individuals and entities likely to be required to comply with the rule, together with a general description of the types of individuals likely to be affected by the rule.
- (c) A good faith estimate of the transactional costs likely to be incurred by individuals and entities required to comply with the requirements of the rule. As used in this paragraph, “transactional costs” are direct costs readily ascertainable based upon standard business practices, and include filing fees, the cost of obtaining a license, the cost of equipment required to be installed and used, or procedures required to be employed in complying with the rule, additional operating costs and the cost of monitoring and reporting.
- (d) An analysis of the impact on small business as defined by Section 288.703, and an analysis of the impact on small counties and cities as defined by Section 120.52.
- (e) Any additional information the FDEP determines useful
- (f) In the statement or revised statement, whichever applies, a description of any good faith written proposal submitted under (1) (a) and either a statement adopting the alternative or a statement of the reasons for rejecting the alternative in favor of the proposed rule.

II. Section By Section Assessment of the Economic Costs of Compliance with the Proposed Changes to Chapter 62. 761, F.A.C., Applicable to Underground Storage Tank (UST) Systems

Compliance with the proposed rules is staggered over three separate time frames. These time frames are:

- 1. Rules to be complied with by December 31, 1998**
- 2. Rules to be complied with by December 31, 2004**
- 3. Rules to be complied with by December 31, 2009**

The costs associated with compliance will be estimated sequentially in keeping with the above different time periods. Additionally, the cost will be estimated at both the county level and the state level for each specific proposed requirement will result in increased costs to UST owners and operators. Precise site specific estimates for all potentially affected parties cannot be quantified given the widely varying environmental and physical conditions at each site.

Sources of Cost Impact Information

The SERC process requires estimates to be as comprehensive and complete as existing data and technical knowledge allow. These estimates comply with those standards and represent the very best set of estimates possible given these widely varying site settings, equipment availability and cost and procedure cost variations. Because of the fluctuation of the market prices for equipment and operational costs, the cost estimates in this analysis will be provided across a range of most likely costs.

Each cost category will be provided with a lowest, average, and the highest possible price level per item or service. In some settings, these calculations will be based on the capacity of the tanks and the identification of known levels of existing tank spill control measures installed, while other costs will be based on the number of sites known to contain a certain category of tanks.

In each case, every effort has been made to secure industry cost estimates from reliable suppliers of such equipment. Over the past twelve months, researchers have attended numerous public workshops and smaller meetings where DEP staff have presented draft rule provisions to potentially affected parties. At each of these meetings, researchers have requested industry representatives to provide detailed cost estimates to assist in completion of this analysis. Researchers have also maintained an ongoing dialogue with representatives of the Florida Petroleum Marketers Association, the Florida Petroleum Council, Florida Electric Power Coordinating Group and other industry consultants and interest groups. Appendix 1 contains the written cost estimates provided by the industry to researchers over the period of record.

1. Estimate of Compliance Costs to for Underground Storage Tank Systems for the December 31, 1998 Deadline

Spill Containment

The proposed amendments to Rule 62-761.510, F.A.C., (Table UST), direct all non-vehicular fuel underground storage tanks to have spill containment installed by December 31, 1998. There are 4,240 tanks in Florida that need to install spill containment equipment to comply with this new proposed standard. The cost associated with this requirement statewide for all of these tanks range between \$636,000 and \$1,060,000 with an average cost of \$848,000. The range of estimated costs to the affected facilities is presented by county and state level in Table 1.1. The average cost per tank for spill containment at non-vehicular USTs is \$200.

Fill Box Covers

Proposed amendments to Rule 62.761.510 (1)(b) 3, F.A.C., requires all underground storage tanks to color code their fill box covers by December 31, 1998. Our estimates to comply with this new measure suggests that 38,676 underground storage tanks will need color coding on their fill box covers by December 31, 1998. The cost estimates associated with meeting this requirement ranges between \$328,746 and \$483,450 with an average cost of \$406,098. The cost, which the industry can be expected to incur to comply with this requirement, is presented by county and state level in Table 1.2. The average UST expense for color coding the fill box covers is \$10.50.

Check Valves for Gravity Piping

Proposed amendments to Rule 62-761.510, F.A.C., (Table UST), requires all non-vehicular fuel underground storage tanks with gravity piping to have check valves installed by December 31, 1998. There are approximately 100 such tanks in Florida that need check valves installed by December 31, 1998. Precise data on the actual number of non-vehicular fuel USTs with gravity piping needing check valves installed is not available. The cost associated with this requirement for all of these effected parties ranges between \$40,000 and \$50,000 with an average cost of \$45,000 The cost, which the

industry can be expected to incur to comply with this requirement, is presented by county and state level in Table 1.3. Average cost of UST check valve installation (for those with gravity piping) is \$450.

Secondary Containment for Small Diameter Piping Extending Over Water

The proposed amendments to Rule 62-761.510, F.A.C., (Table UST and AST), requires all underground storage tank systems with small diameter piping extended over surface water to install secondary containment on their piping by December 31, 1998. Our estimate concludes that short distance piping on average will extend 10 feet in length, while the medium distance piping will extend is 50 feet and a long distance piping will range up to 100 feet. There are 658 UST systems that extend over water with small diameter piping in Florida that will need to install secondary containment for their piping extending over water. The cost associated with complying with short distance piping ranges between \$197,400 and \$460,600 with an average cost of \$329,000 for short distance piping. The medium distance piping costs will range between \$987,000 and \$3,290,000 with an average cost of \$1,645,000. The range of potential costs for the long distance piping varies between \$1,974,000 and \$4,606,000 with an average of \$3,290,000. The significant variation in these cost estimates is due to the assumed length of the piping. Since the DEP data sets do not contain actual piping lengths, these ranges bound the likely costs the industry would incur to comply with this new requirement. The county specific and statewide costs which affected owners and operators will incur associated with this new requirement are presented by county and state level in Table 1.4. Average cost of UST secondary containment for systems with small diameter piping is \$2,500.

Secondary Containment for Small and Moderate Size Concrete USTs

Proposed amendments to Rule 62-761.510, F.A.C., (Table UST), requires all concrete underground storage tanks with storage capacities between 110 and 50,000 gallons to have secondary containment installed by December 31, 1998. The owners or persons responsible for maintaining the tanks in compliance with the rules also have the option to

close those tanks instead of upgrading them with secondary containment. Our evaluation provides estimates of the costs associated with each choice.

The estimate is based on the total and average capacity of these tanks by county and for the state. It is made also based on the reasonable assumption about the number of sites in each county and in Florida. There are only 56 small or medium USTs in Florida identified through the DEP UST database, which will need to install secondary containment under provisions of this new rule. These 56 tanks are located on approximately 25 sites statewide.

The total capacity of these tanks is 141,702 gallons. The cost of complying with this proposed rule will range between \$637,659 and \$779,361 with an average cost of \$708,510. Owners and operators may also choose to meet the provisions of the new rule by closing the tanks. The costs for this option will range between \$112,000 and \$560,000 with an average of \$336,000 for all such tanks in Florida. The cost estimates associated with this requirement are presented by county and state level in Table 1.5. Average cost for secondary containment for USTs between 110 and 50,000 gallons is \$6,000.

2. Estimate of Compliance Costs Associated with the December 31, 2009 Requirements

Secondary Containment for Bulk Product Piping in Contact with the Soil

Proposed amendments to Rule 62-761.510 (2), F.A.C., (Table UST), require all underground storage tank systems with bulk product piping in contact with the soil to have secondary containment installed on their piping by December 31, 2009, or perform a structural evaluation of the piping in conformance with API-570. There 59 storage tanks in Florida identified by the DEP UST data base that need secondary containment for their bulk product piping in contact with the soil. The cost estimates to comply with this requirement ranges between \$1,175,000 to \$1,410,000 with an average cost of \$1,292,000. The cost, which owners-operators of the identified tanks are expected to comply with this new requirement, is presented by county and state level in Table 1.6.

Average UST cost for secondary containment for piping in contact with the soil for cut and cover tanks with capacity over 50,000 gallons will be \$27,000.

**II. Section by Section Assessment of the Economic Costs of Compliance
with the Proposed Changes to Chapter 62-761, F.A.C., Applicable to
Aboveground Storage Tank (AST) Systems**

Compliance with the proposed rules is staggered over three separate time frames. These time frames are:

- 4. Rules to be complied with by January 1, 2000**
- 5. Rules to be complied with by January 1, 2005**
- 6. Rules to be complied with by January 1, 2010**

The costs associated with compliance will be estimated sequentially in keeping with the above different time periods. Additionally, the cost will be estimated at both the county level and the state level for each specific proposed requirement will result in increased costs to AST owners and operators. Precise site specific estimates for all potentially affected parties cannot be quantified given the widely varying environmental and physical conditions at each site.

Sources of Cost Impact Information

The SERC process requires estimates to be as comprehensive and complete as existing data and technical knowledge allow. These estimates comply with those standards and represent the very best set of estimates possible given these widely varying site settings, equipment availability and cost and procedure cost variations. Because of the fluctuation of the market prices for equipment and operational costs, the cost estimates in this analysis will be provided across a range of most likely costs.

Each cost category will be provided with a lowest, average, and the highest possible price level per item or service. In some settings, these calculations will be based on the capacity of the tanks and the identification of known levels of existing tank spill control measures installed, while other costs will be based on the number of sites known to contain a certain category of tanks.

In each case, every effort has been made to secure industry cost estimates from reliable suppliers of such equipment. Over the past twelve months, researchers have attended numerous public workshops and smaller meetings where DEP staff have presented draft rule provisions to potentially affected parties. At each of these meetings, researchers have requested industry representatives to provide detailed cost estimates to assist in completion of this analysis. Researchers have also maintained an ongoing dialogue with representatives of the Florida Petroleum Marketers Association, the Florida Petroleum Council, Florida Electric Power Coordinating Group and other industry consultants and interest groups. Appendix 1 contains the written cost estimates provided by the industry to researchers over the period of record.

3. Estimate of the Compliance Costs to be Expended by

January 1, 2000

Shop-Fabricated Tank Spill Containment

The proposed rule amendments to Rule 62-762.500 (1) (c), F.A.C., direct all shop-fabricated aboveground storage tanks with capacity between 550 and 50,000 gallons to install spill containment around tank fill connections by January 1, 2000. There are 14,971 such tanks in Florida that need to install spill containment equipment to comply with this new requirement. The cost associated with this requirement statewide for all of these tanks range between \$2,245,650 and \$3,742,750 with an average cost of \$2,994,200. The range of estimated costs to the affected facilities is presented by county and state level in Table 2.1. The average cost for spill containment for shop-fabricated ASTs will be \$200.

Fill Box Covers Color Coding

The proposed amendments to Rule 62.761.500 (1)(d), F.A.C., require aboveground storage tanks with storage capacities between 550 and 50,000 gallons to have their fill box covers color coded by January 1, 2000. Our conservative estimates of the number of tanks required to comply with this new measure suggests that approximately 20% of all ASTs are affected. Given this approximation, 3,601 ASTs in Florida will need to comply with this requirement. The cost estimates associated with meeting this requirement

ranges between \$30,612 and \$45,018 with an average cost of \$36,014. The cost, which the industry will incur to cover this requirement, is presented by county and state level in Table 2.2. Average costs for color coding of AST fill-box covers will be \$10.

Shop-Fabricated AST Hydrostatic Testing

The proposed amendments to Rules 62-761.500 (3)(e) and (f), F.A.C., requires all piping sumps and dispenser liners associated with category A & B shop-fabricated ASTs used for retail purposes, whose piping is in contact with the soil, be hydrostatically tested beginning January 1, 2000. This is *not* a new requirement and it does not involve additional expenditures associated with the newly proposed changes. However, we provide this cost estimate for informative purposes since the clarification of the existing rule has been provided by DEP in the newest rule document.

There are 12,596 such tanks in Florida that may need hydrostatic testing, if applicable, and the cost associated with this requirement for all of them is ranging between \$503,840 and \$755,760 with an average cost of \$629,800. The cost, which the industry will incur attributable to this requirement, is presented by county and state level in Table 2.3.

Average cost for hydrostatic testing for shop-fabricated ASTs will cost \$50.

Shop-Fabricated AST Tanks Dispenser Liners

The proposed amendments to Rule 62-761.500 (1)(d), F.A.C., and 62-761.500 (3)(e), F.A.C., require all shop-fabricated aboveground storage tanks with capacities between 550 and 50,000 gallons to have dispenser liners installed by January 1, 2000. There are 13,375 such tanks in Florida that may need dispenser liners installed, and the cost associated with this requirement is between \$6,018,975 and \$7,356,525, with an average cost of \$6,687,750. These costs are presented by county and state level in Table 2.4.

Average costs for dispenser liners for ASTs will be \$500.

Non-Vehicular Fuel AST Check Valves

The proposed amendments to Rule 62-761.510 (4)(c) 2, F.A.C., require all non-vehicular fuel aboveground storage tanks with gravity piping to have check valves installed by January 1, 2000. There are 6,270 such tanks in Florida that need check valves installed. The statewide cost of complying with this new provision ranges between \$1,191,300 and \$1,379,400 with an average cost of \$1,285,350. The cost estimates associated with this

requirement are presented by county and state level in Table 2.5. Average costs for check valves for non-vehicular fuel ASTs will be \$205.

Used Oil AST Secondary Containment

The proposed amendment to Rule 62-761.500 (3)(c), F.A.C., require all above ground used oil storage tanks to have secondary containment installed by January 1, 2000. There are 965 such tanks in Florida. Of those, 251 tanks that have not yet installed such systems will need secondary containment installed. The cost associated with this requirement ranges between \$1,004,000 and \$4,016,000 with an average cost of \$2,510,000, depending on the size (small, average or large) of the tank. The cost that owners-operators of the identified tanks will incur associated with this new requirement is presented by county and state level in Table 2.6. Average costs for secondary containment for used oil ASTs will be \$10,000.

4. Estimate of the Compliance Costs to be Expended by

January 1, 2005

Sealing of ASTs with Concrete Secondary Containment in Dike Field Area

The proposed amendment to Rule 62-761.500 (3)(c), F.A.C., requires all field-erected aboveground storage tanks with concrete secondary containment in a dike field area to have this concrete sealed by January 1, 2005. There are 210 such tanks in Florida that may need their secondary containment sealed. The cost associated with this requirement ranges between \$3,937,500 to \$7,875,000 with an average cost of \$5,906,250 for the "small tank" category.

The cost varies significantly for the "large tanks" category. These costs vary much more widely because of the much larger variation in tank sizes across this category. The compliance costs for this large tank category range from \$31,500,000 to \$63,000,000 with average cost of 47,250,000. The cost that owners-operators of the identified tanks will incur associated with this new requirement is presented by county and state level in Table 2.7. Average costs for sealing concrete field-erected ASTs in dike field areas will be \$28,125 for small ASTs and \$225,000 for large ASTs.

Secondary Containment of AST Associated Small Diameter Piping Extending Over Water

The proposed amendment to Rule 62-761.500 (3)(c), F.A.C., requires all aboveground storage tanks with small diameter piping extended over surface water to install secondary containment on their piping by January 1, 2005. Our estimate has concluded that short distance piping will average 20 feet in length with the average length at 50 feet and a long distance piping ranging up to 80 feet. There are 423 ASTs in Florida that need to install secondary containment on their piping extending over water.

The compliance costs range between \$592,200 and \$2,368,800 with an average cost of \$1,480,500. The significant variation in the cost estimate is due to the assumed length of the piping. The cost, which owners-operators of the identified piping will incur associated with this new requirement, is presented by county and state level in Table 2.8. The average cost for secondary containment on small diameter piping of ASTs extending over surface water will be \$3,500.

Sealing of Concrete Secondary Containment of Shop-fabricated ASTs in Dike Field Areas

The proposed amendments to Rule 62-761.500 (3)(c), F.A.C., require all shop-fabricated aboveground storage tanks in dike field areas to have their concrete secondary containment sealed by January 1, 2005. Our analysis has estimated the size of the area to be sealed to range from small to large ASTs with the following dimensions. The small facilities will average a 20 square foot area to be sealed, while medium facilities will average 50 square foot area to be sealed and large tank areas will average 80 square foot area to be sealed. We have also considered the market variation of the prices for sealing on a per square foot basis and assumed that the lowest price is \$10.00 per square foot, average one is \$15.00 per square foot and the highest price is \$20.00 per square foot.

The cost for sealing the secondary containment of one such small, medium or large tank would range between \$200 and \$800 for a small tank, \$300 to \$1200 for average size

tank, and \$400 to \$1600 for a large size tank.. There are 10,335 such tanks in Florida that will need their secondary containment sealed. The cost associated with this requirement for all of them ranges between:

- \$2,067,000 and \$8,268,000 with an average cost of \$5,167,500, if all of these ASTs are small;
- \$3,100,500 and \$12,402,000 with an average cost of \$7,751,250, if all of these ASTs are of average size;
- \$4,134,000 and \$16,536,000 with an average cost of \$10,335,000, if all of these ASTs are large.

The significant variation in the cost estimate is due to the range in estimated sizes of the affected tanks and the price variation. The cost, which AST owners-operators will incur associated with this new requirement, is presented by county and state level in Table 2.9. Average cost of sealing secondary containment of shop-fabricated ASTs in dike field areas will be \$750.

5. Estimate of the AST Compliance Costs to be Expended by

January 1, 2010

Secondary Containment of Bulk Product Piping Associated with Field-Erected ASTs

The proposed amendment to Rule 62-761.500 (3)(c), F.A.C., requires all field-erected aboveground storage tanks with bulk product piping in contact with the soil to install secondary containment on their bulk product piping by January 1, 2010. Our cost evaluations estimate short distance piping to be 10 ft in length on average, mid range average length is 30 feet, and the long distance average is estimated to be 50 feet. There are 428 such tanks Florida that need secondary containment installed on their bulk product piping. The cost associated with this requirement for each of them ranges between:

- \$85,600 and \$128,400 with an average cost of \$107,000 in case of short distance bulk product piping;
- \$256,800 and \$385,200 with an average cost of \$321,000 in case of mid range distance bulk product piping;
- \$428,000 and \$642,000 with an average cost of \$535,000 in case of long distance bulk product piping;

The significant variation in the cost estimate is due to the differences in the estimated length of the affected piping and the price variation per linear foot of secondary containment. The cost, which facility owners-operators will incur associated with this new requirement, is presented by county and state level in Table 2.10. The average cost of secondary containment on piping in contact with the soil will be \$750.

Secondary Containment of Field-Erected ASTs with Internal Lining

It is also important to note that the proposed rule amendments to Rule 62-761.510, Table AST, U (1), F.A.C., require that all internally lined ASTs have secondary containment installed underneath the tank by January 1, 2010. The current rule requires that any new or replaced AST bottom be installed with secondary containment. Information from the internal lining material manufacturers indicates that the average life of the lining is from 10 to 12 years for thin film lining and from 25 to 30 years for fiberglass reinforced lining. Either of these linings would have to comply with the current rule.

In the current rule, the installation of an internal lining of the tank bottom for the purposes of internal corrosion protection was considered equivalent to the benefits derived from the installation of secondary containment. Unfortunately, the ability to detect a release from these type systems is limited to detection after the discharge enters the environment. The benefit of secondarily contained systems is the ability to detect a release prior to the pollutant entering the environment. The proposed change to AST systems offers similar requirements currently imposed on underground storage tank systems and provides for enhanced protection of the water resources of the State.

Of the total 19,297 active regulated ASTs in Florida in April, 1998, there are 6,402 tanks under 1,100 gallons, and an additional 11,692 tanks between 1,100 to 30,000 gallons. Only 1,203 are above 30,000 gallons. However, when examining the total gallons of stored AST capacity, the opposite profile emerges. Only 6.1 million gallons are contained in the 1,100 gallon storage class while 93 million are in the 1,100 to 30,000 class. The vast majority of storage capacity (96%) of total AST storage capacity is contained in the 1,203 tanks over 30,000 gallons. Profiles of these tank size classes are presented in Figures A and B.

Given these figures, it is apparent that most (96%) of the regulated substances stored at any one time in Florida are contained in these 1,203 field-erected tanks. Therefore, most of the risk associated with the storage of these substances is associated with these tanks, and more protection is needed for the groundwater resources of the state.

Table 2.12 describes the number of tanks, and the volume of the storage capacity by county of field-erected and shop-fabricated ASTs. The total storage capacity of all field-erected storage tanks in Florida is 2.15 billion gallons. The total storage capacity of all shop-fabricated storage tanks in Florida is 99 million gallons.

Table 2.13 describes the costs of upgrading field-erected ASTs with secondary containment, and provides estimates based on a medium sized tank model with a diameter of 105 ft. and a height of 40 ft. (See Appendix 2). The costs of upgrading with secondary containment were derived from the EPA Liner Study: Report to Congress, (May, 1996), and range from \$.05 and \$.38 per gallon. Total costs for upgrading with secondary containment ranges between \$67.8 to \$518.6 million. The table also provides information about the cost of upgrading with internal lining for the same model tank and with three different cost scenarios with a thin film coating as the minimum, and a double laminate fiberglass coating as the maximum cost, and range from \$.11 and \$.18 per gallon. Total costs for upgrading with internal lining ranges between \$73 to \$120 million.

Table 2.14 describes the costs of upgrading shop-fabricated ASTs with secondary containment and internal lining (See Appendix 2). The costs of upgrading with secondary containment were derived from the EPA Liner Study: Report to Congress, (May, 1996), and range from \$.05 and \$.38 per gallon. Total costs for upgrading with secondary containment ranges between \$1.1 to \$8.7 million. The table also provides information about the cost of upgrading with internal lining with three different cost scenarios with a thin film coating as the minimum, and a double laminate fiberglass coating as the maximum cost, and range from \$.11 and \$.18 per gallon. Total costs for upgrading with internal lining ranges between \$.47 to \$.77 million.

Under the existing and the proposed rule, owners or operators have the option of internally lining tanks or installing secondary containment beneath the tank by January 1, 2000. Under the proposed rule, owners or operators choosing to internally line would have until January 1, 2010, to install secondary containment. These owners would have an additive cost of secondary containment and internal lining. Owners choosing to install secondary containment by January 1, 2000, would avoid this additional cost, as well as reducing associated release detection and insurance costs.

ECONOMIC ASSESSMENT OF THE ENVIRONMENTAL RISKS AND BENEFITS OF AST/UST REGULATIONS

Considerable amounts of state funds have been expended in Florida over the last decade to remediate AST and UST discharges. As of March, 1998, over \$1.56 billion dollars have been spent for AST/UST site rehabilitation.

The intent of this program is very clearly set forth in Section 376.3071 (2)(a), F.S.,

“It is the intent of the Legislature to establish the Inland Protection Trust Fund to serve as a repository for funds which will enable the department to respond without delay to incidents of inland contamination related to the storage of petroleum and petroleum products in order to protect the public health, safety, and welfare and to minimize environmental damage.”

Restated, these costs have been expended in an effort to help the AST and UST private sector owners and operators take care of the environmental damages and problems their business caused, and help resolve possible health and environmental pollution risks these discharges engender.

Reported UST/AST Discharges over the 1987-1997 Time Frame.

Based on the Department databases over the ten year 1987-97 period, 26,076 discharges from regulated storage tank systems have been reported to the DEP. Figure 1 profiles the statewide number of reported discharges over the 1987 to 1997 time period. Note that the reported 1988 level of 6,301 was by far the largest number of reported discharges over this period. Since that time, the annual average number of discharges have declined dramatically due to increased quality of DEP regulatory standards and enhanced DEP enforcement and industry compliance.

Note also, however, that slightly higher numbers of discharges were reported in:

- a. 1988, due to the Early Detection Incentive (EDI) Cleanup Program application deadline;
- b. 1991, due to the Abandoned Tank Restoration Program (ATRP) first application deadline;

- c. 1992, due to the Abandoned Tank Restoration Program (ATRP) second application deadline.

Figure 2 profiles the number of reported AST and UST discharges *by county* over the 1987 through 1997 time period. It is evident that the most highly urbanized counties are also the ones with the highest number of reported discharges. For example Dade County, with a population of over 2.2 million led the list with 3,156 discharges over this ten-year period. Hillsborough County reported the second highest level of discharges with 2,253 reported. The other urbanized counties of Broward, Duval, Orange, Palm Beach, Pinellas and Polk reported between 1,000 and 2,000 discharges over this period. That is a county wide annual average of between 100 to 200 discharges per year. On average Florida ASTs and USTs report 2,608 discharges per year with Dade alone averaging 316 per year. The data suggests that the most valuable areas of ground water (those in or near highly urbanized and rapidly urbanizing counties) are the same regions with the highest number of AST and UST ground water related discharges. This realization further enhances the realization of the need for effective regulation and enforcement of AST and UST standards to further enhance the protection of these important and valuable environmental resources.

Probability Risks of UST/AST Discharges by County

Figure 3 and Table 2.11 profiles the probability of discharges for all existing AST and UST tanks per county over the recorded ten-year time frame. This graphic and the associated Table paint a very much different picture. As in Figure 2, Florida's major urbanized counties are among the highest at-risk of discharge per tank communities in the state. For example Dade reports a 22% probability, while Sarasota, Pinellas, and Hillsborough report a 22%, 20% and 16% risk discharge per AST and UST tank respectively. However, a number of semi-rural and rural counties with emerging urbanizing populations and relatively larger industrial concentrations are adjacent to these urbanized areas. For example, almost 90% of the counties report an approximate 10% or higher probability of discharge over this ten-year period. The rapidly urbanizing Alachua and Leon, Duval, and Escambia Counties report a 15%, 18%, 15% and 15% risk respectively. Okeechobee, Jefferson, Jackson, Holmes, Gadsden, and Washington Counties are the leading at-risk rural counties with AST and UST average discharge probability rates ranging between 15% and 22% over this decade.

AST and UST Restoration and Rehabilitation Costs

Data from the DEP Petroleum Contamination Tracking system on requested and authorized reimbursement indicate the costs for site rehabilitation of discharges of petroleum and petroleum products across Florida is enormous. Since data has been collected, the DEP reports 23,359 requested claims for reimbursement with total requested funds of \$2.7 billion. These data indicate the statewide requested clean up cost per site averaged \$114,874¹. Of that amount, the DEP authorized payment claims of \$1.37 billion with an average approved per site claim of \$73,513. This translates into an average per capita Floridian expenditure of \$198.

¹ DEP estimates that total clean up costs average \$200,000 per site. Therefore these estimated costs per site must be viewed as only partial clean up of affected sites.

In addition to these funds, over the period of record 1987-97, Florida has paid almost \$177 million in State Cleanup funds. This adds an additional \$12.47 per capita for each Floridian to deal with these sources of ground water pollution over this decade.

Together these funds sum to \$1.56 billion dollars to deal with pollution related discharges. These site specific and average per capita costs vary widely across the counties. Figure 4 presents the total authorized restoration funds (including State Cleanup costs) on a county by county basis. Clearly, the largest authorized restoration costs are in Palm Beach County followed closely by Pasco, Pinellas, Polk and Dade Counties.

Total Palm Beach costs exceeded \$230 million while Pinellas and Polk were close behind with restoration costs of \$180 million respectively over this period. Dade and Polk counties reported total restoration costs of \$138 and \$125 million each.

Figure 5 profiles the average county per capita pollution restoration reimbursement costs over this ten-year period. The Florida per capita average was \$109 over this period with most counties incurring average costs in the \$65 to \$100 range. A number of counties are conspicuous with their unusual high per capita costs. For example, Pasco County carries an average per capita restoration cost of \$609 over this period. This is largely attributed to the County's relatively large industrial concentration of hazardous materials and associated AST and UST sites and associated discharges. Other counties such as Pinnellas, Polk and Palm Beach report an average per capita cost in excess of \$200 over this period.

These considerable sums of public expenditures widely dispersed across all of the Florida counties points to the need for continued vigilance and enhanced environmental regulation of these hazardous substance AST and UST sites to further protect the vital groundwater drinking water supplies across all regions of the state. This need for enhanced regulation and enforcement is particularly true in growing urban counties where continued rapid expansion of urban population will place even more pressure on the finite groundwater resources in the future.

ECONOMIC COSTS TO SMALL BUSINESS

Section 288.703, F.S. defines “small business” as

“...an independently owned and operated business concern that employs 100 or fewer permanent full-time employees and that, together with its affiliates, has a net worth of not more than \$3 million and an average net income after federal income taxes, excluding any carryover losses, for the preceding 2 years of not more than \$2 million. As applicable to sole proprietorships, the \$3 million net worth requirement shall include both personal and business investments.”

Neither the DEP or other public and private sources of data examined have accurate information on cash flow, net worth, average net income or other measures called for in statute to determine if owners and operators of AST and UST sites qualify as “small businesses” under the identified statutes.

Researchers therefore examined the best available data to determine the relative scale of AST and UST site and ownership to assess which sites or owners may qualify as potential small business operations and thereby warrant separate analysis under the requirements of Section 120.54 F.S.

Figures 6 and 7 characterize the number of AST and UST gallon capacity (under common ownership and per site respectively). Ninety percent of the AST registered owners in Florida each control 53,000 gallons or fewer per individual. The gallon capacity ownership climbs slowly thereafter so that 95% of the owners own less than 131,100 gallons of capacity. Ownership of more than 1 million gallons is not achieved until the 99% range. The same pattern holds for number of gallons per facility site. Figure 7 profiles indicate that 95% of the AST sites contain the relatively small storage capacity of less than 84,000 gallon per facility. Thereafter the site gallon-capacity increases up to 200,000 gallons capacity in the 97% range and then rises significantly to almost 7 million per facility in the 99% range.

Figures 8 and 9 characterize the number of UST gallon capacity under common ownership and per site respectively. Ninety percent of the UST registered owners in

Florida each control 48,000 gallons or fewer per individual. The gallon capacity ownership climbs slowly thereafter so that 97% of the owners own less than 190,000 gallons of capacity. Ownership of more than 500,000 gallons is not achieved until the 99% range. The same pattern holds for number of gallons per site. Again, relatively small gallon capacity are contained throughout the 97% range of the UST sites with a capacity of less than 62,000 gallons per site registered in the 99% of all facilities in the Florida

These data clearly indicate that the relatively small AST and UST owner/operator would be in the relatively small gallon ownership range. For example, 60% of the AST and UST ownership control 8,000 and 20,000 gallons respectively across Florida sites.

A number of the regulatory costs identified across this SERC are directed at larger facilities. The average cost of control for small facilities of the sort identified in this profile are difficult to quantify because they each will be so site specific.

The most likely costs these smaller facilities will have to comply with include color coding fill box covers of non-vehicular AST and UST tanks with a cost ranging from \$8.50 to \$12.50 per tank. If the small tanks are concrete and do not have secondary containment, they will also have to install this capacity with an approximate cost of \$2,000 per tank. All other costs are identified within the appropriate section of this report.

APPENDIX 1

Industry Provided Estimates

APPENDIX 2

AST Secondary Containment and Internal Lining Costs