EPA Innovation Grant Final Proposal for 2006-2009

Project Summary Information Page

Project Title and Location: Environmental Results Program (ERP) Initiative for the VA Underground Storage Tank (UST) Inspection Program – Virginia Department of Environmental Quality - Richmond, Virginia

Name of Applicant Agency: Virginia Department of Environmental Quality

Name of Project Contact:

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This project would be executed in cooperation with the federal and delegated state UST/LUST Programs. No regulatory flexibility from the federal government is anticipated to be needed to implement the project. The Director of the Virginia Department of Environmental Quality endorses this project.

Project Narrative

This project would bring next-generation strategic innovation and extensive application to what is arguably the largest environmental regulatory program in Virginia and the nation—the UST/LUST Program. Virginia has the seventh largest active UST population in the nation with some 27,000 USTs at over 9,000 UST facilities and with limited state resources achieves a current inspection rate of only every eight years. More than 10,181 UST releases have been reported to date in Virginia alone. Although in recent years the release rate has significantly decreased, releases continue to occur primarily related to facility non-compliance and operational issues. A significant volume reduction in contaminants to the environment is expected from increasing facility operational compliance rates. A successful interactive CD-ROM/online self-certification ERP program for UST Inspections in such a large UST population state would be the next logical step in effecting increased UST stewardship, program efficiency, pollution prevention, and environmental protection, that could then easily be rolled out to other states nationwide.

This project will work directly to achieve several of EPA's 2003-2008 stated Strategic Goals: Clean and Safe Water (Goal #2) - Reducing Exposure to Contaminants in Drinking Water (including protecting source waters) by further protecting public and private drinking water supplies and the ground and surface water resources by correcting UST containment, compliance, and operational problems more frequently thus limiting impacts especially from the known carcinogen benzene and the contaminant MTBE; Land Preservation and Restoration (Goal #3) by better preventing the occurrence and limiting the extent of releases and their associated long term impacts to lands; Healthy Communities and Ecosystems (Goal #4) by further reducing petroleum releases to soil, water, and air and thus further protecting human health and the environment; and, Compliance and Environmental Stewardship (Goal #5) by more frequently fostering UST owner stewardship and in so doing achieve better overall UST knowledge and compliance. The Clean Air component of Strategic Goal #1 - Healthier Outdoor Air via reduction in VOCs and the toxic carcinogen (benzene) will also be met as air emissions from UST releases will be diminished. And overall, the Cross-Goal Strategy of Innovation will be achieved with this innovative stewardship project.

In the past 18 years VA-DEQ has received approximately $187,000 per year in EPA UST base grant funds to maintain an UST program presence throughout this federally delegated program state. In addition, the Virginia Petroleum Storage Tank Fund currently contributes over $1.8 million in state funds annually specifically for this UST inspection effort. Combined, these federal and state funds support a staff of some 22 inspectors statewide in the seven DEQ regional offices who annually perform approximately 1,000 full formal UST facility inspections and 400 informal and site visit facility inspections and all follow-up activities. At current staffing and inspection rates, each Virginia UST facility would be formally inspected only approximately every eight years—a too infrequent rate. This very low frequency will hopefully improve somewhat with inspection staff efficiencies achieved over time and the resolution of the many older UST sites, but nationwide a low inspection frequency as noted in the federal May 2001 GAO Report (GAO-01-464 entitled "Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks") remains a long-term obstacle in the effort to

diminish and help prevent UST releases.

The UST Program began on November 8, 1984 when Subtitle I of RCRA was signed into law to prevent the release of regulated substances affecting human health and the environment. Since the passing of the 1998 UST Upgrading deadline some 14 years later, EPA and the states have continued to struggle with increasing the inspection frequency rates and ensuring consistent inspections in order that the proper balance of increased regulatory compliance and environmental protection is achieved and maintained. On September 30, 2003 EPA's Significant Operational Compliance (SOC) guidelines for USTs were adopted nationwide as a good benchmark standard of consistency for all future state and federal UST inspections and reporting compliance rates to EPA.

Current SOC compliance rates for the nation average in the 65%-70% range with some smaller and/or adequately funded states claiming 90% compliance rates and other often larger states with limited funding and/or staffing reporting in the 40%-50% compliance range. Reported compliance rates are dependent on a number of variables such as: frequency of inspections (influenced by tank population of the state and available resources); flexibility and experience of the state inspector(s); training levels of the UST owners; status of the state inspection process (first time inspections, etc.); percentage of tanks upgraded with cathodic protection; the used oil tank population (chronically non-compliant); and, focus of state program efforts on known problem owners/sites.

Based on the aforementioned May 2001 GAO report (GAO-01-464) and final federal energy legislation (Energy Policy Act of 2005) effective August 8, 2005, a national mandate is underway to have states increase their UST inspection frequencies to every three years--a significant and costly undertaking. The GAO research indicates that tank owners are more likely to be in consistent compliance if they are kept aware of the UST requirements on a more frequent basis (2-3 years). This project conforms well to the Energy Policy Act of 2005 - Section 1523 (b) - Study of Alternative Inspection Programs. Unfortunately, the increased inspection effort comes at a time when state budgets have been cut and there is a national business trend for major oil companies to divest their stations to independent dealers and thus the past economies-of-scale for compliance under major-brand oil entities is somewhat being lost. Also, the GAO report identified that more frequent and continuing operator training is needed and this also is mandated under the Energy Policy Act of 2005. Although the main effort of this proposed UST ERP project is to increase compliance rates, an added benefit is that more owner/operator and stakeholder training is achieved.

The main product of this proposed project is to develop an electronic interactive ERP Self-Certification Program for UST Inspections. This effort would initially involve an EPA and State funded Pilot Project to enable selected competent major UST owners/operators or their qualified contractors to use a CD-ROM/online electronic version of the EPA "UST ERP Workbook" (EPA 510-R-04-003) and a more simplified "EPA UST ERP Checklist" to self-certify compliance. Many of the noted difficulties of gaining tank owner/operator understanding of the comprehensive 162-page UST Workbook and Checklist may be overcome using such a CD-ROM/ online question and answer approach. Such an electronic inspection/compliance tool would need to be tailored for both CD-ROM and on-line interactive use similar to desktop and

on-line web-based "tax preparation software" services. (More recent EPA ERP automation user group discussions from other states with ERP projects underway have stressed a strong preference for moving directly to an online web-based portal via which owners/operators would submit information to DEQ rather than a CD-ROM (paper) intermediate version.) A DEQ/EPA-approved software contractor would refine the UST ERP Workbook and Checklist and develop the CD-ROM and on-line interactive versions. Establishment of security of data submissions is critical and will require proper encryption technology and login verification coding. The project development and rollout period is expected to take 36 months. After completing an interactive CD-ROM/online session the UST owner/operator would generate a DEQ UST ERP Inspection Checklist form to certify UST compliance under Virginia Law and Regulation (which is very similar to the federal). Initially, up to 100 UST facilities owned by up to 20 selected owners/operators (preferably those with large numbers of USTs --major oils, federal, state or owners with >~100 facilities) with sufficient competent environmental oversight resources and with proven records of compliance will be selected for the Pilot Program in order to enable owners with the greatest likelihood of successful program participation. (It is common that individual UST owners/operators oversee multiple tanks - 20 owners of 100 facilities representing some 270 individual UST tanks). Staff will also seek to include several “mom and pop” owners among the 20 pilot owners as tests for future broader usability and applicability. Allowing a significant percentage of UST facilities to UST ERP self-certify would free up limited state DEQ UST inspection staff to concentrate on mom-and-pop facilities and those entities most in need of compliance assistance.

It is hoped that when ramped up to include many UST owners, third party contractor certification is can become an inherent part of this UST ERP effort over time. Some major and mid-sized tank owners may prefer to hire third party contractors to conduct their self-certifications much like tax preparation contractors provide tax filing services. The market forces for this will evolve as the program becomes more established and widespread down the road.

DEQ Regional Office UST inspection staff would audit up to 10% of all UST ERP self-certifications to ensure accuracy and take follow-up enforcement action where necessary. Ongoing outreach by DEQ UST staff to associations and stakeholder groups would be integral and critical to the program's ultimate success therefore VA-DEQ UST Program staff would initiate and maintain contact with the key stakeholders to gain consensus on the best ways to eventually roll out the program to all potential self-certifying entities. These stakeholders include the Virginia Petroleum Council (major oil), Virginia Petroleum Marketers and Convenience Store Association (jobbers), and the Virginia Gasoline Marketers Council (independents) and include large public entities such as VDOT.

Principal Project Expected Results.

- This effort will allow Virginia to improve and maintain water quality and ensure the long-term integrity of our water infrastructure by enabling us to more frequently and effectively inspect and remind more facilities of the UST requirements as the GAO recommends. This, when measured, is expected to increase the UST Significant Operational Compliance (SOC) rates for Virginia.
- This project will enable our limited state UST inspection staff to be available for the

many mid-sized and small-sized UST facilities likely to be remiss in compliance due to often-older facility age, limited capital, and in chronic need of technical assistance. After a successful Pilot Program which will include a few "mom & pop" facilities, a ramping up to a broader spectrum of UST owners statewide will follow.

- This project is also needed to gear up for actually addressing how much failure-to-perform UST compliance affects the water quality and environment of Virginia. Benzene, a known carcinogen and MTBE, a pollutant to drinking water supplies make up a large percentage of today's gasoline composition and must be better controlled to staunch their pervasive release and impacts to human health and the environment.
- It is reasonable to project that with the increased inspection rates (3 years versus 9 years), UST site stewardship, and earlier correction of spills and overfills, this program will enable up to a one third reduction in the pounds of VOC emissions (and the carcinogen benzene) to the environment and concomitant health risks that would have been present if the project was not undertaken.

Project and team synergies with other Region III state partner agency's inspection efforts:

- We have been in close contact with the State of Maryland and they strongly support this ERP effort since they are pursuing a hybrid third party inspection program that they say will be greatly complemented by the success of any CD-ROM/online assistance versions for their owners who wish to self-certify compliance. Annual updates on ERP Program progress will be provided at EPA R3 UST All-States meetings.
- We have been in ongoing contact with the State of Delaware and they too are interested in pursuing a similar project--if not funded as an independent state effort then as a joint effort with VA.
- In addition, the Commonwealth of Pennsylvania with a fully functioning third-party inspection program indicates they too would greatly benefit from a successful CD-ROM/online inspection module primarily as a much needed owner/operator compliance-training/refresher tool.

Applicability to other states and EPA:

- This effort by Virginia or by a multi-state approach would be readily transferable to the other state UST programs nationwide with only minor alteration for state-specific needs.
- It is hoped the national EPA UST Program (OUST) may wish to make this project a national endeavor and agree to team up with the multi-states showing interest in ERP CD/-ROM/online self-certification to more effectively address the chronic inspection frequency problem nationwide.
- This project builds upon existing technologies and UST efforts and a project timeline over several years is therefore acceptable.

One contracting option would be to explore the possibility of EPA agreeing to partner with the state to use any ERP cooperative agreement funds toward retaining existing EPA-OUST contractors who developed the online EPA UST Inspector Training module. They are familiar with the UST Program terms and requirements and could leverage existing knowledge and skills

to quickly ramp up this CD-ROM/online ERP effort. EPA-OUST may consider partnering with EPA Innovations on this effort to provide a self-certification template for all states to use.

Project/Task Organization:

Personnel involved in project implementation are listed in Table 1, and shown as an organization chart in Figure 1.

Table 1: Project Implementation Personnel

Individual	Role in Project	Organizational Affiliation
Russ Ellison	ProjectManager/USTProgram Coordinator	VA DEQ
Marilynn Alfaro	QA Manager/Officer & Data Management and Project Support	VA DEQ
Steve Hughes	Inspections/Verification	VA DEQ NVRO
Kevin Jones	Inspection/Verification	VA DEQ PRO
Tom Madigan	Inspections/Verification	VA DEQ TRO
Mike Sexton	Inspections/Verification	VA DEQ SCRO
Tim Petrie	Inspections/Verification	VA DEQ WCRO
Dan Manweiler	Inspection/Verification	VA DEQ SWRO
Dave Robinett	Inspections/Verification	VA DEQ VRO
ERP Contractor	Support on Software Project Design and Implementation (Detailed below)	Contractor
VA DEQ OIS Group	IT Support/Database Mgt	VA DEQ OIS

The VA DEQ Project Manager will be responsible for the following activities:

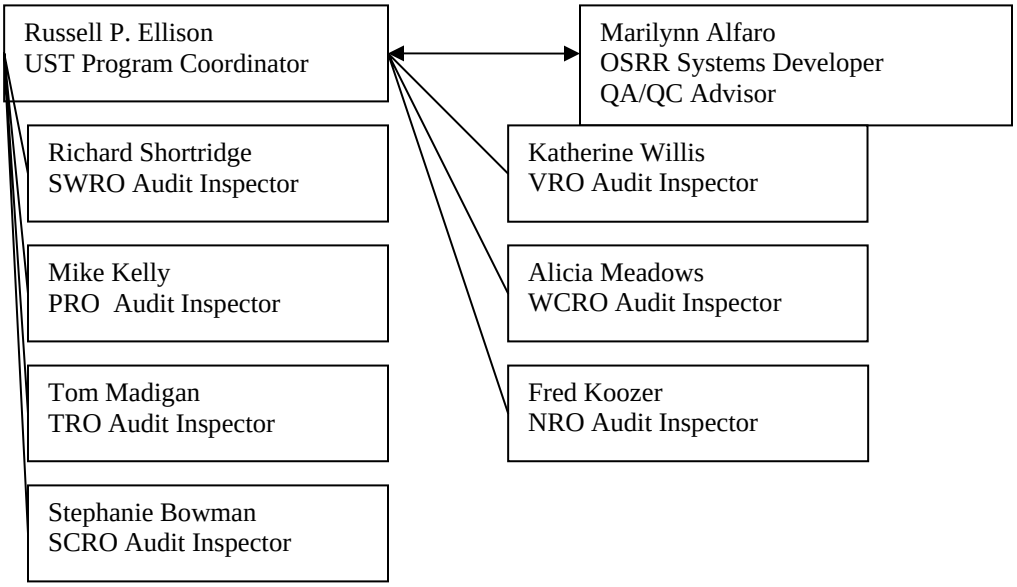
- Conduct outreach with regulated industry and internal/external stakeholders
- Coordinate with Contractor
- Maintain official, approved QAPP
- Develop revised QAPP
- Issue quarterly and annual reports to U.S. EPA

Contractor will be responsible for the following activities:

- Develop Digital Workbook project design and CD-ROM and website software
- Develop statistical methodology
- Coordinate with VA DEQ Office of Information Services (OIS) staff in the development of necessary data systems and hardware infrastructure
- Assist VA DEQ staff in review and presentation of outreach materials
- Assist VA DEQ staff in stakeholder outreach
- Assist VA DEQ staff in analysis of project data and presentation of results
- Review data and provide QA/QC

The participating UST facilities will be responsible for submitting self-certification materials and, if applicable, returning to compliance.

Figure 1: Project Organizational Chart



Project Objectives

This project is mainly designed to improve environmental results by reducing the threat of releases of petroleum and hazardous substances to groundwater (a significant source of drinking water in Virginia) and soils through enhanced compliance with the UST and RCRA requirements.

The ERP model will eventually allow for the measurement of annual compliance progress for the entire UST sector, with several environmental laws. This proposed ERP model consists of an initial round of inspections of a statistically valid number of pilot facilities, UST outreach and education, a self-certification and if necessary a return to compliance schedule on a UST self-certification form, random audit inspections to confirm the self certifications, and data analysis that will result in statistically valid compliance reports to document project performance. Targeted inspections will be used to promote submission of self-certifications as well as assure compliance.

Where facilities indicate they are not in compliance with all applicable regulations under this project, or where inspections find non-compliance, a return to compliance plan will be required. All non-compliance will be documented. When self-certifications indicate non-compliance, the facility will be required to submit a return-to-compliance schedule to the VA DEQ. Random and targeted inspections will be used to confirm return to compliance at selected facilities. These schedules will be tracked in the project database. When inspections identify facility non-compliance, the VA DEQ will respond by both informing facility personnel on-site and sending a letter documenting the non-compliance and requiring a return to compliance by a date certain.

Regulatory information, applicable criteria and action limits.

This project focuses on priority environmental impact issues by targeting an UST industry sector that is present statewide (major oil, state, federal) with significant potential for environmental releases. The project is intended to self-educate owners and improve compliance within the UST sector with requirements of the UST prevention requirements.

This project would establish a CD-ROM/Online UST Workbook covering regulatory requirements. This project would encourage the regulated community to achieve reduced compliance costs by more frequently and thoroughly addressing all compliance and environmental issues at once through an interactive CD-ROM/Online UST Workbook rather than narrowly focusing on whatever problem was identified during the last onsite regulatory inspection.

This project will build on "lessons learned" from the last decade of searching for ways to measure prevention efforts by using a mechanism (ERP) that specifically measures results. The project is likely to produce quantifiable reductions in petroleum and hazardous substance generation as well as quantifiable improvements in compliance with the UST prevention program. The goal of reducing actual spills and leaks may not be quantifiable because of the time lag between a spill or leak and its detection.

Project/Task Description.

Project overview.

This project will allow the VA DEQ to explore whether an approach modeled upon the Environmental Results Program (ERP) can help achieve these goals, while improving UST regulatory cost-effectiveness. The ERP is an innovative approach to solving high-priority environmental problems in industry sectors largely comprised of small businesses. The CD-ROM/Online UST ERP concept combines workbook technical assistance, self-certification, inspections, and statistically based performance measurement in order to reduce environmental impacts of business.

The promise of ERP is that it will initially through the Pilot Project with up to 20 major oil, state, and federal entities with the in-house resources to effectively use the UST ERP CD-ROM/Online Workbook to self-certify compliance thereby freeing up limited state UST inspection staff to technically assist the other sectors of the regulated community in a cost-effective way to reduce environmental impacts of these small businesses that may present a substantial cumulative environmental risk. After the Pilot ERP Project proves effective, other entities such as mid-sized jobbers, convenience store chains, and gas stations will be offered the use of self-certification. ERP can help environmental agencies transfer better understanding of the UST requirements to UST owners and operators, measure performance, increase regulatory efficiency, and help improve overall environmental performance. ERP is in part designed to help facilities that want to comply but don't understand their requirements, and evidence suggests that ERP can motivate firms to comprehensively review their environmental performance and take needed action to come into compliance and adopt best practices.

Project summary and work schedule.

This project's major tasks and timeline are outlined in the table below.

Table 2: Schedule of Major Project Tasks

Task/Milestone	Task Description	Start Date	End Date
Stakeholder Outreach	Outreach to internal and external stakeholders (including Pilot Project facilities) about the project.	4/01/06	4/01/09
Goals identification	Finalize the goals of this project, upon which metrics will be based	1/15/06	4/01/06
Develop Logic Model	Develop a logic model with stakeholder involvement. Logic model can assist in development of metrics and data needs.	1/15/06	4/01/06
Measures identification	Development of metrics to be tracked by this project.	1/15/06	4/01/06
Request for Proposals (RFP) for Contractor	Develop RFP for CD-ROM/Online UST ERP Workbook development and retain contractor.	5/01/06	7/01/06
Contractor develops Beta version of CD-ROM/Online UST ERP	VA-DEQ advises and reviews development of Beta version of CD-ROM/Online UST ERP.	7/01/06	3/01/07
UST Pilot Program Facility identification	Determine the exact characteristics of Pilot facilities to be targeted, and compile a list of facilities from reliable sources. Up to 20 UST owners selected as participants in Pilot Program of major oil, state, federal facilities.	7/01/06	1/01/07
Statistical methodology	Development of a statistical methodology to drive performance measurement and analytical tasks.	7/01/06	1/01/07
Data input & management	Development and implementation of an approach to cost-effectively inputting and managing ERP data, including primary and secondary data. Primary data consists of data from audit inspection reports and facility forms (including self-certification forms). Secondary data sources include percentages of compliance under the existing onsite inspections system; the percentage of compliance under the Pilot Program facilities prior to ERP and after self certification.	6/01/06	1/01/07

Task/Milestone	Task Description	Start Date	End Date
QAPP finalization & approval	Finalize QAPP based upon results of the measures identification, statistical methodology, and data management tasks. Primary data collection will not occur before relevant parts of the QAPP are finalized and approved by EPA.	4/01/06	7/01/06
Baseline inspections	Inspections at Pilot Program facilities to establish a performance baseline. Facilities selected at random from the entire targeted Pilot Program population, based upon sample design from statistical methodology. Any UST violations noted will be handled as would any other facility violation under the VA-DEQ Agency Enforcement Compliance Manual (2001) and applicable program guidance memoranda.	6/01/06	9/30/06
Workbook and Certification Form Finalization	Finalization of CD-ROM/Online workbook, outreach and assistance materials, web resources, and certification forms.	12/1/06	3/1/07
Facility assistance/Outreach	Delivery of compliance/technical assistance to facilities, which is expected to take the form of workbooks, fact sheets and/or workshops.	7/1/06	3/1/08
Self-certification	Implementation of a voluntary facility self-certification approach for up to 100 Pilot Program facilities owned by up to 20 entities. Self-certification refers to the submission of a legally binding record of a facility's compliance and beyond-compliance practices.	2/01/07	2/01/08
Self-Certification Deadline	Self-Certification and Return to Compliance forms due.	6/1/07	N/A
Analysis of Self-Certification Data	Analysis of Self-Certification data with primary purpose of identifying opportunities for selective follow-up (next step).	7/01/07	2/15/08
Selective follow-up	Selective follow-up with self-certifying facilities, based upon analysis of self-certification data. Targeted follow-up may include phone calls, inspections and enforcement.	2/15/08	1/01/09

Task/Milestone	Task Description	Start Date	End Date
Post-certification inspections	Inspections at facilities to establish whether sector performance measures (and other measures) have changed since the baseline. Inspection data also used to cross-check self-certification data at inspected facilities. Facilities selected at random from the entire targeted population, based upon sample design from statistical methodology.	2/15/08	12/15/08
Data analysis	Analysis of baseline, self-certification, and post-certification data to understand change in facility performance and overall outcomes of interest. Assessment of project efficiency.	2/15/08	6/15/08
Preparation of Final Project Report	Draft and finalize final project report.	1/01/09	3/01/09
Reporting to EPA	Reporting shall include quarterly, annual and final reports.	6/30/06	3/01/09

Budget Summary

State: **Virginia**
Agency: **Virginia Department of Environmental Quality (DEQ)**
Project Title: **Environmental Results Program (ERP) Initiative for the VA Underground Storage Tank (UST) Inspection Program**

	Total Project Costs	**Proposed State Leverage Funds**	**EPA Funding**
Staff Salaries & Benefits	**$**	**$**	**$**
Travel	**$**	**$**	**$**
Supplies	**$**	**$**	**$**
Service Contract	**$250,000**	**$**	**$250,000**
TOTAL:	**$250,000**	**$ (See note below)**	**$250,000**

The $250,000 contractor costs are anticipated to be broken down into: Oracle/Java Electronic Workbook for Web Development - $150,000; Web Security (Electronic Signature) and Secure Portal Development - $50,000; Three Year Web Hosting and Maintenance - $50,000

Note: VA-DEQ Central Office and Regional Office UST and data management staff will participate in the development, contracting, testing, and outreach for the project. Travel, supplies and other costs outside the service contract will be funded by the Virginia Petroleum Storage Tank Fund.