ANNUAL UPDATE FOR FISCAL YEAR 2006/2007

COLORADO DEPARTMENT OF LABOR AND EMPLOYMENT
DIVISION OF OIL AND PUBLIC SAFETY

SB 181
COMPLIANCE WITH WATER QUALITY STANDARDS AND CLASSIFICATION

SEPTEMBER 2006

This update is offered to the Water Quality Control Commission concerning the activities of the Division of Oil and Public Safety Storage Tank Program for the period ending June 30, 2006.

Technical Activities

Average number of active releases…… 1450
Number of confirmed releases…….. 236
Number of sites issued No Further Action required letters…….. 219
Number of Site Characterization Reports reviewed……. ……. 223
Number of Corrective Action Plans reviewed and approved…….…… 322
Number of Monitoring Reports reviewed……. 2533
Number of Final Enforcement Letters sent……13
Number of Enforcement Settlement Agreements sent…… 2

State Fund Information

Number of reimbursement applications heard by the PST Committee……2118
Dollars reimbursed by the PST Committee……..…….$31,259,090

Listed below are improvements made by the Division to the program in order to more effectively investigate and remediate the contamination associated with petroleum storage tank system failures and protect the solvency of the Petroleum Storage Tank Fund.

Economic Feasibility Summary/Electronic Reimbursement Application (EFS/ERAP)

The OPS continued to implement the Economic Feasibility Summary (EFS) this year. The EFS allows for standardized submittals, accurate coding and streamlined reviews of all costs submitted for activities within a Corrective Action Plan (CAP). The costs to perform all tasks associated with pilot testing a

remediation system, report writing, purchasing equipment and materials, installing the equipment, etc., through site closure are required to be entered on the EFS. These costs are negotiated and approved by the Remediation Section technical reviewer. All current and future fund applications submitted at sites in the EFS process require an electronic reimbursement application (ERAP) summary of costs in the EFS format to be paid directly against the approved EFS.

OPS staff gave presentations on the EFS process at the 18th Annual National Tanks Conference & Expo held in Memphis, TN, March 19 – 22, and in the Cost Control Session at the National State Fund Conference held in Oklahoma City, June 12 -14. The purpose of the sessions was for states to share with one another cost saving innovations that have been implemented to promote solvency of their state funds.

Methyl-Tert Butyl Ether (MTBE)

MTBE was adopted as a chemical of concern (COC) for the groundwater ingestion pathway through regulation in 2005. Additionally, an MTBE Guidance Document was developed and published to assist tank owners and operators and their consultants with completing MTBE assessments and cleanups. MTBE differs from other COCs in that the property boundary is not considered a POE, but rather water supplies used for human consumption within 2,500 feet of the source. From May 30, 2005 forward, responsible parties are required to analyze MTBE from groundwater samples collected at all site monitoring wells. During FY 2006, 387 Initial MTBE reports were reviewed, sites were classified according to risk, and pathway elimination was granted for 102 sites.

The Remediation Section held a half-day seminar for tank owner/operators and environmental consultants on August 26th. The purpose of the seminar was to provide information concerning the new MTBE regulations. Topics of the seminar included; historical background of MTBE usage, applicability, exposure pathways, points of exposure, laboratory analytical, prioritization, assessment, and reporting. On September 13th, the OPS staff gave a presentation to the Colorado Hazardous Waste Management Society (CHWMS) concerning the new MTBE regulations.

Remedial System Inspection Program (RSIP)

During FY 2006, the OPS completed the fourth year of the Remedial System Inspection Program (RSIP). The main purpose of RSIP is to conduct site inspections of facilities located throughout the state, which have been reimbursed in excess of $100,000 dollars from the Petroleum Storage Tank Fund. During FY 2006, a total of 106 sites were visited and groundwater samples collected. The samples were laboratory analyzed using EPA Method 8260 for the volatile organic compounds BTEX, DCA, EDB, MTBE, ETBE, DIPE, TBA and TAME. The RSIP database continues to provide valuable insight into the presence of MTBE and changes in the MTBE concentrations over time. The program also supports an EPA initiative that is evaluating the presence of the fuel additive EDB

at sites with petroleum releases. As a result of the RSIP program, OPS has this data available. Consistent with RSIP-FY 03 thru RSIP-FY 05, OPS continued to demonstrate a field presence to the regulated community; verified the installation of remediation systems; discussed with consultants (owner's representative) remedial system operational problems, system efficiency and the presence of subsurface formation heterogeneities that may influence the effectiveness of cleanup at the inspected sites. Site maps submitted by the consultant were checked for their accuracy and effectiveness in identifying potentially impacted receptors.

In addition to visiting site that have known releases, the Remediation Section provided regulatory oversight during the permanent closure of petroleum storage tanks at 90 locations during FY 2006 and will continue this role in FY 2007. During these closure inspections, the objectives that were met included; ensuring that proper tank closure methods are utilized and closure assessment sampling of soil and groundwater is conducted to measure for the presence of a release, assess the structural integrity of the petroleum dispensing system and determining the cause of a detected release. When a release of petroleum is detected at the time of tank closure, an initial evaluation of the completed exposure pathways and the potential threat that the contamination may pose to nearby receptors is conducted.

LUST Trust Fund

In FY 2006, the OPS continued to aggressively assess and remediate sites where tank owners were unknown, unwilling or unable to perform the work or in emergency situations. During FY2006, $2,670,000 from the USEPA Leaking Underground Storage Tank (LUST) Trust Fund and cost recovery was spent at 41 LUST Trust sites. Thirty-seven sites are being addressed because the owner is either financially unable or unwilling to perform the work. Of these 37 sites, 25 have active remediation systems operating, nine are in monitoring, and three have corrective action plans tasked. Four investigations have been performed to identify the responsible party. In FY 2005, the EPA awarded OPS an additional $130,000 to LUST funding to address three sites where the owner has been recalcitrant and receptors are threatened. During 2006, the funds were used to assess and begin remediation on an impacted property downgradient of the recalcitrant owner.

LUST Trust Fund Cost Recovery

In FY 2005, the OPS continued to implement a program to cost recover funds expended from the LUST Trust Fund. Costs were recovered at 48 sites where the RPs were eligible for reimbursement from the Colorado Petroleum Storage Tank Fund (PSTF). The eligible funds were transferred from the PSTF to the LUST Trust Fund. Approximately $2,129,950 was recovered from the PSTF. The recovered money will enable the Section to continue to perform assessments and remediation activities at high priority sites. Total costs recovered to date are approximately $6,286,370.

PST Fund State Lead Cleanups

In FY 2005, the OPS pursued assessment and corrective action activities at 45 active State Lead sites. Money from the PSTF was used to perform these activities at sites where persons who bear no responsibility for the releases received eligibility. Approximately $2,310,000 was invoiced at these sites.

Brownfields Grant

The OPS received an EPA National Brownfields Assessment Grant in October, 2005. A brownfields site is real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. The award of the highly competitive $200,000 grant will provide the OPS with funding to inventory, characterize, assess and conduct cleanup and redevelopment planning and community involvement related to brownfields sites. The OPS is partnering with Colorado Department of Public Health and Environment (CDPHE) and the Colorado Brownfields partnership on a Colorado Historic and Scenic Byways initiative to assess sites.

Risk Based Decision Making

In FY 2006, regulations that incorporate risk based decision making (RBDM) promulgated in February 1999, continued to be successfully implemented. The RBDM process consists of a tiered approach to site evaluation and cleanup. During the Tier 1 evaluation, the highest concentrations of chemicals of concern are compared to Tier 1 risk-based screening levels RBSLs for each complete exposure pathway. For sites with contamination above the RBSLs, owners/operators are given the option to cleanup to Tier 1 RBSLs or to collect additional site-specific data and proceed to a Tier 1A or Tier 2 evaluation. Four Tier 1A models, 208 fate and transport models (146 of which were for MTBE contamination) and two Tier 2 models were submitted in FY 2006.

Vapor Intrusion Evaluation

In FY 2005, the OPS completed an Access database that contains 40,000 vapor data points from 110 contaminated sites. The purpose of the database is to evaluate the risk based screening levels (RBSLs) implemented for both the soil vapor and groundwater to indoor air pathways in 1999. During FY 2006 the Remediation Section staff:

- Performed a quality review and summarized information in the database. Preliminary analyses were performed to identify trends based on site conditions, soil type, depth to groundwater, age of release, and source concentrations.
- New J&E modeling parameters were compared with those used to develop Colorado screening levels (indoor air, soil gas, and groundwater) identifying that current RBSLs need to be updated.

- OPS shared the database with the Utah petroleum tanks program and the American Petroleum Institute (API). Both groups are using the data to study whether vadose zone biodegradation can be quantified.
- Developed a Vapor Intrusion Guidance Document that presents current industry standards in the assessment and mitigation of the petroleum contaminant vapor intrusion pathway into structures.
- Remediation staff gave presentations at the Association of State and Territorial Solid Waste Management Officials (ASTSWMO) *Soil Vapor Monitoring, Vapor Intrusion, and Indoor Air Workshop* held in San Diego September 26th and 27th. An overview was provided of the OPS Vapor Intrusion Program and the initial results of the vapor intrusion database study.

Chemical Oxidation Study in Conjunction with the University of Colorado at Denver

During FY 2006, the OPS Remediation Section partnered with the Department of Civil Engineering at the University of Colorado, Denver (UCD) to evaluate the effectiveness of in-situ chemical oxidation (ISCO) in remediating contamination. A draft guidance document was prepared that provides background information, a summary of factors influencing the effectiveness of ISCO, and tracks the site specific data and remedial progress of petroleum contaminated sites regulated by the OPS that have implemented an approved remedial approach using ISCO. The study will be expanded in FY 2007 as additional ISCO CAPs are submitted, approved and implemented. OPS anticipates that as the technology evolves additional oxidants and delivery methods will be proposed that will require consideration and careful evaluation.