

# Survey of Transportation Sector Storm Water BMP Implementation



Los Angeles RWQCB

Tetra Tech, Inc

March 14, 2005

# **BMP Evaluation Goals**

Identify best management practices (BMPs) that are frequently and effectively implemented for storm water control at motor freight transportation facilities

# Field Evaluation Process

- BMP evaluations occurred at 38 facilities with SIC code 42XX – Motor Freight Transportation and Warehousing
- Facilities were selected by the Los Angeles Regional Water Quality Control Board (RWQCB)
- Four Tetra Tech industrial storm water inspectors visited 9 or 10 facilities, apiece, over four days
- Evaluations were conducted jointly with Los Angeles RWQCB staff

# **BMP Evaluation Inspection Protocol**

- Cursory review of facility SWPPP and SWMP occurred, largely to verify that the facility had a SWPPP and SWMP.
- Copies of SWPPP BMP lists were made, if available
- Inspectors targeted implementation of structural and non-structural BMPs
- BMPs analysis was based on visual inspection, historic storm water sampling data was not evaluated
- Results were reviewed with facility representatives

*The inspection week of February 21, 2005 immediately followed a heavy storm cycle that raised the rainfall total for the season in downtown Los Angeles to 33.9 inches*



# Inspection Summary

The following 5 slides summarize observations and qualitative ratings of BMPs implemented for specific activities common to the trucking industry:

waste disposal

maintenance

fueling

truck washing

# Qualitative Ratings

The inspectors used best professional judgment to rate the effectiveness of BMPs on a scale of 1 through 4 as follows:

1 – BMPs did little to protect storm water from potential pollutants

2 – BMPs provided a marginal amount of protection of storm water from pollutants

3 – BMPs were adequate to prevent pollutants from entering storm water

4 – BMPs were exemplary and all but eliminated potential exposure of storm water to pollutants

# Waste Disposal Area BMPs

BMP	Number of Observations out of 38 inspected facilities	Estimated effectiveness (1 [poor] – 4 [excellent])
Overhead cover*	24 (63%)	2.9 (good)
Secondary containment*	23 (60%)	2.9 (good)
Spill Kit present	25 (66%)	Varied, contents of spill kits ranged from just absorbent to full kits with booms
General housekeeping	38 (100%)	2.4 (fair)

\* Overhead cover and secondary containment were evaluated independently but could be implemented together.

# Maintenance Area BMPs

<b>BMP</b>	<b>Number of Observations</b>	<b>Estimated effectiveness (1 [poor] – 4 [excellent])</b>
Maintenance on-site <sup>a</sup>	30 (79%)	N/A
Overhead cover <sup>b</sup>	24 (80%)	3.6 (Excellent)
Spill kit present <sup>b</sup>	27 (90%)	N/A
General housekeeping <sup>b</sup>	30 (100%)	2.6 (Good)

<sup>a</sup> Based on 38 facilities inspected

<sup>b</sup> Based on facilities with on-site maintenance (n=30)

# Fueling Area BMPs

<b>BMP</b>	<b>Number of Observations</b>
On-site fueling <sup>a</sup>	21 (55%)
Overhead covered and/or berm <sup>b</sup>	4 (19%)
Spill kit present <sup>b</sup>	15 (71%)
General housekeeping <sup>b</sup> (1 [poor] – 4 [excellent])	3.2 (Good)

<sup>a</sup> Based on 38 facilities inspected

<sup>b</sup> Based on facilities with on-site fueling (n=21)

# Truck Washing BMPs

<b>BMP</b>	<b>Number of Observations</b>	<b>Estimated effectiveness (1 [poor] – 4 [excellent])</b>
Truck Washing On-site <sup>a</sup>	20 (53%)	N/A
Overhead Cover <sup>b,c</sup>	9 (45%)	3.6 (Excellent)
Bermed <sup>b,c</sup>	9 (45%)	2.7 (Good)
Connected to oil/water separator <sup>b</sup>	11 (55%)	N/A
Average housekeeping	20 (100%)	2.7 (Good)

<sup>a</sup> Based on 38 facilities inspected

<sup>b</sup> Based on facilities with on-site truck washing (n=20)

<sup>c</sup> Only 3 facilities had overhead cover and a berm

# Transportation Sector BMP Evaluation Results

- BMPs identified on subsequent slides are representative of typical BMPs that should be implemented at transportation facilities
- Good and poor BMP examples are provided, where available
- BMPs presented are broadly applicable across many industrial sectors

**Maintain spill kits at all maintenance areas, waste storage areas, fueling areas, loading docks and other areas where potential pollution sources are handled.**



*Spill kits must be maintained in easily accessible locations and absorbent materials must be replaced after use.*



*Employees should be aware of and use spill kits.*

**Clean up all spills and leaks immediately to prevent the mobilization of pollutants in storm water**



*Sheen*



*Evidence of poor spill clean up practices*

## Provide secondary containment for oil storage areas\*

*Appropriately contained*



*Uncontained*



**\* The volume of secondary containment must be equal to the volume of the largest container within the containment structure and must provide sufficient freeboard for precipitation (equals 110% of the largest container in LA county)**

**Storm water collected in secondary containment structures must not be released to the storm water conveyance system if a sheen is visible.**



*Secondary containment valve opened without sampling or observation*



*Secondary containment structure overflowing*

**Maintain conveyances and pretreatment systems (oil/water separators) to eliminate the potential for solids/oil/debris from being discharged to storm water.**



*Sump connection to the sanitary sewer was clogged*



*Trench drain clogged with sediment*

**Train all employees that handle potential pollution sources (including drivers) in storm water BMPs**



*Drip pans should be deployed beneath leaking vehicles*



*Hazardous fluids should be stored within secondary containment. These uncontained drums contained grease, oil, antifreeze, and detergent.*

**Conduct activities involving fluid drainage under cover or in an otherwise contained area**



*Good example of covered maintenance area*



*Poor example of a maintenance area*

**Establish a frequency for parking area/facility sweeping in the SWPPP and maintain appropriate documentation that sweeping has occurred**



**Wash racks should be designed and operated to eliminate unauthorized non-storm water discharges**



*Covered wash rack contained by slot drains*



*The open corner of the partly contained area would enable wash water to flow outside the contained area*

## Require vendors to abide by BMPs identified in the facility SWPPP



*Truck maintenance area operated by a vendor, poor BMP implementation*



*Unauthorized non-storm water discharge because trucks were washed outside the wash rack by a vendor*

**Solid waste disposal units should be covered when wet weather is imminent**

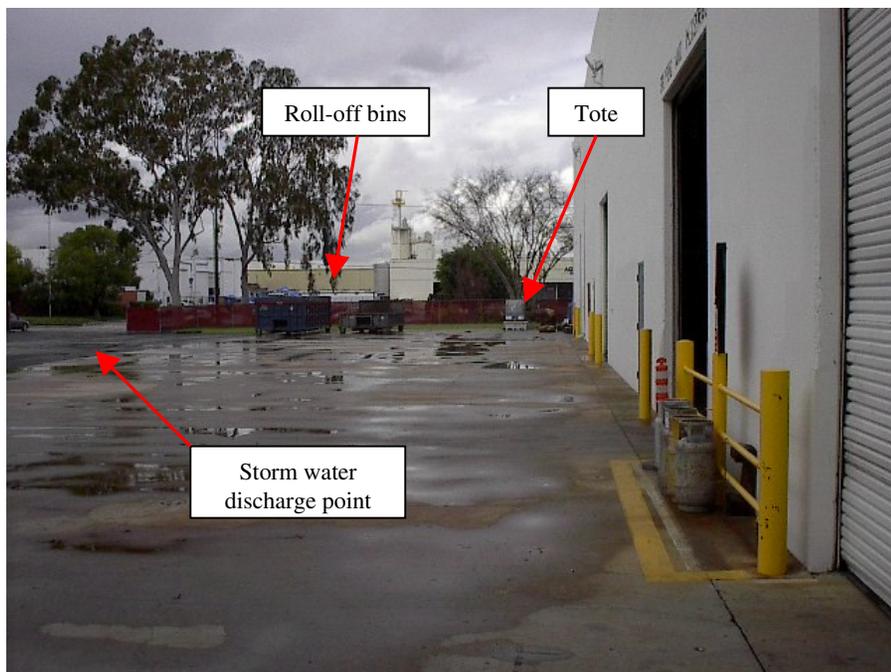


**Secondary containment should be provided for roll-off bins and dumpsters used for disposal of “wet” materials (engine parts, metal turnings, etc.), in addition to covering during wet weather**



*Machine oil leaking from two dumpsters was mobilized in storm water*

## Store waste materials away from storm water conveyance structures



*Roll-off bins, dumpsters, and totes adjacent to storm water discharge point*



*Close-up of roll-off bins, dumpsters, and totes*

**Oily parts and scrap should be stored inside or covered  
within secondary containment**



*Oily transmissions stored outside  
without cover or containment*

# In Conclusion

Tetra Tech inspectors agreed that the following “lessons learned” apply to the motor freight transportation and warehousing and are likely to carry over to other industrial segments as well:

- Facility personnel need to be aware that they are ultimately responsible for implementation of the SWPPP – having a corporate representative, consultant, or group collect samples or submit annual reports does not absolve facility personnel of responsibility for day to day implementation. Facilities cannot buy compliance or shift responsibility.
- Practices employed by outside vendors or contractors (e.g truck washing or maintenance) must be consistent with BMPs identified in the SWPPP or conversely, the SWPPP needs to include the BMPs employed by vendors/contractors.
- Management philosophy at a facility ultimately governs the success or lack thereof in implementing the SWPPP – the diligence with which BMPs are implemented appeared to be more of a factor than the number or type of BMPs listed in the SWPPP.