

Development and Implementation of an Industrial Facility Stormwater Pollution Prevention Program in New England

NEWEA 2015 Annual Conference – Technical Session 18 January 27, 2015



Introductions

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Presentation Outline

- 1) Program Background
- 2) Inventory List Development of Industrial Facilities
- 3) Is Industry Eligible for Coverage Under Multi-Sector General Permit?
- 4) Inspection Program
- 5) Facility Inspections
- 6) Inspection Results
- 7) Data Collection & Information Management Portal Overview
- 8) Transitioning Program to BWSC



Program Background 1972 Clean Water Act Multi-Sector General Permit (MSGP) Industrial Facility Stormwater **Pollution Prevention Program** (IFSPPP)



Consent Decree Requirements

- Develop Ongoing IFSPPP
- Submit IFSPPP for Approval within 180 days from CD
- Develop and Maintain Database



Milestone Dates

- Consent Decree Issued July 2012
- Inventory List January 27, 2013
- Initial Training 30 days after list
- Inspections 90% Completed by end of Year 2



EPA's 1972 Strategy

NPDES Program

- A. Point Source Pollution
 - 1. Wastewater

B. Non-Point Source Pollution

- 1. Stormwater Municipal (MS4)
- C. Comprehensive Watershed Management
 - 1. TMDLs



with for Clean

NPDES





What is the MSGP?

Multi-Sector General Permit (MSGP)

- Permittee (industrial facility) must: Initiate activities that are effective in improving and protecting stormwater quality
- Permittee's responsibility to: Interpret and implement the permit
- Certificate of No Exposure





Industrial facilities are required to obtain Stormwater Permit if...

- Facility has <u>point source</u> stormwater runoff associated with an industrial activity either discharging directly to:
 - Waters of the U.S.
 - Municipal Separate Storm Sewer System (MS4)
- AND either...
 - Primary SIC Code is regulated by the Industrial Stormwater Regulations
 - The North American Industry Classification System (NAICS) will eventually replace the SIC system. EPA provides conversion application
- OR...
 - Facility engages in one or more of the industrial activities identified by the EPA

Stormwater discharge associated with industrial activity means...

Any discharge from a stormwater conveyance system related to:

- Industrial Yards
- Manufacturing processing
- Raw materials storage
- Material Handling
- Refuse sites
- Immediate access roads & Rail Lines







These Areas include...

Storage and maintenance of equipment :

- Fleet maintenance
- Drydocks
- Material Handling

Storage areas for:

- Raw materials
- Intermediate and final products
- Tank Farms

Historical or "Legacy Exposure" industrial sites:

 Where significant materials remain and are exposed





IFSPPP Program Implementation Steps

- Distribute General Program Description Letter
- Distribute 3-Month Inspection Notification
- Perform Industrial Facility Inspections
- Review Inspection Results and QA/QC
- Issue Report with Follow-up Recommendations
- Commission Issues Industry Notification
- Industry Responsible for Preparing NOI or Certificate of No Exposure
- Re-inspect each Facility in Program Bi-Annually



2 Inventory List Development of Industrial Facilities



IFSPPP Inventory List

- Standard Industrial Classification (SIC Code)
- NAICS Association Starting Point
- MWRA IPP and Assessor's Data Added
- Each Record Geo-coded to Spatially Locate
- Geo-coded Records Loaded into the Facilities
 Feature Class in the Tracking Database



Initial Inventory List

- Data Sources
 - MWRA
 - Assessor
 - NAICS Association
 - BFD*
 - BRA*
 - BWSC*
 - City Clerk*
 - EPA*
- 1,760 Facilities







3 Is Industry Eligible for Coverage Under Multi-Sector General Permit?



What is covered under MSGP?

Multi-Sector General Permit (MSGP)

(Industrial Stormwater General Permit)

- 10 categories of industrial activity
- 29 "sectors" of industrial activity

Recommended Internet bookmark:

www.epa.gov/npdes/stormwater/msgp



10 Categories of Industrial Activity

- Category 1: All facilities subject to 40 CFR Parts 405-471
- Category 2: Heavy Manufacturing
 - Paper mills, chemical plants, petroleum refineries, and steel mills
- Category 3: Coal and mineral mining and oil / gas exploration Category 4: Hazardous waste treatment, storage, or disposal Category 5: Landfills, land application sites, and open dumps Category 6: Metal scrapyards, salvage yards, and junkyards
- Category 7: Steam electric power generating plants
- Category 8: Transportation facilities
 - Vehicle maintenance, equipment cleaning, or airport deicing operations
- Category 9: WWTPs treating domestic sewage (> 1 MGD)
- Category 10 Construction (Not Applicable SWPPP)
- Category 11: Light manufacturing
 - Food processing, printing and publishing, warehousing and storage

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29 Classified Sectors of Industrial Activity (Appendix D)

- A: Timber Products
- B: Paper Products
- C: Chemical Products
- D: Asphalt/Roofing
- E: Glass, Clay, Cement
- F: Primary Metals
- G: Metal Mining
- H: Coal Mines
- I: Oil and Gas
- J: Mineral Mining
- K: Hazardous Waste
- L: Landfills
- M: Auto Salvage Yards
- N: Scrap Recycling
- O: Steam Electric Facilities

- P: Land Transportation
- Q: Water Transportation
- R: Ship/Boat Building, Repair
- S: Air Transportation
- T: Treatment Works (WWTPs)
- U: Food Products
- V: Textile Mills
- W: Furniture and Fixtures
- X: Printing, Publishing
- Y: Rubber, Misc. Plastics
- Z: Leather Tanning/Finishing
- AA: Fabricated Metal Products
- AB: Transportation Equip.
- AC: Electronic, photo goods
- AD: Non-classified facilities



Boston's Top Five Industry Sectors Under IFSPPP

P: Land Transportation 507
X: Printing, Publishing 348
AC: Electronic, photo goods 136
U: Food Products 100
V: Textile Mills 94

Total Top Five Sectors = 1,185 Industries (67%)



4 Inspection Program

Commission has Authority to Conduct Inspections

"A. INSPECTION (Section 1 - Right of Access)

(a) Duly authorized representatives of the Commission may inspect the property or facilities of any user (including facilities under construction) to ascertain compliance with these Regulations or compliance with any permit issued pursuant to these Regulations..."



Prioritization of Industrial Inspections

Inspection Priority Levels High

- Have large amount of outdoor activities.
- Close to receiving waters / drainage systems

Medium

- Have a SWPPP but limited outdoor activities

Low

- Limited outdoor facilities
- Not closes to receiving waters / drainage systems

Note: High targeted for early inspections

Boston Industries Priority: High – 276 Medium – 654 Low – 830

155 Southampton Street

Sector P: Land Transportation and Warehousing

"Medium Level Facility"



Training Requirement

- Annual Refresher Training of Inspectors
- Training of New Inspectors within 30 days of Assignment to Perform Inspections



Field Inspection Process & Checklist

- An on-site inspection conducted at each facility
- Standard Operating Procedures (SOP) were developed to help guide the inspection process
- Working in partnership with the industry to address stormwater pollution



Field Inspection Process & Checklist

- Field Crews work off the assigned work lists.
- List facilities on the weekly location notification lists
- Field Crews follow a defined inspection process and checklist
- Upload inspections each day to portal
- Have hardcopy inspection forms available if necessary
- Ask Permission & Take photographs of all pertinent items
- Take detailed notes of issues and why letter
 recommendations
 Stantec

At the Heart of Each Inspection

Stormwater Pollution Prevention Plan (5 parts)

- Site Plan
- Stormwater Mgt. Plan
- Spill prevention & Response
- Prev. Maintenance & Housekeeping
- Employee training



EPA Storm Water Management For Industrial Activities

> Developing Pollution Prevention Plans And Best Management Practices

SUMMARY GUIDANCE







5 Facility Inspections



Activities Polluting Stormwater

Industrial Facility Inspections

- Loading and unloading operations
- Outdoor storage
- Outdoor process activities
- Dust or particulate generating processes
- Illicit connections and non-stormwater discharges
- Waste management

Some facilities may require no action or best management practices implemented where none exist



What to look for during an inspection





Exposure of potential pollutants (e.g., core batteries)





Supplemental Site Sketches





Inspection Application

iPad inspection application :

- Drop down menus for data entry
- Limit free form text
- Field training

Application "sync'd" with tracking database each evening through:

- wifi connection or
- tablet's 4G network

Crews sync their iPad on daily basis



Post Inspection/Conclusions

Post Inspection

- Review information entered into iPad application for accuracy and that photo's confirm text
- Identified contact person met with and verify contact person for future correspondence and site visits
- Follow-up letter recommendation and describe findings and rationale why
- Upload inspection report to portal



Post Inspection/Follow-up

Quality control review

- Inspection report reviewed for completeness
- Contact to verify information.
- Follow-up Edits may be made to correct or revise information .



Letter Recommendations:

Letter 0: MSGP Does Not Apply

- Facility has moved or went out of business
- Facility is a Residence, Office Space or Commercial Establishment - No Industrial Activity
- Covered Under Another Permit

Letter 1:

- MSGP Applies with none or only minor issues
 Letter 2:
- MSGP Applies with more serious deficiencies
 Letter 3:
- Facility May Apply for Certificate of No Exposure
 Letter 4:
- MSGP Applies & Water Quality Violations Stantec

SWPPP Best Management Practices (BMP)

Industrial Facility is responsible for:

- Development of a written stormwater pollution prevention plan
- Implementation of control measures
- Submittal of a request for permit coverage
- Site specific BMPs



SWPP Best Management Practices (BMP) FACT SHEET SERIES

EPA Industrial Stormwater Fact Sheet Series available for each sector

INDUSTRIAL STORMWATER



Sector P: Motor Freight Transportation Facilities, Passeng Facilities, Petroleum Bulk Oil Stations and Terminals, Rail Transportation Facilities, and United States Postal Service Transportation Facilities

What is the NPDES stormwater permitting program for industrial activity?

Activities, such as material handling and storage, equipment maintenance and cleaning, industrial processing or other operations that occur at industrial facilities are often exposed to stormwater. The runoff from these areas may discharge pollutants directly into nearby waterbodies or indirectly via storm sewer systems, thereby degrading water quality.

In 1990, the U.S. Environmental Protection Agency (EPA) developed permitting regulations under the National Pollutant Discharge Elimination System (NPDES) to control stormwater discharges associated with eleven categories of industrial activity. As a result, NPDES permitting authorities, which may be either EPA or a state environmental agency, issue stormwater permits to control runoff from these industrial facilities.

What types of industrial facilities are required to obtain permit coverage?

This fact sheet specifically discusses stormwater discharges from land transportation and warehousing activities as defined by Standard Industrial Classification (SIC) Major Groups 40, 41, 42, 43, and SIC 5171. Facilities and products in this group fall under the following categories, all of which require coverage under an industrial stormwater permit:

- Motor freight transportation facilities (SIC 4212-4231)
- Passenger transportation facilities (SIC 4111-4173)
- Petroleum bulk oil stations and terminals (SIC 5171)
- Rail transportation facilities (SIC 4011, 4013)
- United States Postal Service facilities (SIC 4311)

Vehicle and equipment maintenance is a broad term used to include the following activities

- Vehicle and equipment fluid changes
- Mechanical repairs
- Parts cleaning
- Sanding
- Refinishing
- Painting and/or fueling
- Locomotive sanding (loading sand for traction)
- Storage of vehicles and equipment waiting for repair or maintenance
- Storage of the related materials and waste materials, such as oil, fuel, batteries, tires, or oil filters

http://water.epa.gov/polwaste/npdes/stormwater/Industrial-Fact-Sheet-Series-for-Activities-Covered-by-EPAs-MSGP.cfm


6 Inspection Results



Examples of Industries Inspected

Types:

- Auto Salvage Yards
- Transportation & Warehousing
- Printing & Publishing
- Food Related Activities
- Mineral Processing Facilities
- Municipal Facilities
- Residential Businesses
- Corporate Offices



Auto Salvage Yards





Fleet maintenance and storage exposed while employee parking not exposed.

















Printing & Publishing



Uncovered loading docks with central storm drain is asking for trouble!



Printing & Publishing





Printing & Publishing







Food Related Facilities





Product Delivery, Processing and Chemical Storage Operations.



Food Related Facilities



Containers and Wash down Operations.



Mineral Processing Facilities



Product Delivery, Storage, Processing, Fueling and Fleet Maintenance Operations.



Mineral Processing Facilities



BMP Lagoons to Capture Runoff for Onsite Treatment



Municipal Operations





Municipal Operations



Covered Fueling Operations



Businesses Out of Residences



Office or Mailing Address





Office Space

Commercial Space

Statistics of Industries

Inspections Completed By Category:

Category	Category Description	Count of Facilities by Category
Category 1	All facilities subject to 40 CFR Parts 405-471	0
Category 2	Heavy Manufacturing	149
Category 3	Coal and mineral mining and oil / gas exploration	3
Category 4	Hazardous waste treatment, storage, or disposal	0
Category 5	Landfills, land application sites, and open dumps	0
Category 6	Metal scrapyards, salvage yards, and junkyards	14
Category 7	Steam electric power generating plants	0
Category 8	Transportation Facilities	475
Category 9	WWTPs treating domestic sewage (> 1 MGD)	0
Category 11	Light manufacturing	740
TRI	Toxic Release Inventory	46
None	No Category Description Available	91
	Total Inspections	1,518



Facility Inventory Database

Original Master Inventory Database = 1,760 Facilities

- New Facilities added to Database = 87
- Current Master Inventory Database = 1,847
 Facilities
- Removed Facilities = 140
- Retired Facilities = 189
- Active Facilities = 1,518 Facilities (note: includes 48 facilities still awaiting inspection)
- Active Facilities (Excluding Letter 0) = 464 (note: includes 48 facilities still awaiting inspection)



7 Data Collection & Information Management Portal Overview



Information Management

Portal Overview:

- Web-based portal
- Assists in managing the field data collection
- Portal serves as the interface to the database
- Promotes information exchange
- Near real time status
 tracking
- Report generation
- Integrated with CASSWORKS



BWSC Industrial Facility Pollution Prevention Program Portal

Signed in: ray.rush@stantec.com [Sign Out]

Facility Information Background Information Stormwater Pollution Prevention Plan/Spill Plan Review SWPPP & Site Maps Spill Prevention & Response Plan Monitoring Site Inspection Preventive Maintenance / Good Housekeeping Non-Stormwater Discharges Preliminary Results Sketch Photos

Se IFSPPP Portal

Facilities

Inspections Map

Admin

	B.	
C. Preliminary Results (answer	in the opinion of the inspector)	
Pollutant Potential (low=very little, if any exp	osed outdoor activity/chemicals; medium=some exposed s; high=exposed outdoor activity/chemicals with no secondary	
🕞 High 💿 Medium 💿 Low		
	ps should include: (Letter 1= none or only minor issues; Letter noted; Letter 3=No Exposure, Letter 4=water quality violation,	
© Letter 1 ⊚ Letter 2 ⊚ Letter 3 ⊚ Let	etter 4	
Preliminary Notes:		
No chemical or solvents stored outside.	ATAT LTE 5:33 PM	99%
	Main Inspection Form	Completed
	Site Inspection	
Sketch Mana	ge A. PREVENTATIVE MAINTENANCE / GOOD HOUSEKEEPING I. Tanks / Other Containers	
A sketch is not assigned to this inspection.	1a. Do they have chemicals stored in tanks or barrels that are exposed?	
Dhataa	Yes No N/A Unknown	
Photos	1b. Select the applicable types of containers:	
	Above ground tanks Below ground tanks Barrels Buckets	
	1c. Select the types of chemicals stored:	
	Hydraulic Fluid Fuel Oil Paint Other	
	1d. Do ALL containers have secondary containment?	
	Yes No N/A Unknown	
	1e. Is there evidence of leaks from the containers?	
	Yes No N/A Unknown 1f. Are ALL containers properly labeled with their contents?	
	Yes No N/A Unknown	
	2. Dumpster or Trash Compactors	
	2a. Are dumpsters/trash compactors covered to limit exposure? Yes No N/A Unknown	
	2b. Is there evidence of leaks from the dumpsters/trash compactors?	
	Yes No N/A Unknown	
	3. Vehicle & Equipment Storage or Repair	
	3. Are vehicles or equipment located outside with the risk of exposure?	-
	Form Photos	

Project Description

To manage an Industrial **Facility Pollution Prevention** Program, we implemented tablet-based offline data collection. Data was sent to a database-driven web portal for data review, storage, and reporting.

Key Features

- File Management
- · Data Tracking and Reporting
- Tablet Data Collection
- Web GIS

Software

- ASP.Net 4.0 (C#.Net)
- JavaScript •
- ArcGIS Server, JavaScript API
- SQL Server 2008 R2

User Community

- Boston Water and Sewer Commission (BWSC)
- Stantec
- Subcontractors
- State and Federal Agencies

Dates

2013 to present





Legend



Manhole



- Sanitary
- Storm
- O Unknown

Outfall









Map Admin -

Signed in: matt.wagoner@stantec.com [Sign Out]

Worklists Status

Click the Worklist name to show all facilities in that Worklist on the Facilities page.

Worklist 🔺	Team 🕴	Status 🔶	Due Date 💠	Total Facilities	Awaiting 🕴	Sent 🔶	Completed \$	Last Activity
2013-01	SDE	WORKING	7/5/2013	24	0	0	24	7/23/2013
2013-02	SDE	WORKING	7/5/2013	22	0	0	22	8/15/2013
2013-03	SDE	COMPLETE	7/5/2013	21	0	0	21	7/2/2013
2013-04	SDE	COMPLETE	7/5/2013	21	0	0	21	7/2/2013
2013-05	VHB	WORKING	8/22/2013	25	0	0	25	8/13/2013
2013-06	VHB	WORKING	8/22/2013	25	0	0	25	10/29/2014
2013-07	VHB	WORKING	8/22/2013	25	0	0	25	7/15/2014
2013-08	VHB	WORKING	8/22/2013	25	0	0	25	8/22/2013
2013-09	SDE	WORKING	8/22/2013	24	0	0	24	10/7/2014
2013-10	SDE	WORKING	8/22/2013	25	0	0	25	9/25/2013

Showing 1 to 10 of 75 entries

← Previous 1 2 3 4 5 Next →





Facilities

Inspection -Мар Admin - Signed in: matt.wagoner@stantec.com [Sign Out]

Facilities

Click the Facility Id to view the Facility Details. Click the map link to view the site on a map.	Worklist:	- select -	~	
---	-----------	------------	----------	--

✓ records per page 10

Search entire table: 2013-03

Id	Name	Compliance Status	Inspected	Inspection Date	Worklist	Map
1375			Yes	6/5/2013	2013-03	map
1410	American Nut & Chocolate Inc		Yes	6/5/2013	2013-03	map
1411	London Veal Company Inc		Yes	6/5/2013	2013-03	map
1412	Mutual Beef Co Inc		Yes	6/5/2013	2013-03	map
1414	Chinese Spaghetti Factory Inc		Yes	7/2/2013	2013-03	map
1426	Bombadier Transportation		Yes	7/2/2013	2013-03	map
1525	Airgas - East Inc		Yes	6/6/2013	2013-03	map
1526	Aggregate Inds - Northeast Reg		Yes	6/11/2013	2013-03	map
1536	M A Peacard Co		Yes	6/6/2013	2013-03	map
1537	City Fresh Foods Inc		Yes	6/6/2013	2013-03	map





Facilities Inspection -

Map

Admin -

Compliance Status:

Phone: 617-567-2630

Title: Branch Manager

Letter Status:

Show on Map

Inspection Priority: Medium

Signed in: matt.wagoner@stantec.com [Sign Out]

Facilities / 2186

Company Name: U-Haul Co Of Massachusetts Facility ID: 2186 Address: 985 Massachusetts Ave, Boston Contact Person: George White Program Status: Active Worklist: 2013-02 Industrial Activity: Motor Freight Transportation and Warehousing SIC Code: 4225 Note: Site map download: Facility_2186.pdf

Activity History

Activity Id	Regulatory Type 🔶	Classification \$	Туре 🕴	Status 🕴	Activity Date	Modified On
1672	INS	ROU	LTR		3/11/2013	8/22/2013
2896	INS	ROU	LTR		5/10/2013	8/22/2013
4914	ENF	ENF	LTR		10/11/2013	1/8/2014
4933	ENF	ENF	LTR		10/29/2013	1/8/2014
52	INS	ROU	INS	CMP	6/12/2013	2/4/2014
5418	INS	ROU	VIS		10/28/2013	3/27/2014





Facility Information	>
Background Information	>
Stormwater Pollution Preven- tion Plan/Spill Plan Review	>
SWPPP & Site Maps	>
Spill Prevention & Response Plan	>
Monitoring	2
Site Inspection	>
Preventive Maintenance / Good Housekeeping	>
Non-Stormwater Discharges	>
Preliminary Results	?
Sketch	>
Photos	>

Facility Information

Company Name: U-Haul Co Of Massachusetts Address: 985 Massachusetts Ave, Boston Contact Person: George White Facility ID: 2186 Industrial Activity: Motor Freight Transportation and Warehousing Date: 6/12/2013 Phone: 617-567-2630 Title: Branch Manager Inspection Priority: Medium SIC Code: 4225

Inspector Ab

Background Information

1. Does the facility have any materials, chemicals or industrial activity that are exposed?

⊖ Yes	O NO	⊖ N/A	OUnknown	
2. Does	the site r	equire a s	ite inspection?	
Yes	O No	⊖ N/A	O Unknown	
3. If no,	why not?			
4. Does	the facilit	ty have ar	existing permit?	
⊖ Yes	No	0 N/A	O Unknown	
5. If so,	what type	e (NPDES	Stormwater, MWRA Sewer Use)?	
6. Does	the facilit	ty have a	certificate of No Exposure?	
O Yes	No	O N/A	O Unknown	

Background Notes:

Contact owner George emichineki



Site Inspection

Facility Information	2
Background Information	>
Stormwater Pollution Preven- tion Plan/Spill Plan Review	>
SWPPP & Site Maps	>
Spill Prevention & Response Plan	Σ
Monitoring	5
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Site Inspection	>
and a second	>
Site Inspection Preventive Maintenance / Good	>
Site Inspection Preventive Maintenance / Good Housekeeping	
Site Inspection Preventive Maintenance / Good Housekeeping Non-Stormwater Discharges	

A. PREVENTATIVE MAINTENANCE / GOOD HOUSEKEEPING

1. Tanks / Other Containers 1a. Do they have chemicals stored in tanks or barrels that are exposed? ○ Yes ● No ○ N/A ○ Unknown 1b. Select the applicable types of containers: Above ground tanks 🗌 Below ground tanks 🔽 Barrels 🗌 Buckets 1c. Select the types of chemicals stored: Hydraulic Fluid Fuel 🗸 Oil Paint 🖌 Other 1d. Do ALL containers have secondary containment? 1e. Is there evidence of leaks from the containers? ○ Yes ● No ○ N/A ○ Unknown 1f. Are ALL containers properly labeled with their contents? Dumpster or Trash Compactors 2a. Are dumpsters/trash compactors covered to limit exposure? ○ Yes ● No ○ N/A ○ Unknown 2b. Is there evidence of leaks from the dumpsters/trash compactors? ○ Yes ● No ○ N/A ○ Unknown 3. Vehicle & Equipment Storage or Repair

3a. Are vehicles or equipment located outside with the risk of exposure?

3b.What activities take place outside with risk of exposure?

Parking Develing Washing Repair Other





8 Transitioning Program to BWSC



Transition Activities

Assist Commission to Incorporate into Operations:

- Database Transfer
- Portal Application
- Training Requirements
- Annual Updating of the Industrial Facility Inventory



Questions? And Discussion



