CITY OF KELSO
Public Works Department
203 S. Pacific Ave., Suite 205
PO Box 819
Kelso, WA 98626

Engineering Phone 360-423-6590
Fax 360-423-6591
Operations Phone 360-423-5730
Fax 360-423-8196

March 30, 2012

Department of Ecology
Water Quality Program
Municipal Stormwater Permits
PO Box 47696
Olympia, WA 98504-7696

RE: 2011 Annual Report for Phase II NPDES Municipal Permit

Dear Sir/Madam:

The City of Kelso is permitted under the NPDES Western Washington Phase II Municipal Stormwater Permit Number WAR045010. One of the requirements of the permit (Section S9) is to submit by March 31, 2012 the 2011 Annual Report. The Kelso 2011 Annual Report submittal includes the annual report forms and the City's Stormwater Management Program (SWMP). An electronic copy of this Annual Report was sent out by email today to PH2_WAnnRpt@ecy.wa.gov.

If you have any questions, please contact me at 360-423-6590.

Sincerely,

Van McKay

Van McKay, P.E.
Senior Engineer

Attachments: Kelso 2011 Annual Report
SWMP

I. Permittee Information

Permittee Name City of Kelso	**Permittee Coverage Number** WAR045010
Contact Name Van McKay, P.E.	**Phone Number** 360-423-6590
Mailing Address P.O. Box 819	
City Kelso	**State** **Zip + 4** WA 98626-0078
Email Adddress vmckay@kelso.gov	

II. Regulated Small MS4 Location

Jurisdiction City of Kelso	***Entity Type: Check the box that applies*** **County**	**City/Town**	**Other**
		X	
Major Receiving Water(s) Cowlitz and Coweeman Rivers			

III. Relying on another Governmental Entity

If you are relying on another governmental entity to satisfy one or more of the permit obligations, list the entity and briefly describe the permit obligation(s) they are implementing on your behalf below. ***Attach a copy of your agreement with the other entity to provide additional detail.***

Name of Entity:	**Permit Obligation(s):**

IV. Certification

All annual reports must be signed and certified by the responsible official(s) of permittee or co-permittees. Please print and sign this page of the reporting form and mail it (with an original signature) to Ecology at the address noted below. An electronic signature will not suffice.

I certify under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that Qualified Personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for willful violations.

Name		Title	City Manager	Date	
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	

I. Permittee Information

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City of Kelso	WAR045010
Contact Name	**Phone Number**
Van McKay, P.E.	360-423-6590
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P.O. Box 819	
City	**State** / **Zip + 4**
Kelso	WA / 98626-0078
Email Adddress	
vmckay@kelso.gov	

II. Regulated Small MS4 Location

Jurisdiction	*Entity Type: Check the box that applies*		
	County	**City/Town**	**Other**
City of Kelso		X	
Major Receiving Water(s)			
Cowlitz and Coweeman Rivers			

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Name	[signature]	Title	City Manager	Date	3/30/2012
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	

VI. Status Report Covering Calendar Yr: 2011 **Jurisdiction Name:** City of Kelso

PLEASE indicate reporting year and your jurisdiction in Line 1, above.

PLEASE refer to the INSTRUCTIONS tab for assistance filling out this table.

NOTE: For clarification on how to answer questions, place cursor over cells with red flags.
NOTE: Please answer all questions.
PLEASE review your work for completeness and accuracy. Save this worksheet as you go!

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
1.	**Attached** annual written update of Permittee's Stormwater Management Program (SWMP), including applicable requirements under S5.A.2 and S9?	Y		The SWMP was updated to include the IDDE Program and the O&M Program. Copies of the documents can be found at http://stormwater.kelso.gov.	1) City of Kelso Phase II Municipal Stormwater Management Program (SWMP) 2) IDDE Program 3) O&M Program
2.	**Attached** a copy of any annexations, incorporations or boundary changes resulting in an increase or decrease in the Permittee's geographic area of permit coverage during the reporting period, and implications for the SWMP as per S9.E.3?	NA		No annexations within the City of Kelso in 2011	
3.	Implemented an ongoing program for gathering, tracking, maintaining, and using information to evaluate SWMP development, implementation and permit compliance and to set priorities? (S5.A.3)	Y			
4.	Began tracking costs or estimated costs of the development and implementation of the SWMP? (*Required* no later than January 1, 2009, S5.A.3.a)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
5.	SWMP includes an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff and other employees of the Permittee? (*Required to begin* by February 15, 2009, S5.C.1)	Y			
6.	Distributed appropriate information to target audiences identified in the area served by the MS4? (*Required to begin* by February 15, 2009, S5.C.1.a)	Y			
7.	Tracked the types of public education and outreach activities implemented. (*Required to begin* by February 15, 2009, S5.C.1.c)	Y			
7b.	Number of activities implemented:		5		
8.	Measured the understanding and adoption of the targeted behaviors among at least one targeted audience in at least one subject area. (*Required to begin* by February 15, 2009, S5.C.1.b)	Y			
9.	Provided opportunities for the public to participate in the decision making processes involving the development, implementation and updates of the Permittee's SWMP? (*Required* by February 15, 2008, S5.C.2.a)	Y			
10.	Developed and implemented a process for public involvement and consideration of public comments on the SWMP? (*Required* by February 15, 2008, S5.C.2.a)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
11.	Made the most current version of the SWMP available to the public. (S5.C.2.b)	Y			
12.	Posted the SWMP and latest annual report on your website. (S5.C.2.b)	Y			
12b.	NOTE website address in *Attachment* field:				http://stormwater.kelso.gov
13.	Initiated or implemented an ongoing program to detect and remove illicit connections and illegal discharges into the Permittee's MS4? (*Required* August 19, 2011, S5.C.3)	Y			
14.	Developed and currently maintain a map of your MS4? (*Required* by February 16, 2011, S5.C.3.a)	Y			
14b.	Initiated a program to develop and maintain a map of all connections to the MS4 authorized or allowed by the Permittee after the Permit effective date? (S5.C.3.a.ii)	Y			
15.	Map shows the location of all known municipal separate storm sewer outfalls, receiving waters and structural stormwater BMPs owned, operated, or maintained by the Permittee? (*Required* by February 16, 2011, S5.C.3.a.i)	Y			
16.	Map shows all storm sewer outfalls with a 24 inch nominal diameter or larger, or an equivalent cross-sectional area for non-pipe systems and includes tributary conveyances, associated drainage areas and land use? (*Required* by February 16, 2011, S5.C.3.a.i)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
17.	Map shows geographic areas served by the Permittee's MS4 that do not discharge stormwater to surface waters? (*Required* by February 16, 2011, S5.C.3.a.iii)	Y			
18.	Map has been made available upon request? (S5.C.3.a.iv)	Y			
19.	Developed and implemented regulatory actions necessary to effectively prohibit non-stormwater, illicit discharges into the Permittee's MS4? (*Required* by August 15, 2009, S5.C.3.b)	Y			
20.	Developed and implemented an ongoing program to detect and address non-stormwater illicit discharges, including spills, and illicit connections into the Permittee's MS4? (*Required* by August 19, 2011, S5.C.3.c)	Y			
21.	Developed procedures for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in illicit discharges, including spills? (*Required* by August 19, 2011, S5.C.3.c.i)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
22.	Implemented field assessment activities, including visual inspection of priority outfalls identified during dry weather, and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges. (*Required* by August 19, 2011, S5.C.3.c.ii)	N		Performed all except 2011 dry weather priority outfall inspection.	
23.	Prioritized receiving waters for visual inspection? (*Required* by February 16, 2010, S5.C.3.c.ii)	Y			
24.	Conducted field assessments for three high priority water bodies? (*Required* by February 16, 2011, S5.C.3.c.ii)	Y			
25.	Conducted field assessments on at least one high priority water body? (*Required* annually **after** February 16, 2011, S5.C.3.c.ii)	Y			
26.	Developed and implemented procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee? (*Required* by August 19, 2011, S5.C.3.c.iii)	Y			
27.	Developed and implemented procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures? (*Required* by August 19, 2011, S5.C.3.c.iv)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
28.	Developed and implemented procedures for removing the source of the discharge, including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated? (*Required* by August 19, 2011, S5.C.3.c.v.)	Y			
29.	Informed public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste? (*Required* by August 19, 2011, S5.C.3.d)	Y			
30.	Distributed appropriate information to target audiences identified pursuant to S5.C.1? (*Required* by August 19, 2011, S5.C.3.d.i)				
31.	Publicized a hotline or other local telephone number for public reporting of spills and other illicit discharges? (*Required* by February 15, 2009, S5.C.3.d.ii)	Y			
31b.	Number of hotline calls received:		8		
31c.	Number of follow-up actions taken in response to calls:		8		
32	Maintained a hotline or other reporting number for public reporting of illicit discharges, including spills? (*Required* by February 15, 2009, S5.C.3.d.ii)	Y			
32b.	NOTE hotline number in *Comments* field			Kelso Hotline: 423-6590; Longview/Kelso Hotline: 578-0900.	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
33	Tracked the number of illicit discharges, including spills, identified? (*Required* by August 19, 2011, S5.C.3.e)	Y			
33b.	Number of illicit discharges identified:		5		
34	Tracked the number of inspections made for illicit connections? (*Required* by August 19, 2011, S5.C.3.e)	Y			
34b.	Number of inspections:		2		
35	Received feedback from IDDE public education efforts? (*Required* by August 19, 2011, S5.C.3.e)	N		No feedback received.	
36	**Attached** report on IDDE public education efforts? (*Required* by August 19, 2011, S5.C.3.d, S5.C.3.e)	NA		A report is not required.	
37	Municipal field staff responsible for identification, investigation, termination, cleanup, and reporting of illicit discharges, improper disposal and illicit connections are trained to conduct these activities? (*Required* by August 15, 2009, S5.C.3.f.i)	Y			
37b.	Number of trainings provided:		1		
37c.	Number of staff trained:		1		
38	Provided follow-up training as needed to address changes in procedures, techniques or requirements? (*Required* by August 15, 2009, S5.C.3.f.i)	Y			
38b.	Number of trainings provided:		1		
38c.	Number of staff trained:		1		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
39	Developed and implemented an ongoing training program on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/ connection for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system? (*Required* by February 16, 2010, S5.C.3.f.ii.)	Y			
39b.	Number of trainings provided:		7		
39c.	Number of staff trained:		35		
40	Developed, implemented and enforced a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment and construction site activities? *(Required* by February 16, 2010, S5.C.4)	Y			
41	Applied stormwater runoff program to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale? *(Required* by February 16, 2010, S5.C.4)	Y			
42	Applied stormwater runoff program to private and public development, including roads? *(Required* by February 16, 2010, S5.C.4)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
43	Applied the Technical Thresholds in Appendix 1 to all sites 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale? *(Required* by February 16, 2010, S5.C.4)	Y			
44	Adopted and implemented regulatory mechanism (such as an ordinance) necessary to address run-off from new development, redevelopment and construction site activities? (*Required* by February 16, 2010, S5.C.4.a)	Y			
45	Retained existing local requirements to apply stormwater controls at smaller sites or at lower thresholds than required pursuant to S5.C.4? (S5.A.4)	Y			
46	The ordinance or other enforceable mechanism includes the minimum requirements, technical thresholds, and definitions in Appendix 1 (or an equivalent approved by Ecology under the NPDES Phase I Municipal Stormwater Permit) for new development, redevelopment, and construction sites? (*Required* by February 16, 2010, S5.C.4.a.i)	Y			
47	The ordinance or other enforceable mechanism includes exceptions and variance criteria equivalent to those in Appendix 1? (*Required* by February 16, 2010, S5.C.4.a.i., and Section 6 of Appendix 1)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
48	Were exceptions or variances to the minimum requirements in Appendix 1 granted? (*Required* by February 16, 2010, S5.C.4.a.i., and Section 6 of Appendix 1)	N			
48b.	If so, how many were granted?		0		
49	The ordinance or other enforceable mechanism includes a site planning process and BMP selection and design criteria that, when used to implement the minimum requirements in Appendix 1 (or equivalent approved by Ecology under the Phase I Permit) will protect water quality, reduce the discharge of pollutants to the maximum extent practicable and satisfy the State requirement under Chapter 90.48 RCW to apply all known, available and reasonable methods of prevention, control and treatment (AKART) prior to discharge? *(Required* by February 16, 2010, S5.C.4.a.ii)	Y			
49b.	Cite documentation to meet this requirement in *Attachment* field:	y			See Ordinance No. 10-3727 at http://stormwater.kelso.gov
50	The ordinance or other enforceable mechanism provides the legal authority, through the approval process for new development, to inspect private stormwater facilities that discharge to the Permittee's MS4? (*Required* by February 16, 2010, S5.C.4.a.iii)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
51	The ordinance or other enforceable mechanism allows non-structural preventive actions and source reduction approaches such as Low Impact Development (LID) Techniques to minimize the creation of impervious surfaces and minimize the disturbance of native soils and vegetation? (*Required* by February 16, 2010, S5.C.4.a.iv)	Y			
52	If the ordinance or regulatory mechanism allows construction sites to apply the **Erosivity Waiver** in Appendix 1, Minimum Requirement #2, does it include appropriate, escalating enforcement sanctions for construction sites that provide notice to the Permittee of their intention to apply the waiver but do not meet the requirements (including timeframe restrictions, limits on activities that result in non-stormwater discharges, and implementation of appropriate BMPs to prevent violations of water quality standards) to qualify for the waiver? (If waiver is allowed, the qualification is *required* by February 16, 2010, S5.C.4.a.v)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
53	Developed and implemented a permitting process to address runoff from new development, redevelopment and construction site activities with plan review, inspection, and enforcement capability? *(Required* by February 16, 2010, S5.C.4.b)	Y			
54	Applied permitting process to all sites that disturb a land area 1 acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale? (*Required* by February 16, 2010, S5.C.4.b)	Y			
55	Reviewed **Stormwater Site Plans** for new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.b.i)	NA		No projects over 1 acre.	
55b.	Number of site plans reviewed during the reporting period:		0		
56	Inspected, prior to clearing and construction, all known development sites that have a high potential for sediment transport as determined through plan review based on definitions and requirements in Appendix 7 **Determining Construction Site Sediment Potential**? (*Required* by February 16, 2010, S5.C.4.b.ii)	NA			
56b.	Number of qualifying sites inspected prior to clearing and construction during the reporting period:		0		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
57	Inspected construction-phase stormwater controls at all known permitted development sites during construction to verify proper installation and maintenance of required erosion and sediment controls? (*Required* by February 16, 2010, S5.C.4.b.iii)	NA			
57b.	Number of sites inspected during the construction phase for the reporting period:		0		
58	Enforced as necessary based on the inspection at new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.b.iii)	NA			
58b.	Number of enforcement actions taken during the reporting period:		0		
59	Inspected qualifying permitted development sites upon completion of construction and prior to final approval or occupancy to ensure proper installation of permanent stormwater controls such as stormwater facilities and structural BMPs? (*Required* by February 16, 2010, S5.C.4.b.iv and v)	NA			
59b.	Number of qualifying sites known during the reporting period:		0		
59c.	Number of qualifying sites inspected during the reporting period:		0		
60	Verified a maintenance plan is completed and responsibility for maintenance is assigned for qualifying projects? (*Required* by February 16, 2010, S5.C.4.b.iv)	NA			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
61	Enforced regulations as necessary based on the inspection? (*Required* by February 16, 2010, S5.C.4.b.iv)	NA			
61b.	Number of enforcement actions taken during the reporting period:		0		
62	Developed and implemented an enforcement strategy to respond to issues of non-compliance with the regulations for qualifying projects? (*Required* by February 16, 2010, S5.C.4.b.vi)	Y			
63	Did the Permittee choose to allow construction sites to apply the **Erosivity Waiver** in Appendix 1, Minimum Requirement #2? (S5.C.4.b.vii)	NA			
63b.	If yes, how many waivers were allowed ?		0		
64	Developed and implemented a long-term operation and maintenance (O&M) program for post-construction stormwater facilities and BMPs? (*Required* by February 16, 2010, S5.C.4.c)	Y			
65	Adopted an ordinance or other regulatory mechanism that clearly identifies the party responsible for maintenance, requires inspection of facilities and establishes enforcement procedures? (*Required* by February 16, 2010, S5.C.4.c.i)	Y			
66	Inspected post-construction stormwater controls, including structural BMPs, at new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.c)	NA			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
66b.	Number of sites inspected during the reporting period:		0		
66c.	Number of structural BMPs inspected during the reporting period:		0		
66d.	Number of enforcement actions taken during the reporting period:		0		
67	Established maintenance standards that are as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the **2005 Stormwater Management Manual for Western Washington**? (*Required* by February 16, 2010, S5.C.4.c.ii)	Y			
68	Performed timely maintenance as per S5.C.4.c.ii? *(Required* by February 16, 2010, S5.C.4.c.ii)	NA			
68b.	**Attached** documentation of any maintenance delays. *(Required* by February 16, 2010, S5.C.4.c.ii)	NA			
69	Established program to annually inspect all stormwater treatment and flow control facilities (other than catch basins) permitted by the Permittee according to S5.C.4.b. unless there are maintenance records to justify a different frequency? (*Required* by February 16, 2010, S5.C.4.c.iii)	Y			
70	If using reduced inspection frequency, **Attached** documentation as per S5.C.4.c.iii? *(Required* by February 16, 2010, S5.C.4.c.iii)	NA			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
71	Inspected all new stormwater treatment and flow control facilities owned or operated, including catch basins, for new residential developments that are a part of a larger common plan of development or sale, every 6 months during the period of heaviest house construction (i.e., 1 to 2 years following subdivision approval) to identify maintenance needs and enforce compliance with maintenance standards as needed? (*Required* by February 16, 2010, S5.C.4.c.iv)	NA			
71b.	Number of facilities inspected during the reporting period:		0		
72	Implemented a procedure for keeping records of inspections and enforcement actions by staff, including inspection reports, warning letters, notices of violations, other enforcement records, maintenance inspections and maintenance activities? (*Required* by February 16, 2010, S5.C.4.d)	Y		(What is recording procedure?)	
73	Provided copies of the **Notice of Intent for Construction Activity** and **Notice of Intent for Industrial Activity** to representatives of proposed new development and redevelopment? (S5.C.4.e)	Y			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
74	All staff responsible for implementing the program to control stormwater runoff from new development, redevelopment, and construction sites, including permitting, plan review, construction site inspections, and enforcement were trained to conduct these activities? (*Required* by February 16, 2010, S5.C.4.f)	Y			
74b.	Number of trainings provided:		1		
74c.	Number of staff trained:		1		
75	Developed and implemented an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations? (*Required* by February 16, 2010, S5.C.5)	Y			
76	Adopted maintenance standards as protective, or more protective, of facility function as those specified in Chapter 4 of Volume V of the 2005 *Stormwater Management Manual for Western Washington*? (*Required* by February 16, 2010, S5.C.5.a)	Y			
77	Performed timely maintenance as per S5.C.5.a.ii? *(Required* by February 16, 2010, S5.C.5.a.ii)	Y			
77b.	**Attached** documentation of any maintenance delays. *(Required* by February 16, 2010, S5.C.5.a.ii)	NA			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
78	Established a program to annually inspect and maintained all stormwater treatment and flow control facilities (other than catch basins)? (*Required* by February 16, 2010, S5.C.5.c.iii)	Y			
78b.	Number of known facilities:		6		
78c.	Number of facilities inspected during the reporting period:		5		
79	If using reduced inspection frequency, **Attached** documentation as per S5.C.5.a.ii? *(Required* by February 16, 2010, S5.C.5.b)	NA			
80	Conducted spot checks of stormwater facilities after major storms? *(Required* by February 16, 2010, S5.C.5.c)	Y			
80b.	Number of known facilities:		2		
80c.	Number of facilities inspected during the reporting period:		6		
81	Inspected municipally owned or operated catch basins at least once before the end of the Permit term? (*Required to begin* by February 16, 2010, S5.C.5.d)	Y			
81b.	Number of known catch basins:		1313		
81c.	Number of inspections:		20		
81d.	Number of catch basins cleaned:		20	Estimate	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
82	Established and implemented practices to reduce stormwater impacts associated with runoff from streets, parking lots, roads or highways owned or maintained by the Permittee, and road maintenance activities conducted by the Permittee? *(Required* by February 16, 2010, S5.C.5.f)	Y			
83	Established and implemented policies and procedures to reduce pollutants in discharges from all lands owned or maintained by the Permittee and subject to this Permit, including but not limited to: parks, open space, road right-of-way, maintenance yards, and stormwater treatment and flow control facilities? *(Required* by February 16, 2010, S5.C.5.g)	Y			
84	Implemented an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations? (Required by February 16, 2010, S5.C.5.h.)	Y			
84b.	Number of trainings provided:		2		
84c.	Number of staff trained:		21		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
85	Implemented a Stormwater Pollution Prevention Plan (SWPPP) for all heavy equipment maintenance or storage yards, and material storage facilities owned or operated by the Permittee in areas subject to this Permit that are not required to have coverage under the Industrial Stormwater General Permit? *(Required* by February 16, 2010, S5.C.5.i)	Y			
86	Is there an approved Total Maximum Daily Load (TMDL) applicable to stormwater discharges from a MS4s owned or operated by the Permittee?	N			
87	Complied with the specific requirements identified in Appendix 2? (S7.A)	NA			
88	**Attached** status report of TMDL implementation? (S7.A)	NA			
89	Where monitoring was required in Appendix 2, did you conduct the monitoring according to an approved Quality Assurance Project Plan? (S7.A)	NA			
90	Took appropriate action to correct or minimize discharges into or from the MS4 which may constitute a threat to human health, welfare, or the environment? (G3)	NA			
90b.	**Attached** a summary of the status of implementation of any actions taken pursuant to S4.F and the status of any montioring, assessment, or evaluation efforts conducted during the reporting period? (S4.F.3.d)	NA			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
91	Notified Ecology of the failure to comply with the permit terms and conditions within 30 days of becoming aware of the non-compliance? (G20)	NA			
92	Notified Ecology immediately in cases where the Permittee becomes aware of a discharge from the Permittees MS4 which may cause or contribute to an imminent threat to human health or the environment? (G3)	NA			
93	**Attached** a summary of identified barriers to the use of low impact development (LID) and measures to address the barriers (Required to be submitted by March 31, 2011, S9.E.4.a)	Y		The document Low Impact Development (LID) in the Longview-Kelso Area was submitted in the 2010 Annual Report. It can be found at http://stormwater.kelso.gov	
94	**Attached** a report describing LID practices currently available and that can be reasonably implemented, potential or planned non-structural actions and LID techniques to prevent stormwater impacts, goals and metrics to identify, promote, measure LID; and schedules to require and implement non-structureal and LID techniques on a broader scale (Required to be submitted by March 31, 2011, S9.E.4.b)	Y		The document Low Impact Development (LID) in the Longview-Kelso Area was submitted in the 2010 Annual Report. It can be found at http://stormwater.kelso.gov	

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part A for all annual reports.
NOTE: Please note in Row 1 of the table if you have no information to report.
NOTE: Please limit your entries to 255 characters per cell. You may include additional information in your Supplemental Documentation attachment and reference it below with the page number.

A. Information Collection

	Briefly describe any stormwater monitoring, studies, or type of information collected and analyzed during the reporting period. (S8.B.1)	Who/how to contact for additional information?
1.	Stormwater monitoring was not performed in 2010	Van McKay, P.E.
2.		
3.		
4.		
5.		
6.		

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part B for all annual reports.

B. SWMP Evaluation (S8.B & S9)

You are required to assess the appropriateness of the BMPs you have selected to implement your SWMP. This evaluation is necessary to evaluate whether the MEP standard set by the permit is protective of water quality in your receiving water bodies. This assessment may be entirely qualitative. Answer **NA** if you are not yet implementing BMPs for a component of the SWMP. (S8.B.2 and S9)

Question	Y/N/NA	Comments (50 word limit)
1. Are the BMPs selected and implemented for Public Outreach appropriate to minimize pollutants in the MS4 to the MEP?	Y	
2. Are the BMPs selected and implemented for Public Involvement appropriate to minimize pollutants in the MS4 to the MEP?	Y	
3. Are the BMPs selected and implemented for Illicit Discharge Detection and Elimination appropriate to minimize pollutants in the MS4 to the MEP?	Y	
4. Are the BMPs selected and implemented for Construction Stormwater Pollution Prevention appropriate to minimize pollutants in the MS4 to the MEP?	Y	
5. Are the BMPs selected and implemented for Post-Construction Runoff Management appropriate to minimize pollutants in the MS4 to the MEP?	Y	
6. Are the BMPs selected and implemented for Good Housekeeping for Municipal Operations appropriate to minimize pollutants in the MS4 to the MEP?	Y	

VII. Information Collection, BMP Evaluation, and Monitoring

Complete Part C for all annual reports.

C. Changes in BMPs or objectives (S8.B)

If any of the BMPs or objectives is being changed, list the old BMP and objective, the new BMP and objective, and a justification for the change below. (S8.B.2., and S9)

NOTE: You may choose to attach additional documentation justifying Changes in BMPs or objectives. Note such attachments in the *Justification for change* field.

	Old BMP	Old Objective	New BMP	New Objective	Justification for Change
1	NA				
2					
3					
4					
5					
6					
7					

CITY OF KELSO PHASE II MUNICIPAL STORMWATER MANAGEMENT PROGRAM (SWMP)

In compliance with the provisions of
The State of Washington Water Pollution Control Law Chapter 90.48 Revised Code of Washington
and
The Federal Water Pollution Control Act (The Clean Water Act)
Title 33 United States Code, Section 1251 et seq.

Latest Update: 2011

PURPOSE

The purpose of this Stormwater Management Program (SWMP) Plan is to document the City of Kelso's efforts as required by the Western Washington Phase II Municipal Stormwater Permit (Permit). The City received coverage under this Permit by submitting a Notice of Intent (NOI) to the Washington Department of Ecology (Ecology) on January 2, 2007.

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EXECUTIVE SUMMARY

In 1987, Congress amended the federal Clean Water Act of 1972 and established water quality goals for surface waters (stormwater) of the United States. The National Pollutant Discharge Elimination System (NPDES) permit program is the mechanism under which these goals are implemented. The Environmental Protection Agency (EPA) administers the NPDES program nationwide and has delegated responsibility to administer the NPDES permit program to most states, including Washington.

The Clean Water Act established a two phase permit program. Phase I regulates larger and medium-sized municipalities and counties, construction site five acres or larger, and major industrial sources. Phase I was issued in 1995 to the cities of Seattle and Tacoma. In 1999, the counties of King, Pierce, Snohomish, and Clark also became regulated entities under the Phase I regulations.

Phase II regulates smaller jurisdictions, construction sites equal to or greater than one acre, and other industrial sources. In 2000, EPA finalized the NPDES Phase II rules regulating "small" municipal separate stormwater sewer systems (a.k.a. MS4s). On January 17, 2007, the Washington Department of Ecology (Ecology) issued a new Phase I and two new Phase II permits, one each for western and eastern Washington. The City of Kelso is now regulated as a MS4 under the western Washington Phase II permit.

These new requirements effectively prohibit non-stormwater discharges and require jurisdictions to apply controls to reduce the discharge of pollutants to the Maximum Extent Practicable (MEP). Ecology is also using the permit to satisfy its own Water Pollution Control Act, RCW 90.48.

Phase II permits affect some 100 cities and 12 counties statewide, plus many other secondary and co-permittees such as diking districts, school districts, colleges, hospitals, and correctional facilities. Cities and counties covered by the permit must implement a Stormwater Management Program (SWMP). Requirements are specific and detailed with numerous compliance deadlines distributed over the five-year permit cycle and are shown in Table 1 below.

The Phase II permit program is structured around the following components:

- Public education and outreach program designed to measurably reduce stormwater pollution;

- Public involvement process to guide the development of the stormwater management program;
- Adoption of ordinances to control runoff from development, redevelopment, and construction activities;
- An illicit discharge detection and elimination (IDDE) program to identify and remove improper discharges into the storm sewer system; and
- An operation and maintenance program that reduces pollutant runoff from municipal operations.

Reporting requirements and detailed record-keeping are included to assess compliance and allow for making changes to improve water quality.

Permit obligations are legally binding and there are consequences for failure to comply with requirements. Ecology's approach to compliance during this first five-year permit cycle is technical assistance. However, the CWA allows third-parties (citizens) to take legal action against jurisdictions failing to comply. Violators may be subject to penalties of up to $37,500 per day per violation.

The following SWMP Plan provides the public and Ecology with information about how the City of Kelso is implementing the various program requirements of the Phase II permit.

Table 1: NPDES Phase II Municipal Stormwater Management Program Compliance Schedule

Permit Section	Requirements	Deadline	2007				2008				2009				2010				2011				2012			
			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
S5	**STORMWATER MANAGEMENT PROGRAM (SWMP)**																									
S5.A	***SWMP Fully developed and implemented***	08/19/2011																			★					
	Start tracking SWMP costs	01/01/2009									★															
S5.C.1	***Public Education and Outreach***																									
	Provide education and outreach program	02/15/2009									★															
S5.C.2	***Public Involvement and Participation***																									
	Public participation in SWMP development	02/15/2008					★																			
S5.C.3	***Illicit Discharge Detection and Elimination***																									
	Map storm/sewer system	02/15/2011																	★							
	Adopt ordinance to prohibit illicit discharge	08/15/2009											★													
	Implement illicit discharge detection and elimination program	08/19/2011																			★					
	List a hotline	02/15/2009									★															
	Field staff trained	08/15/2009											★													
	Implement ongoing training program	02/15/2010													★											
	Prioritize receiving waters for visual inspection	02/15/2010													★											
	Field assessment of **three** high priority water bodies	02/15/2011																	★							
	Field assessment of **one** high priority water body	02/15/2012																					★			
	Distribute public education and outreach information	08/19/2011																			★					
S5.C.4	***Controlling Runoff from New Development, Redevelopment and Construction Sites***																									
	Adopt ordinance for new development, redevelopment, and construction site projects	08/15/2009											★													
	Plan review, inspection and enforcement strategies in place	08/15/2009											★													
	Provisions to verify O&M of post-construction stormwater facilities and BMPs	08/15/2009											★													
	Staff trained	08/15/2009											★													
S5.C.5	**Pollution Prevention and O&M for Municipal Operations**																									
	Develop and implementing O&M Program	02/15/2010													★											
	Inspect all catch basins and inlets	02/15/2012																					★			
S9	**REPORTING REQUIREMENTS**																									
S9.A	***Submit Annual Report***																									
	First Annual Report (including SWMP document)	03/31/2008					★																			
	Second Annual Report	03/31/2009									★															
	Third Annual Report	03/31/2010													★											
	Fourth Annual Report (including status of monitoring program)	03/31/2011																	★							
	Fifth Annual Report	03/31/2012																					★			

S5.C1 PUBLIC EDUCATION AND OUTREACH

The SWMP shall include an education program aimed at residents, businesses, industries, elected officials, policy makers, planning staff, operations staff, and other employees of the Permittee. The goal of the education program is to reduce or eliminate behaviors and practices that cause or contribute to adverse stormwater impacts. An education program may be developed locally or regionally and planned activities for public education and outreach are shown in Table 2 below.

PROGRAM GOALS

The goals of the City of Kelso's Stormwater Public Education Program are:

1. Increase Knowledge - To measurably increase the knowledge of the target audiences regarding the MS4, the impacts of storm water pollution on receiving waters, and potential solutions to mitigate the problems caused;
2. Change Behavior - To measurably change the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions;
3. Reach a Diverse Audience - To involve and engage a diverse audience in Kelso to participate in mitigating the impacts of storm water pollution; and
4. Implement a Public/Business/Employee Education Program That Meets Permit Requirements

Table 2: Public Education and Outreach: Planned Activities

	Planned Activity	Due Dates
1	**Evaluate existing public education/outreach activities**	Ongoing with yearly review
2	**Identify individual responsible for public education/outreach**	
3	**Conduct public education workshop**	
	Identify "gaps" in target audience	
	Initiate framework for public education/outreach program	
	Initiate development of measurable goal	
	Conduct initial public opinion survey	
	Evaluate results of public opinion survey	
4	**Draft framework for public education program (including feedback mechanism)**	
	Prepare a formal education and outreach program document for submittal in the Annual Report	2/15/09
5	**Initiate activities program defined in the public education and outreach program**	
6	**Initiate summary of yearly public education/outreach activities for the Annual Report**	Annually

S5.C.1.a Education and Outreach

The City's stormwater program maintains a full time stormwater manager. Through the efforts of this manager, the City has built upon its existing stormwater education by enhancing its website, producing informational mailings of the Ecology stormwater permit (Phase II Municipal permit) requirements to utility customers, and labeling storm drains. City managers and Council members have received technical presentations from Ecology educating them on basic stormwater and water quality protection principles as well as the requirements and importance of the Phase II Municipal permit. The City Council has also received a technical presentation on the proposed illicit discharge detection and elimination and stormwater management ordinances which they later adopted.

The City, in cooperation with local jurisdictions, developed a citizen's guide to clean runoff that addressed public awareness of stormwater pollution. The contents of this brochure, *The Solution to Stormwater Pollution*, were developed around the results from a 2008 telephone survey that is described in section S5.C.1.b below. The brochure was mailed out in 2008 to Kelso citizens and businesses with utility service.

METHOD FOR DETERMINING TARGET AUDIENCE

- Demographic information, such as age, income, and education.
- Economic information, such as types of commercial or development activities.
- Land-use data, pet licenses, population density and home ownership statistics.

TARGET POLLUTANT

- Specific local pollution problems

PRIORITIZED TARGET AUDIENCES & BEHAVIORS

General Public

- General impacts of stormwater flows into surface waters
- Impacts from impervious surfaces
- Source control BMPs and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance landscaping and buffers

General public, businesses (home-based and mobile)

- BMPs for use and storage of automotive chemicals, hazardous cleaning supplies, carwash soaps and other hazardous materials
- Impacts of illicit discharges and how to report them

Homeowners, landscapers and property managers

- Yard care techniques protective of water quality
- BMPs for use and storage of pesticides and fertilizers
- BMPs for carpet cleaning and auto repair and maintenance
- Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees

- Stormwater pond maintenance
- Car washing

Engineers, contractors, developers, review staff and land use planners

- Technical standards for stormwater site and erosion control plans
- Low Impact Development techniques, including site design, pervious paving, retention of forests and mature trees
- Stormwater treatment and flow control BMPs

Methods to distribute information:

- Direct mailers
- Inserts in utility bills
- Presentations
- Classes
- Kids
- Radio ads
- TV -public service announcement
- Print-newspapers, yard signs

S5.C.1.b Performance Measurement

PERFORMANCE MEASUREMENT

- Methods of measuring behavior change
    - Perform initial survey of public behaviors to determine baseline
    - Conduct public education activities
    - Perform another survey of public behaviors
    - Compare results to initial survey to determine behavior change

A telephone survey was conducted in 2008 to measure the knowledge and practices regarding stormwater and pollution. Both the public and businesses were targeted. This baseline survey was a multi-agency endeavor, with Cowlitz County, the Cities of Kelso and Longview, and the Consolidated Diking Improvement District #1 all participating. A consulting firm was hired to develop and perform the telephone survey. A total of 390 surveys were completed with the adult public and 386 surveys were completed with businesses.

This survey has provided the baseline of general stormwater knowledge from which to improve. The City is using this baseline to help develop their education and outreach program. A second survey is planned for 2011 to assess improvements.

S5.C.1.c Recordkeeping

The City tracks and maintains records of public education and outreach activities in accordance with this permit. Information about many of these activities are also posted on the City's website.

S5.C.2 PUBLIC INVOLVEMENT AND PARTICIPATION

The SWMP shall include ongoing opportunities for public involvement through advisory councils, watershed committees, participation in developing rate structures, stewardship programs, environmental activities, or other similar activities. Each Permittee shall comply with applicable state and local public notice requirements when developing their SWMP. Planned activities for public involvement and participation are shown in Table 3 below.

Table 3: Public Involvement and Participation: Planned Activities

	Planned Activity	Due Dates
1	**Evaluate existing public involvement/participation activities**	Ongoing
2	**Identify individual responsible for public involvement/participation**	-
3	**Develop ongoing public involvement/participation strategy**	Ongoing
	Create opportunities for public involvement	
	Post the Annual Report and SWMP document on the City website	Annually on 3/31
	Identify public involvement venues	Ongoing
4	**Reporting**	Annually on or before 3/31
	Initiate summary of public involvement/participation activities for the Annual Report	
	Identify Annual Report attachments if needed	
5	**Plan public involvement/participation activities and responsibilities**	
	Initiate SWMP document update if necessary	
	Post the SWMP related documents on the City's website along with an email address for public involvement	
	Initiate planning of future public involvement/participation activities	

S5.C.2.a Public Participation

The Kelso Stormwater Advisory Committee (KSAC) was formed in 2008 as an avenue for public participation and input. The KSAC meets on many months of the year and has 7 appointed members who represent different interests related to stormwater in the City. The members represent the environment, recreation, industrial permit holder, student, citizen, developer, and technical advisor. The KSAC has worked on the various requirements of this permit, including the IDDE Ordinance and the Stormwater Management Ordinance. People with interest in the City's stormwater issues are welcome to participate as a KSAC member when positions become available, can talk with current KSAC members, or can attend KSAC meetings.

People can also participate through involvement with the City's Planning Commission, City Council, or the region's Watershed Committee (Grays-Elochoman & Cowlitz Watershed Planning Unit – WRIA 25/26).

S5.C.2.b Reporting

Kelso maintains a website that includes posting of various stormwater documents, including those required by this permit. This website can be found at http://stormwater.kelso.gov.

S5.C.3 ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE)

The SWMP shall include an ongoing program to detect and remove illicit connections, discharges as defined in 40 CFR 122.26(b)(2), and improper disposal, including any spills not under the purview of another responding authority, into the municipal separate storm sewers owned or operated by the Permittee. Permittees shall fully implement an ongoing illicit discharge detection and elimination program no later than 180 days prior to the expiration of the Permit. Planned activities for illicit discharge detection and elimination are shown in Table 4 below.

Table 4: Illicit Discharge Detection and Elimination Plan: Planned Activities

	Planned Activity	Due Dates
1	**Evaluate existing illicit discharge detection and elimination program**	Ongoing with annual review
2	**Develop Illicit Discharge Detection and Elimination Program**	
	Develop and implement screening procedures	8/19/2011
	Review and update illicit discharge response/source control procedures if necessary	
	Review and update tracking/documentation procedures if necessary	
	Review and supplement public education/outreach efforts if necessary (coordinate with the City's public education and outreach program)	
	Develop inspection plan and enforcement team	
3	**Update storm sewer system map**	
	Define conveyance system and outfalls	8/15/2011
	Define drainage areas and catchments	
	Map structural BMPs	
	Document permit-required attributes	
	Develop procedures for additions and updates	
4	**Update ordinances**	
	Determine inspection and enforcement procedures	8/15/2009
	Update City Municipal Code to address illicit discharges if needed	
5	**Evaluate and update current hotline procedures if necessary**	2/15/2009
6	**Develop training program**	
	Review current training with respect to illicit discharges	8/15/2009
	Identify additional training if necessary	
	Draft framework for training program	
7	**Reporting**	
	Initiate summary of prior year's IDDE activities for each Annual Report	Annually 3/31
	Identify Annual Report attachments if needed	
8	**Plan future year's IDDE activities and responsibilities**	
	Initiate SWMP document update if necessary	
	Initiate planning of next year's IDDE activities	

S5.C.3.a Mapping

The City began locating all storm drains via Global Positioning Unit (GPS) in 2008. This data is being developed to map these storm drain locations. The City is approximately 75% complete with this effort. The overall goal is to develop a municipal storm sewer system map. This map will provide locations of all catch basins, manholes, pipelines as well as known municipal separate storm sewer outfalls and receiving waters and structural BMPs owned, operated, or maintained by the City. This map will be updated as additional information becomes available or new additions or deletions made to the exiting infrastructure. A draft map is available on the City's website at http://stormwater.kelso.gov. The storm sewer map is being developed together with a Stormwater Master Plan for the City.

S5.C.3.b Regulatory Mechanism

The City developed their Illicit Discharge, Detection, and Elimination Stormwater Ordinance with input from City departments, the KSAC, the City of Longview stormwater advisory committee (LSAC) and consultants. It was formally adopted by the City Council in August 2009.

S5.C.3.c Procedures

The City of Kelso's Public Works Department implements the City's IDDE program. The program goal is to provide for the health, safety, and general welfare of the citizens of the City through the regulation of non-stormwater discharges to the storm drainage system. The objectives of this program, per the IDDE Ordinance, are:

1. To regulate the contribution of pollutants to the stormwater drainage system by stormwater discharges by any user;
2. To prohibit illicit connections and discharges to the municipal separate storm sewer system; and
3. To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with the Ordinance.

The specific procedures for IDDE program implementation are described in the Ordinance. Such procedures cover discharge prohibitions, suspension of stormwater drainage system access, industrial or construction activity discharges, inspection and sampling, use of best management practices, protection of water bodies, notification of spills, and enforcement.

The City is planning to build upon current IDDE activities to create a more identifiable program that includes:

- Procedures for locating priority areas likely to have illicit discharges;
- Procedures for tracing the source of an illicit discharge;

- Procedures for removing the source of the illicit discharge;
- Training for City staff on IDDE awareness; and
- Further public education of IDDE awareness.

S5.C.3.d Public Involvement

Public involvement opportunities to comment on the development of this ordinance were made available. Three public meetings were conducted as part of the City's normal ordinance adoption process. During this time period, the public was offered the opportunity to review and comment on the ordinance.

The City developed a stormwater hotline for people to call to report unlawful discharges into stormwater. The Kelso stormwater hotline phone number is 423-6590 during normal business hours. Kelso's after-hours Operations phone number for street and utility issues including illicit discharges is 423-5730. A 24-hour Longview/Kelso stormwater hotline is also available at 578-0900. Additionally, two forms are posted on the City's website for public input. The forms include a stormwater incident report for citizens to report spills and illicit discharges as well as a "citizen concern form" for people to provide many types of concerns to the Public Works Department.

S5.C.3.e Program Evaluation

As the IDDE program progresses through creation and maturity, the City will be evaluating its effectiveness on an on-going basis. The annual review and reporting requirements per the Permit ensure that these efforts are compiled and summarized at least annually.

S5.C.3.f Training

The City has developed and implemented a formal training program for its staff related to the IDDE requirements.

S5.C.4 CONTROLLING RUNOFF FROM NEW DEVELOPMENT, REDEVELOPMENT, AND CONSTRUCTION SITES

Each Permittee shall develop, implement, and enforce a program to reduce pollutants in stormwater runoff to a regulated small MS4 from new development, redevelopment, and construction site activities. This program shall be applied to all sites that disturb a land area one acre or greater, including projects less than one acre that are part of a larger common plan of the development or sale. The program shall apply to private and public development, including roads. Planned activities for controlling runoff is shown in Table 5 below.

Table 5: Controlling Runoff from New Development, Redevelopment, and Construction Sites: Planned Activities

	Planned Activity	Due Dates
1	**Evaluate existing runoff control program**	Annually
2	**Review and update KMC to address permit requirement, if necessary**	8/15/2009
	Required thresholds and minimum requirements	
	Site planning and BMP selection criteria that protect water quality, meet MEP, and satisfy AKART	
	Legal authority to inspect new facilities	
	Provisions for LID (or equivalent)	
	Application of erosivity waiver	
3	**Plan review, inspection, and enforcement**	8/15/2009
	Review and update plan review if necessary	
	Develop inspection procedure plan	
	Identify staff inspection team	
	Update enforcement strategy if necessary	
	Identify enforcement team	
	Update KMC if necessary	
	Develop mechanisms to track plan review, inspection, and enforcement actions	
	Document NOIs for construction and industrial activities	
4	**Operation and maintenance**	8/15/2009
	Update process for accepting new facilities or inspecting private facilities (keep private or go public)	
	Document new stormwater systems for inspection, operation, and maintenance	
	Update KMC to include long-term operation and maintenance requirements for phased construction	
	Review BMP inspection frequency	
5	**Staff trained in plan review, inspections, and enforcement related to stormwater**	8/15/2009
	Define training needs (who and what)	

Table 5: Controlling Runoff from New Development, Redevelopment, and Construction Sites: Planned Activities

	Planned Activity	Due Dates
	Identify supplemental training needs	
	Develop training schedule	
	Track training and summarize for Annual Report	
6	**Reporting**	
	Initiate summary of plan review, inspection, and enforcement activities for Annual Report	Annually
	Identify Annual Report attachments, if any	
7	**Plan next year's runoff control activities and responsibilities**	
	Initiate SWMP document update if necessary for Annual Report	Annually
	Initiate planning of future runoff control activities	

S5.C.4.a Regulatory Mechanism

The City drafted a Stormwater Management Ordinance with the help of City staff, consultants, KSAC, LSAC and was approved for adoption through the KSAC. The City formally adopted this ordinance in March 2010.

In conjunction with the development of this ordinance, the City revised applicable portions of the Kelso Engineering Design Manual (KEDM). This process ensured consistency between the ordinance and the KEDM. Additionally, the ordinance refers to KEDM in relation to specific technical issues easy user reference. The KEDM was also developed in conjunction with the City of Longview's Stormwater Management Manual to create consistent development guidelines in the region. The KEDM revisions were adopted by ordinance concurrently with the Stormwater Management Ordinance.

S5.C.4.b Permitting

The City's permitting process includes plan review, inspection, and enforcement capabilities and is implemented through the Public Works and Planning Departments. Permitting requirements were updated through the Stormwater Management Ordinance and KEDM.

S5.C.4.c Maintenance Inspection (Private)

The Stormwater Management Ordinance allows the City to make inspections on private stormwater facilities. The City is in the process of training its staff related to protection of stormwater quality at privately-owned properties. This includes proper operations and maintenance measures.

S5.C.4.d Recordkeeping

The City maintains inspection and enforcement records on permitted activities within the City boundaries. These records are located within both the Public Works and Planning Departments.

S5.C.4.e Notice of Intent

The "Notice of Intent for Construction Activities" and "Notice of Intent for Industrial Activities" are available at City Hall. The address for City Hall is 203 S. Pacific Avenue, Kelso, WA 98626.

S5.C.4.f Training

Currently, two staff members responsible for inspecting stormwater systems and issues have been formally trained and certified as Certified Erosion Sedimentation Control Leads (CESCL).

S5.C.5 POLLUTION PREVENTION AND OPERATION AND MAINTENANCE FOR MUNICIPAL OPERATIONS

Within three years of the effective date of the Permit, each Permittee shall develop and implement an operations and maintenance (O&M) program that includes a training component and has the ultimate goal of preventing or reducing polluted stormwater runoff from municipal operations. Planned activities for pollution prevention and the operation and maintenance program are listed in Table 6 below.

Table 6: Pollution Prevention and Operation and Maintenance Program: Planned Activities

	Planned Activity	Due Dates
1	**Evaluate existing pollution prevention and operation and maintenance program**	Ongoing with annual review
2	**Update inspection and maintenance program**	
	Define and quantify system for maintenance (e.g. type and size)	Ongoing
	Catch basins	All inspected by 8/15/2011 on a 5-year schedule thereafter
	Stormwater treatment and flow control facilities	All inspected by 2/15/2012 on a 1-year schedule thereafter
	Streets, roads, and highways	Ongoing, due 2/15/2010
	Parks, open spaces, right-of-way	
	Determine system maintenance for water quality	
	Evaluate frequency of inspections	
	Develop resource needs assessment for maintenance	
	Fund and staff maintenance plan (not a SWMP requirement)	
	Develop tracking mechanisms for inspections, maintenance, and repairs	
3	**Training of operation and maintenance staff**	2/15/2010
	Identify operation and maintenance training needs (who and what)	
	Update current training if necessary	
	Develop ongoing training program	
	Document training	
4	**Reporting**	Annually
	Initiate summary of the Pollution Prevention and Operation and Maintenance activities for the Annual Report	
	Identify Annual Report attachments, if any	
5	**Plan the Pollution prevention and O&M activities and responsibilities**	
	Initiate SWMP document update if necessary	
	Initiate planning of 2009 Pollution Prevention and O&M activities	

S5.C.5.a Maintenance Standards

The City has an O&M program with the ultimate goal of minimizing pollutant runoff from municipal operations. The program includes street and gutter sweeping, pipe and culvert cleaning, ditch maintenance, catch basin cleaning, snow and ice control, road repair, vegetation management and emergency stormwater system repairs. Stormwater facilities will be inspected annually. Catch basins and inlets will be inspected at least once every five years. Those requiring maintenance will be maintained within six months of the inspection. The City intends to inspect and clean as necessary all its catch basins prior to the permit expiration on February 15, 2012.

S5.C.5.b Annual Inspection (Public)

Stormwater facilities other than catch basins will be inspected and maintained, if necessary, on an annual basis. Stormwater facilities identified for inspection include:

- Stormwater pond at west end of Allen Street Bridge
- CDS continuous deflective separation unit on North Pacific Avenue
- Stormceptor unit at Oak and 3rd Ave. parking lot
- Stormwater pond at the airport

S5.C.5.c Spot Checks

Spot checks of City stormwater facilities for water quality and quantity will be performed after rain storms larger than the 24-hour, 10-year storm event including documentation of the inspections.

S5.C.5.d Catch Basin Inspection

As part of the stormwater system mapping, the City has been cleaning some catch basins in order to make measurements. All catch basins and inlets will be inspected by August 15, 2011.

S5.C.5.e Compliance

The City intends to comply with inspection requirements described above. The City will review and update all procedures and practices to assure permit compliance and make adjustments as needed.

S5.C.5.f Practices to Reduce Stormwater Impacts

The City plans to implement and refine practices and procedures to reduce stormwater impacts associated with runoff from streets, parking lots, roads and highways owned or maintained by

the City, as well as road maintenance activities conducted by the City. Activities that will be addressed include: pipe & culvert cleaning, ditch maintenance, street cleaning, road repair and resurfacing, snow and ice control, utility installation, pavement striping, maintaining roadside areas and vegetation, and dust control.

S5.C.5.g Public Land Maintenance

The City is committed to implementing policies and procedures regarding the maintenance of all public lands owned or maintained by the City. These lands include parks, open space, road right-of-way, maintenance yards and stormwater treatment and flow control facilities. Policies and procedures addressed include: application of fertilizers, pesticides and herbicides, sediment and erosion control, landscape maintenance, vegetation disposal, and cleaning and maintenance of building exteriors.

S5.C.5.h Training

The City developed a training program for its field staff in pollution prevention of its municipal operations and maintenance programs. This training program component was implemented by the Permit deadline of February 15, 2010. Further training of staff will occur when modifications to procedures and policy have been implemented.

S5.C.5.i Stormwater Pollution Prevention Plans (SWPPP)

A stormwater pollution prevention plan was drafted for the Operations maintenance facility. Operations staff have been trained on the SWPPP. The City plans to inspect, implement and maintain BMPs outlined in the SWPPP. Training will occur when the SWPPP is updated due to a change in design, construction, operation, or maintenance which cause(s) the SWPPP to be less effective in controlling the pollutants. The SWPPP can be found within the City's stormwater website at http://stormwater.kelso.gov.

S5.C.5.j Recordkeeping

The City will maintain records of inspections and maintenance or repair activities in accordance with the S9 Reporting Requirements of the Permit.

MUNICIPAL STORMWATER ILLICIT DISCHARGE DETECTION AND ELIMINATION (IDDE) PROGRAM

2011

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CROSS REFERENCE WITH MUNICIPAL STORMWATER NPDES PERMIT

TABLE OF REVISIONS AND REVIEWS

DATE	COMMENTS
09-28-2011	Approved by Kelso Stormwater Advisory Committee

PURPOSE, GOAL, AND APPROACH

PURPOSE

This Municipal Stormwater Illicit Discharge Detection and Elimination (IDDE) program was written to comply with the Phase II Municipal Stormwater NPDES Permit (Permit) for Western Washington; specifically, sections S4.C, S4.D, and S5.C.3. This manual is intended to establish and guide internal policy, procedures, training, scheduling and to document those items that are already in place.

GOAL

Detect and remove illicit connections, illicit discharges and spills into Kelso's stormwater drainage system.

APPROACH

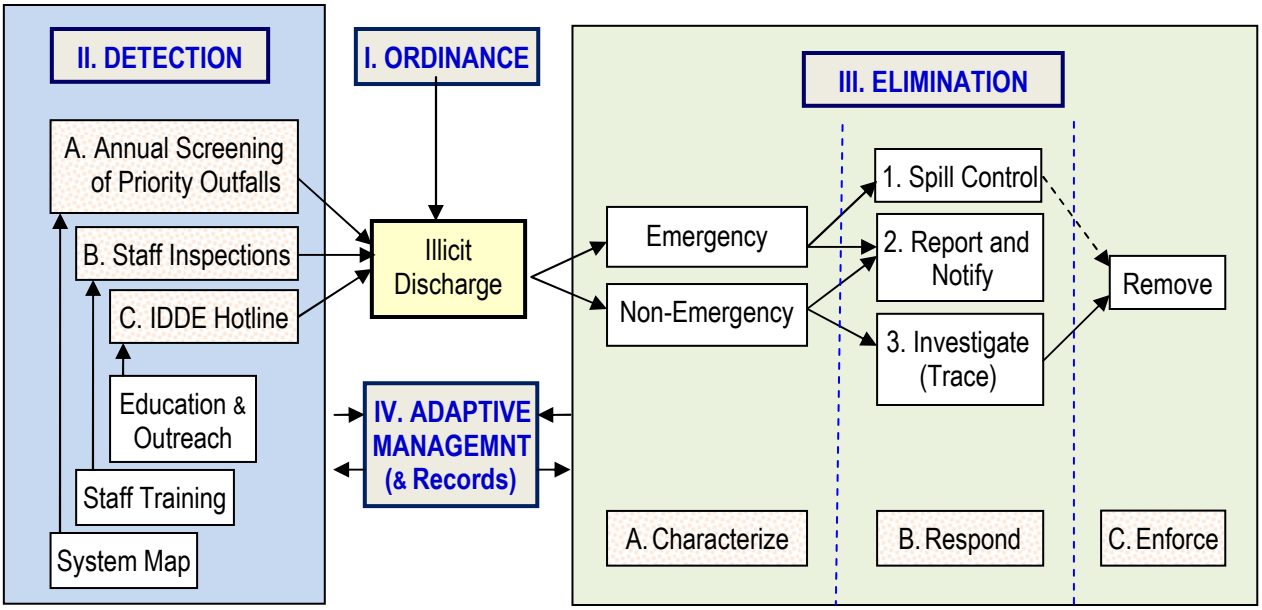
A. This program is a subcomponent of the City's Stormwater Management Program (SWMP).

B. It will be reviewed periodically, but no less often than once per permit cycle, by Public Works, and updated as necessary to keep current, capture lessons learned, and to otherwise ensure effectiveness.

C. It incorporates or relies upon the following:

- All requirements of Section S5.C.3 of the Municipal Stormwater NPDES Permit
- Other elements of the SWMP
- Kelso Municipal Code (KMC) 13.09 Stormwater Management and KMC 13.11 Illicit Discharge – Stormwater Utility
- Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments, Center for Watershed Protection, October 2004 [a.k.a. the CWP IDDE Manual]
- Various Ecology publications, including #07-10-089 "Reporting Discharge and Spills under the Municipal Stormwater NPDES Permits" and "IDDE Field Training Guidance Elements Checklist"

D. The City's IDDE strategy is organized as shown below:



OVERVIEW

The City of Kelso is located on Interstate 5, at the confluence of the Cowlitz, Coweeman and Columbia Rivers and serves a population of about 12,000 people. The stormwater drainage system discharges to the Coweeman and Cowlitz Rivers and three diking improvement districts — Consolidated Diking Improvement District #1 (CDID#1), Consolidated Diking Improvement District #3 (CDID#3) and Diking Improvement District #1 (DID#1).

To protect these waters from illicit discharges, this program includes the following main elements: Geographical Information System (GIS) mapping, municipal code and enforcement, detection and elimination, education and outreach, and training and adaptive management.

Local IDDE aids include:

- Coordination with the other permittees (City of Longview, Cowlitz County, and CDID#1).
- A sanitary sewer system that serves all but a small handful of developed properties.
- Geographically insular community with its own radio and print market – making outreach more cost effective and easier to plan.
- Columbia Analytical Services, a nationally accredited, award-winning, full-service laboratory located in Kelso.

City staff time is required to meet the Permit requirements of the IDDE Program. It is estimated to take about twenty-four days of staff time per year to implement the IDDE Program.

Note: Action items found in this manual are prioritized as shown in the example below . . .

"IDDE-bN1"

IDDE – Associates the action item with this manual, as opposed to other portions of the SWMP.
b – The subsection of the S5.C.3 of the Permit, in this case the requirement comes from S5.C.3.b of the Permit, which deals with the Ordinance.
N – Indicates whether the action item is Required or Not required by the Permit.
1 – Self explanatory. In case, the action item is the first in its category.

I. ORDINANCE

MS4 NPDES Permit Requirement: S5.C.3.b (Ordinance)
Have an ordinance that prohibits non-stormwater discharges, and . . . i. Excludes certain non-stormwater discharges (most groundwater, A/C condensate, emergency firefighting, etc.). ii. Conditionally excludes certain non-stormwater discharges (de-chlorinated potable and pool water, etc.). iii. [the SWMP shall address each category in b.ii]. iv. [the SWMP shall address any category in b.i or ii that are identified to be significant source of water pollution]. v. Include escalating enforcement procedures. vi. [the SWMP shall include an escalating enforcement strategy (i.e. implement that portion of the ordinance)].

Compliance Status

The Kelso City Council adopted Ordinance No. 09-3713, Illicit Discharge – Stormwater Utility, on 8/18/2009, thereby adding to the City's Public Services portion of the municipal code. The ordinance allows the City to prohibit any discharge that it considers to be an illicit discharge and it provides for escalating enforcement.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-bR1	Continue enforcing KMC 13.11 with a positive, professional approach.	8/2011
IDDE-bN1	Maintain a copy of Ordinance No. 09-3713 to mark up with potential revisions.	8/2011

II. DETECTION

A. PRIORITY FIELD ASSESMENTS (SCREENING)

MS4* NPDES Permit Requirement: S5.C.3.c.i-ii (Priority Field Assessments)
The SWMP will include a program to detect illicit discharges, specifically . . . i. SOP(s) for locating priority areas likely to have illicit discharges, including at a minimum: evaluating land uses and associated business/industrial activities present; areas where complaints have been registered in the past; and areas with storage of large quantities of materials that could result in spills. ii. Field assessment activities, including visual inspection of priority outfalls identified above, during dry weather and for the purposes of verifying outfall locations, identifying previously unknown outfalls, and detecting illicit discharges. • Annual field assessments on at least one high priority waterbody. • Screening for illicit connections shall be conducted using the CWP IDDE Manual.

Compliance Status

The City prioritizes areas most likely to have illicit discharges and each year at least one priority area is inspected. Using IDDE-SOP1 (see Appendix A), all receiving water bodies are prioritized for their illicit discharge potential including five pump station sloughs for CDID#3 and the Cowlitz River. The prioritization is based on zoning, NPDES permittees and IDDE call volume. The highest priority watercourses include the following pump station sloughs: Baker Way, Tam O'Shanter 1, Coweeman. See Appendix B for the 2010 Priority Receiving Waters Illicit Discharge Prioritization Spreadsheet.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-cR1	Inspect at least one priority water body annually.	Annually
IDDE-bN1	Audit (observe) municipal field activities with potential non-stormwater discharge.	8/2012

II. DETECTION

A. PRIORITY FIELD ASSESMENTS (SCREENING)

1. STORM SEWER SYSTEM MAP

MS4 NPDES Permit Requirement: S5.C.3.a (Storm Sewer System Map)
Maintain a Storm Sewer System map that . . . i. Shows the location of outfalls, receiving waters, and structural stormwater BMPs (that are owned/maintained by the City). For outfalls ≥24," map shall include the drainage area, land use, and the type, material, and size of tributary conveyances. ii. Shows all connections authorized after February 16, 2007. iii. Shows areas served by the storm sewer system that do not discharge to surface waters. iv. Is provided to Ecology upon request. v. Is provided to secondary permittees upon request.

Compliance Status

Kelso has been using a stormwater drainage system map in a basic GIS system for several years. The City hired a consultant to produce an advanced GIS system that will include a relational database. The City obtained as-built data from the field and the consultant is using the data for mapping, modeling, and development of the georelational database. The new system is expected to be completed by March 15, 2012.

Key GIS layers will include catch basins, manholes, culverts, outfalls, public structural stormwater Best Management Practices (BMPs), drainage sub-basins, and the type, material, and size of conveyances. Other stormwater layers will include roadside ditches, CDID#1, CDID#3, DID#1 conveyances and their pump stations. Other layers will include datasets for infrastructure, census, land use, elevation, digital imagery, geographic reference and environment such as soils, rivers and landslides. The GIS system will be updated by the City after repairs and additions to the stormwater drainage system. In addition, supporting datasets will be updated periodically.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-aR3	Routine updates of the map (incl. laterals, new infrastructure from annexations, Public Improvement Projects, and in-house work).	Ongoing
IDDE-aN1	Consider adding a mapping layer of private facilities (and check the layer of public facilities)	--

II. DETECTION
B. STAFF INSPECTIONS (TRAINING)

MS4 NPDES Permit Requirement: S5.C.3.f (Training)
Train municipal field staff on the identification and reporting of illicit discharges into MS4s . . . i. Ensure that all municipal field staff who are responsible for identification, investigation, termination, cleanup, and reporting illicit discharges, including spills, and illicit connections are trained to conduct these activities. Follow-up training shall be provided as needed to address changes in procedures, techniques or requirements. Document and maintain records of the training provided and the staff trained. ii. Develop and implement an ongoing program for all municipal field staff, which, as part of their normal job responsibilities, might come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system shall be trained on the identification of an illicit discharge/connection, and on the proper procedures for reporting and responding to the illicit discharge/connection. Provide follow-up training as needed. Document and maintain records of the training provided and the staff trained.

Compliance Status

The stormwater manager is the only City employee charged with the duties described in S5.C.3.f.i above. At a minimum, the stormwater manager has studied the following materials:

- CWP IDDE Manual;
- Environmental Protection Agency (EPA) web cast presentations including: Developing Your IDDE Program (IDDE 101); Conducting Illicit Discharge Detection and Elimination Investigations (IDDE 201); and Finding and Fixing Illicit Discharges and Connections (IDDE 301).
- The City's SWMP (including this manual) and the Phase II Municipal Stormwater NPDES Permit.
- KMC 13.09 (Stormwater Management) and KMC 13.11 (Illicit Discharge – Stormwater Utility).

Tailored training was provided to staff involved in field activities. Both Police and Operations Department staff were trained in illicit discharge and elimination. At a minimum, the training covered how to recognize, report, and respond to an illicit discharge/connection.

Training will continue with changes to the IDDE procedures and/or with every permit cycle. Training documents and attendance are kept for a minimum of 5-years. See Appendix C for example materials.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-fR1	Continue training efforts.	Ongoing

II. DETECTION
C. HOTLINE (PUBLIC EDUCATION AND OUTREACH)

MS4 NPDES Permit Requirement: S5.C.3.d (Public Education & Outreach)
Inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste . . . i. Distribute appropriate information to target audiences identified pursuant to S5.C.1. ii. List and publicize a hotline or other local telephone number for public reporting of spills and other illicit discharges. Keep a record of calls received and follow-up actions taken in accordance with this Section; include a summary in the annual report (see section S9).

Compliance Status

The Kelso Stormwater Hotline and the Longview-Kelso Stormwater Hotline, 578-0900, were established in the fourth quarter and August of 2008, respectively, and have been continuously operated and listed ever since. IDDE-SOP2, provided in Appendix A, describes its call-out procedures. Reports from the hotline are entered into Kelso's IDDE log. The log is used to track calls and follow-up actions in accordance with S5.C3.d.ii. The Longview-Kelso hotline has been listed in every edition of the area telephone book since 2008, and is publicized periodically in all traditional media formats. In October 2011, letters were sent to all water/sewer bill recipients in Kelso regarding the IDDE ordinance and illicit discharge problems. The City's stormwater website, http://stormwater.kelso.gov, has a stormwater incident report form that allows citizens to report online since February 2010.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-dR1	Continue hotline, IDDE Log, training, and public outreach efforts.	Ongoing

III. ELIMINATION

MS4 NPDES Permit Requirement: S5.C.3.c.iii - v (Characterize, Trace, Remove)

The SWMP will include a program to detect illicit discharges, specifically . . .

iii. Procedures for characterizing the nature of, and potential public or environmental threat posed by, any illicit discharges found by or reported to the Permittee. Procedures shall include detailed instructions for evaluating whether the discharge must be immediately contained and steps to be taken for containment of the discharge.

Investigate (or refer to the appropriate agency) within 7 days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge, including spills; and immediately investigate (or refer) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.

iv. Procedures for tracing the source of an illicit discharge; including visual inspections, and when necessary, opening manholes, using mobile cameras, collecting and analyzing water samples, and/or other detailed inspection procedures.

v. Procedures for removing the source of the discharge; including notification of appropriate authorities; notification of the property owner; technical assistance for eliminating the discharge; follow-up inspections; and escalating enforcement and legal actions if the discharge is not eliminated.

Compliance with this provision shall be achieved by initiating an investigation within 21 days of a report or discovery of a suspected illicit connection to determine the source of the connection, the nature and volume of discharge through the connection, and the party responsible for the connection. Upon confirmation of the illicit nature of a storm drain connection, Permittees shall use their enforcement authority in a documented effort to eliminate the illicit connection within 6 months.

Compliance

The City developed a program to detect illicit discharges that includes investigation, documentation, discharge removal and enforcement. Various standard operating procedures (SOPs) were developed and are listed below.

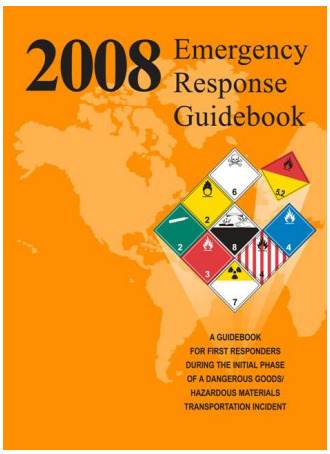
A. Characterization IDDE-SOP3
B. Response
    1. Spill Control IDDE-SOP4
    2. Reporting/Notifications IDDE-SOP5
    3. Investigations (Tracing) IDDE-SOP6
C. Enforcement (Removal) IDDE-SOP7

Safety

Hazmat dangers may not be obvious and may be severe or lethal. Occupational Safety and Health Administration's (OSHAs) definition of a hazardous substance includes two long lists from CERCLA and the DOT plus biological agents. Situations can be subtle, such as a material that is radioactive, reactive or toxic, an oxygen deficient atmosphere, or an odorless vapor in concentrations exceeding its IDLH (level that is Immediately Dangerous to Life and Health) or its LEL (Lower Explosive Limit). *Know the material, its hazards, and the human pathways it can exploit – or do not approach the material without professional assistance*. Your safety is more important than the project, the Right-of-Way, the environment, or any property. OSHA requires training for those who respond to "an anticipated release of a hazardous substance that is, or could become [uncontrolled]" or even "limited action" in a "danger area," such as to risks of fire, explosion, inhalation, or harmful chemical exposure (see WAC 296-824). Training requirements

can be extensive, and often begin with a 40-hour HAZWOPER course and its 8-hour annual refresher (see CFR 1910.120 or WAC 296-843).

<u>In summary, your best response may be to evacuate yourself and others, then call 911 and try to control access to the area until trained professionals arrive</u>.



- The Emergency Response Guidebook (ERG, shown right) was developed by the US DOT and its Canadian and Mexican counterparts for transportation incidents involving a hazardous material. It is designed to help first responders quickly identify the material/hazards and to establish protective zones away from the incident.
- Basic tips:
  - Call for assistance (911).
  - Use the ERG (shown right) to set a safe perimeter.
  - Go upwind of an inhalation hazard.
  - Do not touch or approach the material without the correct Personal Protection Equipment (PPE).
  - Do not touch mouth, nose, or eyes, or ingest anything on-scene until decontamination or unless cleared by the safety officer.
  - Eliminate ignition sources near flammable or explosive risks.
- Stay in communication, preferably with other staff, via a cell.
- PPE should include: Sunscreen (and/or hat), durable clothing (including taller boots), and gloves. Bring a lifejacket and waders (or rubber boots) near watercourses
- Traffic caution*!* Use vests, any safety lights, cones, and look-outs as necessary.

<u>Access</u>

Do not enter or work on private property without permission. Aside from that general rule, inspection and sampling constraints and allowances are delineated in KMC 13.11.070.

- Even if the City has tacit permission to enter (such as with a permit or application), the City must first notify the owner of intent to enter for inspection and present credentials.
- City may enter without permission or after unsuccessfully locating the owner only to abate an imminent hazard – and even then, a search warrant must still be obtained afterwards.
- The City may require the Owner to conduct or pay for monitoring to ensure compliance.

<u>Citizen Relations</u>

Informing the responsible party of the condition and requirements, then politely suggesting voluntarily compliance is the most cost effective way of dealing with most access and stormwater issues. As a representative of the City, one should actively listen to the citizen and acknowledge any concerns. Other considerations may include being prepared, projecting a high degree of professionalism, giving a proper introduction, clearly communicating (or better, reaching mutually understood agreement on) the problem, expectations, and timelines, assuring confidentiality as applicable, completing any follow-up, and finally, documenting the case. Typically, it is also a good idea to apprise a co-worker of anticipated citizen contacts, should an emergency arise.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-cR1	Ensure compliance with the deadlines outline in this section of the permit.	Ongoing

IV. ADAPTIVE MANAGEMENT (RECORDKEEPING)

MS4 NPDES Permit Requirement: S5.C.3.e (Program Evaluation & Assessment)
Implement procedures for program evaluation and assessment, including tracking the number and type of illicit discharges, including spills, identified; inspections made; and any feedback received from public education efforts. A summary of this information shall be included in the annual report.

Compliance Status

Since February 2008, the number and type of illicit discharges, including spills; inspections made and any feedback received from public education efforts have been logged into the Kelso IDDE Log (see Appendix D for an example page). A summary is included in the annual report.

This Manual is a working document. It is reviewed and revised periodically to keep it current and accurate. Records are kept in accordance with S9 of the Phase II Municipal Stormwater Permit.

Task ID	**PLANNED ACTIVITIES**	Date
IDDE-eR1	Continue current efforts.	Ongoing

APPENDICES

A. SOPs
   1. IDDE-SOP1 – Annual Priority IDDE Field Survey
   2. IDDE-SOP2 – Kelso/Longview Stormwater Hotlines Call-out Procedures.
   3. IDDE-SOP3 – Characterization
   4. IDDE-SOP4 – Response, Spill Control
   5. IDDE-SOP5 – Response, Reporting/Notifications
   6. IDDE-SOP6 – Response, Investigations (Tracing)
   7. IDDE-SOP7 – Enforcement (Removal)

B. 2010 Priority Receiving Waters Illicit Discharge Prioritization Spreadsheet

C. Sample Training Documents

D. IDDE Log Example

E. Glossary

APPENDIX A

Standard Operating Procedures (SOPs)

1. **IDDE-SOP1 – Annual Priority IDDE Field Survey**
2. **IDDE-SOP2 – Longview/Kelso Stormwater Hotline Call-out Procedures**
3. **IDDE-SOP3 – Characterization**
4. **IDDE-SOP4 – Response, Spill Control**
5. **IDDE-SOP5 – Response, Reporting/Notifications**
6. **IDDE-SOP6 – Response, Investigations (Tracing)**
7. **IDDE-SOP7 – Enforcement (Removal)**

Note: All SOPs are requirements under the Permit, depending on the conditions. For example, if a citizen complies with clean-up of an illicit discharge due to City education efforts, then enforcement is not necessary.

IDDE-SOP1 – Annual Priority IDDE Field Survey

Prioritization

Planning. Understand Chapter 5 of the CWP IDDE Manual. This is not a time-consuming research effort – rely on common-sense processing of readily available information.

Criteria. Basic criteria includes zoning (note the dominant and secondary zones by area), density of NPDES permittees, EPA's Enforcement & Compliance History Online (ECHO), EPA's regulated facilities in Envirofacts, Tier II reports for air quality, Ecology stormwater permits. Optional criteria include:

- Consider basin size,
- IDDE call volume
- Sanitary septic systems
- Age of development, and/or
- Density of target businesses (such as those likely to have floor drains or highly contaminated runoff).

Procedure.

- Work to plot this information on the map (it should also include the storm sewer system and drainage basins).
- Use the map to assign criteria to all receiving water bodies including Coweeman and Cowlitz Rivers and diking district watercourses.

Screening

Safety and Access. Fully adhere to Section II of this manual.

Planning.

- Understand and use the CWP IDDE Manual; specifically, its Outfall Reconnaissance Inventory (ORI) field sheets and its procedures in Sections 11.1, 11.3 – 9, 12.1 – 2, and 12.5.
- Inspect only during dry weather (with no precipitation in runoff in the past 48 hours, typically in the summer).

Equipment List

PPE (refer to Section III of this Manual)

Watch	Digital camera (spare batteries)
City ID	Flashlight (spare batteries)
Machete	Dry erase board and pens
Cell phone	Clip board and pencils
System map	ORI field sheets

Tape Measure [Sampling & monitoring gear]

Procedure

- Use the Trimble GPS unit to locate each outfall (capture/correct points if necessary).
- Photograph and complete the ORI field sheet for each outfall (consider a dry erase to ID the outfall in the photos)
- If problems are identified (tracers, dry weather flow, etc.), then assess the risk (IDDE SOP-3), flag the outfall, and return to trace at a later date.
- Trace questionable outfalls (see IDDE SOP6).
- Summarize the finding in a report and file all relevant materials (such as by scanning the ORI sheets).

IDDE-SOP2 – Kelso/Longview Stormwater Hotlines Call-out Procedures

Kelso has two Stormwater Hotlines: one is for Kelso only, 423-6590, and the other, 578-0900, is shared with the City of Longview.

The first Standard Operating Procedure (SOP) is used for Kelso's Stormwater Hotline where calls are directed to the Stormwater Manager, Van McKay. During business hours he will investigate, educate, and enforce as needed and document the incident in Kelso's IDDE Log.

The second SOP is part of the set of procedures provided to Advanced Messaging and Dispatch, who is contracted through the City of Longview to operate 578-0900, the Longview Public Works After-hours and Longview/Kelso Stormwater Hotline.

<u>For spills and/or unique events with potential to threaten safety or the environment</u>.

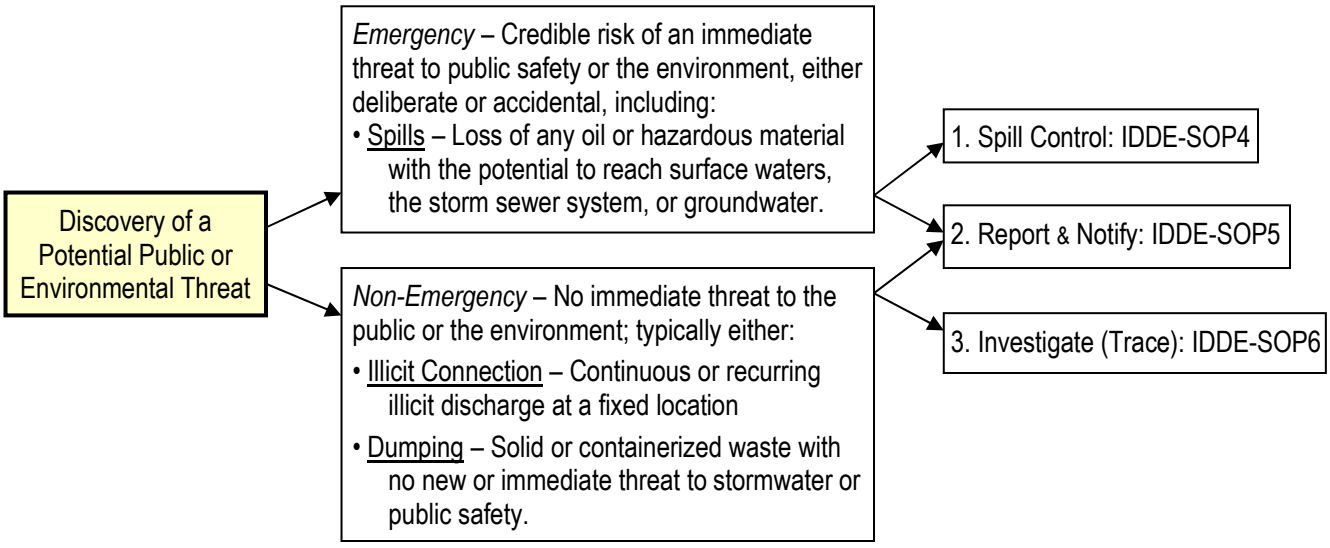
1. Ask the following questions:
   "What is your name? How can we get back to you? Where is the spill? What is spilled? How much spilled? Who spilled the material? Is anyone cleaning up the spill? Can the spill reach a storm drain and/or the environment? Has wildlife impacts been observed (e.g. dead fish, oiled birds, etc.)?"
2. Ask caller:
   "Could the City be responsible for the incident [for example, is it a spill from City vehicles/equipment, was it on City property (excl. the Right-of-Way), or was it possibly caused by contractors working on behalf of the City]?"
3. If yes, tell the caller: "I will promptly notify the appropriate City official after this call."
4. If the spill threatens the environment, say:
   "Thank-you. I will now patch you through to 911," and then do so.
5. Otherwise, say:
   "Thank-you. I will forward this information to the City for their review by the next business day."
6. If the City could be the responsible party; then, immediately call:
   A. For incidents in Kelso: Van McKay 423-6590 office
   B. For incidents in Longview call: Josh Johnson 442-5210 office, 957-2676 cell, or 636-3136 home. If no contact made, then call: Steve Warner 442-5299 office, 957-2720 cell, or (503) 397-0996 home.
   C. If unable to contact the designated City representative within 15 minutes, leave a message, and call all three of the following to report and respond to the spill:
      - National Response Center (NRC): (800) 424-8802
      - WA Emergency Management Division (Ecology's Spill Response Team): (800) 258-5990
      - Ecology Regional Office: (360) 407-6300
7. Log the incident, and report it to the customer, the next business day.

<u>For illicit discharges, conditions with no new or immediate threat to the environment, such as illegal dumping or connections to storm sewer, and/or general practices that may harm water quality.</u>

1. Longview: Call Lisa Vertrees 422-5209 and Steve Warner 442-5299 or 957-2720
2. Kelso: Call Van McKay 423-6590

IDDE-SOP3 – Characterization

CHARACTERIZATION OF MATERIALS IS A COMPLICATED ENDEAVOR SUBJECT TO MANY FEDERAL AND STATE REGULATIONS AND WHICH MUST BE COMPLETED BY PROPERLY TRAINED PROFESSIONALS. THIS SOP REPRESENTS A BEST ATTEMPT TO COMPLY WITH THE MUNICIPAL STORMWATER NPDES PERMIT AND PROVIDE BASIC GUIDANCE TO A DIVERSE GROUP OF PUBLIC EMPLOYEES WHO MAY WORK IN THE FIELD.



Considerations

1. Safety and Access: See Section III of this manual.
2. Amount: Is the amount changing; Can you estimate the amount or rate of loss?
3. Source: Can it be stopped? Where is it from? Is it an accident, illicit discharge, or vandalism? How large is the discharge pipe? Could the City be responsible party (see IDDE-SOP5)?
4. Potential for discharge / Mobility: Where is it going (or is it contained)? How far to the storm sewer, surface water, or groundwater?
5. Frequency: Continuous, intermittent, single event?
6. Hazard Types: Flammable (incl. explosive), corrosive (acidic or basic), reactive (incl. pressure), toxic (including persistent), or unknown.
7. Exposure Pathway: Inhalation, ingestion, absorption, and injection.
8. Other Physical Descriptors: Labels and placards, bill of lading [shipper, transporter, vendor, and/or manufacturer information], phase (gas, liquid, solid), odor, color, turbidity, viscosity, water miscibility, smoking/fuming/boiling/audible, suds, sheen, floatables, or damage/staining of the container or the affected area.

Common Examples

1. Spills: Auto fluids (typically from an accident, hydraulic failures, or poor maintenance)
2. Illicit connection: Sanitary, floor, or process drains to the storm sewer.
3. Dumping: Drums, pails, manure, garbage, yard waste
4. Illicit Discharges: Residential, commercial, industrial

A. *Only stormwater is allowed to discharge to municipal storm sewers & receiving waters.*

B. Exemptions: Clean groundwater, NPDES permitted discharges, Emergency fire-fighting waters, Air conditioner condensate, and Agriculture irrigation.

C. Conditionally allowed discharges:
   - Potable water: if dechlorinated to ≤0.1-ppm Cl_2 and releases are controlled as necessary to prevent re-suspension of silt [e.g. hydrant flushing, pipeline disinfection and pressure testing].
   - Lawn and landscape irrigation: Minimize through water conservation & public ed.
   - Swimming pool discharges: if dechlorinated, pH-adjusted, re-oxygenated, and controlled release. Pool cleaning wastewater and filter backflush is prohibited.
   - Street & sidewalk wash water, dust-control water, and building wash: if detergent-free. Reduce discharges through public education and best management practices (BMPs) such as sweeping before washing and minimizing water used.
   - Construction site dewatering: if handled per an approved plan.

CWP IDDE Resources
1. Sections 1.1, 11.8, 11.7, 11.8, 12.1, 12.4, and 12.7.
2. Tables 1, 27, 39, 45, 46, 47, and 51.
3. Figure 47

IDDE-SOP4 – Response, Spill Control

SPILL CONTROL OF POTENTIALLY HAZARDOUS MATERIALS IS A COMPLICATED ENDEAVOR SUBJECT TO MANY FEDERAL AND STATE REGULATIONS AND WHICH IS BEST COMPLETED BY TRAINED PROFESSIONALS. THIS SOP REPRESENTS A BEST ATTEMPT TO COMPLY WITH THE MUNICIPAL STORMWATER NPDES PERMIT AND PROVIDE BASIC GUIDANCE TO A DIVERSE GROUP OF FIRST RESPONDERS.

Response, Clean-up, and Disposal

1. Safety and Access: See Section III of this manual*!*
2. Equipment/Supplies: Maintain a kit/stock of the following: plenty of absorbent such as Amerizorb, a variety of pads (oil, chemical, acid), some absorbent socks, a couple flexible drain covers, cones, plastic garbage bags, broom & pan, label tags, PPE, etc.
3. Assess: Use IDDE-SOP3 to help determine if immediate controls and/or additional resources (including emergency services and/or a spill contractor) are needed to protect health or environment. If there is no threat, then address the problem at the first opportunity, the next working day.
4. Advise: Keep your supervisor (or safety representative), 911 Dispatch, Ecology, &/or the spill contractor enroute apprised of site conditions.
5. Control: If possible/safe, stop the source and block pathways to receiving waters.
6. Typical Accident: Stop the source and protect storm drains. Absorb the spill with sorbent pads, kitty litter, or Amerizorb. If possible, promptly bag and label material initially recovered from the spill's hotspot (where free liquid puddles or flows were present, as opposed to just drips or a sheen). Re-apply sorbents to the hotspot as necessary. Notify Operations for sand, sweeping, or vactoring. If the situation is stable, then clean-up can occur later during normal working hours.
   - *Safety Note*: Consider placing sand and "Motorcycles Use Extreme Caution" (or equivalent) road signs if, after clean-up, the street remains slippery from weather conditions and any spill residuals.
   - To learn more, get Ecology's *Focus on Small Spill Clean-up Guide, 03-08-005*.
7. Other Incidents:
   - Consult with Ecology's Spill Response Teams.
   - Need to isolate a spill within a Consolidated Diking District #1 (CDID#1) ditch? CDID#1 (423-2493) might stop the pumps.
   - Big spill on I-5 or a State Route? Involve Washington State Department of Transportation's (WSDOTs) SW Region Traffic Management Center (360) 759-1300.
8. Clean-up:
   - *Minor Incidents*: Depending on the identification and concentrations of the waste, most of the waste generated from a small spill incident is compatible with garbage. Debris from the hotspot of typical oil-related clean-ups (hydraulic oil, greases, incidental amounts of diesel, etc.) should be placed in the "Waste Grease" drum at the City Shop – or in a dump truck (parked under-cover) for disposal in the Subtitle D lined landfill in Hillsboro [Contact the stormwater manager for arrangements with this non-RCRA waste].
   - *Hazardous/Dangerous Waste*: Notify the stormwater manager or a supervisor for hazardous materials (e.g. gasoline), or if there is doubt about the nature of the material or

its proper disposal (see below). Concerns include adequate training per WAC 173-303 (dangerous waste regulations), analysis, profiling, packaging, labeling, storage, manifests, transportation, and disposal. Segregation can improve safety and disposal cost.

- *Unknown Material*: Potentially hazardous/dangerous materials need to be handled and managed as such until proven otherwise via testing and/or generator knowledge or Ecology decision – to do otherwise can harm the environment and/or the health of others . . . and it is illegal.

9. Documentation:
    - Incident Command System forms may be required documentation. Note: if the material was left in place, if any reached the environment, if notifications were made, and whether Ecology or a spill contractor was able to respond.
    - Phase II Permit (IDDE Log): The stormwater manager must document and investigate all spills and illicit discharges, and will record the incident in its IDDE Log.

Responsible Party

The spiller is the responsible party. They must report the spill immediately (see below) and manage it from response to clean-up. Try to help the responsible party get this done.

- Often commercial operators have training and spill response contracts in place.
- Most citizens are unaware that their vehicle insurance covers environmental costs.

If the responsible party is unresponsive, unable, or unwilling to report and respond, 911 Dispatch should do the Notifications (see below) and call a spill response contractor (ex: CCS 423-6316).

- *Remember:* Ecology's Spill Response Teams are an excellent resource – they will consult 24-hrs/day or even respond to small incidents.
- *Key Point:* Never call a private contractor, unless you (the City) intend to pay for it.
- *The responsible party may face enforcement actions for failure to report and respond.*

Notifications (more detail provided in IDDE-SOP5):

- National Response Center (NRC): (800) 424-8802
- Ecology Regional Office: (360) 407-6300
- WA Emergency Mngt Division (Ecology's Spill Response Team): (800) 258-5990
- Kelso Stormwater Hotline: 423-6590 or the Longview-Kelso Stormwater Hotline: 578-0900 [incidents for which the City may be responsible or which may constitute a threat to human health, welfare, or the environment].

IDDE-SOP5 – Response, Reporting/Notifications

1. Impetus to Report: The Municipal Stormwater NPDES Permit requires City field staff to be trained to identify and report illicit discharges during the regular course of work. State and Federal laws also govern the (often immediate) reporting of spills
2. How to Report:
   A. *Business Hours*: Van McKay (423-6590)
   B. *Anytime*: Longview-Kelso Stormwater Hotline (578-0900).
   C. *Spills with a potential to threaten safety or reach the environment*: Call 911 for hazmat assessment/response and for proper notifications. Report even if there is uncertainty; the Fire Department will help characterize the spill.
      - ❖ Additionally, contact Van McKay 423-6590 **immediately if the City may be the Responsible Party**.
3. Permit Reporting Matrix: [from ECY Publication #07-10-089 (Rev. 09/10)]

Type of Discharge	Permit Section	Who to Notify	Time to Notify	Other Reporting
A spill or discharge into or from the MS4, which could constitute a threat to human health, welfare, or the environment.	G3	**Ecology SW Region**: 360-407-6300	Immediately, but no later than 24- hours after obtaining the knowledge.	Call CDID#1 & affected jurisdictions
A spill or discharge of oil or hazardous substances into or from the MS4, which presents a threat to human health, welfare, or the environment.	G3	**Nat'l Response Center**: 800-424-8802 **WA Emergency Mngt Division**: 800-258-5990, or 800-OILS-911; & **Ecology SW Region Office** (see above)	Immediately	None
A discharge from my MS4 that is causing or contributing to a known or likely violation of water quality standards.	S4.F	In addition to any immediate notification under G3, as above, the appropriate authorized person shall notify Ecology in writing. (See S4.F.1)	≤30 days of determining that the discharge contributes to a known or likely violation of WQ standards.	Ecology will respond in writing per S4.F.2.
Illicit discharges not otherwise categorized above.	Various	Document in the Municipal Stormwater Permit Annual Report.	Include in your annual report submittal.	None

These thresholds for G3 reporting are subjective. The following considerations shall be used when gauging "a threat to human health, welfare, or the environment:"

A. Instances which could pose a safety threat to infrastructure or personnel using it, such as volatiles of a nature and/or amount as to render conditions in or adjacent to any section of the storm sewer system potentially flammable, corrosive, toxic, etc.

B. Instances which restrict the beneficial use of receiving waters such as swimming.

C. Note: "Oil" includes a wide variety of materials, including plant-based oils. Report oil spills that cause a sheen in receiving waters (www.epa.gov/oem/content/reporting).

D. Note: Hazmat spills are more complicated (see Ecology guidance #92-119 "Reporting hazardous material spills…"). Ecology's reporting requirements differ from the EPA's CERCLA regulations, which rely on reportable quantities.

E. Note: A spill that causes a threat to the environment or human health includes those that cannot be easily and rapidly contained (e.g. to saturated soils and/or in amounts that could get out of hand).

F. See IDDE-SOP3 for the definition of an illicit discharge.

G. Lesson: Report the spill. Sort-out the details later, and don't forget the follow-up and documentation.

IDDE-SOP6 – Response, Investigations (Tracing)

Requirement to Act:

- Illicit discharges of any kind shall be investigated as soon as possible.
- Immediately respond to (or refer) problems and violations determined to be emergencies or otherwise judged to be urgent or severe.
- Begin an investigation of potential illicit discharge (or refer to the appropriate agency, such as Longview or the Cowlitz County Department of Health) within 7 days of a report or information.
- Begin an investigation of a suspected illicit connection within 21 days of a report or discovery.

General Considerations:

- Refer to Section III of this Manual for Safety and Access.
- Understand Chapter 13 of the CWP IDDE Manual.
- Enter the potential illicit discharge into the IDDE log. Use the log to document any findings or necessary follow-up work.

Strategies:

A. Storm Drainage System Investigation.
   1. This approach is best to identify constant or frequent illicit discharges.
   2. Systematically isolate the area from which the polluted discharge originates by inspecting manholes progressively upstream from the telltale outfall until it (or evidence thereof) is no longer observed – then work downstream from the “clean” manhole or junction to isolate the location where the polluted discharge is entering the storm drainage system.
   3. Use a system map, a manhole hook, a flashlight, and maybe a water quality meter(s) to look for flow during dry weather, foul odors, colors or stained deposits, oily sheen and floatable materials.
   4. When visual inspections are not enough to isolate the source, consider dye testing, TV inspection, and/or smoke testing. Each of these methods are discussed in Section 13.3 of the CWP IDDE Manual and are typically performed in-house by the stormwater or sanitary sewer utilities.

B. Drainage Area Investigation.
   1. This approach is particularly useful when the type of activity responsible for the problem can be ascertained (see the table below) or for infrequent discharges (such as intentional dumping).
   2. This approach is similar to the screening process described in IDDE-SOP1, but it considers only the sub-basin and pollution sources that are germane to the problem.
   3. Identify potential sources by:
      - Reviewing information used to prioritize water bodies for screening or that was collected from the latest annual outfall survey.
      - Survey the general area and surrounding properties to identify potential sources of the illicit discharge (for example by using the phonebook, driving around, etc.)
   4. Once potential discharge sites are identified, conduct individual site inspections to find source(s), characterize them, and ascertain responsibility.

Common Discharges and Potential Sources

Observed Discharge	Potential Causes
Clogging Sediment	• Construction activity without proper erosion & sediment controls • Roadway sanding operations • Outdoor work areas or material storage areas
Thick Algae Growth	• Fertilizer leak or spill • Landscaping operations • Hydroseeding following construction • Failing or leaking septic system
Oil	• Refueling operations • Vehicle or machinery maintenance activities
Sudsy discharge	• Power washing of buildings • Vehicle or equipment washing operations • Mobile cleaning crew dumping • Laundromats or cleaners • Household greywater discharge
Clogged Grease	• Restaurant sink drain connection to stormwater system
Sewage	• Failing or leaking septic systems

IDDE-SOP7 – Enforcement

The illicit discharge enforcement and code compliance provisions of the KMC 13.11 provide ample process and authority to ensure compliance with this manual and local laws. Enforcement is through escalating enforcement procedures and actions. These include education to civil penalties to misdemeanor criminal penalties and/or imprisonment. Once the responsible parties are properly identified, they are to be approached in a positive manner, providing education relating to the illicit discharge and applicable ordinance concerns. Allow them to address their illicit discharge in a timely and satisfactory manner; and as appropriate, offer limited technical and compliance assistance such as the safe containment, cleanup, repair, and disposal and/or recycling of the illicit discharge. Continue involvement with the parties to ensure they addressed the illicit discharge and adequately addressed any potential public safety & health issues. If voluntary compliance is not progressing in an acceptable manner or within a time frame that would satisfy the Permit, issue a Notice and Order of Compliance for civil penalties. Various requirements to be included in this notice are listed in the KMC 13.11. The violator has the opportunity to appeal to the City hearings examiner. After non-compliance with the notice, proceed to criminal prosecution with the help of the City's legal department.

APPENDIX B

2010 Priority Receiving Waters Illicit Discharge Prioritization Spreadsheet

Criteria	Water Body					
	Tam 1 slough	Tam 2 slough	Coweeman slough	Baker Way slough	Elks slough	Cowliz River @ Cowlitz Way
Dominant Zoning	Residential	Residential	Residential	Industrial	Open space	Residential
Secondary Zoning	Commercial	Commercial	Commercial	Industrial	Residential	Commercial
Stormwater Permit holders	3	0	4	19	0	0
EPA-Regulated Facilities (Envirofacts)	9	0	8	30	0	0
Enforcement & Compliance History (ECHO)	5	0	5	17	0	0
Tier II spreadsheet on Air Quality - emitters	0	0	1	4	0	0
Relative Rating	Medium	Low	Medium	High	Low	Low

Note:

Zoning	Risk
Residential	Low
Commercial	Medium
Industrial	High

	Water Body					
	Tam 1 slough	Tam 2 slough	Coweeman slough	Baker Way slough	Elks slough	Cowliz River @ Cowlitz Way
Priority Rating (1 is highest priority)	2	4	3	1	6	5

APPENDIX C

Sample Training Documents

1. Police (abbreviated version)
2. Operations (abbreviated version)

POLICE DEPARTMENT PHASE II PERMIT STORMWATER TRAINING

Illicit Discharge Detection and Elimination Program

Abbreviated Training in a Bulleted List

- Stormwater Hotlines
  Business Hours: 423-6590, After hours: 423-5730.
- Municipal Stormwater Permit requires that the City have an Illicit Discharge Detection and Elimination program. The City must investigate illicit discharges and try to eliminate them.
- Why do we need to protect stormwater?
  - Rainwater washes debris, chemicals, dirt, etc. into our ditches and rivers
  - This stormwater gets little to no treatment
  - Stormwater is the leading cause of water pollution in urban areas
  - The solution is for each of us to reduce pollution at its many sources

- Illicit Discharges – only stormwater is allowed to discharge into the stormwater system.
- Exemptions: Include emergency firefighting, clean groundwater, NPDES permitted discharges, air conditioner condensate and agriculture irrigation.
- Conditionally Allowed Discharges: Potable water, lawn and landscape irrigation, swimming pool discharges, street and sidewalk rinse water and construction site dewatering.
- Examples of Illicit Discharges:
  - Suds
  - Oil/gas
  - Dog poop
  - Leaf litter
  - Sanitary sewage
  - Industrial waste

- Field staff must be trained to identify & report illicit discharges during regular work hrs.
- Hotlines and Reporting: A Stormwater Hotline is a Permit requirement.
- What to Report: Who, what (pollutant and amount), when and where.
- How to Report: Call 911 or hotlines.
- Calling Priority:
  - Spills - Call 911 if an immediate potential to threaten safety or environment
  - Illicit Discharges – Call Van McKay at Public Works, 423-6590
  - Operations – Call Public Works after-hours hotline at 423-5730

- Spill Safety
  - Know the material, hazards and use proper Personal Protective Equipment
  - Hazardous material dangers may not be obvious
  - Use the Emergency Response Guidebook to identify materials/hazards and to establish protective zones

- Follow-up: The City (currently Van McKay) will investigate, document and take action on violations to the illicit discharge ordinance.
- The policy for illicit discharges is with increasing enforcement from education through misdemeanor.

OPERATIONS DEPT. PHASE II PERMIT STORMWATER TRAINING

Illicit Discharge Detection and Elimination Program

Abbreviated Training in a Bulleted List

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APPENDIX D
IDDE Log Example

S5.C.3.e (IDDE Log)

Date In	Inspection, Caller, or Hotline	Spill, Illicit Dumpn/Dischrg or Connection, or PR Feedback	Caller Information	Location	Problem	Response Date	Discussion of Actions and Resolution (Van McKay unless otherwise noted)	Date Completed	Days to Respond	Days to Conclude
1/1/2008	C	S	John Doe	Your Block	Truck spill going into strom drain	01/01/08	This is an example incident. Site visit; Minor and dispersed. Fire Dept to blocked storm	1/2/2008	0	1
2/22/2008	I	D		S. Pacific Ave. and 1st Street	Sediment tracked onto street	02/22/08	Approx. 1:30 and during a walk by, Josh Johnson informed an employee Watkins Tractor between Pacific Ave. and 1st street that they are tracking soil onto the street and it should be swept. Van McKay was in attendance. The employee said they did clean the street on occasion.	2/22/2008	0	0
08/05/09	C	D		700 W Cowlitz Way	Washing automobiles on lot and street with washwater draining into stormwater drainage system	08/05/09	VLM discussed with owner Debbie and her husband about washing cars on auto lots and discharging to the stormwater system. Also discussed the new IDDE ordinance banning the practice in mid-August. On 8-06-09 I dropped of the draft IDDE ordinance and Ecology guidance on washwaters.	8/6/2009	0	1
8/18/2009	C	D		Commercial properties	Requirement for permit to wash equipment on commercial properties	08/18/09	VLM returned call and discussed the upcoming illicit discharge ordinance. No permit required but vehicle washing washwater required to be discharged to the sanitary sewer, likely with an oil/water separator.	8/18/2009	0	0
8/18/2009	C	D		Sears store at Three Rivers Mall	The Sears store is considering selling some cars at their location, maybe about a dozen. Syed was inquiring about washing cars at the parking lot and a filtration system requirement	08/18/09	VLM returned the call and discussed the upcoming illicit discharge ordinance. In short, I said that washwater needs to be sent to the sanitary sewer, that he needs to discuss with the treatment plant, and washwater will likely need to be treated with an oil/water separator. A washpad would need a cover to keep stormwater from going into the sanitary sewer. We discussed temporary covers. I said auto lots have an exemption where they can rinse cars off with rinsewater draining to a catch basin with sediment and oil traps.	8/18/2009	0	0
9/3/2009	I/C	D		S. of 701 S. Pacific Ave.	Water treatment plant had a discharge of potable water to the curb. It was about 200 gal/hr. and lasted 1/2 to 1 hour.	09/03/09	VLM witnessed the discharge at approx. 8:30 a.m. Paul Reebs called in the afternoon to discuss. The treatment plant had an unintentional discharge and the plant will change the Standard Operating Proceedures so that the discharge won't happen in the future.	9/3/2009	0	0
9/14/2009	C	D		500 Allen Street, Cheveron Station	Employee was seen on the evening of 9/11/09 dumping a bucket full of soapy water used for windsheild washing into the street to go to the gutter.	11/23/09	VLM talked with the manager on duty, Lara, and discussed the problem. He gave Lara a copy of the ordinance with the verbiage on what can't be discharged into the MS4 highlighted. He explained that nothing but stormwater can go into the stormwater system and that the soapy wastewater can be dumped into the sanitary sewer system, such as a toilet.	11/23/2009	70	70
1/27/2010	C	D		1214 6th Ave. So.	Residents are dumping leaves into curb line. Most of the leaves are from the right of way where trees are located and trees along Laurel significantly overhang the street. Leaves that fall on the street would be the City's responsibility.	01/27/10	VLM went to site and discussed with B. Hogue. Then discussed the piling of leaves with Mike Wallace who lives at 1214 So. 6th Ave. and is likely a renter. Leaves have been piled up along 6th and Laurel Street. I gave him a Stormwater Pollution brochure and discussed that leaves can't be piled into the street and options for disposal such as Waste Control Transfer Station. I said the City would remove the leaves.	1/27/2010	0	0
1/27/2010	C	D		206 Columbia Street	Resident dumping leaves into curb line on parcel.	01/29/10	Went to site on 01-27-10 and discussed with B. Hogue. Tracy Laurinat is listed as owner of parcel. Went to residence but no one answered the door. The leaves had been picked up by Operations in the last two days. Decided not to pursue individual household but to have a City-wide educational campaign on dumping leaves into street this fall.	1/29/2010	2	2
1/8/2010	C	D		Grimm Road, just east of Crestwood Lane	Kurthy claims that County residents at 2001 Grimm Road ride their horses up Grimm Rd into the City of Kelso and their horses poop in the road and they don't clean up after the horses. P. Kurthy wishes to remain an anonymous caller with respect to the resident.	01/29/10	Discussed with mother at 2001 Grimm Rd., possibly owner of property Kimberly Bodine, stormwater pollution and horse waste. That the City has a new ordinance that prohibits animal waste deposits to the stormwater drainage system. She said they are having horses at their property temporarily and waste from the horses will be picked up in the future. I explained that both the County and City have this permit. I gave her a stormwater pollution citizen's guide.	1/29/2010	21	21
1/28/2010	I	C		2206 Talley Way; PUD substation	Upon reviewing the Cowlitz PUD#1 stormwater mitigation application, I noticed the potential for an illicit connection on substation drawings.	02/01/10	Doug Thomas and I made a sitewalk regarding the application. I noticed what was likely the oil-containment vault. I did not see an outfall for the vault to the stormwater ditch around the substation. Consider writing a letter to PUD on a potential connection.	2/1/2010	4	4
2/3/2010	C	D		805 Walnut Street	Yard trimmings, about a wheelbarrow's worth, have been dumped into the ditch.	02/05/10	Went to 805 Walnut St. No one answered door. Left a citizen's guide to stormwater pollution and a business card with request to let people know not to dump in ditch. Indicated illicit discharge ordinance and directed to City stormwater website.	2/5/2010	2	2

Appendix E
Glossary

BMP	Best Management Practice
CDID#1	Consolidated Diking Improvement District #1
CDID#3	Consolidated Diking Improvement District #3
CFR	Code of Federal Regulations
CWP	Center for Watershed Protection
DID#1	Diking Improvement District #1
DOT	Department of Transportation
EPA	Environmental Protection Agency
ERG	Emergency Response Guide
GIS	Geographic Information System
IDDE	Illicit Discharge Detection and Elimination
IDLH	Immediately Dangerous to Life and Health
KMC	Kelso Municipal Code
LEL	Lower Explosive Limit
MS4	Municipal Separate Storm Sewer System
NPDES	National Pollution Discharge Elimination System
NRC	National Response Center
ORI	Outfall Reconnaissance Inventory
OSHA	Occupational Safety and Health Administration
PPE	Personal Protection Equipment
SOP	Standard Operating Procedure
SWMP	Stormwater Management Program
US	United States
WAC	Washington Administrative Code
WSDOT	Washington State Department of Transportation

MUNICIPAL STORMWATER OPERATIONS AND MAINTENANCE (O&M) PROGRAM

2011

TABLE OF CONTENTS

APPENDICES

PURPOSE, GOAL, AND APPROACH

PURPOSE

This program was written to comply with the Phase II Municipal Stormwater NPDES Permit (Permit) for Western Washington, sections S4.C and D and S5.C.5.

GOAL

Conduct municipal operations and maintenance programs in a manner that reduces the discharge of pollutants to the maximum extent practicable (MEP) using all known, available, and reasonable methods of prevention, control, and treatment (AKART).

APPROACH

A. This program is a supporting document to the City's Stormwater Management Program (SWMP).
B. It shall be reviewed at least once per Permit cycle by Engineering and Operations Division (Operations) staff, and updated as necessary.
C. This program outlines the inspections and maintenance procedures to be performed by staff in Engineering, Parks & Recreation Division (Parks) and Operations.
D. It incorporates the Stormwater Management Manual for Western Washington (SMMWW) Volume IV into City operations and maintenance practices.

OVERVIEW

The City of Kelso has a population of almost 12,000 people located along Interstate 5 and is a sister city to Longview. The Coweeman and Cowlitz rivers flow through the city and it borders the Columbia River. City operations that potentially impact stormwater include Operations and Parks.

Operations Division

Operations provides services from its Operations Maintenance Facility (Facility) at 2300 Parrott Way and the Facility operates under its own SWPPP. Water, sewer, stormwater and traffic services are based out of the Facility. The Facility has heavy equipment and a storage yard. The SWPPP is also a part of the SWMP and is used to prevent and control pollution to waters of the state and to comply with the requirements of the Permit.

Parks and Recreation Division

The Parks and Recreation Division (Parks) manages 8 parks with over 50 acres of parkland. It conducts operations out of its facility located at Tam O'Shanter Way, next to the City's largest park, Tam O'Shanter Park. Parks activities include maintenance at the City parks.

Operations and Parks work under the guidance of other programs such as the Nutrient, Integrated Pest Management and Herbicide Plan and the Illicit Discharge Detection and

Elimination (IDDE) Program. All City employees who work in the field as part of their regular duties may observe illicit discharges or connections or who may impact water quality receive training on illicit discharges and spills.

STORMWATER FACILITIES

The City's stormwater drainage system has five runoff detention and/or treatment facilities. The Stormwater Facilities Manual contains all relevant information about these facilities and copies are kept with Engineering. The stormwater drainage system has about 55 miles of storm sewer pipes from 4- to 60-inches in diameter and approximately 1200 catch basins and 500 manholes.

Stormwater treatment and flow control facilities include the following:

- CDS unit at 1st Avenue and North Pacific Avenue
- Stormceptor System at 3rd Avenue and Oak Street City parking lot
- Flow control structure and oil/water separator at east end of Allen Street Bridge
- Flow control structure, oil/water separator and pond with outlet control structure at west end of Allen Street Bridge
- Pond with bioswale at airport

A table in Appendix A includes the stormwater facilities, their maintenance requirements and schedules. The facilities will be inspected, maintained and documented. Engineering will perform regularly scheduled inspections and Operations will perform the maintenance.

A. Standards. The maintenance standards from Chapter 2 in Volume IV of the SMMWW are required by this manual.

B. Compliance with Standards. Maintenance will be performed promptly as necessary to remain compliant with the standards. When an inspection identifies an exceedance of the maintenance standard, maintenance will be performed:
   - Within 1 year for typical maintenance of facilities, except catch basins,
   - Within 6 months for catch basins,
   - Within 2 years for maintenance that requires capital construction of less than $25,000, or
   - As otherwise documented in the Permit per S5.C.5(a)(ii).

C. Inspection Frequency.
   1. Annually for municipally owned or operated permanent stormwater treatment and flow control facilities.
   2. Once each Permit cycle (every five years) for catch basins and inlets (includes cleaning as needed).
   3. After major storm events (10-year design storm).

D. Records and Performance. Records of all inspections are kept in Engineering. Compliance during this Permit cycle shall be determined by achieving an annual rate of at least 95% of inspections specified above.

Further guidance for inspection and maintenance is provided in *BMPs for Maintenance of Stormwater Drainage and Treatment Systems* found in Appendix XX.

STREETS

Street Sweeping

Operations performs street sweeping on all curbed streets in the City of Kelso. Street sweeping is performed using an Elgin Crosswind J regenerative air street sweeper. The sweeper has vacuum and sweeping capabilities for efficient removal of sediment, debris and other pollutants. Debris build-up is at its most during the months of October through December. The City coordinates sweeping with other activities that generate higher than normal loading. An example is in areas of heavy leaf build-up during the Fall, when street sweeping is performed after crews remove the majority of leaves with heavy equipment The City performs the sweeping on an as-needed basis and as much as staff time allows. Refer to *BMPs for Urban Streets* found in Appendix B for further guidance.

Deicing

Operations performs de-icing of city streets using ZEP Super D-Ice that is an ice melt compound composed of calcium chloride anhydrous beads. Application of the ZEP is only performed when needed to protect the health and safety of vehicular traffic. Refer to the *BMPs for Deicing and Anti-Icing Operations – Airports and Streets* in Appendix B for further guidance.

Dust Emissions

The City has unpaved streets and alleys that are re-graded and re-rocked periodically to control erosion and potholing. Dust problems are uncommon. If dust emissions become significant the City will consider dust control practices. These could include re-rocking with a cleaner grade of rock and using approved dust suppressant chemicals such as those listed in Ecology Publication #96-433, "Techniques for Dust Prevention and Suppression." For further guidance refer to the *BMPs for Dust Control at Disturbed Areas and Unpaved Roadways and Parking Lots* in Appendix B.

Utility Corridors and Facilities

The City has pervious surfaces outside of the streets and sidewalks but still within the right of way. For these areas, the City will follow its Nutrient, Integrated Pest Management and Herbicide Plan and the *BMPs for Maintenance of Public and Private Utility Corridors and Facilities* found in Appendix B.

Roadside Ditches

Roadside ditches are maintained to preserve the condition and capacity for which they were originally constructed, and to minimize bare or thinly vegetated ground surfaces.

Maintenance practices should provide for erosion and sediment control as needed. Further guidance can be found in the *BMPs for Maintenance of Roadside Ditches* found in Appendix B.

The BMPs discussed below are referenced in the Phase II Municipal Stormwater NPDES Permit, but are not in the SMMWW (hence, no BMP citations).

Road Repair and Resurfacing, including pavement grinding:

- Regular municipal street repair and maintenance activities, such as pavement marking, repair, patching, resurfacing, sealing and right-of-way maintenance, can generate a range of stormwater pollutants, including metals, chlorides, hydrocarbons (e.g. benzene, toluene, ethylbenzene, xylene), nutrients, sediment and trash.
- The City will employ pollution prevention/good housekeeping efforts such as protecting inlets, keeping the street clean including erosion/sediment control to ensure final stabilization of disturbed soils.

Pavement Striping Maintenance:

- Only DOT-approved paint is used and it is applied to WSDOT standards.

GENERATED MATERIAL

The City will manage materials generated by municipal operations using appropriate BMPs to reduce and prevent potential pollutants from being mixed with stormwater runoff.

Operations and Parks generating material will be responsible for implementing BMPs in either the Facility SWPPP and/or in this O&M manual.

A. APPLICABLE REGULATIONS

The City will comply with all applicable local, state, and Federal laws and regulations, including but not limited to:

- State (Ecology): WAC 173-303 – Dangerous Waste Regulations;
- Local (Cowlitz County Health Dept.) according to the Minimum Functional Standards for Solid Waste Management (WAC 173-304) and Municipal Landfill Standard (WAC 173-351), Cowlitz County Health Department.

B. WASTE HANDLING AND DISPOSAL

This section addresses the generally applicable stormwater runoff pollution prevention BMPs. Street wastes are discussed in this section because they are specifically discussed in the Phase II Municipal Stormwater NPDES Permit.

BMPs for Storage of Liquid, Food Waste, or Dangerous Waste (see Appendix B)

- Clean-up leaks and spills.
- Store containers in impervious containment under a roof.

- *Liquids* – Use tight fitting lids or bungs; use of drip pans; inspect containers for damage and leaks. *Solids* – Elevate or otherwise protect from stormwater.
- If generating "dangerous waste," contact the Stormwater Manager (x3377) for assistance and Follow Ecology's "Shop Guide for Dangerous Waste Management." (See Appendix C).
- Comply with Uniform Fire Code if waste is flammable, reactive, or explosive.
- Cover trash cans and dumpsters.

BMPs for Storage or Transfer (outside) of Solid Raw Materials, By-products, or Finished Products (see Appendix B)

- Provide [impervious where necessary] containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutants, and TSS.
- The storage area should have a minimum 1.5% slope to prevent run-on and to minimize contact (pooling) between stormwater and any leachable materials.
- Do not hose down materials/product to the stormwater system.
- Protect catch basins or other entry points nearest to the pile.
- Sweep regularly.
- Treat runoff, where it has a pathway to the storm sewer or surface waters.

Selected Waste Related Definitions

- *Dangerous Waste*: Means those solid waste designated in WAC 173-303-70 through 173-303-100 as dangerous, or extremely hazardous or mixed waste. Characterization is a three-step process:
  1. Is the material is a waste?
  2. Is it a listed waste substance?
  3. Does it exhibit any dangerous waste characteristics (ignitability, corrosivity, reactivity, or toxicity).

  No person without appropriate training should perform this task.

- *Special Waste*: Means any state-only dangerous waste that is solid only (non-liquid, non-aqueous, non-gaseous), that is: Corrosive, toxic (Category D toxicity only), selective PCB waste, or persistent waste that is not extremely hazardous waste. [Exclusion: Any solid waste regulated by the EPA cannot be a special waste].

The BMPs discussed below are referenced in the SWPPP and/or Phase II Municipal Stormwater NPDES Permit, but are not in the SMMWW (hence, no BMP numbers).

Dangerous or Special Wastes

- These waste materials typically contain hazardous substances, oils, or exhibit hazardous characteristics such as corrosivity, ignitability, reactivity, toxicity, or environment persistence.
- State regulations require anyone handling and managing these waste including but not limited to waste designation, packaging, labeling, preparing shipping documents, and transporting be trained in the duties they perform. See WAC 173-303-330.
- City staff is not trained in the handling and managing of dangerous or special wastes, such as hazardous waste operations and emergency response (HAZWOPER) training. Spills that include dangerous wastes materials are forwarded on to 911 for response.

Street Wastes

- Street wastes generated by street sweeping or cleaning of catch basins, etc. will be managed according to Appendix 6 of the Permit.
- Currently, vactor truck wastes are taken to the shop and disposed of at the leaf/waste bin. The wastes are tested for metals three times per year at Columbia Analytical Services in Kelso. Metals tested are arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Results typically are non-detect for the metals and a sample report is shown in Appendix D. Wastes that pass testing are shipped to either the City's fill site at 2514 Talley Way or the Cowlitz County landfill.
- Vactor waste from cleaning the stormwater drainage system will be delivered to a joint (WSDOT and local jurisdictions) decant facility when it is completed. Completion date is estimated to be Summer, 2012. The facility will be maintained by Cowlitz County and will be equipped with a decant bay, a grit chamber, and a coalescing plate oil/water separator. The final effluent will be discharged to the sanitary sewer and treated at the Three Rivers Regional Wastewater Plant.

Spills

- Operations and Parks staff have been trained on spill response through Illicit Discharge Detection and Elimination (IDDE) training. Spill response basics are described below.
- For major spills that can not be controlled or cleaned up using spill kits available on City vehicles or at the Facility, call 911 for assistance. For minor spills respond as detailed below.
- Notify the Operations Supervisor or the Stormwater Manager for spills on municipal streets and alleys for internal reporting, assistance, and/or direction for traffic safety, street surface damage, and/or cleanup waste assistance.
- When responding to liquids, the best practice to manage waste from cleanup activities is to first cleanup the hotspot areas (Those with free liquids on the surface) separately from residual stains. Sand or sorbents applied on residual stains can usually be characterized and managed separately providing cost savings to the City.
- Hydraulic Oil Spill Example:
    1. Absorb the hot spot area of free liquid with sorbent material (preferably with sorbent pads or if needed with Amerizorb, floor dry, soil, or sand).
    2. Place the material in a heavy duty plastic bag and label on it the date, City of Kelso, spill source (e.g. equipment #), and the phrase "Non-Regulated Material, Solid" followed by the specific sorbent type then "Hydraulic Oil".

        Example:

        8/16/11
        City of Kelso
        Spill from 38-500
        Non-Regulated Material, Solid – Sorbent pads and Hydraulic Oil.

    3. Take the bagged material to the designated storage container for disposal and notify your supervisor and the Stormwater Manager of the quantity of waste generated from the spill.

Note: Alternatively, if sanding is the only feasible option, the a street sweeper can sweep the area when ready (preferably when empty). The sweeper operator will write down the above label information plus the total estimated quantity in volume and submit the information to the Operations Supervisor.

4. Any remaining residual oil that cannot be absorbed on street surfaces may need sand spread over for traction purposes. Place Motorcycle related warning signs as needed until street sweepers are ready to sweep up the sand. This sand can be combined with normal street sweeping material.

TRAINING

Operations and Parks staff are trained at least once per Permit cycle on the importance of protecting water quality, the requirements of the Phase II Municipal Stormwater NPDES Permit, operation and maintenance standards, inspection procedures, ways to perform their job activities to prevent or minimize impacts to water quality, and procedures for reporting water quality concerns, including potential illicit discharges.

REVIEW AND RECORDKEEPING

This Manual is reviewed at least once per Permit cycle by the Stormwater Manager, the Operations Supervisor and the Stormwater Lead.

Records of training, inspection, and maintenance (or repair) activities are kept in order to report in the annual report required by the Permit.

Appendix A

Table of Stormwater Facilities

ANNUAL DRAINAGE MAINTENANCE

PROJECT TITLE	START DATE	DURA-TION	QUANTITY PER YEAR	NOTES/GOALS
Annual Maintenance Items				
Alley Maintenance	January	6 Months	2000 Feet	Six year program. Weather dependent
Storm Sewer Ditches	January	6 Months	1000 Feet	In conjuction with the culvert maintenance program.
Equipment Inventory	January	Monthly	Approx 50 Hours yearly	Monthly and annual inventory
Equipment Maint.	January	As Needed	Varies	Equipment weekly mileage sheets
Street Sweeping	January	12 months		Heavy months are October, November, December
Locates	January	Daily	Varies	
Sweeper Screenings	January	3 Weeks		Scheduled 3 times a year. Need the use of screening machine from City of Longview
Sweeper Screenings testing			3 times/year	Send sample to CAS for metals testing.
Catch Basin Cleaning	October	3 Months	200	Five year program
Leaf Pick up	October	3 Months	300 hrs+	Back hoe and dump truck for heavy leaf areas; after that clean up with street sweeper.
Culvert Maintenance	October	4 Months	Unknown	In conjunction with the ditch maintenance program. Must be inventoried and mapped.
Allen St Bridge Oil/Water Separators	May	1 day	1	Two Oil/Water separators' maintenance. Traffic control needed. Hire contractor to clean.
Allen St Bridge Flow Control Structures	May	1 day	1	Vactor 2 flow control structures. Traffic control needed.
Allen St Bridge Catch Basins	May	1 day	1 minimum	Vactor all catch basins
Allen St Bridge sidewalks	May		1	Sidewalk flushing necessary?
Allen Street Bridge stormwater pond	Spring	1 day	3	Operations to hire jail crew to mow inside fence, remove trash.
Coweeman Bridge Maintenance	Late spring	3 Weeks	3	Vactor catch basins? Are there CBs? Sidewalk flushing?
CDS unit at 1st Ave. and No. Pacific Ave.	Late spring	Four hours	1	Perform with Engineering observation
Stormceptor System at 3rd Ave. and Oak Street parking lot	Late Spring	One hour	1	Perform with Engineering observation
Pond with bioswale at airport	May and Sept	2 days	2	Operations to hire jail crew to hand pull weeds inside the pond; weed whack the area around pond and in bioswale.
Bioswale at Tam O'Shanter Park	Spring, Summer, Fall	1/2 day	4	Parks to mow, clean trash and maintain bioswale
One-Time and Recurring Projects				
Minor rd.@Mount Brynion	?	1 Day	1	Waiting on Engineering for design
Catch Basin Repair	Spring	6 Months	6	Approximately 250 man hours

Appendix B

Best Management Practices

BMPs for Maintenance of Stormwater Drainage and Treatment Systems

Description of Pollutant Sources: Facilities include roadside catch basins on arterials and within residential areas, conveyance systems, detention facilities such as ponds and vaults, oil and water separators, biofilters, settling basins, infiltration systems, and all other types of stormwater treatment systems presented in Volume V. Roadside catch basins can remove from 5 to 15 percent of the pollutants present in stormwater. When catch basins are about 60 percent full of sediment, they cease removing sediments. Oil and grease, hydrocarbons, debris, heavy metals, sediments and contaminated water are found in catch basins, oil and water separators, settling basins, etc.

Pollutant Control Approach: Provide maintenance and cleaning of debris, sediments, and oil from stormwater collection, conveyance, and treatment systems to obtain proper operation.

Applicable Operational BMPs:

Maintain stormwater treatment facilities according to the O & M procedures presented in Section 4.6 of Volume V in addition to the following BMPs:

- Inspect and clean treatment BMPs, conveyance systems, and catch basins as needed, and determine whether improvements in O & M are needed.
- Promptly repair any deterioration threatening the structural integrity of the facilities. These include replacement of clean-out gates, catch basin lids, and rock in emergency spillways.
- Ensure that storm sewer capacities are not exceeded and that heavy sediment discharges to the sewer system are prevented.
- Regularly remove debris and sludge from BMPs used for peak-rate control, treatment, etc. and discharge to a sanitary sewer if approved by the sewer authority, or truck to a local or state government approved disposal site.
- Clean catch basins when the depth of deposits reaches 60 percent of the sump depth as measured from the bottom of basin to the invert of the lowest pipe into or out of the basin. However, in no case should there be less than six inches clearance from the debris surface to the invert of the lowest pipe. Some catch basins (for example, WSDOT Type 1L basins) may have as little as 12 inches sediment storage below the invert. These catch basins will need more frequent inspection and cleaning to prevent scouring. Where these catch basins are part of a stormwater collection and treatment system, the system owner/operator may choose to concentrate maintenance efforts on downstream control devices as part of a systems approach.

- Clean woody debris in a catch basin as frequently as needed to ensure proper operation of the catchbasin.
- Post warning signs; "Dump No Waste - Drains to Ground Water," "Streams," "Lakes," or emboss on or adjacent to all storm drain inlets *where practical.*
- Disposal of sediments and liquids from the catch basins must comply with "Recommendations for Management of Street Wastes" described in Appendix IV-G of this volume.

Additional Applicable BMPs: Select additional applicable BMPs from this chapter depending on the pollutant sources and activities conducted at the facility. Those BMPs include:

- BMPs for Soil Erosion and Sediment Control at Industrial Sites
- BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers
- BMPs for Spills of Oil and Hazardous Substances
- BMPs for Illicit Connections to Storm Drains
- BMPs for Urban Streets.

BMPs for Deicing and Anti-Icing Operations - Airports and Streets

Description of Pollutant Sources: Deicing and/or anti-icing compounds are used on highways, streets, airport runways, and on aircraft to control ice and snow. Typically ethylene glycol and propylene glycol are deicers used on aircraft. Deicers commonly used on highways and streets include calcium magnesium acetate (CMA), calcium chloride, magnesium chloride, sodium chloride, urea, and potassium acetate. The deicing and anti-icing compounds become pollutants when they are conveyed to storm drains or to surface water after application. Leaks and spills of these chemicals can also occur during their handling and storage.

BMPs for Airport De/anti-Icing Operations

EPA is currently studying airport deicing as part of the pretreatment regulations (40 CFR 403). These regulations are not expected to be promulgated for several years.

Pollutant Control Approach for Aircraft: Spent glycol discharges in aircraft application areas are process wastewaters that are regulated under Ecology's industrial stormwater general permit. (Contact the Ecology Regional Office for details.) BMPs for aircraft de/anti-icers must be consistent with aviation safety and the operational needs of the aircraft operator.

Applicable BMPs for Aircraft:

Conduct aircraft deicing or anti-icing applications in impervious containment areas. Collect aircraft deicer or anti-icer spent chemicals, such as glycol, draining from aircraft in deicing or anti-icing application areas and convey to a sanitary sewer, treatment, or other approved disposal or recovery method. Divert deicing runoff from paved gate areas to appropriate collection areas or conveyances for proper treatment or disposal.

Do not allow spent deicer or anti-icer chemicals or stormwater contaminated with aircraft deicer or anti-icer chemicals to be discharged from application areas including gate areas, to surface water, or ground water, directly or indirectly.

Transfer deicing and anti-icing chemicals on an impervious containment pad, or equivalent spill/leak containment area, and store in secondary containment areas. (See Storage of Liquids in Above-Ground Tanks)

Note the applicable containment BMP of aircraft de/anti-icing applications, and applicable treatment BMPs for de/anti-icer spent chemicals such as glycols.

Recommended Additional BMPs for Aircraft:

Establish a centralized aircraft de/anti-icing facility, if feasible and practicable, or in designated areas of the tarmac equipped with separate collection drains for the spent deicer liquids.

Consider installing an aircraft de/anti-icing chemical recovery system, or contract with a chemical recycler, if practicable.

Applicable BMPs for Airport Runways/Taxiways:

Avoid excessive application of all de/anti-icing chemicals, which could contaminate stormwater.

Store and transfer de/anti-icing materials on an impervious containment pad or an equivalent containment area and/or under cover in accordance with BMP Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products in this volume. Other material storage and transfer approaches may be considered if it can be demonstrated that stormwater will not be contaminated with or that the de/anti-icer material cannot reach surface or ground waters.

Recommended Additional BMPs for Airport Runways/Taxiways:

Include limits on toxic materials and phosphorous in the specifications for de/anti-icers, where applicable.

Consider using anti-icing materials rather than deicers if it will result in less adverse environmental impact.

Select cost-effective de/anti-icers that cause the least adverse environmental impact.

BMPs for Streets/Highways

Applicable BMPs

- Select de and anti-icers that cause the least adverse environmental impact. Apply only as needed using minimum quantities.
- Where feasible and practicable use roadway deicers, such as calcium magnesium acetate, potassium acetate, or similar materials, that cause less adverse environmental impact than urea, and sodium chloride.
- Store and transfer de/anti-icing materials on an impervious containment pad in accordance with BMP Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products in this volume.
- Sweep/clean up accumulated de/anti-icing materials and grit from roads as soon as possible after the road surface clears.

Recommended Additional BMPs

- Intensify roadway cleaning in early spring to help remove particulates from road surfaces.
- Include limits on toxic metals in the specifications for de/anti-icers.

BMPs for Dust Control at Disturbed Land Areas and Unpaved Roadways and Parking Lots

Description of Pollutant Sources: Dust can cause air and water pollution problems particularly at demolition sites and in arid areas where reduced rainfall exposes soil particles to transport by air.

Pollutant Control Approach: Minimize dust generation and apply environmentally friendly and government approved dust suppressant chemicals, if necessary.

Applicable Operational BMPs:

- Sprinkle or wet down soil or dust with water as long as it does not result in a wastewater discharge.
- Use only local and/or state government approved dust suppressant chemicals such as those listed in Ecology Publication #96-433, "Techniques for Dust Prevention and Suppression."
- Avoid excessive and repeated applications of dust suppressant chemicals. Time the application of dust suppressants to avoid or minimize their wash-off by rainfall or human activity such as irrigation.
- Apply stormwater containment to prevent the conveyance of stormwater TSS into storm drains or receiving waters.
- The use of motor oil for dust control is prohibited. Care should be taken when using lignin derivatives and other high BOD chemicals in excavations or areas easily accessible to surface water or ground water.
- Consult with the Ecology Regional Office in your area on discharge permit requirements if the dust suppression process results in a wastewater discharge to the ground, ground water, storm drain, or surface water.

Recommended Additional Operational BMPs for Roadways and Other Trafficked Areas:

- Consider limiting use of off-road recreational vehicles on dust generating land.
- Consider paving unpaved permanent roads and other trafficked areas at municipal, commercial, and industrial areas.
- Consider paving or stabilizing shoulders of paved roads with gravel, vegetation, or local government approved chemicals.
- Encourage use of alternate paved routes, if available.
- Vacuum or wet sweep fine dirt and skid control materials from paved roads soon after winter weather ends or when needed.
- Consider using traction sand that is pre-washed to reduce dust emissions.

Additional Recommended Operational BMPs for Dust Generating Areas:

- Prepare a dust control plan. Helpful references include: Control of Open Fugitive Dust Sources (EPA-450/3-88-088), and Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures (EPA-450/2-92-004)
- Limit exposure of soil (dust source) as much as feasible.
- Stabilize dust-generating soil by growing and maintaining vegetation, mulching, topsoiling, and/or applying stone, sand, or gravel.
- Apply windbreaks in the soil such as trees, board fences, tarp curtains, bales of hay, etc.
- Cover dust-generating piles with wind-impervious fabric, or equivalent material.

BMPs for Maintenance of Public and Private Utility Corridors and Facilities

Description of Pollutant Sources: Passageways and equipment at petroleum product, natural gas, and water pipelines, and electrical power transmission corridors and rights-of-way can be sources of pollutants such as herbicides used for vegetation management, and eroded soil particles from unpaved access roads. At pump stations waste materials generated during maintenance activities may be temporarily stored outside. Additional potential pollutant sources include the leaching of preservatives from wood utility poles, PCBs in older transformers, water that is removed from underground transformer vaults, and leaks/spills from petroleum pipelines. The following are potential pollutants: oil and grease, TSS, BOD, organics, PCB, pesticides, and heavy metals.

Pollutant Control Approach: Control of fertilizer and pesticide applications, soil erosion, and site debris that can contaminate stormwater.

Applicable Operational BMPs:

- Implement BMPs for Landscaping and Lawn/Vegetation Management and R.7 in Appendix IV-D on Pesticide Regulations.
- When water or sediments are removed from electric transformer vaults, determine whether contaminants might be present before disposing of the water and sediments. This includes inspecting for the presence of oil or sheen, and determining from records or testing if the transformers contain PCBs. If records or tests indicate that the sediment or water are contaminated above applicable levels, manage these media in accordance with applicable federal and state regulations, including the federal PCB rules (40 CFR 761) and the state MTCA cleanup regulations (Chapter 173-340 WAC). Water removed from the vaults can be discharged in accordance with the federal 40 CFR 761.79, and state regulations (Chapter 173-201A WAC and Chapter 173-200 WAC), or via the sanitary sewer if the requirements, including applicable permits, for such a discharge are met. (See also Appendix IV-D R.1 and R.3).
- Within utility corridors, consider preparing maintenance procedures and an implementation schedule that provides for a vegetative, gravel, or equivalent cover that minimizes bare or thinly vegetated ground surfaces within the corridor, to prevent the erosion of soil.
- Provide maintenance practices to prevent stormwater from accumulating and draining across and/or onto roadways. Stormwater should be conveyed through roadside ditches and culverts. The road should be crowned, outsloped, water barred or otherwise left in a condition not conducive to erosion. Appropriately maintaining grassy roadside ditches discharging to surface waters is an effective way of removing some pollutants associated with sediments carried by stormwater.

- Maintain ditches and culverts at an appropriate frequency to ensure that plugging and flooding across the roadbed, with resulting overflow erosion, does not occur.
- Apply the appropriate BMPs in this Volume for the storage of waste materials that can contaminate stormwater.

Recommended Operational BMPs

- When selecting utility poles for a specific location, consideration should be given to the potential environmental effects of the pole or poles during storage, handling, and end-use, as well as its cost, safety, efficacy and expected life. If a wood product treated with chemical preservatives is used, it should be made in accordance with generally accepted industry standards such as the American Wood Preservers Association Standards. If the pole or poles will be placed in or near an environmentally sensitive area, such as a wetland or a drinking water well, alternative materials or technologies should be considered. These include poles constructed with material(s) other than wood such as fiberglass composites, metal, or concrete. Other technologies and materials, such as sleeves or caissons for wood poles, may also be considered when they are determined to be practicable and available.
- As soon as practicable remove all litter from wire cutting/replacing operations, etc.
- Implement temporary erosion and sediment control in areas where clear-cuts are conducted and new roads are constructed.

BMPs for Maintenance of Roadside Ditches

Description of Pollutant Sources: Common road debris including eroded soil, oils, vegetative particles, and heavy metals can be sources of stormwater pollutants.

Pollutant Control Approach: Roadside ditches should be maintained to preserve the condition and capacity for which they were originally constructed, and to minimize bare or thinly vegetated ground surfaces. Maintenance practices should provide for erosion and sediment control (Refer to BMP Landscaping and Lawn/Vegetation Management).

Applicable Operational BMPs:

- Inspect roadside ditches regularly, as needed, to identify sediment accumulations and localized erosion.
- Clean ditches on a regular basis, as needed. Ditches should be kept free of rubbish and debris.
- Vegetation in ditches often prevents erosion and cleanses runoff waters. Remove vegetation only when flow is blocked or excess sediments have accumulated. Conduct ditch maintenance (seeding, fertilizer application, harvesting) in late spring and/or early fall, where possible. This allows vegetative cover to be re-established by the next wet season thereby minimizing erosion of the ditch as well as making the ditch effective as a biofilter.
- In the area between the edge of the pavement and the bottom of the ditch, commonly known as the "bare earth zone," use grass vegetation, wherever possible. Vegetation should be established from the edge of the pavement if possible, or at least from the top of the slope of the ditch.
- Diversion ditches on top of cut slopes that are constructed to prevent slope erosion by intercepting surface drainage must be maintained to retain their diversion shape and capability.
- Ditch cleanings are not to be left on the roadway surfaces. Sweep dirt and debris remaining on the pavement at the completion of ditch cleaning operations.
- Roadside ditch cleanings, not contaminated by spills or other releases and not associated with a stormwater treatment system such as a bioswale, may be screened to remove litter and separated into soil and vegetative matter (leaves, grass, needles, branches, etc.). The soil fraction may be handled as 'clean soils' and the vegetative matter can be composted or disposed of in a municipal waste landfill. For more information, please see "Recommendations for Management of Street Wastes," in Appendix IV-G of this volume.
- Roadside ditch cleanings contaminated by spills or other releases known or suspected to contain dangerous waste must be handled

following the Dangerous Waste Regulations (Chapter 173-303 WAC) unless testing determines it is not dangerous waste.

- Examine culverts on a regular basis for scour or sedimentation at the inlet and outlet, and repair as necessary. Give priority to those culverts conveying perennial and/or salmon-bearing streams and culverts near streams in areas of high sediment load, such as those near subdivisions during construction.

Recommended Treatment BMPs:

Install biofiltration swales and filter strips –See Chapter 9, Volume V) to treat roadside runoff wherever practicable and use engineered topsoils wherever necessary to maintain adequate vegetation (CH2M Hill, 2000). These systems can improve infiltration and stormwater pollutant control upstream of roadside ditches.

BMPs for Urban Streets

Description of Pollutant Sources: Streets can be the sources of vegetative debris, paper, fine dust, vehicle liquids, tire wear residues, heavy metals (lead and zinc), soil particles, ice control salts, domestic wastes, lawn chemicals, and vehicle combustion products. Street surface contaminants have been found to contain significant concentrations of particle sizes less than 250 microns. (Sartor and Boyd, 1972)

Pollutant Control Approach: Conduct efficient street sweeping where and when appropriate to minimize the contamination of stormwater. Do not wash street debris into storm drains.

Recommended BMPs:

- For maximum stormwater pollutant reductions on curbed streets and high volume parking lots use efficient vacuum sweepers (refer to Volume V, Ch. 12, for information about an emerging high-efficiency vacuum sweeper technology).

  Note: High-efficiency street sweepers utilize strong vacuums and the mechanical action of main and gutter brooms combined with an air filtration system that only returns clean air to the atmosphere (i.e., filters very fine particulates). They sweep dry and use no water since they do not emit any dust.

  It has been reported that high-efficiency vacuum sweepers have the capability of removing, from pavements under good condition, 80 percent or more of the accumulated street dirt particles whose diameters are less than 250 microns. (Sutherland, 1998) *This assumes pavements under good condition and reasonably expected accumulation conditions.*

- For moderate stormwater pollutant reductions on curbed streets use regenerative air sweepers or tandem sweeping operations.

  Note: *A tandem sweeping operation involves a single pass of a mechanical sweeper followed immediately by a single pass of a vacuum sweeper or regenerative air sweeper.*

  - *A regenerative air sweeper blows air down on the pavement to entrain particles and uses a return vacuum to transport the material to the hopper.*
  - *These operations usually use water to control dust. This reduces their ability to pick up fine particulates.*

  It has been reported that these types of sweepers have the capability of removing approximately 25 to 50 percent of the accumulated street dirt particles whose diameters are less than 250 microns. (Sutherland, 1998) *This assumes pavements under good conditions and typical accumulation conditions.*

- For minimal stormwater pollutant reductions on curbed streets us use mechanical sweepers.
  - Note: *Mechanical sweepers are referred to as broom sweepers and use the mechanical action of main and gutter brooms to throw material on a conveyor belt that transports it to the hopper.*
  - *These sweepers usually use water to control dust. This reduces their ability to pick up fine particulates.*

  It has been reported that mechanical sweepers have the capability of removing only 10 to 20 percent of the accumulated street dirt particles whose diameters are less than 250 microns. (Sutherland, 1998) *This assumes pavements under good condition and the most favorable accumulation conditions.*
- Conduct sweeping at optimal frequencies. Optimal frequencies are those scheduled sweeping intervals that produce the most cost-effective annual reduction of pollutants normally found in stormwater and can vary depending on land use, traffic volume and rainfall patterns.
- Train operators in those factors that result in optimal pollutant removal. These factors include sweeper speed, brush adjustment and rotation rate, sweeping pattern, maneuvering around parked vehicles, and interim storage and disposal methods.
- Consider the use of periodic parking restrictions in low to medium density single-family residential areas to ensure the sweeper's ability to sweep along the curb.
- Establish programs for prompt sweeping, removal, and disposal of debris from special events that will generate higher than normal loadings.
- Disposal of street sweeping solids must comply with "Recommendations for Management of Street Wastes" described in Appendix IV-G of this volume.
- Inform citizens about eliminating yard debris, oil and other wastes in street gutters to reduce street pollutant sources.

BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers

Description of Pollutant Sources: Steel and plastic drums with volumetric capacities of 55 gallons or less are typically used at industrial facilities for container storage of liquids and powders. The BMPs specified below apply to container(s) located outside a building used for temporary storage of accumulated food wastes, vegetable or animal grease, used oil, liquid feedstock or cleaning chemical, or Dangerous Wastes (liquid or solid) unless the business is permitted by Ecology to store the wastes (Appendix IV-D R.4). Leaks and spills of pollutant materials during handling and storage are the primary sources of pollutants. Oil and grease, acid/alkali pH, BOD, COD are potential pollutant constituents.

Pollutant Control Approach: Store containers in impervious containment under a roof or other appropriate cover, or in a building. For roll-containers (for example, dumpsters) that are picked up directly by the collection truck, a filet can be placed on both sides of the curb to facilitate moving the dumpster. If a storage area is to be used on-site for less than 30 days, a portable temporary secondary system like that shown in Figure 2.8 can be used in lieu of a permanent system as described above.

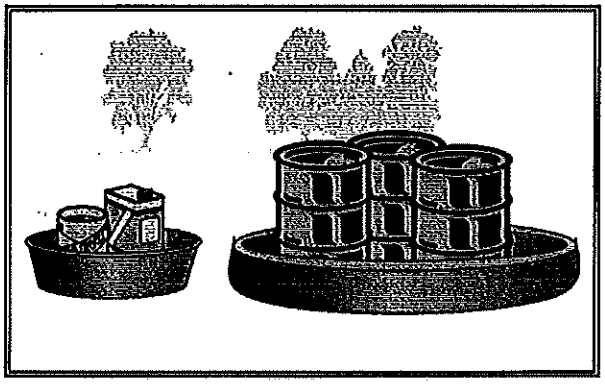


Figure 2.8 – Secondary Containment System

Applicable Operational BMPs:

- Place tight-fitting lids on all containers.
- Place drip pans beneath all mounted container taps and at all potential drip and spill locations during filling and unloading of containers.
- Inspect container storage areas regularly for corrosion, structural failure, spills, leaks, overfills, and failure of piping systems. Check containers daily for leaks/spills. Replace containers, and replace and tighten bungs in drums as needed.
- Businesses accumulating Dangerous Wastes that do not contain free liquids need only to store these wastes in a sloped designated area with

the containers elevated or otherwise protected from storm water run-on.

- Drums stored in an area where unauthorized persons may gain access must be secured in a manner that prevents accidental spillage, pilferage, or any unauthorized use (see Figure 2.9).

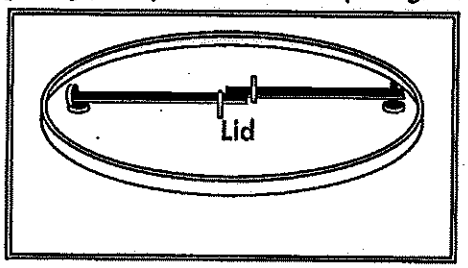


Figure 2.9 – Locking System for Drum Lid

- If the material is a Dangerous Waste, the business owner must comply with any additional Ecology requirements as specified in Appendix IV-D R.3.
- Storage of reactive, ignitable, or flammable liquids must comply with the Uniform Fire Code (Appendix IV-D R.2).
- Cover dumpsters, or keep them under cover such as a lean-to, to prevent the entry of stormwater. Replace or repair leaking garbage dumpsters.
- Drain dumpsters and/or dumpster pads to sanitary sewer. Keep dumpster lids closed. Install waterproof liners.

Applicable Structural Source Control BMPs:

- Keep containers with Dangerous Waste, food waste, or other potential pollutant liquids inside a building unless this is impracticable due to site constraints or Uniform Fire Code requirements.
- Store containers in a designated area, which is covered, bermed or diked, paved and impervious in order to contain leaks and spills (see Figure 2.10). The secondary containment shall be sloped to drain into a dead-end sump for the collection of leaks and small spills.
- For liquid wastes, surround the containers with a dike as illustrated in Figure 2.10. The dike must be of sufficient height to provide a volume of either 10 percent of the total enclosed container volume or 110 percent of the volume contained in the largest container, whichever is greater, or, if a single container, 110 percent of the volume of that container.

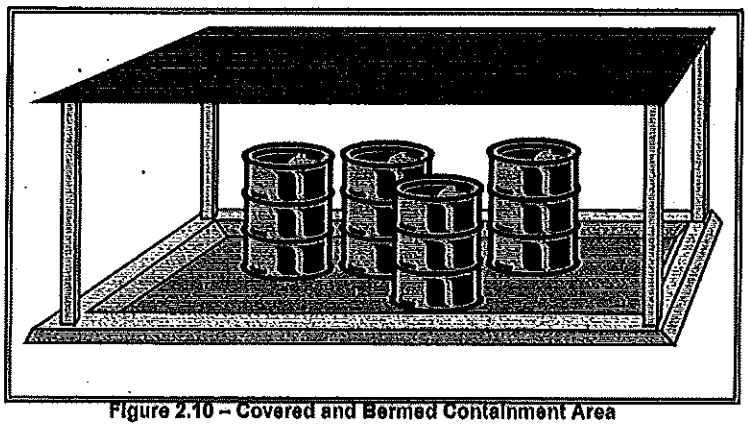


Figure 2.10 – Covered and Bermed Containment Area

- Where material is temporarily stored in drums, a containment system can be used as illustrated, in lieu of the above system (see Figure 2.8).
- Place containers mounted for direct removal of a liquid chemical for use by employees inside a containment area as described above. Use a drip pan during liquid transfer (see Figure 2.11).

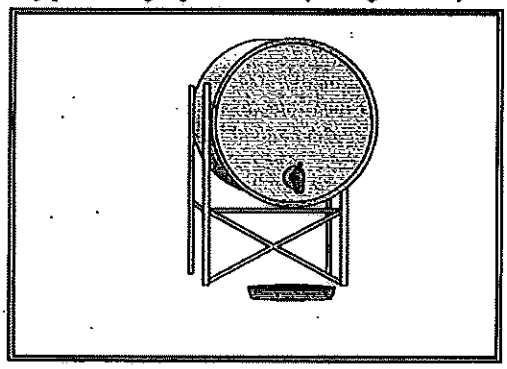


Figure 2.11 – Mounted Container - with drip pan

Applicable Treatment BMP:

Note that a treatment BMP is applicable for contaminated stormwater from drum storage areas.

- For contaminated stormwater in the containment area, connect the sump outlet to a sanitary sewer, if approved by the local Sewer Authority, or to appropriate treatment such as an API or CP oil/water separator, catch basin filter or other appropriate system (see Volume V). Equip the sump outlet with a normally closed valve to prevent the release of spilled or leaked liquids, especially flammables (compliance with Fire Codes), and dangerous liquids. This valve may be opened only for the conveyance of contaminated stormwater to treatment.
- Another option for discharge of contaminated stormwater is to pump it from a dead-end sump or catchment to a tank truck or other appropriate vehicle for off-site treatment and/or disposal.

BMPs for Storage or Transfer (Outside) of Solid Raw Materials, By-Products, or Finished Products

Description of Pollutant Sources: Solid raw materials, by-products, or products such as gravel, sand, salts, topsoil, compost, logs, sawdust, wood chips, lumber and other building materials, concrete, and metal products sometimes are typically stored outside in large piles, stacks, etc. at commercial or industrial establishments. Contact of outside bulk materials with stormwater can cause leachate, and erosion of the stored materials. Contaminants include TSS, BOD, organics, and dissolved salts (sodium, calcium, and magnesium chloride, etc).

Pollutant Control Approach: Provide impervious containment with berms, dikes, etc. and/or cover to prevent run-on and discharge of leachate pollutant(s) and TSS.

Applicable Operational BMP: Do not hose down the contained stockpile area to a storm drain or a conveyance to a storm drain or to a receiving water.

Applicable Structural Source Control BMP Options: Choose one or more of the source control BMP options listed below for stockpiles greater than 5 cubic yards of erodible or water soluble materials such as soil, road deicing salts, compost, unwashed sand and gravel, sawdust, etc. Also included are outside storage areas for solid materials such as logs, bark, lumber, metal products, etc.

- Store in a building or paved and bermed covered area as shown in Figure 2.13, or;

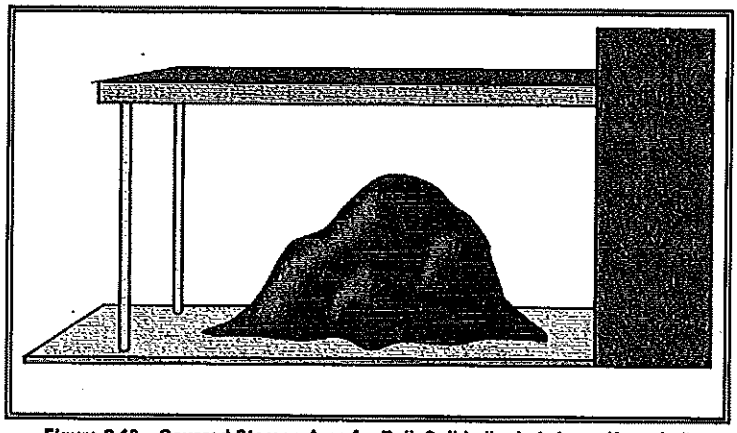


Figure 2.13 – Covered Storage Area for Bulk Solids (Include berm if needed)

- Place temporary plastic sheeting (polyethylene, polypropylene, hypalon, or equivalent) over the material as illustrated (see Figure 2.14), or;

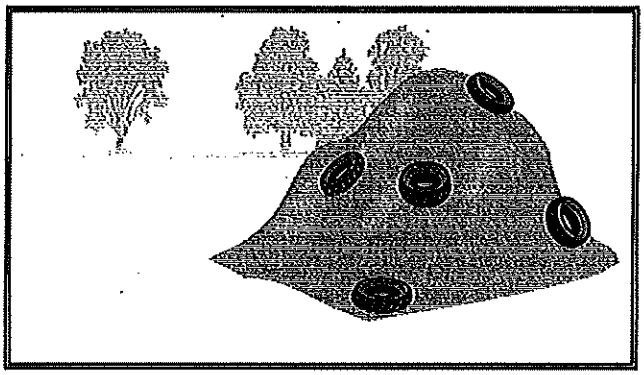


Figure 2.14 – Material Covered with Plastic Sheeting

- Pave the area and install a stormwater drainage system. Place curbs or berms along the perimeter of the area to prevent the run-on of uncontaminated stormwater and to collect and convey runoff to treatment. Slope the paved area in a manner that minimizes the contact between stormwater (e.g., pooling) and leachable materials in compost, logs, bark, wood chips, etc.
- For large stockpiles that cannot be covered, implement containment practices at the perimeter of the site and at any catch basins as needed to prevent erosion and discharge of the stockpiled material offsite or to a storm drain. Ensure that contaminated stormwater is not discharged directly to catch basins without conveying through a treatment BMP.

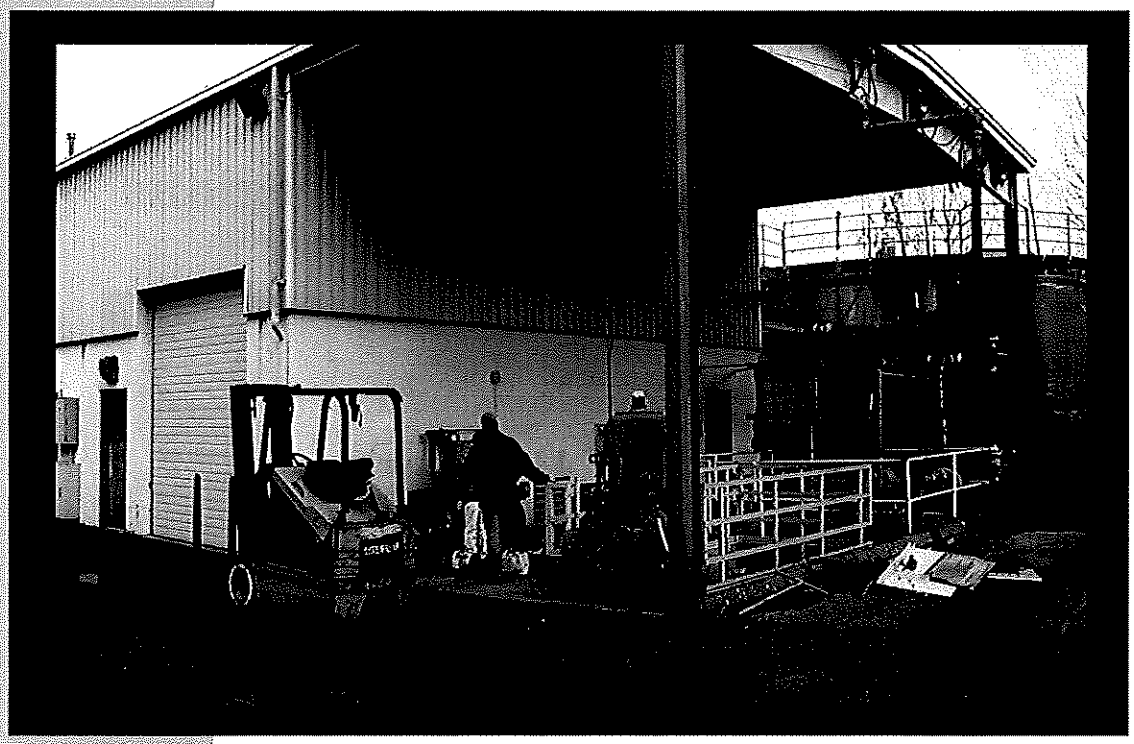
Applicable Treatment BMP: Convey contaminated stormwater from the stockpile area to a wet pond, wet vault, settling basin, media filter, or other appropriate treatment system depending on the contamination.

Recommended Additional Operational BMPs:

- Maintain drainage areas in and around storage of solid materials with a minimum slope of 1.5 percent to prevent pooling and minimize leachate formation. Areas should be sloped to drain stormwater to the perimeter where it can be collected, or to internal drainage "alleyways" where material is not stockpiled.
- Sweep paved storage areas regularly for collection and disposal of loose solid materials.
- If and when feasible, collect and recycle water-soluble materials (leachates) to the stockpile.
- Stock cleanup materials, such as brooms, dustpans, and vacuum sweepers near the storage area.

Appendix C

Shop Guide for Dangerous Waste Management



Shop Guide

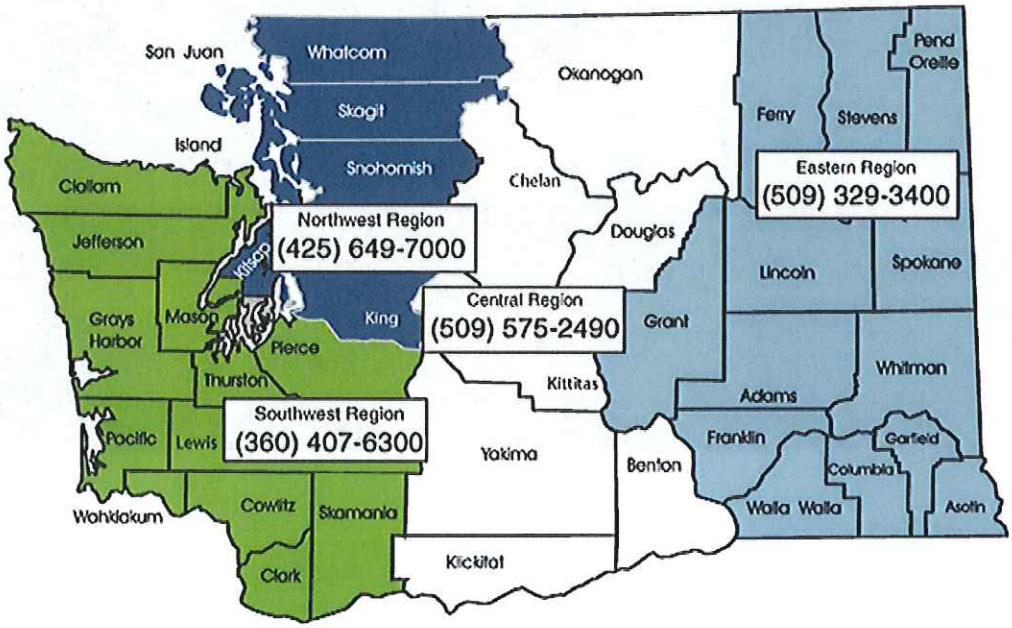
For Dangerous Waste Management

DEPARTMENT OF
ECOLOGY
State of Washington

Revised February 2010
Publication no. 09-04-015

Department of Ecology Regions

http://www.ecy.wa.gov/programs/hwtr



Central Region
15 W Yakima Ave #200
Yakima WA 98902-3452

Northwest Region
3190 160th Ave SE
Bellevue WA 98008-5452

Eastern Region
N 4601 Monroe
Spokane WA 99205-1295

Southwest Region
PO Box 47775
Olympia WA 98504-7775

Table of Contents

Introduction

This guide helps you manage common shop wastes that threaten the safety of your facility, its workers, and the community if such wastes are improperly handled. It will help you:

- Comply with dangerous waste regulations and avoid costly penalties.
- Improve workplace safety.
- Save money by handling wastes the smartest way.
- Gain customers who know they made a wise choice when selecting a shop that protects the environment.
- Be prepared in case a hazardous (dangerous) waste inspector visits your site.

Find helpful resources at the Department of Ecology's (Ecology) website: *www.ecy.wa.gov/programs/hwtr/index.html*.

Obtain free help from the Ecology office nearest you:

Northwest Regional Office, Bellevue	(425) 649-7000
Southwest Regional Office, Lacey	(360) 407-6300
Central Regional Office, Yakima	(509) 575-2490
Eastern Regional Office, Spokane	(509) 329-3400

Parts Washers

Sink-type parts washer solvent tanks used for cleaning smaller parts and tools usually contain mineral spirits, Stoddard solvent, or petroleum naphtha. These spent solvents are usually hazardous because they are ignitable, toxic, or pick up hazardous contaminants such as heavy metals from parts being cleaned. They become dangerous wastes the moment the waste tank is replaced with a fresh tank. If the spent solvent is recycled, you can claim a reduction in the annual hazardous waste generation fees you pay to Ecology. Call 1-800-874-2022 for more information.

Don't mix solvents with any other waste. Keep different types of solvents in separate, labeled, closed containers. Do not mix solvents into used oil. And don't use spray cans over solvent tanks. This can contaminate the solvent in the solvent tank.

To reduce the amount of dangerous waste from parts washers:

- Make solvent last longer by pre-cleaning parts with a rag or brush to remove the heaviest dirt.
- Make sure the solvent is actually too dirty to use before it is exchanged for new solvent.
- Keep the lid closed when not in use. This prevents accidental contamination with other chemicals and minimizes evaporation.
- Use an aqueous cabinet-type parts washer if appropriate. These work like a dish washer and typically do not require hazardous solvents. Test the sludge to be sure it doesn't contain regulated levels of heavy metals.

If you wish to lease or purchase a parts washer, choose one with an attached still or cartridge filter to make your solvent last longer and generate less dangerous waste. Used filters may be a dangerous waste. Overall, they reduce the net amount of waste.

Aerosol Cans

Aerosol cans are not dangerous waste if they are used until no more product comes out. Partially full (for instance if the nozzle doesn't work) or full discarded cans may be a dangerous waste because the contents are under pressure and may be toxic or flammable.

There are two options for disposing of aerosol cans with hazardous contents:

1. Send the can with its contents to a permitted dangerous waste facility.
2. Puncture the can with a commercial puncturing device. Drain and collect the contents, and manage as dangerous waste. This means putting a dangerous waste label and risk label on the container used to hold the contents and keeping it closed when not in use. Recycle empty cans as scrap metal.

Dangerous waste aerosol cans or drained contents must be stored, counted, labeled, and reported according to dangerous waste requirements. These are described later in this guide.

Check labels and Material Safety Data Sheets (MSDS) to make sure the product does not add unnecessary hazards to your shop. Look for less hazardous formulations.

Buying the product in bulk and using refillable spray bottles may generate less aerosol can waste.

Shop Towels and Rags

Shop towels (wipers, rags, or towels) are usually made of cloth or paper. Towels containing solvents, paints, stains, inks, or other chemicals may be ignitable, toxic, or have "listed" solvents that cause them to be dangerous waste. If this is the case, you must manage them as dangerous waste. This means they must be properly contained, labeled, stored, counted, shipped, and reported (see later sections of this guide). Used towels containing oil or solvents can spontaneously start fires even when no flame is present and should be stored in closed, fireproof metal containers.

If you send your soiled towels to a permitted commercial laundry and you handle them properly, they are not dangerous waste. This may save you money.

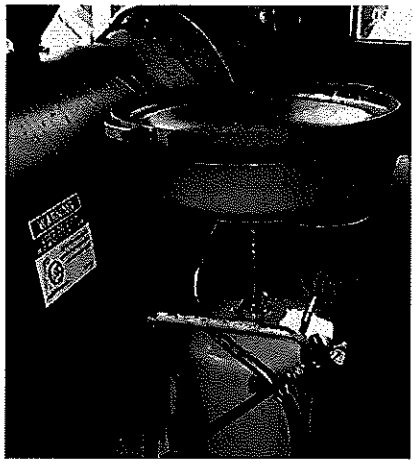
To recycle your towels through a laundry, you must follow these guidelines:

- Remove free liquids before tossing soiled shop towels in containers by simple means like hand wringing (while wearing proper protective equipment) or compressing them. Collect and reuse the liquids. If not directly reused, these liquids may be dangerous waste.
- Do not dispose of solvents by pouring them into containers of used shop towels. This is illegal.
- Do not accumulate used towels longer than 180 days before recycling.
- For safety reasons, keep incompatible wastes separated (for instance, don't mix rags with alcohols amid rags with acids). Also, keep hazardous and non-hazardous shop towels segregated, following the instructions of your recycler.
- Make sure used shop towels contaminated with hazardous substances are collected, transported, and stored in closed containers. Label containers with "contaminated shop towels." If a commercial laundry picks up your towels, they may provide you with a collection and shipping container. Place oily or flammable towels in closed, fireproof containers.

- It is your responsibility to obtain reasonable assurance that the recycling facility you use is meeting local sewer discharge limits and other applicable environmental regulations. Do not use recyclers that discharge dangerous wastewaters to a drain field or cleaning solvents directly to the air.

Used Oil

Used motor oil (petroleum or synthetic), transmission fluid, brake fluid, lubricating oil, compressor oil, gear, and metal working fluids without chlorinated compounds, are all considered used oil, and can be mixed without designating the mixture as hazardous waste.



If used oil is contaminated with dangerous waste such as solvent it is dangerous waste. Used oil is not considered a dangerous waste if it is recycled; that includes using it as fuel in a furnace. Recycling can save you money, so don't mix solvents or other wastes into used oil. Even small amounts of chlorinated solvents or aerosol products such as brake cleaner or carburetor cleaner could turn the whole load of used oil into a dangerous waste that cannot be recycled.

Used oil filters are not a hazardous waste if they are thoroughly drained for 24 hours. Send drained filters to a scrap metal recycler.

Don't dispose used oil to a dumpster, storm drain, septic tank, dry well, or sewer.
Don't pour used oil on the ground or use it for dust suppression.

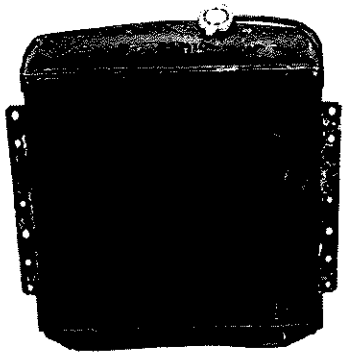
To recycle your used oil, follow these guidelines:

- Keep used oil in a separate container marked "USED OIL ONLY."
- Place container in a secure area away from floor or storm drains.
- Don't mix used oil or "do-it-yourselfer" used oil with any other waste if you plan to burn it in your shop for heating.

Spent Antifreeze

Spent antifreeze is toxic and may contain lead and other hazardous contaminants. If spent ethylene glycol antifreeze is recycled, it does not have to be counted as a dangerous waste or require a Uniform Hazardous Waste Manifest.

To recycle your spent antifreeze, follow these guidelines:



- Do not mix any other material with antifreeze.
- Label containers "Spent Antifreeze—Toxic."
- Avoid spills by keeping containers closed except when adding or removing waste.
- Maintain containers so they do not leak, rupture, or tip over when being opened, handled, or stored.
- Store containers on a non-porous concrete surface.
- Don't dispose of spent antifreeze into a sewer, storm drain, septic tank, or dry well.
- Never pour antifreeze on the ground.

Light Bulbs and Ballasts

Some spent light bulbs may be dangerous wastes because they contain mercury, which is very toxic. These types of light bulbs include fluorescent, neon, and High Intensity Discharge (for instance, mercury vapor, metal halide, high-pressure sodium).

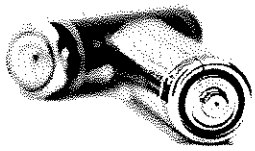
If such light bulbs are recycled and handled properly, they may be managed as "Universal Waste" rather than dangerous waste by following these guidelines:

- Light bulbs cannot be crushed under Universal Waste regulations. Because glass bulbs are easily broken, contain lamps in structurally sound containers such as cardboard boxes or fiber drums. Keep containers closed when not adding lamps.
- You can accumulate waste light bulbs for one year from the date they are generated. To document this, the collection container or individual bulb is typically marked with the first date of accumulation.
- An extension to the one-year accumulation limit is allowed if the facility needs more time to collect items to facilitate proper recovery, treatment, or disposal.
- Clearly label or mark individual bulbs or containers with one of the following phrases:
  - Universal Waste –Lamps
  - Waste Lamps
  - Used Lamps
- Immediately clean up broken bulbs and store debris in a closed container with a dangerous waste label and a risk label that says "Toxic."
- You may self-transport waste bulbs, complying with applicable U.S. Department of Transportation (USDOT) regulations.

Batteries

All batteries are dangerous waste, but can be managed more easily as "Universal Waste" when sent for recycling and managed according to the following guidelines:

- Clearly label or mark individual batteries or containers of UW batteries with one of the following phrases:
  - Universal Waste – Batteries
  - Waste Batteries
  - Used Batteries

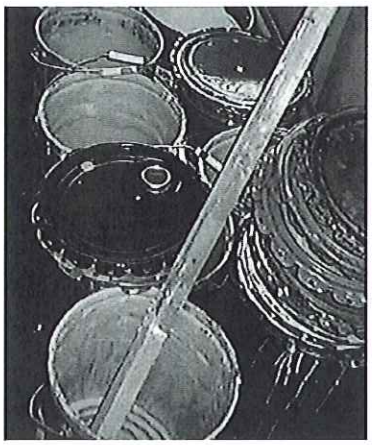


- You can accumulate batteries for one year from the date they are generated. To document this, the collection container or individual battery is typically marked with the first date of accumulation. An extension to the one-year accumulation limit is

allowed if the facility needs more time to collect items to facilitate proper recovery, treatment, or disposal.

- Store damaged or leaking batteries in closed containers to prevent releasing toxic materials to the environment. Batteries must be compatible with one another and with the container.
- You may self-transport batteries, complying with applicable USDOT regulations.

Paint Wastes



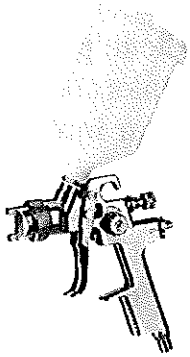
Solvent-based paint wastes must typically be managed as dangerous wastes. These include thinners, clean-up solvents, waste paints, and some paint booth filters. Containers for these wastes must be kept closed when not in use. They must be stored, counted, labeled, and reported according to dangerous waste requirements (these are described later in this guide).

1. Waste paint
   - Buy only as much paint as you need.
   - Don't get in the habit of mixing a standard amount of paint for every job (1 quart, 1 pint, etc.). Mix only what you will use. Mix and use the least amount of coating possible.
   - Give left over paint to customers for touch-ups.
   - Return unused paint to the manufacturer if it is not past the expiration date. It may be possible to sell it through an industrial materials exchange service (see *http://apps.ecy.wa.gov/hwsd/default.htm*).
   - If possible, reduce the number of different coatings and colors you use.

2. Spray Gun Wastes

   - If possible, wash spray guns in an enclosed solvent re-circulating gun washer. This will be required for most painting operations beginning 2011. This helps you get more "mileage" from your solvent, reduce solvent evaporation loss, save labor, and reduce worker exposure.
   - If you do not use an automatic gun washer, get more use from your solvent and generate less waste by using a two-stage cleaning method. Use previously used thinner or gun wash solvent for the first rinse.

Follow this with fresh solvent to clean guns. Save what was fresh solvent to use as the first rinse next time. (Containers of solvent must be labeled.) This will cut your waste in half.



- Do not clean guns by spraying thinner into the air or onto booth filters.

3. Paint Booth Filters

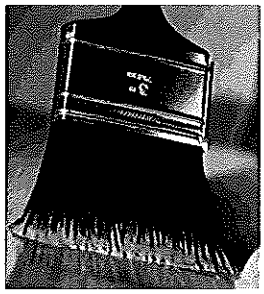
Paint booth filters may have to be managed as dangerous waste. It depends on whether they contain paint with heavy metals like chromium, nickel, or lead or whether the filter is made with certain flame retardants. Test filters to determine if they are hazardous or if they can be disposed more economically as solid waste.

4. Thinners and Solvents

Thinners and solvents frequently used in paint preparation, painting, and cleanup include acetone, toluene, xylene, or MEK (Methyl Ethyl Ketone). They typically become dangerous waste because they are "listed," ignitable, or toxic.

- Don't mix thinner and solvents with other types of waste.
- Don't leave the waste thinner drum uncovered.
- Reduce solvent waste by:
  - Adding spigots or pumps to solvent containers.
  - Using solvent until it loses its cleaning effectiveness, not just because it looks dirty.
  - Reusing flushing and rinsing solvents for thinning, where appropriate.
- Send waste solvents and paint thinners to a recycler. If spent solvent is recycled, claim a reduction in the annual hazardous waste generation fees you pay to Ecology. Call 1-800-874-2022 for more information.
- Save money by using a still to reclaim your solvent on-site for further use.
  - Keep a daily log of the date, amount of spent solvent distilled, and the amount yet awaiting distillation.
  - Don't throw still bottoms (the sludge or solid cakes left over from distillation) in the dumpster or trash. They need to be handled and disposed as dangerous waste.
  - If solvent is treated and reused over and over, there is a counting exemption. Count the greatest amount of spent material awaiting treatment on any day. That amount is all of the spent material that must be counted and reported for the month. Also, count all residual dangerous waste.

5. Water-based paints and brushes
   Clean paint brushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers and pour into a sanitary sewer drain.

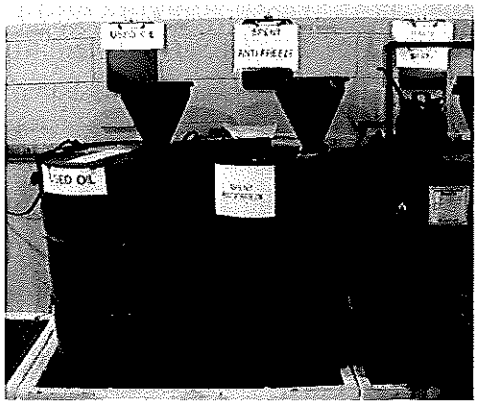


6. Other tips
   - Use water-borne primers and stay informed about new developments in water-based top coats.
   - Use optimum gun settings and spray tips for each job.
   - Where possible, thin coatings using heat rather than solvents.
   - Use disposable liners for paint containers and spray gun cups. Disposing of liners creates less waste than disposing of rinsing material.
   - Schedule jobs in batches to reduce number of cleanups.

   Operator technique causes spray gun efficiency to vary up to 50 percent, and affects the quality of your product. Training and experience makes more of a difference than just the type of equipment used. Some spray equipment manufacturers provide training videos that you can keep on hand to train new employees or refresh experienced ones. One Washington company periodically videotapes painters in action so they can review their own performance and technique. Ecology staff can provide information on other training resources (see contacts listed at the end of this manual).

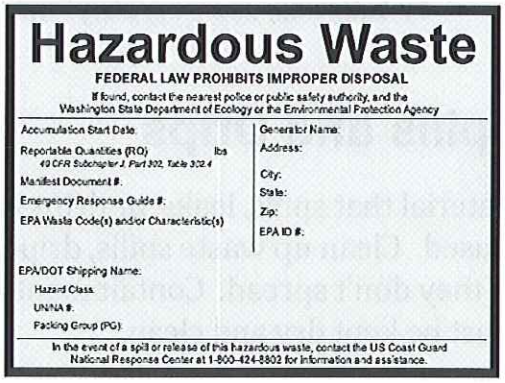
Dangerous Waste Accumulation and Storage

7. Time limits
   How long you are allowed to store wastes depends on the amount of dangerous waste you generate each month and store on-site. See Appendix 1 for your time limit.



8. Storage area
   You should have a specific area in your shop for storing dangerous wastes. The waste storage area should:
   - Be well-marked with hazardous waste/ dangerous waste signs, and be access-restricted.
   - Have a floor made of impervious material, like concrete. It should be free of cracks.
   - Be indoors or under cover outside and protected from storm water.

- Have no active floor drains in the area. A sealed drain means no contamination can leave the area through the drain.
- Have at least 30 inches of space between rows of waste containers.
- Have no more than two waste containers stacked on each other.
- Be inspected weekly for signs of leaks or damage.
- Have clear labels on every container.
- Have a containment system to hold leaks and spills. Build or buy a containment system, such as a dike, berm, or commercial spill-containment pallet.


Hazardous Waste
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
If found, contact the nearest police or public safety authority, and the Washington State Department of Ecology or the Environmental Protection Agency
Accumulation Start Date:
Reportable Quantities (RQ): lbs
40 CFR Subchapter J, Part 302, Table 302.4
Manifest Document #:
Emergency Response Guide #:
EPA Waste Code(s) and/or Characteristic(s):
Generator Name:
Address:
City:
State:
Zip:
EPA ID #:
EPA/DOT Shipping Name:
Hazard Class:
UN/NA #:
Packing Group (PG):
In the event of a spill or release of this hazardous waste, contact the US Coast Guard National Response Center at 1-800-424-8802 for information and assistance.

9. Satellite accumulation

Small amounts of dangerous waste may be held near the work stations where they are generated. These "satellite" accumulation areas are places to store waste as you work, before moving waste to the central storage area. Store up to 55 gallons of each dangerous waste with no time limit. When full, label containers including date and move to the main storage area within three days. Containers must be:

- At or near where the waste is created.
- Under control of the operator of the process making the waste.
- Arranged so chemically incompatible wastes cannot come in contact with each other.
- Labeled with the words "Dangerous Waste" or "Hazardous Waste" and the hazard posed by the waste.

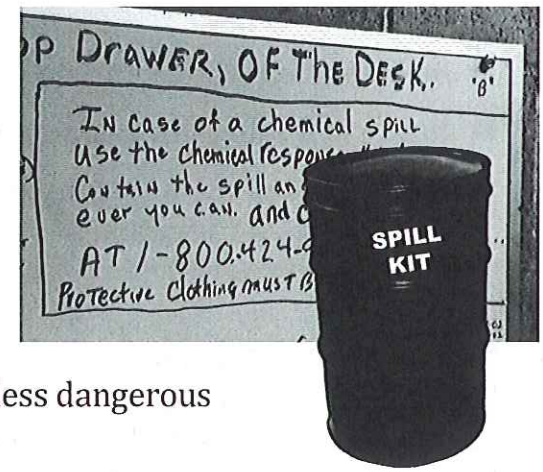
Waste Containers

All dangerous waste containers must be:

- Closed except when adding or removing waste. If you need to add waste frequently, consider using a funnel with latching lid.
- In good condition (no rust, bulging, etc.).
- Handled to prevent rupture or leaks.
- Properly labeled (see Appendix 2). The label must be easy to read and show "Hazardous Waste" or "Dangerous Waste," the nature of the hazard (toxic, corrosive, flammable, etc.), and the date waste was first added. (Small quantity generators do not have to show a date on the label.) Free, printable labels are available from *www.ecy.wa.gov/programs/hwtr.*

- Made of material compatible with the waste. For solvents, use metal drums; for acids or caustics, use polyethylene.

Spills and Drips



Material that spills, leaks, or drips is waste unless it is reused. Clean up waste spills, drips, and leaks promptly, so they don't spread. Containment and storage areas must be kept dry and clean.

Keep spill cleanup supplies handy. Train employees to use them. Know whether clean-up residues and sorbent pads must be handled as dangerous wastes. For small spills, the use of absorbent granules (kitty litter), absorbent pads, or other absorbent materials may create less dangerous waste than washing with water.

Report significant spills and releases to each of the following:

- National Response Center: 1-800-424-8802
- Washington Emergency Management Division: 1-800-258-5990

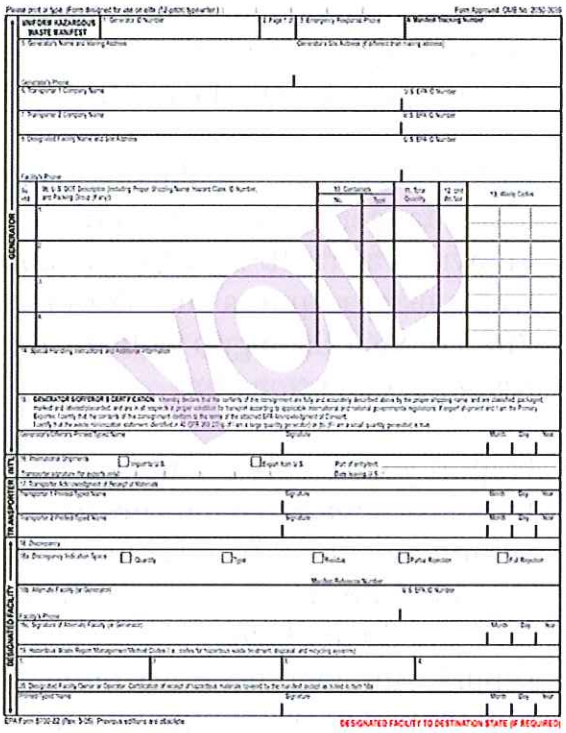
Shipping and Disposal

1. Transporters
   Use a legal transporter with a valid EPA ID number. Find transporters in the Hazardous Waste Services Directory on the Department of Ecology website at *http://apps.ecy.wa.gov/hwsd/default.htm*. It is your responsibility to choose a proper transporter; the Department of Ecology cannot recommend any one company.

2. Manifests
   A Uniform Hazardous Waste Manifest must accompany dangerous waste when it is shipped off-site. Your transporter can help fill out this form properly. Retain one of the copies signed by the transporter and someone in your shop.

   When the transporter delivers the waste to the receiving facility you have chosen, the facility representative accepts the waste and signs each copy of the manifest. The transporter takes a copy, the facility keeps a copy, and the facility sends you the last copy. This proves the waste arrived at its destination. Keep all manifests for at least five years.

As an incentive to recycle certain dangerous wastes such as used oil, spent antifreeze, batteries, and light bulbs, Washington State allows these wastes to be sent off-site to a recycler without a Uniform Hazardous Waste Manifest. A bill of lading, receipt, or other documentation will work. Keep these records for at least five years.



3. Small Quantity Generators

Small quantity generators (SQG) of dangerous waste have additional options for shipping their wastes. See Appendix 1 and the next section for more information. Many household hazardous waste (HHW) facilities accept dangerous waste from small generators. SQGs may transport their own waste to a permitted dangerous waste facility or HHW facility. A Uniform Hazardous Waste Manifest, bill of lading, receipt, or other documentation can be used. In addition, USDOT has rules governing how and what you transport. See *www.phmsa.dot.gov* for more information on required containers, labels, and shipping papers.

Counting and Reporting Your Waste

1. Count your waste

Different rules apply depending on how much dangerous waste you generate and accumulate (see Appendix 1). These levels are referred to as "generator status." Generator status is determined by the maximum amount of dangerous waste generated in a month during a calendar year, and by the amount of waste accumulated at any one time:

Generator Status	Generates Monthly	Stores On-Site
Small Quantity Generator	< 220 lbs hazardous waste < 2.2 lbs acutely hazardous waste or dangerous waste WT01	<2200 lbs
Medium Quantity Generator	Between 220-2200 hazardous waste	<2200 lbs
Large Quantity Generator	>2200 lbs hazardous waste > 2.2 lbs acutely hazardous waste or dangerous waste WT01	No limit

Document the amount of each dangerous waste generated each month. Don't use shipping manifests for this purpose, since shipment records often lump several months' worth of wastes together. This might artificially inflate your generator status. Waste must be counted and reported in pounds, including liquids.

Convert gallons to pounds by multiplying the gallons by the density of the liquid shown on the MSDS. (If the MSDS shows only the specific gravity, multiply the gallons by the specific gravity and the number 8.34.)

2. Get a RCRA Site Identification Number
   Many dangerous waste generators must have a RCRA Identification Number (also known as a Site ID #). SQGs do not need a Site ID # unless their dangerous waste transporter requires one. For more information on obtaining a Site ID # call (800) 874-2022 or visit Ecology's website at *www.ecy.wa.gov/programs/hwtr/waste-report/notification.html*.

3. Report your waste annually
   Dangerous waste generators with an active Site ID # must submit an annual Dangerous Waste Report, even if they did not generate any dangerous waste that year. If you are an SQG and do not have a Site ID #, you are not required to report. Annual reports are due by March 1. Keep a copy for at least five years. To file an annual report, call (800) 874-2022 or go to *www.ecy.wa.gov/programs/hwtr/waste-report/index.html*.

4. Pollution Prevention Plans
   Facilities that generate more than 2,640 pounds of dangerous waste a year or file Toxics Release Inventory (TRI) reports must file an annual Pollution Prevention Plan for reducing dangerous wastes and hazardous materials. Many recycled wastes are not counted toward this threshold. Your facility may be able to avoid the planning requirement by reducing or recycling their waste. For more information or free assistance, go to *www.ecy.wa.gov/programs/hwtr/P2/index.html*.

Do You Treat Your Waste?

If you treat your dangerous waste on-site, you may be subject to "Treatment by Generator" requirements. Some examples of treatment include:

- Neutralization
- Solidification
- Evaporation
- Filtration
- Carbon adsorption
- Separation and distillation

1. Treatment for recycling
   Treatment by Generator requirements do not apply if you are recycling your treated waste. Such waste must be managed according to all dangerous waste requirements until it enters the recycling unit.

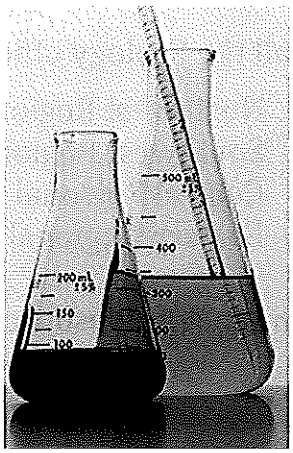
Any residues from the recycling process that are dangerous wastes must also be managed according to the dangerous waste requirements. You must keep a daily log of the amount of dangerous waste treated and the amount of any residual dangerous wastes that result.

Generally, recycled waste must be counted and reported, along with any dangerous waste residues that result. If the same material is treated and reused over and over, such as a cleaning solvent or thinner distilled for reuse, there is a counting exemption. Count the greatest amount of spent material awaiting recycling on any single day in a month. That is the amount of spent material that is counted for the month. Also, count all residual dangerous waste.

There is another special recycling exemption for dangerous waste that is treated and reused in a "closed loop" system. The treatment equipment is integral ("hard-piped") to the equipment generating the original waste. An example is a parts washer having a built-in still. In that case, the waste to be treated does not have to be counted and reported. All residual dangerous waste from this recycling process (for instance, sludge or filters) must be counted.

2. Treatment for disposal

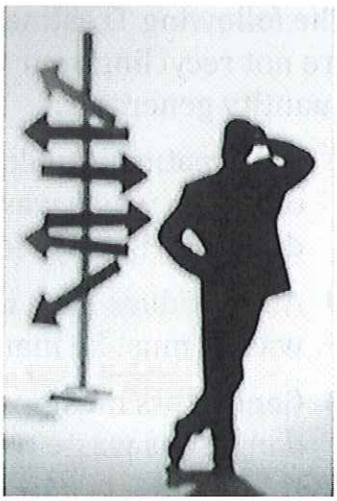
The following Treatment By Generator requirements apply if you are not recycling your treated waste and you are not a small quantity generator:



- The treatment tank or container must be marked with the date on which waste was first added. It must be emptied every 90 days (or 180 days for generators of 220-2,200 lbs/mo).
- Any residues from the treatment process that are dangerous wastes must be managed as such.
- Generators must maintain a written log of the quantity of each dangerous waste treated, the treatment methods, and dates of treatment.
- When filing your annual waste generator report, do the following:
  - On the Site Identification form, note in the *Comment Section* the process is treatment by generator.
  - For annual reporting and generator status determinations, count the total quantity (as wet weight) of waste generated prior to treatment and the weight of any remaining material that is dangerous waste.
- If you treat wastes in a wastewater treatment unit or elementary neutralization unit and discharge a wastewater, the regulatory provisions in WAC 173-303-802(5) apply instead of the Treatment by Generator rules and guidance.

3. Requirements for specific treatment processes
   - *Evaporation* — Only inorganic wastes mixed with water should be treated in an evaporator. Inorganic wastes include spent caustics, rinse waters, and water-based machining coolants. Do not treat organic solutions such as solvents, paints, or oils in an evaporator unless all vapors are captured and there are no releases to the air (except if allowed by state or local authorities). Have secondary containment around the evaporator to catch a spill.
   - *Solidification* — Solidified waste must pass the Paint Filter Liquids Test (PFLT). This test, EPA SW-846 Method 9095 *Test Methods for Evaluating Solid Waste, Physical /Chemical Methods* assesses the amount of free liquid in the waste. The waste must be solidified using a non-biodegradable solidification. Solidified waste must be stable in its ultimate disposal destination.
   - *Carbon filtration* — Any treated effluent and backwash from the process must be managed according to appropriate state or federal regulations. The spent carbon is either regenerated in a safe manner without discharge of dangerous waste to the air, or handled as a hazardous or non-dangerous waste accordingly.

More Help



Call the Ecology office nearest you:

Northwest Regional Office, Bellevue	(425) 649-7000
Southwest Regional Office, Lacey	(360) 407-6300
Central Regional Office, Yakima	(509) 575-2490
Eastern Regional Office, Spokane	(509) 329-3400

Find helpful resources at Ecology's website:
www.ecy.wa.gov/programs/hwtr/index.html.

Guide for determining whether a material is a dangerous waste:
www.ecy.wa.gov/biblio/96436.html.

Hotline for Annual Hazardous Waste Reporting (Turbowaste) 1-800-874-2022.

Database of hazardous waste management companies:
http://apps.ecy.wa.gov/hwsd/default.htm.

Helpful waste management information, tips, and regulatory updates from Ecology's *Shoptalk* newsletter. Subscribe at:
www.ecy.wa.gov/programs/hwtr/shoptalkonline/index.html.

Dangerous waste training modules:
www.ecy.wa.gov/programs/hwtr/workshops/index.html.

Appendix 1

Quick Reference Guide for Dangerous Waste Generators

Publication #98-1252, *revised December 2010*

DEPARTMENT OF ECOLOGY
State of Washington

Guide for Dangerous Waste (DW) Generators in Washington State

Quick Reference Guide

Publication #98-1252 - HWTR *Revised December 2010*

Dangerous Waste Regulations			
	Large Quantity Generator (LQG) Generates > 2,200 lbs/mo DW or 2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)	**Medium Quantity Generator (MQG)** Generates 220-2,200 lbs/mo	**Small Quantity Generator (SQG)** Generates <220 lbs/mo DW or <2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)
Dangerous Waste Designation	Determine if waste is covered by regulations. WAC 173-303-070-100,170(1)	Determine if waste is covered by regulations. WAC 173-303-070-100,170(1)	Determine if waste is covered by regulations. WAC 173-303-070(8),070--100,170(1)
Identification Number and Required Notices	File DW Site Identification Form to notify and obtain ID number. WAC 173-303-060,170	File DW Site Identification Form to notify and obtain ID number. WAC 173-303-060,170	Not required. WAC 173-303-070(8)
Labeling, Marking of Waste During Accumulation	DW label with start date, risk label (major risks ignitable, corrosive, toxic). WAC 173-303-200(1)(c),(1)(d)	DW label with start date, risk label (major risks ignitable, corrosive, toxic). WAC 173-303-200(1)(c),(1)(d)	Major risk label required by L&I/DOSH and some local Health Departments. WAC 173-303-070(8)
Waste Generation Amount	More than 2,200 lbs/mo DW or more than 2.2 lbs/mo Acute Hazardous Waste (AHW) or WT01 (EHW).	Between 220 lbs/mo and 2,200 lbs/mo.	Less than 220 lbs/mo DW less than 2.2 lbs/mo AHW or WT01 (EHW).
Waste Accumulation Amount	No volume limit. WAC 173-303-200(1)	Not to exceed a total of 2,200 lbs. WAC 173-303-201(1),(2)	Not to exceed a total of 2,200 lbs. WAC 173-303-070(8)(a)
Accumulation Time Limit	90 days. WAC 173-303-200	180 days. WAC 173-303-201(2)(a)	No limit. WAC 173-303-070(8)
Satellite Accumulation Areas	55 gallons DW or 1 quart AHW. WAC 173-303-200(2)	55 gallons DW or 1 quart AHW. WAC 173-303-200(2)	Does not apply.
Accumulation Area and General Inspections	Must be scheduled, documented, and deficiencies corrected. WAC 173-303-200(1)(b),(e), 320(1),(2)(a),(b),(d),(3) 630(6),640(6)(d).	Must be scheduled, documented, and deficiencies corrected. WAC 173-303-201,320(1),(2)(a), (b),(d),(3), 630(6), 202	Not required. WAC 173-303-070(8)

To ask about available formats for the visually impaired please call the Hazardous Waste and Toxics Reduction Program at 360-407-6700. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Dangerous Waste Regulations			
	Large Quantity Generator (LQG) Generates > 2,200 lbs/mo DW or 2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)	**Medium Quantity Generator (MQG)** Generates 220-2,200 lbs/mo	**Small Quantity Generator (SQG)** Generates <220 lbs/mo DW or <2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)
Personnel Training	Required written plan. WAC 173-303-200(1)(e),330	Familiarize employees with proper waste handling and emergency procedures. Also see Cont. Plan & Emergency Procedures below. WAC 173-303-201(2)(c)	Written plan not required by DW regulation, but Hazard Communications required by L&I/DOSH. WAC 173-303-070(8)
Preparedness and Prevention	• Minimize fire, explosion, release. • Communication systems (internal and external), fire control. • Test/maintain communication and control equipment. • Access to communications or alarm system. • Adequate aisle space. • Arrangements with local authorities. WAC 173-303-200(1)(e),340	• Minimize fire, explosion, release. • Communication systems (internal and external), fire control. • Test/maintain communication and control equipment. • Access to communications or alarm system. • Adequate aisle space. • Arrangements with local authorities. WAC 173-303-200(1)(e),340	Not required. WAC 173-303-070(8)
Contingency Plan and Emergency Procedures	• Written plan. • Arrangements with local emergency response agencies (ER). • Emergency coordinator (EC) (phone, address). • Emergency equipment list. • Evacuation plan. • Plan distribution to police, fire departments, hospitals, and local agencies. • Plan must be amended if it fails in an emergency or there are changes in the facility, equipment, or personnel. • EC must respond. WAC 173-303-200(1)(e),350,360	• Emergency coordinator (EC) onsite/on call. • Post: EC name and phone number. • Post: Location of fire extinguishers/spill control/fire alarm. • Post: Fire department phone. • Familiarize employees with proper waste handling and emergency procedures. • EC must respond. WAC 173-303-201(2)(c)	Not required. Check L&I/DOSH. WAC 173-303-070(8)
Additional Reporting for Emergencies	Report spill, fire, explosion, release. WAC 173-303-145,200(1)(e),360	Report spill, fire, explosion, release. WAC 173-303-145,201(2)(c)(iv)	Report spills if threat to human health and the environment. WAC 173-303-070(8)(b)(ii),145

Dangerous Waste Regulations			
	Large Quantity Generator (LQG) Generates > 2,200 lbs/mo DW or 2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)	**Medium Quantity Generator (MQG)** Generates 220-2,200 lbs/mo	**Small Quantity Generator (SQG)** Generates <220 lbs/mo DW or <2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)
Waste Containers	• Good condition. • Non-leaking. • Compatible with waste. • Closed/protected. • 30" aisle space. • Response to spills. • Leaks, emergencies. • Weekly inspections. • Ignitable, reactive, incompatible waste. • Containment system. WAC 173-303-200(1)(b),630(2),(3),(4),(5),(6),(7)(a),(8),(9),(10)	• Good condition. • Non-leaking. • Compatible with waste. • Closed/protected. • 30" aisle space. • Response to spills. • Leaks, emergencies. • Weekly inspections. • Ignitable, reactive, incompatible waste. • Containment system. WAC 173-303-200(1)(b),630(2),(3),(4),(5),(6),(7)(a),(8),(9),(10)	Manage waste in way that does not pose a threat. Local regulations may apply. WAC 173-303-070(8)
Waste Tanks	• Assessment. • Design, installation. • Containment, release, direction. • Operating requirements. • Daily inspections. • Response to spills, leaks. • Closure, post closure. • Ignitable, reactive, incompatible waste. WAC 173-303-200(1)(b),640 except (8)(a),(8)(c)	• Operating requirements. • Daily/weekly inspections. • Closure, post closure. • Ignitable, reactive, incompatible waste. • Freeboard requirement. WAC 173-303-202	Local regulations may apply. WAC 173-303-070(8)
Disposal of Dangerous Waste	Ship to permitted TSD or DW recycler. Uniform Manifest Form required. WAC 173-303-200(1)(a)	Ship to permitted TSD or DW recycler. Uniform Manifest Form required. WAC 173-303-200(1)(a)	Ship off-site or treat on-site: permitted TSD or permitted to manage moderate risk waste or legitimate recycle or other permitted solid waste facility. WAC 173-303-070(8)
Packaging, Labeling, Marking for Transport	Package, label and mark per USDOT (49 CFR). WAC 173-303-190(1),(2),(3),(5),(6)	Package, label and mark per USDOT (49 CFR). WAC 173-303-190(1),(2),(3),(5),(6)	Refer to DOT Regulations. WAC 173-303-070(8)
Placarding for Transport	Must offer placard. WAC 173-303-190(4)	Must offer placard. WAC 173-303-190(4)	Refer to DOT Regulations. WAC 173-303-070(8)
Manifest	Use for shipments off-site. WAC 173-303-180	Use for shipments off-site. WAC 173-303-180	Not required – only bill of lading. WAC 173-303-070(8)

Dangerous Waste Regulations			
	Large Quantity Generator (LQG) Generates > 2,200 lbs/mo DW or 2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)	**Medium Quantity Generator (MQG)** Generates 220-2,200 lbs/mo	**Small Quantity Generator (SQG)** Generates <220 lbs/mo DW or <2.2 lbs/mo of Acute Hazardous Waste (AHW) or WT01 (EHW)
Annual Reporting	File every year. WAC 173-303-220(1), 390(2)	File every year. WAC 173-303-220(1), 390(2)	File every year, if have ID#. Site Identification form only. WAC 173-303-070(8)(b)(iv), 220(1)
Exception Reporting	45 days: if no signed manifest from TSD returned. WAC 173-303-220(2)	45 days: if no signed manifest from TSD returned. WAC 173-303-220(2)	Not required. WAC 173-303-070(8)
Recordkeeping	5 years: manifests 5 years: annual reports, exception reports, test results. WAC 173-303-210(1),(2),(3)(a)	5 years: manifests 5 years: annual reports, exception reports, test results. WAC 173-303-210(1),(2),(3)(a)	Not required, but encouraged. WAC 173-303-070(8)
Waste Minimization	• For generators > 2,640 lbs/yr: plan to minimize waste required. • Written plan and program in place to minimize hazardous waste volume, toxicity. • Submit executive summary to WDOE. • 5 year updates. WAC 173-307	• Good faith effort to minimize waste and selected best waste management method. • For generators > 2,640 lbs/yr: Plan to minimize waste required. • Submit executive summary to WDOE. • 5 year updates. WAC 173-307	Not required.
Recycled, Reclaimed, Recovered Waste	Depending on the circumstances, recycled used oil, recycled car batteries, other recycled wastes partially or fully exempt. WAC 173-303-120,500-525	Depending on the circumstances, recycled used oil, recycled car batteries, other recycled wastes partially or fully exempt. WAC 173-303-120,500-525	Depending on the circumstances, recycled used oil, recycled used batteries, other recycled wastes partially or fully exempt. WAC 173-303-120,500-525
Regulating Agency	Ecology	Ecology	Ecology/ County Health District
Universal Waste	Standards for universal waste management (batteries, mercury-containing equipment, and lamps). WAC 173-303-573	Standards for universal waste management (batteries, mercury-containing equipment, and lamps). WAC 173-303-573	Standards for universal waste management (batteries, mercury-containing equipment, and lamps). WAC 173-303-573

This Quick Reference Guide summarizes the requirements for each generator status under the *Dangerous Waste Regulations* (Chapter 173-303 WAC), but does not replace them. Always refer to the regulations for details or call a hazardous waste specialist at your nearest Ecology Regional Office.

Central Regional Office	**509-575-2490**	**Eastern Regional Office**	**509-329-3400**
Northwest Regional Office	**425-649-7000**	**Southwest Regional Office**	**360-407-6300**

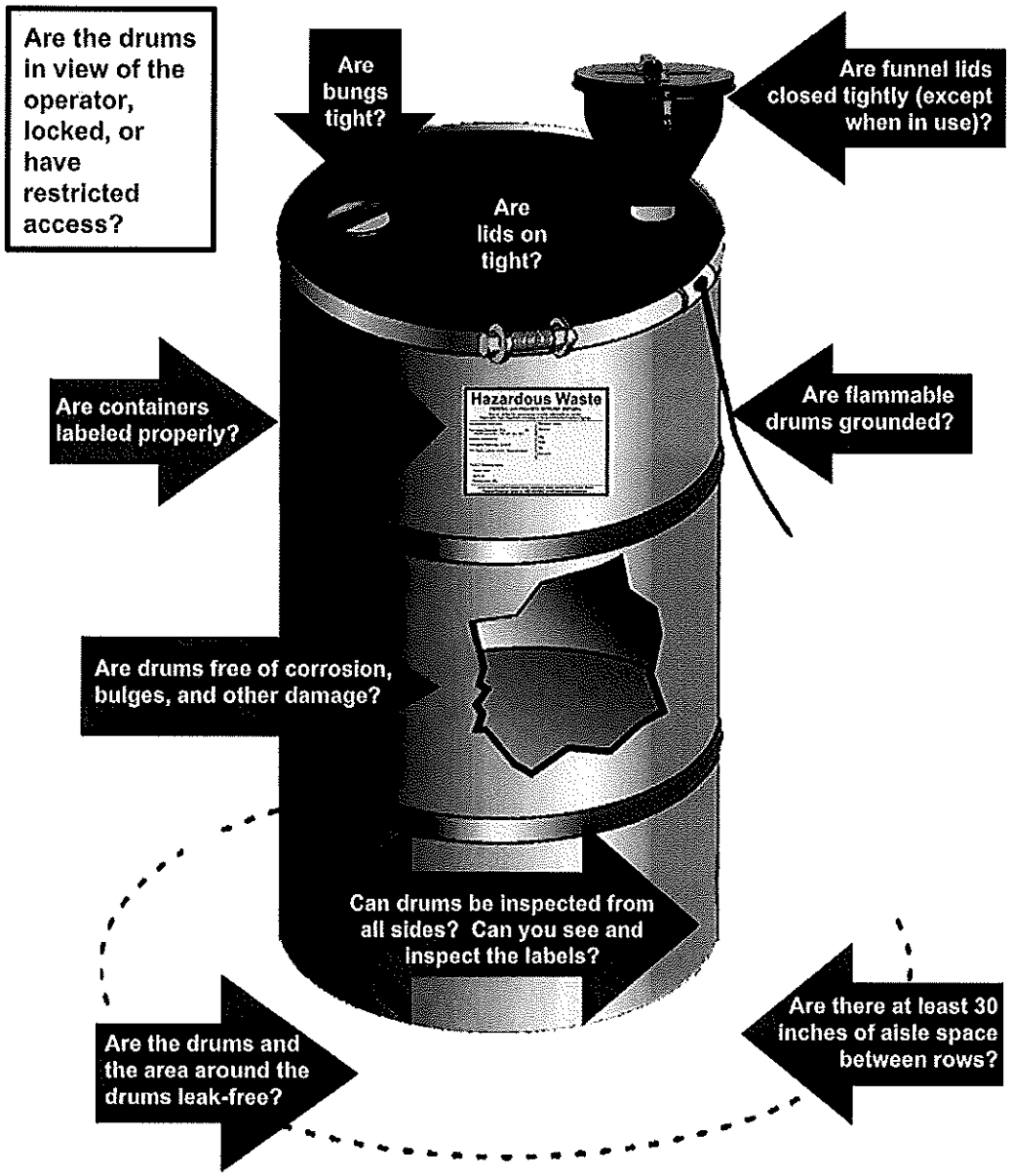
Appendix 2

Do Your Drums Pass the Test?

Publication #08-04-015

Do Your Drums Pass the Test?

A 10-point checklist for hazardous waste containers



Emergency Coordinator:_____

Emergency Coordinator #:_____

Emergency #:_____ Spill #:_____

Reference Chapter 173-303-630, Use and management of containers

DEPARTMENT OF ECOLOGY
State of Washington

Appendix D

Metals Sample Report

Columbia Analytical Services™ 1317 S. 13th Avenue, Kelso, WA 98626 360.577.7222 360.636.1068 (fax) www.caslab.com

December 5, 2011 Analytical Report for Service Request No: K1110842

Brian Hogue
Kelso, City of
2300 Parrott Way
P.O. Box 819
Kelso, WA 98626

RE: Sweeper Pile A/A1

Dear Brian:

Enclosed are the results of the sample submitted to our laboratory on November 07, 2011. For your reference, these analyses have been assigned our service request number K1110842.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.caslab.com. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please call if you have any questions. My extension is 3363. You may also contact me via Email at LDomenighini@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.

Lisa Domenighini
Project Chemist

LD/jw

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.1 definition*: Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

Columbia Analytical Services, Inc.
Kelso, WA
State Certifications, Accreditations, and Licenses

Agency	Number
Alaska DEC UST	UST-040
Arizona DHS	AZ0339
Arkansas - DEQ	88-0637
California DHS	2286
DOD ELAP	L11-119
Florida DOH	E87412
Georgia DNR	881
Hawaii DOH	-
Idaho DHW	-
Indiana DOH	C-WA-01
ISO 17025	L11-118
Louisiana DEQ	3016
Louisiana DHH	LA080001
Maine DHS	WA0035
Michigan DEQ	9949
Minnesota DOH	053-999-368
Montana DPHHS	CERT0047
Nevada DEP	WA35
New Jersey DEP	WA005
New Mexico ED	-
North Carolina DWQ	605
Oklahoma DEQ	9801
Oregon – DEQ (NELAP)	WA100010
South Carolina DHEC	61002
Texas CEQ	04704427-08-TX
Washington DOE	C1203
Wisconsin DNR	998386840
Wyoming (EPA Region 8)	-

Columbia Analytical Services

CHAIN OF CUSTODY

SR#: K1110842

1317 South 13th Ave, Kelso, WA 98626 | 360.577.7222 | 800.695.7222 | 360.636.1068 (fax)

PAGE _____ OF _____ COC #_____

PROJECT NAME	SWEEPER PILE A
PROJECT NUMBER	A1
PROJECT MANAGER	BRIAN HOGUE
COMPANY/ADDRESS	2300 PARROT WAY KELSO WA.
CITY/STATE/ZIP	KELSO WA. 98626
E-MAIL ADDRESS	B HOGUE@ KELSO. gov
PHONE #	957-7181 FAX #
SAMPLER'S SIGNATURE	Brian Hogue

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	Semivolatile Organics by GC/MS 625☐ 8270☐ 8270LL☐	Volatile Organics 624☐ 8260☐ 8021☐ BTEX☐	Hydrocarbons (*see below) Gas☐ Diesel☐ Oil☐	☐ Fuel Fingerprint (FIQ) ☐ NW-HCID Screen	Oil & Grease/TRPH 1664 HEM☐ 1664 SGT☐	PCB's Aroclors☐ Congeners☐	Pesticides/Herbicides 608☐ 8081A☐ 8141A☐ 8151A☐	Chlorophenolics - 8151M Tri☐ Tetra☐ PCP☐	PAHS 8310☐ SIM☐	Metals, Total or Dissolved (See list below)	Cyanide☐ Hex-Chrom☐	pH, Cond., Cl, SO_4, PO_4, F, NO_2, NO_3, BOD, TSS, TDS (circle) NH_3-N, COD, Total-P, TKN, TOC, DOC (circle) NO_2+NO_3	TOX 9020☐ AOX 1650☐ 506☐	TCLP METALS					REMARKS
SWEEPER PILE A1	11/7/2011	930 AM																	✓					

REPORT REQUIREMENTS

___ I. Routine Report: Method Blank, Surrogate, as required

___ II. Report Dup., MS, MSD as required

___ III. Data Validation Report (includes all raw data)

___ IV. CLP Deliverable Report

___ V. EDD

INVOICE INFORMATION

P.O. # _____

Bill To: _____

TURNAROUND REQUIREMENTS

____ 24 hr. ____ 48 hr.

____ 5 Day

____ Standard (10-15 working days)

____ Provide FAX Results

_____ Requested Report Date

Circle which metals are to be analyzed:

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

*INDICATE STATE HYDROCARBON PROCEDURE: AK CA WI NORTHWEST OTHER:_____ (CIRCLE ONE)

SPECIAL INSTRUCTIONS/COMMENTS:

☐ Sample Shipment contains USDA regulated soil samples (check box if applicable)

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Brian Hogue	Signature:	Signature:	Signature:
Date/Time: 11-7-11	Date/Time: 11/7/11 0950	Date/Time:	Date/Time:
Printed Name: Brian Hogue	Printed Name:	Printed Name:	Printed Name:
Firm: City of Kelso	Firm: NAS	Firm:	Firm:

RCOC #1 03/10

5

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC Lisa

Client / Project: City of Kelso Service Request *K11* 10847

Received: 11/7/11 Opened: 11/7/11 By: SMW Unloaded: 11/7/11 By: SMW

1. Samples were received via? *Mail* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Cooler Temp °C	Temp Blank °C	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
NA					

7. Packing material used. *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Sleeves* *Other* N/A
8. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
9. Did all bottles arrive in good condition (unbroken)? *Indicate in the table below.* NA Y N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
11. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
12. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
13. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
15. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

COLUMBIA ANALYTICAL SERVICES, INC.

- Cover Page -
INORGANIC ANALYSIS DATA PACKAGE

Service Request : K1110842

Client : Kelso, City of
Project Name : Sweeper Pile A
Project No. : A1

Sample Name :	Lab Code :
Sweeper Pile A1	K1110842-001
Sweeper Pile A1	K1110842-001S
Method Blank	K1110842-MB

Comments:

Approved By: SC Date: 12/2/11

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	Kelso, City of	**Service Request :**	K1110842
Project Name :	Sweeper Pile A	**Date Collected :**	11/07/11
Project Number :	A1	**Date Received :**	11/07/11
Matrix :	Soil	**Date TCLP Performed :**	11/09/11
		Date Extracted :	11/10/11
		Date Analyzed :	11/14-21/11

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : Sweeper Pile A1
Lab Code : K1110842-001

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Arsenic	3010A/6010C	0.1	5	ND	
Barium	3010A/6010C	1.0	100	ND	
Cadmium	3010A/6010C	0.01	1	ND	
Chromium	3010A/6010C	0.01	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.01	0.2	ND	
Selenium	3010A/6010C	0.1	1	ND	
Silver	3010A/6010C	0.02	5	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	Kelso, City of	**Service Request :**	K1110842
Project Name :	Sweeper Pile A	**Date Collected :**	NA
Project Number :	A1	**Date Received :**	NA
Matrix :	Soil	**Date TCLP Performed :**	11/09/11
		Date Extracted :	11/10/11
		Date Analyzed :	11/14-21/11

Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : Method Blank
Lab Code : K1110842-MB

Analyte	EPA Method	MRL	Regulatory Limit *	Sample Result	Result Notes
Arsenic	3010A/6010C	0.1	5	ND	
Barium	3010A/6010C	1.0	100	ND	
Cadmium	3010A/6010C	0.01	1	ND	
Chromium	3010A/6010C	0.01	5	ND	
Lead	3010A/6010C	0.05	5	ND	
Mercury	7470A	0.01	0.2	ND	
Selenium	3010A/6010C	0.1	1	ND	
Silver	3010A/6010C	0.02	5	ND	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client : Kelso, City of
Project Name : Sweeper Pile A
Project Number : A1
Matrix : Soil

Service Request : K1110842
Date Collected : 11/07/11
Date Received : 11/07/11
Date TCLP Performed : 11/09/11
Date Extracted : 11/10/11
Date Analyzed : 11/14-21/11

Matrix Spike Summary
Toxicity Characteristic Leaching Procedure (TCLP)
EPA Method 1311
Metals
Units: mg/L (ppm) in TCLP Extract

Sample Name : Sweeper Pile A1
Lab Code : K1110842-001S

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery*	Result Notes
Arsenic	5.0	ND	4.3	86	
Barium	10	ND	9.4	94	
Cadmium	1.0	ND	0.82	82	
Chromium	5.0	ND	4.54	91	
Lead	5.0	ND	4.36	87	
Mercury	0.05	ND	0.05	100	
Selenium	1.0	ND	0.9	90	
Silver	1.0	ND	0.85	85	

* From 40 CFR Part 261, et al., and Federal Register, March 29, 1990 and June 29, 1990.