I. Permittee Information

Permittee Name City of Tukwila	**Permittee Coverage Number** WAR04-5544
Contact Name Greg Villanueva	**Phone Number** 206-431-2442
Mailing Address 6300 Southcenter Blvd. Suite 100	
City Tukwila	**State** WA / **Zip + 4** 98188-8548
Email Adddress greg.villanueva@tukwilawa.gov	

II. Regulated Small MS4 Location

Jurisdiction Tukwila	***Entity Type: Check the box that applies***		
	County	**City/Town**	**Other**
		X	
Major Receiving Water(s) Green River - Duwamish River			

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):**
NA	

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	[illegible]	Title	City Administrator	Date	3-24-12
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	
Name		Title		Date	

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

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		SWMP included with this annual report and attached to the City's web site.	City of Tukwila 2012 Surface Water Management 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 or boundary changes this reporting year.	
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		Implementation of the program has been ongoing since 2008.	
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		Education program began in 2008. A variety of approaches are used to meet this program element.	
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		Distribution of appropriate information and education has been met. This program element will continue to grow.	
7.	Tracked the types of public education and outreach activities implemented. (*Required to begin* by February 15, 2009, S5.C.1.c)	Y		This programt element began in 2008.	
7b.	Number of activities implemented:		7	Hazelnut newsletter, industrial inspections, Suds Safe program, brochures, storm drain markers, Tukwila Recycle Events.	
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		The City conducted a phone survey that targeted the general public in multiple subjects relating to stormwater issues.	
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		Public involvement opportunities provided at Utility Committee, Committee of the Whole, and City Council Regular Meetings. Opportunities are encouraged throughout the year with the City's NPDES website, http://www.tukwilawa.gov/pubwks/npdes.html	
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		Public involvement is solicited via City website, Hazelnut newsletter, Tukwila Reporter newspaper, Utilities Committee, and interactions at the Public Works counter.	

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		A copy of the most current SWMP is available at City Hall. Also available on the City website at www.ci.tukwila.wa.us	
12.	Posted the SWMP and latest annual report on your website. (S5.C.2.b)	Y		The SWMP and latest annual report is posted on the City's website and email address is provided for public comment.	
12b.	NOTE website address in *Attachment* field:	y		http://www.tukwilawa.gov/pubwks/npdes.html	
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		In 2010, the City began a commercial and industrial inspection program designed specifically for IDDE. In addition, routine site inspections and M&O video inspections are conducted annually.	
14.	Developed and currently maintain a map of your MS4? (*Required* by February 16, 2011, S5.C.3.a)	Y		The City is in Phase 8 of mapping its MS4 that includes housekeeping items, correction of errors missing from previous phases and updating maps to GIS format.	
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		A consultant has been hired to develop a program to ensure our MS4 mapping is kept current.	
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		City has completed mapping this part of the program element.	
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		The City is current with its GIS coverage and mapping showing all known City owned storm outfalls with a 24 inch diameter or larger. In addition, smaller size diameters are being mapped.	

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		There is one known infiltration area served and maintained by the City.	
18.	Map has been made available upon request? (S5.C.3.a.iv)	Y		The most current GIS and Drainage Basin maps are available by contacting the City's Public Works Department.	
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		The City is current with this program element.	
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		The City has an ongoing process that meets this program element.	
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		The City has a program in place which identifies commercial and industrial businesses with activities likely to have stormwater impacts.	

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)	Y		The City is meeting this program element.	
23.	Prioritized receiving waters for visual inspection? (*Required* by February 16, 2010, S5.C.3.c.ii)	Y		The City has prioritized for implementation as follow: One within the Green River and two within the Duwamish River.	
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		The City actively seeks illicit discharges while conducting project inspections, commercial & industrial inspections and routine Maintenance and Operations throughout the City. In addition, responds to reported violations.	
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		The City has trained key personnel to conduct investigations that use video detection, water sampling, and visual inspections.	

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		In addition to providing stormwater education to essential City employees and the general public, the City has in place an industrial and commercial inspection program which includes addressing this program element.	
30.	Distributed appropriate information to target audiences identified pursuant to S5.C.1? (*Required* by August 19, 2011, S5.C.3.d.i)	Y		Information sheets are provided during commercial and industrial inspectons and interactions with the general public. Also, via the City web site, Tukwila Reporter and Hazelnut newsletter.	
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:		5		
31c.	Number of follow-up actions taken in response to calls:		5		
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	y		A hotline phone number, 206-433-1860 has been added to the City website, www.ci.tukwila.wa.us/pubwks/npdes.html.	
33	Tracked the number of illicit discharges, including spills, identified? (*Required* by August 19, 2011, S5.C.3.e)	13			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
33b.	Number of illicit discharges identified:		9		
34	Tracked the number of inspections made for illicit connections? (*Required* by August 19, 2011, S5.C.3.e)	Y			
34b.	Number of inspections:		23		
35	Received feedback from IDDE public education efforts? (*Required* by August 19, 2011, S5.C.3.e)	Y		Feed back was given in response to the phone survey conducted during this reporting period.	
36	**Attached** report on IDDE public education efforts? (*Required* by August 19, 2011, S5.C.3.d, S5.C.3.e)	Y		The attached report was conducted for the Tukwila and the City of Kent.	Stormwater Community Research Report. See pages 33 - 43 for Tukwila's report.
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:		9		
37c.	Number of staff trained:		51		
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:		7		
38c.	Number of staff trained:		27		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
	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		This project element was met in 2009 with additional training in 2010 and will continue to grow.	
39b.	Number of trainings provided:		2	This reporting period.	
39c.	Number of staff trained:		1		
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		The City has adopted the 2009 Surface Water Design Manual which has a lower threshold. Otherwise, sites greater than 1 acre will be required to meet this program element.	
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		City adopted Ordinance 2274 to meet this program element.	
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		The City adopted the 2009 King County Surface Water Design Manual meeting this program element.	
49b.	Cite documentation to meet this requirement in *Attachment* field:	y			T.M.C. 14.30 & 14.31
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			
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		This program element is being met.	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
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		This program element is being met.	
55	Reviewed **Stormwater Site Plans** for new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.b.i)	Y			
55b.	Number of site plans reviewed during the reporting period:		36	This number represents all site plans regardless of the 1 acre threshold.	
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)	Y			
56b.	Number of qualifying sites inspected prior to clearing and construction during the reporting period:		3		
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)	Y			
57b.	Number of sites inspected during the construction phase for the reporting period:		35	Includes all projects and construction sites regardless of size.	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
58	Enforced as necessary based on the inspection at new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.b.iii)	Y		This number includes inspections and correction notices.	
58b.	Number of enforcement actions taken during the reporting period:		1		
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)	Y		All permitted sites are routinely inspected meeting this program element.	
59b.	Number of qualifying sites known during the reporting period:		6		
59c.	Number of qualifying sites inspected during the reporting period:		6		
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)	Y		Maintenance and operation agreements of all drainage facilities for qualifying projects are required.	
61	Enforced regulations as necessary based on the inspection? (*Required* by February 16, 2010, S5.C.4.b.iv)	NA		No enforcement action necessary this reporting period.	
61b.	Number of enforcement actions taken during the reporting period:		0	No enforcement actions necessary this reporting period.	
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			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
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)	N			
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		Ordinance No. 2272 meets this program element.	
66	Inspected post-construction stormwater controls, including structural BMPs, at new development and redevelopment projects? (*Required* by February 16, 2010, S5.C.4.c)	Y			
66b.	Number of sites inspected during the reporting period:		2		
66c.	Number of structural BMPs inspected during the reporting period:		2		
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		City follows a limited variety of practices, 2009 King County SWDM Appendix A, SWPPM and King County Drainage Maintenance Standards for Commercial and Multifamily Drainage Facilities.	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
68	Performed timely maintenance as per S5.C.4.c.ii? *(Required* by February 16, 2010, S5.C.4.c.ii)	Y			
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			
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		

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
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			
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			
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		This program element has been met and will be ongoing.	
74b.	Number of trainings provided:		3		
74c.	Number of staff trained:		6		
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			

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
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		The City has adopted the 2009 King County SWDM and SWPP manuals to meet this program element.	
77	Performed timely maintenance as per S5.C.5.a.ii? (*Required* by February 16, 2010, S5.C.5.a.ii)	Y		Routine scheduled maintenance for all City facilities is ongoing and in compliance with this program element.	
77b.	**Attached** documentation of any maintenance delays. (*Required* by February 16, 2010, S5.C.5.a.ii)	NA		No maintenance delays for this reporting year.	
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:		25		
78c.	Number of facilities inspected during the reporting period:		25		
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:		25	Estimated number of facilties.	
80c.	Number of facilities inspected during the reporting period:		150	M&O inspected each 25 known facilities six times this reporting period.	

Question		Y/N/ NA	#	Comments (50 word limit)	Name of Attachment & Page #, if applicable
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:		4,316		
81c.	Number of inspections:		698		
81d.	Number of catch basins cleaned:		698		
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:		3	This reporting period.	
84c.	Number of staff trained:		6	This reporting period.	

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		A SWPPP is in place that has been developed to address five City facility's. Evaluations are periodically made if and when issues occur through routine safety and maintenance meetings.	
86	Is there an approved Total Maximum Daily Load (TMDL) applicable to stormwater discharges from a MS4s owned or operated by the Permittee?	N		TMDL requirements due not apply to the City's MS4 permit	
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)	NA		City of Tukwila, listing of barriers to LID implementation was submitted with 2010 Annual Report.	
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)	NA		Tukwila LID Practice was submitted with 2010 Annual Report.	

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.	In support of EPA efforts to clean up the lower Duwamish River, KTA Consultant conducted Phase 1 Collection & Analysis of eight stormwater sampling sites near the Duwamish River. The purpose was to identify high concentrations of contaminates in the sediment collected. See attached report summarizes sampling outcome, Attachment 6.	Greg Villanueva @ 206-431-2442 - Office or email greg.villanueva@tukwilawa.gov
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	The City recognizes the 2009 King County Stormwater Pollution Prevention Manual and the listed BMPs. In addition, the City provides technical assistance to property owners and are confident these BMPs are appropriate.
2.	Are the BMPs selected and implemented for Public Involvement appropriate to minimize pollutants in the MS4 to the MEP?	Y	The City has provided hands on projects for rain gardens and stream protection using adoptive measures. The City will continue to evaluate the appropriateness of the selected BMPs.
3.	Are the BMPs selected and implemented for Illicit Discharge Detection and Elimination appropriate to minimize pollutants in the MS4 to the MEP?	Y	The City recognizes the 2009 King County Stormwater Pollution Prevention Manual and the listed BMPs. In addition, the City provides technical assistance to property owners and find these BMPs to be appropriate.
4.	Are the BMPs selected and implemented for Construction Stormwater Pollution Prevention appropriate to minimize pollutants in the MS4 to the MEP?	Y	The City has adopted the 2009 King County Surface Water Design Manual to meet this requirement and are confident we meet this program element.
5.	Are the BMPs selected and implemented for Post-Construction Runoff Management appropriate to minimize pollutants in the MS4 to the MEP?	Y	The City has adopted the 2009 King County Surface Water Design Manual to meet this requirement and are confident we meet this program element.
6.	Are the BMPs selected and implemented for Good Housekeeping for Municipal Operations appropriate to minimize pollutants in the MS4 to the MEP?	Y	The City believes it is meeting this program element and will continue to review and enhance its housekeeping operations when needed.

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		NA		
2					
3					
4					
5					
6					
7					

The Cities of Kent and Tukwila

Stormwater Community Research Report

April, 2011

Prepared by:
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The Cities of Kent and Tukwila

STORMWATER COMMUNITY RESEARCH REPORT

April, 2011

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Goal

Research Goal:
The goal of this research is to measure the public's knowledge and practices regarding stormwater in the cities of Kent and Tukwila using a telephone survey. This research was completed at the request of the participating cities and may be used for stormwater planning and partial compliance with National Pollutant Discharge Elimination System (NPDES) Phase II permit compliance requirements in Washington State.

Content Areas for the Survey:
The "general public" is defined as: adults (18 years of age and older) who speak English and live in the cities of Kent and Tukwila. The subjects covered included:

- General impacts of stormwater flows into surface waters.
- Knowledge of the benefit of pervious surfaces.
- Source control BMPs and environmental stewardship actions and opportunities in the areas of pet waste, vehicle maintenance, and landscaping.
- BMPs for use and storage of automotive parts, hazardous cleaning supplies, carwash soaps and other hazardous materials.
- Knowledge of what constitutes an illicit discharge and how to report it.
- Yard care techniques relating to protecting stormwater quality and knowledge of what constitutes pollution in the yard.
- BMPs for use and storage of pesticides and fertilizers.
- BMPs for the disposal of carpet cleaning fluids.
- BMPs for auto maintenance.

Methodology

The survey was created for the general public for administration within each of the participating cities. Survey questions were developed by Hebert Research with input from each city. The survey consisted of 30 questions with 27 of them relating directly to knowledge about stormwater issues and practices respondents had adopted which protect the quality of stormwater. The remaining three questions dealt with an overall assessment of surface water quality, to whom illicit discharges should be reported and the age of the respondent.

Sample

The sample for Kent was determined through identifying Census Tracts from the US Census Bureau within Kent. Hebert Research then purchased a list of phone numbers of residents within the selected Census Tracts from a reputable vendor. A random sample of phone numbers was drawn from the selected Tracts by the vendor.

A list containing over 1000 telephone numbers appearing in the telephone directory was purchased from a reputable commercial list company for Tukwila. The list company maintains a record of all telephone numbers appearing in all phone books in the United States cross-referenced by zip code. Using the zip codes covering the study area, the list company drew a random sample of phone numbers.

The random draw of these phone numbers assures proper proportionate sampling. High density areas have more phone numbers and, by randomly drawing from the list, the high and low density areas are properly proportioned. The resulting list for each city was loaded into Hebert Research's CATI (Computer-Aided Telephone Interviewing) system which randomly selects phone numbers as required during the interviewing process. Phone numbers were called up to five times at different times during the day and evening. This helped to assure that the survey is administered to both those who are easy to reach and those who are more difficult to contact.

The following table represents the obtained, random sample for each of the participating cities:

Sample Totals	
City	**Sample Size**
Kent	104
Tukwila	100
Total Sample	**204**

Research Controls

Hebert Research applied a variety of controls to help ensure that the research and analysis reached the highest quality that can be provided. The primary research controls that were employed in this study included the following:

Interviewer Training
All interviewers participated in a special training session for this study. During this training session, the questionnaire was read and a discussion was held regarding the objectives of the study, screening questions, skip patterns, and techniques for handling potential problems. Interviewers raised questions and provided their professional feedback regarding potential interviewing issues. All issues were resolved.

Pre-test the Survey
After the questionnaire was programmed in our CATI system, it was rigorously tested to assure all questions were asked and that data was accurately recorded. Thirty surveys were conducted during the pretest. The programming was deemed to be valid.

Conduct Interviews
Following a successful pretest of the questionnaire, telephone interviews were conducted using Ci3 CATI software from Sawtooth Software, a recognized leader in computer-aided interviewing. Potential respondents were called on weekdays at various times throughout the afternoon and evening until 9:00 pm. An appointment and callback procedure was used when necessary to minimize refusals and allow respondents to complete the survey at a convenient time. Interviews were conducted in English.

Monitoring
Telephone interviews were regularly monitored by the data collection supervisor and were found to be properly conducted.

Internal Peer Review
Hebert Research uses an internal review process called "CERA" (create, edit, review, approve) which is similar to academic peer review to ensure that each study meets or exceeds rigorous quality control standards. Through this process, several analysts review the statistical findings and offer critical feedback designed to increase the utility of the research and produce a clear and insightful report.

Incidence and Response Rates, Margin of Error
A total of 204 surveys were completed with adults living within the zip codes of Kent and Tukwila. At the 95% confidence level, the maximum margin of error for a sample size of 104 respondents is ±9.6% and for a sample size of 100 is ±9.8%. For the entire sample of the two cities combined (204 respondents), the maximum margin of error is ±6.9%. This margin of error means that if the two-city survey was repeated 100 times, the resulting percents for each question for the two cities combined would be within ±6.9% (the margin of error) in 95 out of 100 cases for each question.

Over 1,000 phone numbers of residences in each city were called. Many of these calls went unanswered or went to voicemail. When a resident answered the phone and contact was made, we asked the respondent to participate in the survey. The *incidence rate* represents the percent of individuals we spoke to who were qualified to take the survey, meaning they spoke English and reported living within the city. The *response rate* represents the percent of qualified individuals we spoke to who agreed to participate and who completed an interview. Response

rates above 50.0% are higher compared to other community-wide surveys and serve to increase confidence in the survey's validity and reliability.

Sampling Frame		
City	**Incidence Rate**	**Response Rate**
Kent	55.0%	54.1%
Tukwila	37.9%	53.6%

Statistical Weighting

Statistical weighting is a technique that is commonly used in survey research to correct for sampling bias. During the process of data collection, demographic data from the U.S. Census was obtained to identify population parameters for the zip codes involved in the survey. Sample demographics—specifically, age and gender—were compared with distributions in the population within each city. To compensate for potential sampling bias (e.g., interviewing a disproportionately high number of females), weights were calculated and applied to the survey sample for each city in order to ensure that gender and age distributions were represented in the proper proportion according to census statistics. After being weighted by age and gender, the samples for each city were then weighted by population to assure a proper proportionate representation across the two cities combined to determine the results for the Region (the area made up of the two cities combined). In the final weighting analysis, it was concluded that each sample was representative of the population for each city within the critical parameters of gender and age and for the region (*region* is defined for this report as the two cities combined) according to gender, age and population density.

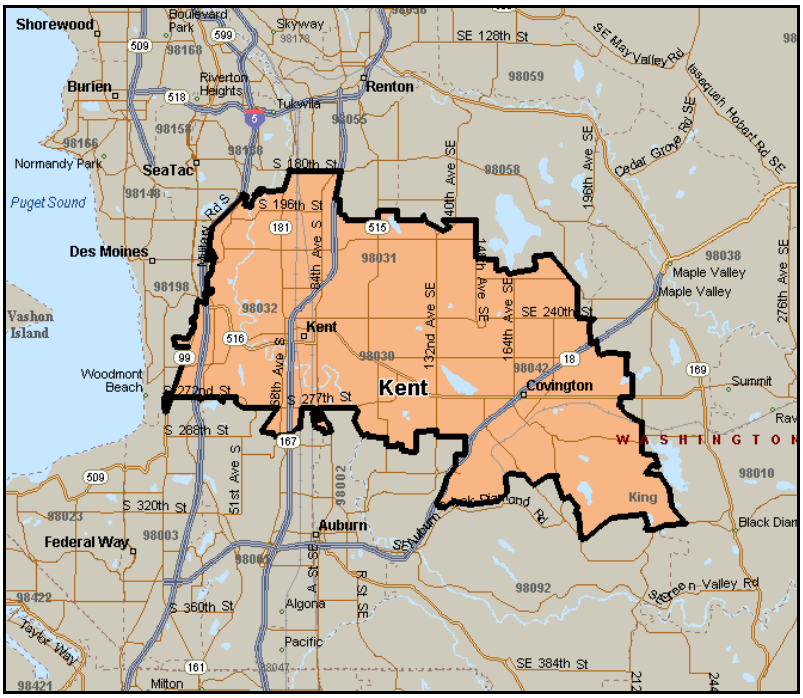
Use of Findings

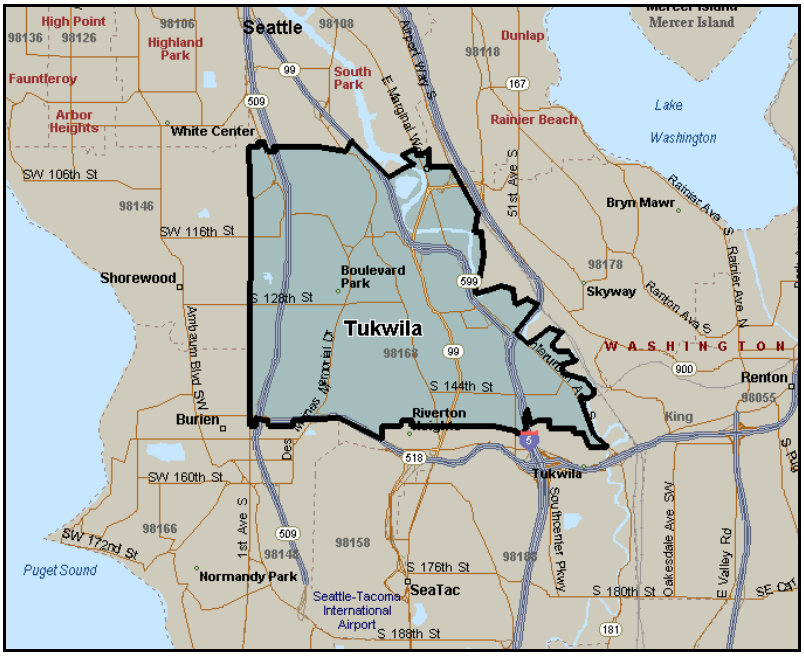
Hebert Research has made every effort to produce the highest quality research product within the agreed specifications, budget and schedule. The customer understands that Hebert Research uses those statistical techniques, which, in its opinion, are the most accurate possible. However, inherent in any statistical process is a possibility of error, which must be taken into account in evaluating the results. Statistical research can reveal information regarding community perceptions only as of the time of the sampling, within the parameters of the project, and within the margin of error inherent in the techniques used.

Evaluations and interpretations of statistical research findings and decisions based on them are solely the responsibility of the customer and not Hebert Research. The conclusions, summaries and interpretations provided by Hebert Research are based strictly on the analysis of the data gathered, and are not to be construed as recommendations; therefore, Hebert Research neither warrants their viability nor assumes responsibility for the success or failure of any customer actions subsequently taken.

Geographic Area Surveyed

The map below shows the geographic area covered by the zip codes of the two cities in the study (98030, 98031, 98032, and 98042 for Kent and 98168 for Tukwila).





Explanation of Multivariate Analysis

The data for the surveys were analyzed using the chi square statistic to examine differences between respondents on a regional basis according to age and gender. Responses for the knowledge questions were first categorized as being a correct response or an incorrect response. The incorrect response category was made up of wrong answers plus responses classified as "need more information," "don't know/refused," and "not applicable." Following classification, the chi square test was executed. For the questions dealing with the actions of the respondents, those who said the action did not apply to them were first eliminated from the data set. Following their removal, the categories were classified as being "correct" or "incorrect" with the "incorrect" classification consisting of the collapsed categories as described above. The statistical test was run using these two categories.

Hypotheses were tested using the *0.05 level of significance* as the criterion value for the chi square analysis. When differences between groups reached this value, the finding is reported along with its *level of significance* which is stated as a *p value* (e.g., $p = 0.04$). Chi square results that reach the 0.05 level of significance indicate there is at least a 19-out-of-20 likelihood that the finding is true. This is a generally accepted level of reliability for public surveys.

In addition to measures of significance in which differences have been determined at the 0.05 level, a measurement of association is also reported. This measure shows the strength of association or dependency between the variables being tested such as the response to a question and gender. A measurement of 0 indicates there is no association between the two. It represents a null relationship. A measurement of 1 indicates perfect association or, to continue the example, gender is completely predictive of the response to the question. This measure of association is called Cramer's V.

Respondent Profile

The following tables describe the demographic profile of the sample. As indicated in the methodology section, the sample was statistically weighted to match the populations of Kent and Tukwila by gender and age. The figures appearing in the table represent weighted values.

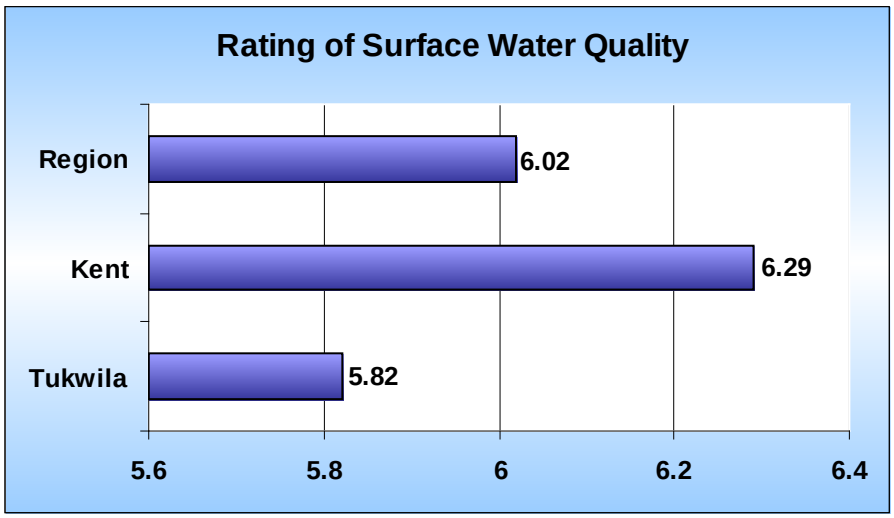
Age	Region	Kent	Tukwila
18 - 24	13.9%	14.4%	11.5%
25 - 34	22.2%	21.8%	24.2%
35 - 44	21.3%	21.2%	21.9%
45 - 54	19.4%	19.7%	18.1%
55 - 64	12.5%	12.1%	14.6%
65 or Older	10.6%	10.8%	9.6%

Gender	Region	Kent	Tukwila
Male	50.4%	50.5%	50.0%
Female	49.6%	49.5%	50.0%

Highly Variable Assessment of Water Quality in the Environment

Cities Show Similar Overall Perception Regarding Surface Water Quality
Respondents rated the quality of water in our rivers, wetlands and lakes and in Puget Sound on a "0" to "10" scale where "0" meant "extremely polluted" and "10" meant "extremely clean." Respondent ratings in Kent and Tukwila were similar in their assessment of the quality of surface water in our region with ratings of 6.29 for Kent and 5.82 for Tukwila.

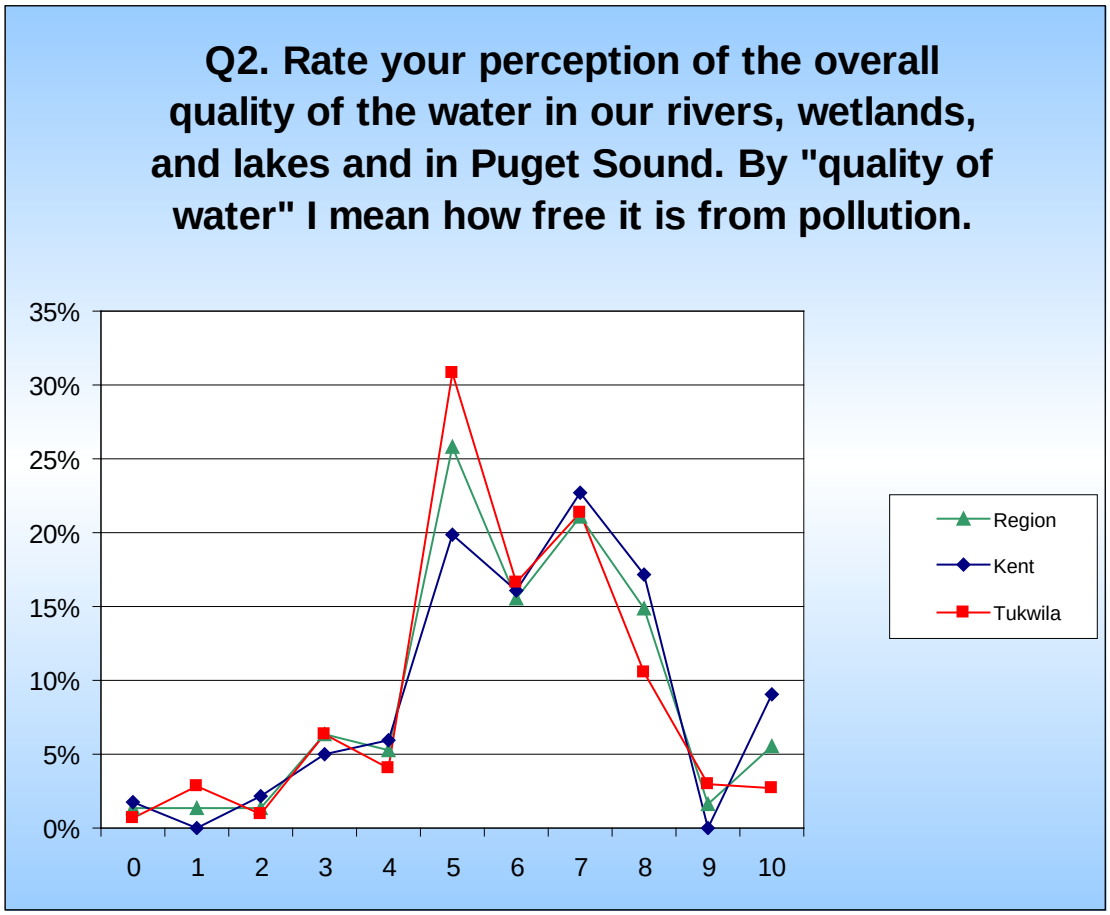
Figure 1. Respondent Rating of Surface Water Quality by Area



For the region represented by the two cities, the average rating of 6.02 suggests the public sees these waters as being clean, but on a relatively low level. The shape of the curve (see Figure 2 below) suggests a classic normal distribution of scores which is shifted to the right, toward the high end of the scale. A classic normal distribution would result if: 1) the information available to the public provided a confusing picture of surface water as being both high and low in quality, or 2) respondents possessed little knowledge about water quality and guessed at an answer.

The fact that residents rated the quality of water across the scale shows high variability in the public's perception of the quality of surface waters. The shift in average ratings from the middle toward the high end of the rating scale suggests the public, as a whole, views water quality as being generally clean but with some uncertainty. The similarity of the distribution of ratings to the normal curve suggests that the residents in each city are unclear about how clean the water is and that many respondents may have taken a guess at it.

Figure 2. Rating by General Public of the Quality of Water in the Environment (0 to 10 scale where "0" meant "extremely polluted" and "10" meant "extremely clean.")



Public Needs a Better Awareness of the Problem

The implication of this finding for education purposes is that the public needs to be more deeply informed regarding the current levels of pollution in rivers, wetlands and lakes and in Puget Sound. Using social marketing techniques, educational efforts should communicate: 1) the current nature, severity and negative effects of surface water pollution originating in stormwater, 2) the quality of stormwater that is desired and a vision of clean water in the future, 3) the many positive outcomes that will result from constructive public action to preserve the quality of stormwater, and 4) the helpful practices individuals need to adopt to prevent polluting stormwater. The more real the public perceives the problems and the benefits and the more advertising employs effective social marketing techniques, the greater the impact and response will be. If cities can go beyond simple education and offer programs that help to overcome obstacles to change, the opportunity for success increases. For example, many people resist changing their behavior if it will cost them money. Programs that will eliminate or reduce the monetary cost will have a much higher chance of success. If, for example, the city can offer a program where citizens receive money-saving coupons for using a commercial car wash instead of washing their car on the street where soapy water enters the stormwater drainage system, the likelihood of changing the public's behavior in a desirable direction rises.

Areas of Greatest Educational Need

The two main purposes of this survey are to establish a baseline of the public's knowledge and practices regarding stormwater and to provide direction for each city's public education program to meet the requirements in the NPDES Phase II Permit in WA. The survey tested the public's knowledge and practices regarding 27 key issues and the resulting data provides baseline measures against which to assess future improvement as a result of each city's social marketing programming.

The priorities for education resulting from this research are divided into three levels based on the percent of the respondents across the region who provided a correct answer—the lower the percent of correct answers given, the higher the priority for education.

- Priority 1: Less than 50% correct answers (Table 1)
- Priority 2: From 50 to 80% correct answers (Table 2)
- Priority 3: Over 80% correct answers (Table 3)

In administering the questionnaire, respondents were presented with statements that were either true or false and were asked if they agreed or disagreed with the statement. Each of the statements in the tables appearing below include a letter indicating the correct answer for that statement, an **A** for "Agree" and a **D** for "Disagree." When the word "**Adopt"** appears, it means the statement deals with whether respondents have "adopted" the desirable behavior mentioned in the statement. The combination of "**A Adopt**," then, means the question deals with behavior and the desired response is "**A"** for "Agree"—which equates to the respondent saying that he or she engages in the desired behavior mentioned in the statement.

Rank for Education
1
2
3
4-9
10-18
19-23
24
25
26
27

All issues in Tables 1, 2 and 3 are ordered by the city's rank for education. The ranking of issues for the Region is also shown with a color code as shown in the "Rank for Education" table on the left. The top rank item for education is colored bright green. Also a "1" appears underneath the percentage in the cell. The least important issue is a magenta color with "27" appearing underneath the percentage of correct answers given by respondents.

Priority 1 Issues: Less than 50% Correct Answers in the Region

Across the Region, less than 50% of the public gave the correct answer to seven issues (25.9% of the 27 issues tested, see Table 1). The seven lowest scoring issues for Kent and Tukwila were the same for the first five issues and varied by only one ranking position for two issues. Tukwila residents provided a higher percent of correct answers for every Priority 1 issue compared to Kent indicating a higher level of correct knowledge and awareness regarding these stormwater issues.

Table 1. Priority 1 Issues for Public Education Ranked by Region

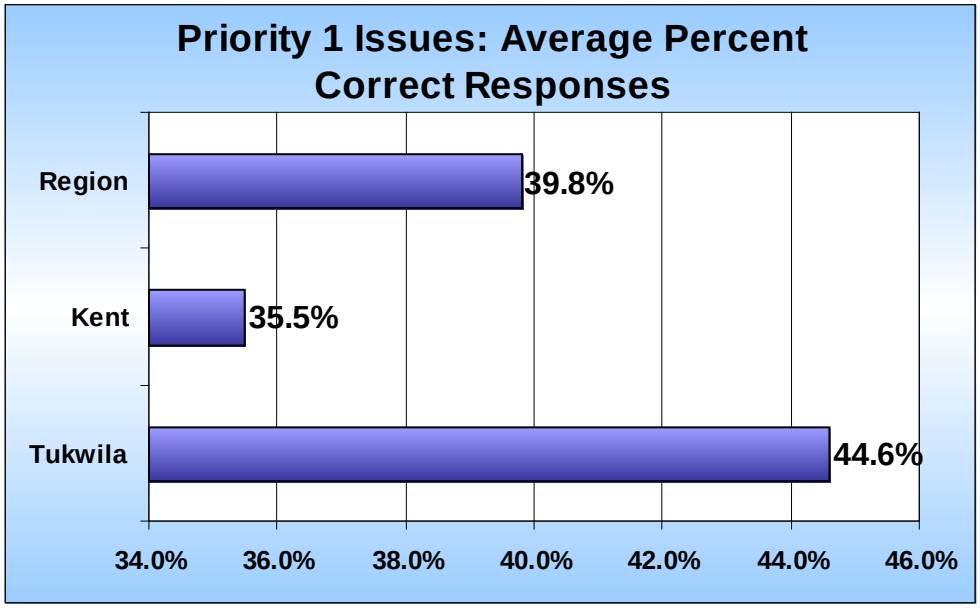
Rank for Education	Question	% Correct Responses by Area		
		Region	Kent	Tukwila
1	15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**	27.3% 1	24.5% 1	31.0% 1
2	28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**	35.3% 2	31.2% 2	42.1% 2
3	5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**	38.2% 3	31.6% 3	43.6% 3
4	16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**	38.5% 4	32.3% 4	45.8% 4
5	3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**	43.9% 5	40.6% 5	46.5% 5
6	21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**	47.6% 6	41.6% 6	53.3% 7
7	19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**	47.8% 7	46.5% 8	50.0% 6

**Blue indicates a question dealing with behavior, what the respondent does. Percents apply only to respondents who said the question applied to them.*

Table Note: All "Does not apply" responses to knowledge questions were added to the "Incorrect" response category since all knowledge questions apply to all respondents. This rule applies to all the tables in the report.

Kent Shows a Greater Need for Education
As shown in Figure 3, residents of Kent, on average, gave a substantially lower percent of correct answers than Tukwila residents for Priority 1 issues, suggesting a stronger need for educational programming exists in Kent.

Figure 3: Percent Correct Responses to Priority 1 Issues by Area



Issues Involving Soap Show High Need for Education
The residents in Kent and Tukwila show low awareness of correct practices involving soap. Issues involving soap have the greatest potential for demonstrating improved community knowledge as a result of educational programming. Educational programming should convey the following messages:

- *Biodegradable soap is not a safe addition to stormwater drains and should be kept from running into the stormwater drainage system.*
- *Motor vehicles should be washed in an area where the soapy runoff will be absorbed by the ground or the vehicles should be taken to a commercial car wash. Soapy water, including biodegradable soap, should not be allowed to flow into the street or into a drainage ditch.*

Knowledge of Pollution Sources and the Stormwater Drainage System are Lacking
Other low scoring issues for the cities dealt with how the stormwater drainage system works. Six out of ten respondents in the two cities (61.8%) did not know that individual human activity, not industrial dumping, is the primary cause of pollution in rivers, wetlands, and lakes and in Puget Sound. Residents in both cities were similarly unaware that stormwater drains are not connected to the sanitary sewer system.

Knowledge of how rivers, wetlands, and lakes and the marine waters of Puget Sound become polluted by stormwater is an essential precursor to improving understanding, raising the desire to act responsibly, and bringing about behavioral change. Educational programming in both cities should convey the following messages:

- *The primary cause of pollution in stormwater runoff is individual human activity, not industrial dumping. Success in reducing environmental pollution depends upon everyone's participation in helping to make a difference.*
- *The water in stormwater drains is not connected to the sanitary sewer system nor is all stormwater treated to remove pollutants before being released into the environment. Therefore, the quality of stormwater going into the drainage system is what determines the level of pollution in surface water.*

Actions to Prevent Polluting Stormwater Need Emphasis

Responses to questions regarding pavers, sediment, and grass clippings also revealed relatively low levels of informed awareness in the community and indicated a need for public education. Nearly two out of three respondents in the combined cities (64.7%) were not aware that bricks and pavers offer an advantage in reducing storm water runoff. Less than half of the respondents across the two cities combined knew that sediment, grass clippings and leaves constituted pollution. The following messages should be conveyed:

- *Bricks or pavers help to reduce the volume of stormwater runoff and, therefore, help to reduce stormwater pollution in the environment.*
- *Sediment is pollution and should be prevented from entering the stormwater drainage system.*
- *Grass clippings and leaves in stormwater are regarded as pollution and should be kept out of the stormwater drainage system.*

Related Multivariate Analysis Findings

Q3. Men show significantly higher awareness than women that the drains on city streets for stormwater are not connected to the same sanitary sewer system used for treating human waste ($p < .001$, Cramer's $V = .298$).

Gender	Correct	Incorrect
Male	58.3%	41.7%
Female	28.7%	71.3%

Priority 2 Issues: From 50-80% Correct Answers

Priority 2 Issues represent areas of knowledge or behavior where at least half of the public knows what is correct. Thirteen issues made this list (see Table 2 on the next page) which constitutes 48.1% of the 27 issues tested. While this more desirable level of public knowledge is a step in the right direction, more can and needs to be done to further raise the public's level of knowledge. These areas continue to represent genuine opportunities for reducing surface water pollution in stormwater runoff.

Overall, the Priority 2 list shows a good deal of similarity in the rank of issues indicating that respondents in both cities are similarly informed regarding these stormwater subjects. However, the degree to which residents in Kent are informed about some issues did vary a good deal compared to Tukwila. Differences between cities in the percent of correct responses ranged from a low of 2.0% to a high of 15.0%. For example, Kent residents appeared to be less aware than Tukwila residents that all water in a stormwater drain is not treated (44.1% correct answers for Kent, 59.1% correct for Tukwila).

Two issues on the Priority 2 list should be included among the Priority 1 items as issues that are fundamental to generating increased responsible action in the public domain. The first issue is the fact that about half of the respondents in the Region were not aware that all water going into stormwater drains is not treated before being discharged into the environment. Correcting this lack of understanding can be a major step forward to expanded public recognition and alertness to actions that contribute to surface water pollution and to subsequent behavioral improvement. Awareness of the problem is the first necessary step on the road to behavioral change.

The second issue on the Priority 2 list that should be elevated to Priority 1 is knowledge of the definition of an illicit discharge. About four out of ten respondents overall were not aware that anything in stormwater other than water is pollution. As a beginning point and a key precursor for positive action, knowing the definition of an illicit discharge will help individuals make better decisions regarding how to protect stormwater quality when facing new situations with a potential for creating pollution. For this issue, Kent residents appeared to be better informed than Tukwila residents (67.2% correct responses for Kent vs. 58.5% for Tukwila).

Table 2. Priority 2 Issues for Public Education

Rank for Education	Question	% Correct Responses by Area		
		Region	Kent	Tukwila
8	6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**	51.1% 8	44.1% 7	59.1% 9
9	4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**	59.3% 9	56.1% 9	60.7% 10
10	17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**	60% 10	58.9% 10	62.5% 12
11	18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**	60.7% 11	59.5% 11	64.0% 13
12	29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not made up entirely of stormwater. **A**	62.1% 12	67.2% 13	58.5% 8
13	20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**	64.3% 13	66.6% 12	61.5% 11
14	10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**	69.3% 14	73.3% 18	67.2% 14
15	7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**	71.1% 15	69.9% 15	71.9% 15
16	27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**	73.0% 16	69.2% 14	77.4% 16
17	23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**	74.7% 17	74.9% 19	78.0% 17
18	12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**	76.7% 18	72.2% 17	82.0% 20
19	22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**	77.8% 19	71.1% 16	85.6% 23
20	9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**	77.9% 20	75.4% 20	81.8% 19

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them.*

Related Multivariate Analysis Findings

Q6. Women showed significantly less awareness than men that all water going into stormwater drains is not treated before being discharged into the environment (p = .003, Cramer's V = .206).

Gender	Correct	Incorrect
Male	61.2%	40.6%
Female	40.7%	59.4%

Q17. Men were significantly more aware than women that washing a car at a commercial car wash creates less pollution than washing a car on the street with biodegradable soap (p = .027, Cramer's V = .155).

Gender	Correct	Incorrect
Male	67.6%	32.4%
Female	52.5%	47.5%

Q27. Men showed significantly higher awareness compared to women that carpet shampoo wastewater cannot safely be added to a stormwater drain (p = .033, Cramer's V = .150).

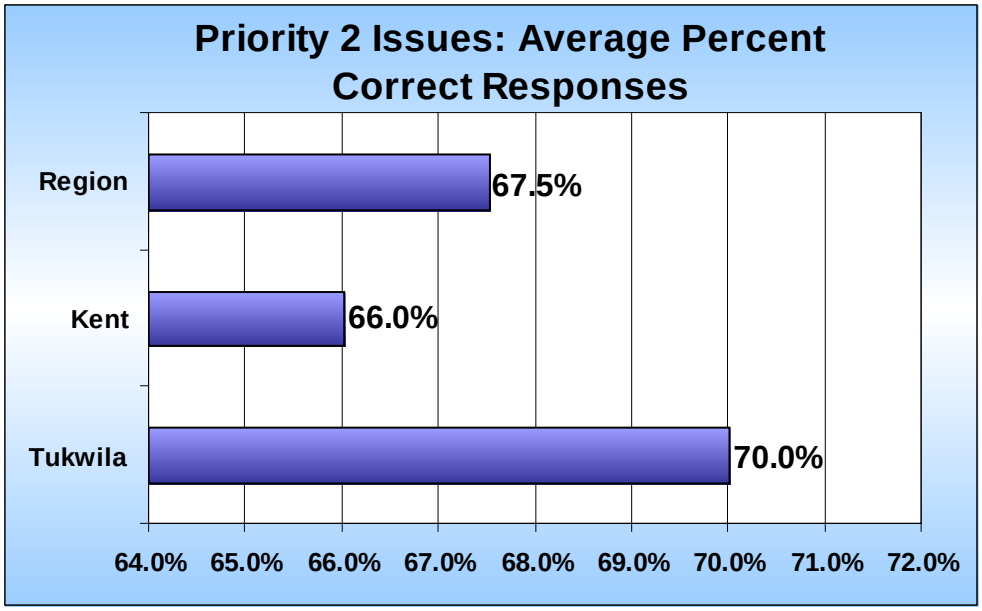
Gender	Correct	Incorrect
Male	79.6%	20.4%
Female	66.3%	33.7%

Q29. Men were significantly more aware than women that an illicit or unlawful stormwater discharge is primarily defined as anything that enters a stormwater drain system that is not made up entirely of stormwater (p = .004, Cramer's V = .200).

Gender	Correct	Incorrect
Male	71.8%	28.2%
Female	52.5%	47.5%

Cities Vary in Correct Knowledge about Priority 2 Issues
Figure 4 compares the percent of correct responses given by citizens in each city for all Priority 2 issues. Respondents living in Tukwila showed a higher percent of correct responses across Priority 2 issues (70.0%) than did respondents living in Kent (66.0%).

Figure 4: Percent Correct Responses to Priority 2 Issues by Area



Educational Messages Are Needed for These Issues
In order of importance, the following messages should be included in educational programming on a regional basis:

- *All water going into stormwater drains is **not** treated before being discharged into the environment.*
- *Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. Therefore, to reduce environmental pollution, the challenge to the community is to help keep stormwater runoff pollution free.*
- *Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle at home with biodegradable soap.*
- *The best place to clean paint brushes is in a sink that drains into the sanitary sewer system, not outdoors.*
- *An illicit or unlawful discharge is anything that enters a storm drain system that is not made up entirely of stormwater.*
- *The residue from chemical treatments that kill moss is a source of pollution.*
- *Applying soap to oil and grease spots on outdoor concrete or asphalt and rinsing it off with a hose is not a good method for protecting stormwater runoff.*
- *Hard surfaces are significant contributors to pollution in stormwater runoff. Hence, it is important to keep hard surfaces clean using acceptable cleaning techniques and, where possible, convert impervious surfaces to pervious surfaces.*
- *Carpet shampoo wastewater causes pollution to the environment and should not be disposed of in a stormwater drain.*

- *A mulching lawnmower reduces the need for using fertilizer and, hence, represents a valuable method for eliminating fertilizer pollution in stormwater.*
- *Store auto or truck parts with oil or grease on them under a roof or cover.*
- *Direct downspouts to areas on land where the runoff will be absorbed by the ground to avoid the water entering the stormwater system.*
- *Clean up oil and grease spots on outdoor concrete or asphalt with soap and absorb the residue using kitty litter or paper towels which should then be disposed of in the garbage can.*

Priority 3 Issues: Higher than 80% Correct Answers

The remaining seven issues (25.9% of the 27 issues tested) deal with specific practices respondents reported engaging in. High uniformity in rank and percent of correct answers given by residents in the two cities can be seen in Table 3 below, indicating that residents in the two cities are quite similar in how they deal with these issues in their lives.

While respondents indicated in high percentages that they engage in these positive behaviors, a question can be raised whether this is actually the case or whether respondents are simply providing the recognized, and socially acceptable correct answer. What this data indicates is that at least respondents are quite aware of the proper actions to take if not actually practicing them. Since a high percentage of respondents say they are already practicing these desirable behaviors, dollars spent to further raise public awareness and promote behavioral change in these areas will have a rather small target market—namely, the 4% to 20% of the population in the Region who are not currently engaging in these desirable behaviors. Because the number of people is so small, the ability to raise the percent of correct responses in these areas will be much more difficult to achieve and document compared to Priority 1 and Priority 2 issues.

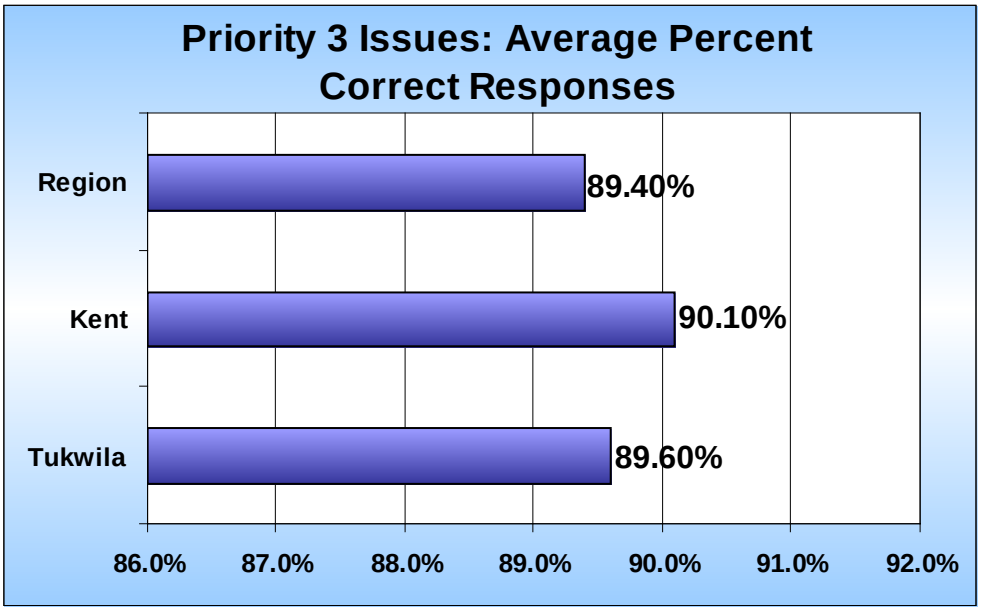
Table 3. Priority 3 Issues for Public Education

Rank for Education	Question	% Correct Responses by Area		
		Region	Kent	Tukwila
21	13. My household recycles all used motor oil. **A Adopt**	80.6% 21	82.4% 21	80.3% 18
22	11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**	86.6% 22	87.4% 22	85.5% 22
23	8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**	89.0% 23	93.8% 26	85.4% 21
24	26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**	90.9% 24	89.9% 23	93.2% 25
25	25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**	91.1% 25	92.0% 25	91.1% 24
26	14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**	92.0% 26	91.0% 24	93.2% 26
27	24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**	95.9% 27	94.5% 27	98.2% 27

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them.*

On average, respondents living in Kent and Tukwila showed a similar level of high compliance with Priority 3 behaviors which are friendly to stormwater.

Figure 5: Percent Correct Responses to Priority 3 Issues by Area



Practices

Because of their already high awareness, one may assume that minimal social marketing needs to be done in these areas. Given the potential for negatively impacting stormwater which these items represent, however, it remains advisable to continue educating the public on these issues but at a lower level of emphasis compared to Priority 1 and 2 issues. The messages to be communicated are:

- *Recycle used motor oil.*
- *Fix auto or truck oil leaks within three weeks.*
- *Pick up pet waste when outside.*
- *Apply fertilizer at recommended rates.*
- *Apply insecticides or weed killer at recommended rates*
- *Store containers holding oil or antifreeze under a roof or cover.*
- *Store all yard fertilizers and pesticides inside a building or in a covered area out of the rain.*

Related Multivariate Analysis Findings

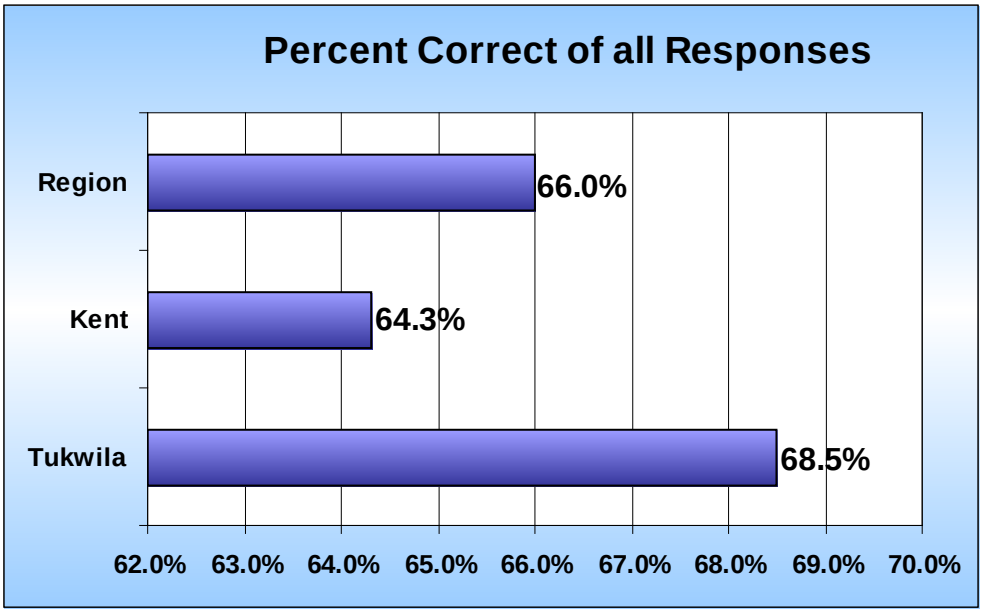
Q24. Men were significantly more likely than women to report that they store all of their household's fertilizers and pesticides in a building or covered area (p = .038, Cramer's V = .160).

Gender	Correct	Incorrect
Male	98.9%	1.1%
Female	92.5%	7.5%

All Issues: Overall Percent Correct Responses is Very Uniform

Figure 6 shows the average percent of correct responses for all questions for Kent and Tukwila. The average number of correct responses for the two cities combined was 66.0%. The difference overall between the two cities in the number of correct responses was only 4.2%. Overall, Tukwila residents provided a higher percent of correct responses and appeared slightly more knowledgeable about the broad spectrum of stormwater issues tested in this research.

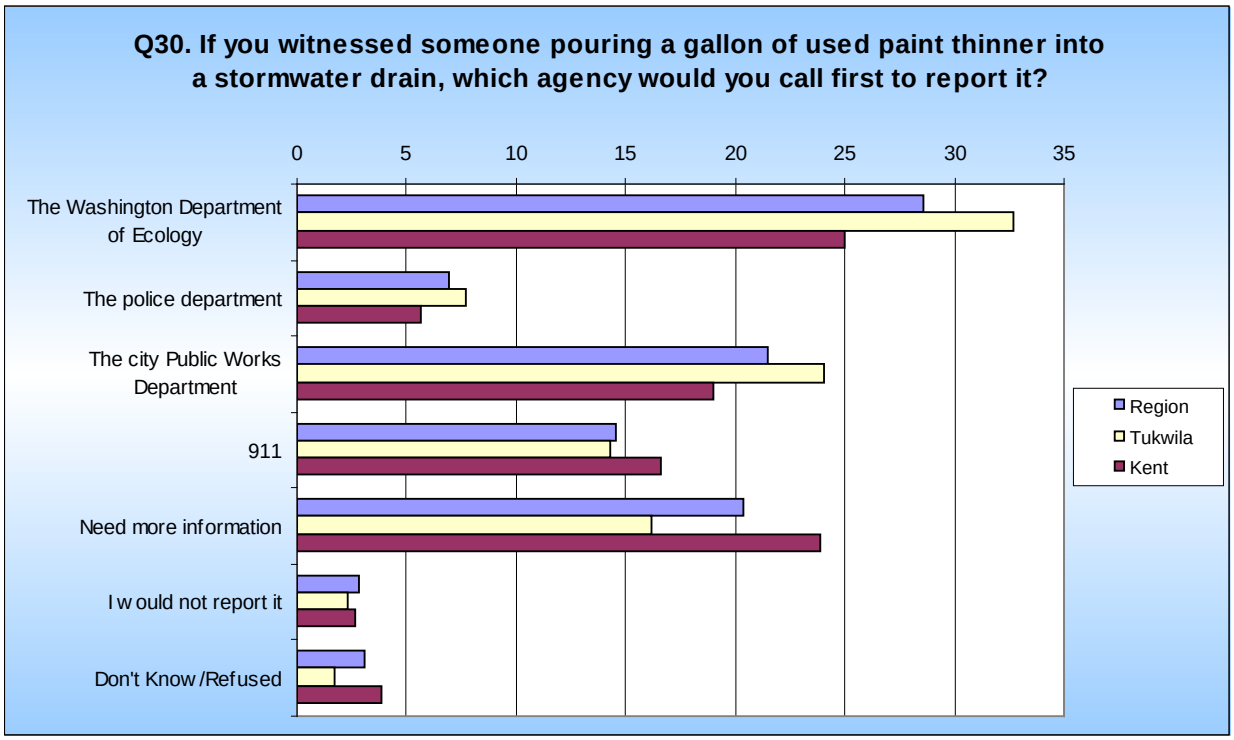
Figure 6: Percent Correct Responses Across All Questions by Area



Reporting an Illicit Discharge

To report an illicit discharge, respondents would call a variety of agencies with only 19.0% of Kent residents and 24.0% of Tukwila residents calling their City Public Works Department, the correct choice. If paint thinner in the stormwater system is regarded as a genuine emergency and 911 is included as a correct choice, then 35.6% of Kent respondents and 38.3% of Tukwila residents would have provided a correct answer. The fact that more than six out of ten respondents said they needed more information or would call an inappropriate agency such as the Department of Ecology, it is apparent that a good deal of public education is needed if illicit discharges are to be reported to the proper agency in the future. The following graph presents the responses by individual city.

Figure 7: Reporting an Illicit Discharge



The actual percent of responses given by respondents in each city appears in Table 4 below.

Table 4. Percent Reporting an Illicit Discharge to an Agency by City and Region

Agency	Region	Kent	Tukwila
The Washington Department of Ecology	28.6%	25.0%	32.1%
The Police Department	7.0%	5.7%	7.7%
The City Public Works Department	21.4%	19.0%	24.0%
911	14.5%	16.6%	14.3%
Need more information	20.4%	23.9%	16.1%
I would not Report it	2.8%	2.7%	2.3%
Don't Know / Refused	3.1%	3.9%	1.7%

City of Kent
Priority 1 Issues: 50% or Less Correct Answers

Knowledge and Practices

All Priority 1 questions for the City of Kent are shown in Table 5 below. These issues represent the areas which need the most attention. In order of importance, the following messages should be included in educational programming:

- *Biodegradable soap is not a safe addition to stormwater drains and should be kept from entering the stormwater drainage system.*
- *The primary cause of pollution in stormwater runoffs is individual human activity, not industrial dumping. Success in reducing environmental pollution depends upon everyone's participation in helping to make a difference.*
- *Bricks or pavers help to reduce the volume of stormwater runoff and, therefore, help to reduce stormwater pollution in the environment.*
- *Wash your car in an area where the soapy runoff will be absorbed by the ground or take your car to a commercial car wash. Soapy water should not be allowed to flow into the street or into a drainage ditch.*
- *The water in stormwater drains is not connected to the sanitary sewer system nor is all stormwater treated to remove pollutants before being released into the environment. Therefore, the quality of stormwater going into the drainage system is what determines the level of pollution in surface water.*
- *Sediment is pollution and should be prevented from entering the stormwater drainage system.*
- *All water going into stormwater drains is **not** treated before being discharged into the environment.*
- *Grass clippings and leaves in stormwater are regarded as pollution and should be kept out of the stormwater drainage system.*

Table 5. Priority 1 Issues for Public Education

Rank for Education	Question	% Correct Responses
1	15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**	24.5% 1
2	28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**	31.2% 2
3	5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**	31.6% 3
4	16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**	32.3% 4
5	3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**	40.6% 5
6	21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**	41.6% 6
7	6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**	44.1% 7
8	19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**	46.5% 8

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

Related Multivariate Analysis Findings for Kent

*Q3. Men were significantly more aware than women that drains on city streets are **not** connected to sanitary sewer systems (p < .001, Cramer's V = .348).*

Gender	Correct	Incorrect
Male	57.5%	42.3%
Female	23.5%	76.5%

Q6. Women showed significantly less awareness than men that all water going into stormwater drains is not treated before being discharged into the environment (p = .004, Cramer's V = .285).

Gender	Correct	Incorrect
Male	57.7%	42.3%
Female	29.4%	70.6%

City of Kent
Priority 2 Issues: 50% - 80% Correct Answers

Knowledge and Practices

All Priority 2 questions for the City of Kent are shown in Table 6 below. Although not as important as Priority 1 messages, Priority 2 areas retain importance in their ability to significantly reduce water pollution. In order of importance, the following messages should be included in educational programming:

- *Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. Therefore, to reduce environmental pollution, the challenge to the community is to help keep stormwater runoff pollution free.*
- *Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle at home with biodegradable soap.*
- *The best place to clean paint brushes is in a sink that drains into the sanitary sewer system, not outdoors.*
- *The residue from chemical treatments that kill moss is a source of pollution.*
- *An illicit or unlawful discharge is anything that enters a storm drain system that is not made up of entirely stormwater.*
- *Carpet shampoo wastewater causes pollution to the environment and should not be disposed of in a stormwater drain.*
- *Hard surfaces are significant contributors to pollution in stormwater runoff. Hence, it is important to keep hard surfaces clean using acceptable cleaning techniques and, where possible, convert impervious surfaces to pervious surfaces.*
- *Direct downspouts to areas on land where the runoff will be absorbed by the ground to avoid the water entering the stormwater system.*
- *Store auto or truck parts with oil or grease on them under a roof or cover.*
- *Applying soap to oil and grease spots on outdoor concrete or asphalt and rinsing it off with a hose is not a good method for protecting stormwater runoff.*
- *A mulching lawn mower reduces the need for using fertilizer and, hence, represents a valuable method for eliminating fertilizer pollution in stormwater.*
- *Clean up oil and grease spots on outdoor concrete or asphalt with soap and absorb the residue using kitty litter or paper towels which should then be disposed of in the garbage can.*

Table 6. Priority 2 Issues for Public Education

Rank for Education	Question	% Correct Responses
9	4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**	56.1% 9
10	17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**	58.9% 10
11	18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**	59.5% 11
12	20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**	66.6% 12
13	29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not made up entirely of stormwater. **A**	67.2% 13
14	27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**	69.2% 14
15	7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**	69.9% 15
16	22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**	71.1% 16
17	12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**	72.2% 17
18	10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**	73.3% 18
19	23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**	74.9% 19
20	9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**	75.4% 20

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

Related Multivariate Analysis Findings for Kent

Q10. Men were significantly more aware than women that scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is not a good way to prevent polluting stormwater runoff (p = .006, Cramer's V = .272).

Gender	Correct	Incorrect
Male	84.9%	15.1%
Female	60.8%	39.2%

Q23. Men were significantly more aware than women that using a mulching lawnmower reduces the need to fertilize a lawn (p = .005, Cramer's V = .278).

Gender	Correct	Incorrect
Male	86.8%	13.2%
Female	62.7%	37.3%

Q29. Men were significantly more aware than women that an illicit or unlawful stormwater discharge is primarily defined as anything that enters a stormwater drain system that is not made up entirely of stormwater (p < .001, Cramer's V = .341).

Gender	Correct	Incorrect
Male	83.0%	17.0%
Female	51.0%	49.0%

City of Kent
Priority 3 Issues: Higher than 80% Correct Answers

Knowledge and Practices

A high percentage of respondents in Kent gave the correct responses to seven questions regarding behaviors that are protective of stormwater. This suggests that high compliance with recommended actions is already taking place. Given the nature of the items tested, however, improvement in these practices is still desirable and should remain a goal. Education should communicate the following actions to the public:

- *Recycle used motor oil.*
- *Fix auto or truck oil leaks within three weeks.*
- *Apply fertilizer at recommended rates.*
- *Store containers holding oil or antifreeze under a roof or cover.*
- *Apply insecticides or weed killer at recommended rates.*
- *Pick up pet waste when outside.*
- *Store all yard fertilizers and pesticides inside a building or in a covered area out of the rain.*

Table 7. Priority 3 Issues for Public Education

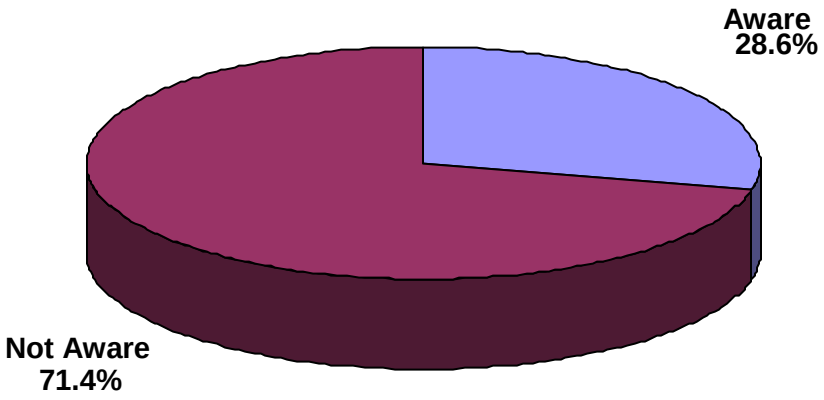
Rank for Education	Question	% Correct Responses
21	13. My household recycles all used motor oil. **A Adopt**	82.4% 21
22	11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**	87.4% 22
23	26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**	89.9% 23
24	14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**	91.0% 24
25	25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**	92.0% 25
26	8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**	93.8% 26
27	24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**	94.5% 27

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

Awareness of *The Clean Water Project*

Only 28.6% of respondents in Kent agreed with the statement that the city is carrying out *The Clean Water Project*. Nearly all other respondents said they did not know or needed more information.

The City of Kent is currently carrying out a program called *The Clean Water Project*.



City of Tukwila
Priority 1 Issues: 50% or Less Correct Answers

Knowledge and Practices

All Priority 1 questions for the City of Tukwila are shown in Table 8 below. These issues represent the areas which need the most attention. In order of importance, the following messages should be included in educational programming:

- *Biodegradable soap is not a safe addition to stormwater drains and should be kept from entering the stormwater drainage system.*
- *Bricks or pavers help to reduce the volume of stormwater runoff and, therefore, help to reduce stormwater pollution in the environment.*
- *The primary cause of pollution in stormwater runoffs is individual human activity, not industrial dumping. Success in reducing environmental pollution depends upon everyone's participation in helping to make a difference.*
- *Wash your car in an area where the soapy runoff will be absorbed by the ground or take your car to a commercial car wash. Soapy water should not be allowed to flow into the street or into a drainage ditch.*
- *The water in stormwater drains is not connected to the sanitary sewer system nor is all stormwater treated to remove pollutants before being released into the environment. Therefore, the quality of stormwater going into the drainage system is what determines the level of pollution in surface water.*
- *Grass clippings and leaves in stormwater are regarded as pollution and should be kept out of the stormwater drainage system.*

Table 8. Priority 1 Issues for Public Education

Rank for Education	Question	% Correct Responses
1	15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**	31.0% 1
2	28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**	42.1% 2
3	5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**	43.6% 3
4	16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**	45.8% 4
5	3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**	46.5% 5
6	19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**	50.0% 6

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

Related Multivariate Analysis Findings for Tukwila

Q3. Men show significantly higher awareness than women that the drains on city streets for stormwater are not connected to the same sanitary sewer system used for treating human waste (p = .016, Cramer's V = .241).

Gender	Correct	Incorrect
Male	58.0%	42.0%
Female	34.0%	66.0%

City of Tukwila
Priority 2 Issues: 50% - 80% Correct Answers

Knowledge and Practices

All Priority 2 questions for the City of Tukwila are shown in Table 9 below. Although not as important as Priority 1 messages, Priority 2 areas retain importance in their ability to significantly reduce water pollution. In order of importance, the following messages should be included in educational programming:

- *Sediment is pollution and should be prevented from entering the stormwater drainage system.*
- *An illicit or unlawful discharge is anything that enters a storm drain system that is not made up of entirely stormwater.*
- *All water going into stormwater drains is **not** treated before being discharged into the environment.*
- *Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. Therefore, to reduce environmental pollution, the challenge to the community is to help keep stormwater runoff pollution free.*
- *The residue from chemical treatments that kill moss is a source of pollution.*
- *Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle at home with biodegradable soap.*
- *The best place to clean paint brushes is in a sink that drains into the sanitary sewer system, not outdoors.*
- *Applying soap to oil and grease spots on outdoor concrete or asphalt and rinsing it off with a hose is not a good method for protecting stormwater runoff.*
- *Hard surfaces are significant contributors to pollution in stormwater runoff. Hence, it is important to keep hard surfaces clean using acceptable cleaning techniques and, where possible, convert impervious surfaces to pervious surfaces.*
- *Carpet shampoo wastewater causes pollution to the environment and should not be disposed of in a stormwater drain.*
- *A mulching lawnmower reduces the need for using fertilizer and, hence, represents a valuable method for eliminating fertilizer pollution in stormwater.*

Table 9. Priority 2 Issues for Public Education

Rank for Education	Question	% Correct Responses
7	21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**	53.3% 7
8	29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not made up entirely of stormwater. **A**	58.5% 8
9	6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**	59.1% 9
10	4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**	60.7% 10
11	20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**	61.5% 11
12	17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**	62.5% 12
13	18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**	64.0% 13
14	10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**	67.2% 14
15	7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**	71.9% 15
16	27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**	77.4% 16
17	23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**	78% 17

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

City of Tukwila
Priority 3 Issues: Higher than 80% Correct Answers

Knowledge and Practices

A high percent of respondents in Tukwila gave the correct responses to ten questions regarding behaviors that are protective of stormwater. This suggests that high compliance with recommended actions is already taking place. Given the nature of the items tested, however, improvement in these practices is still desirable and should remain a goal. Education should communicate the following actions to the public:

- *Recycle used motor oil.*
- *Clean up oil and grease spots on outdoor concrete or asphalt with soap and absorb the residue using kitty litter or paper towels which should then be disposed of in the garbage can.*
- *Store auto or truck parts with oil or grease on them under a roof or cover.*
- *Pick up all pet waste when outside.*
- *Fix auto or truck oil leaks within three weeks.*
- *Direct downspouts to areas on land where the runoff will be absorbed by the ground to avoid the water entering the stormwater system.*
- *Apply insecticides or weed killer at recommended rates.*
- *Apply fertilizer at recommended rates.*
- *Store containers holding oil or antifreeze under a roof or cover.*
- *Store all yard fertilizers and pesticides inside a building or in a covered area out of the rain.*

Table 10. Priority 3 Issues for Public Education

Rank for Education	Question	% Correct Responses
18	13. My household recycles all used motor oil. **A Adopt**	80.3% 18
19	9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**	81.8% 19
20	12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**	82.0% 20
21	8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**	85.4% 21
22	11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**	85.5% 22
23	22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**	85.6% 23
24	25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**	91.1% 24
25	26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**	93.2% 25
26	14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**	93.2% 26
27	24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**	98.2% 27

**Blue indicates a question dealing with what the respondent does. Percents apply only to respondents who said the question applied to them*

Conclusions and Recommendations

It is clear that the residents living in Kent and Tukwila do not regard the water in our rivers, wetlands, and lakes, and in the marine waters of Puget Sound as "extremely clean" (meaning free from pollution) nor "extremely polluted." The distribution of opinions across the rating scale suggests the public tends to either think of these waters as being somewhat clean, or to be uncertain regarding the level of pollution due to receiving a mix of both positive and negative information. Effort is needed to more definitively educate the public as to the level of pollution in these waters which can serve as a motivation for change.

The public in these two cities shows varying degrees of knowledge regarding key issues for controlling stormwater pollution. In many cases, respondents lacked awareness of basic information which substantiates the need for public education programming. Results for Priority 1 Issues also show a high level of similarity in the two cities in what citizens know and do not know. The results are also very similar to the results from the same survey conducted in fourteen other cities in Snohomish, King, Pierce and Lewis Counties from the summer of 2009 through the spring of 2011.

Results show that the public needs to be better informed regarding current levels of pollution in surface waters. Awareness of the problem is the first step to motivating action. Educational programming should raise the public's consciousness by highlighting the detrimental nature of surface water pollution, the threats current levels pose and the negative or destructive outcomes that currently result. Second, programming should help to establish a common vision of pollution-free rivers, wetlands, and lakes and a healthier Puget Sound as the goal to be achieved. Third, the direct and indirect positive outcomes of maintaining pristine conditions in surface waters and in Puget Sound should be highlighted—these are all the good things that will result. Fourth, the means of achieving these outcomes—meaning the helpful practices individuals can implement—need to be presented through effective social marketing practices in a way that is interesting, immediately understandable, convincing, and memorable and is able to tap into the beliefs, values and emotional benefits that will motivate behavioral change. Social marketing programs that provide a practical means to help people overcome obstacles to change will likely be most successful in modifying behavior.

Since Priority 1 Issues show the lowest correct knowledge in the Kent/Tukwila Region, these subject areas offer an opportunity where success in improving the public's knowledge and subsequent behavior can be most directly realized and documented. Educational messaging should communicate the following Priority 1 messages:

- *Biodegradable soap is not a safe addition to stormwater drains and should be kept from running into the stormwater drainage system.*
- *Bricks or pavers help to reduce the volume of stormwater runoff and, therefore, help to reduce stormwater pollution in the environment.*
- *The primary cause of pollution in stormwater runoff is individual human activity, not industrial dumping. Success in reducing environmental pollution depends upon everyone's participation in helping to make a difference.*

- *Wash your car in an area where the soapy runoff will be absorbed by the ground or take your car to a commercial car wash. Soapy water should not be allowed to flow into the street or into a drainage ditch.*
- *The water in stormwater drains is not connected to the sanitary sewer system nor is all stormwater treated to remove pollutants before being released into the environment. Therefore, the quality of stormwater going into the drainage system is what determines the level of pollution in surface water.*
- *Sediment is pollution and should be prevented from entering the stormwater drainage system.*
- *Grass clippings and leaves in stormwater are regarded as pollution and should be kept out of the stormwater drainage system.*

Priority 1 issues should be communicated in repeated educational messaging. Social marketing seeks to produce behavioral change which means learning new ways of acting. Learning requires repetition (practice). Hence, important messages need to be repeated through different communication channels and at different times to effectively promote assimilation and bring about change over time. As mentioned previously, practical programs that help citizens to overcome obstacles to change or reduce the "cost" for citizens in changing their behavior (such as reducing the amount it costs citizens to use a commercial car wash) offer the greatest potential for bringing about positive results.

The rank order of Priority 2 issues showed high similarity between the two cities, more so than for Priority 1 issues. Two issues appearing on the Priority 2 list should be included among the Priority 1 items because of their standing as knowledge that is fundamental to improving behavior: the understanding that all water going into stormwater drains is not treated before being discharged into the environment, and, second, the definition of an illicit discharge. Both concepts serve as precursors to increasing positive action. Messaging also needs to focus on establishing the concept that everyone is responsible for reducing pollution in surface waters.

The public shows the highest level of correct knowledge regarding Priority 3 issues which primarily involved actual behaviors. At minimum, this finding demonstrates a wide public understanding of the right actions. At best, it indicates the public has adopted and is already widely practicing these desirable behaviors. Continued messaging is recommended regarding these issues, with less intensity than for Priority 1 and 2 Issues, to reinforce, maintain and extend positive action.

Baseline Stormwater Survey Results for 16 Cities: Priority 1 Issues

The following three tables present the percent correct answers for each of sixteen cities that have administered a baseline survey beginning in the summer of 2009. Priority rankings for education were determined by the overall percent of correct responses for all cities combined (labeled All Cities).

Table 11. Priority 1 Issues (Under 50% Correct Responses) for Sixteen Northwest Washington Cities

Rank for Education	Question	% Correct Responses by Area																
		All Cities	Aberdeen	Centralia	Duvall	Edmonds	Enumclaw	Kenmore	Kent	Lakewood	Maple Valley	Mercer Island	Mill Creek	Mountlake Terrace	Mukilteo	Newcastle	Tukwila	Woodinville
1	15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**	29.8% 1	23.8% 1	18.3% 1	30.4% 1	31.8% 1	32.4% 1	36.6% 2	24.5% 1	31.7% 3	22.5% 2	26.5% 1	31.8% 2	23.3% 2	22.8% 1	31.4% 3	31.0% 1	30.7% 1
2	16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**	35.1% 2	47.4% 6	44.8% 7	36.8% 3	37.1% 2	42.4% 4	36.2% 1	32.3% 4	33.0% 4	19.5% 1	35.2% 2	24.9% 1	21.4% 1	38.9% 4	19.2% 1	45.8% 4	33.3% 2
3	28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**	38.2% 3	36.8% 3	30.9% 3	48.9% 7	40.8% 3	48.3% 8	46.3% 6	31.2% 2	30.0% 2	38.4% 4	49.1% 5	39.6% 3	30.3% 4	33.1% 2	29.9% 2	42.1% 2	34.4% 3
4	5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**	40.0% 4	34.4% 2	41.2% 6	40.4% 6	43.8% 5	39.4% 3	44.2% 4	31.6% 3	35.5% 5	44.2% 5	47.7% 4	44.1% 6	41.3% 6	39.2% 5	46.9% 7	43.6% 3	37.6% 5
5	21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**	42.7% 5	50.5% 8	38.0% 4	38.0% 4	52.6% 6	46.3% 6	43.8% 3	41.6% 6	50.7% 8	32.5% 3	49.2% 6	44.1% 5	29.0% 3	36.8% 3	33.6% 4	53.3% 7	36.0% 4
6	19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**	46.6% 6	47.0% 5	40.2% 5	49.2% 8	43.3% 4	43.8% 5	50.7% 7	46.5% 8	53.4% 9	45.9% 6	40.7% 3	49.2% 7	47.0% 8	53.5% 6	46.7% 6	50.0% 6	41.5% 6
7	3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**	46.7% 7	56.4% 10	28.4% 2	36.7% 2	55.1% 7	36.6% 2	45.3% 5	40.6% 5	27.5% 1	49.0% 7	57.5% 9	40.5% 4	41.6% 7	53.9% 7	45.9% 5	46.5% 5	50.9% 7

Baseline Stormwater Survey Results for 16 Cities: Priority 2 Issues

Table 12. Priority 2 Issues (50% to 80% Correct Responses) for Sixteen Northwest Washington Cities

Rank for Education	Question	% Correct Responses by Area																
		All Cities	Aberdeen	Centralia	Duvall	Edmonds	Enumclaw	Kenmore	Kent	Lakewood	Maple Valley	Mercer Island	Mill Creek	Mountlake Terrace	Mukilteo	Newcastle	Tukwila	Woodinville
8	4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**	53.2% 8	49.2% 7	54.8% 10	39.8% 5	59.6% 9	52.3% 10	62.1% 10	56.1% 9	46.5% 6	57.1% 9	56.6% 8	50.6% 9	53.9% 9	59.5% 8	56.2% 8	60.7% 10	58.6% 9
9	17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**	57.8% 9	44.4% 4	52.3% 9	52.3% 9	72.8% 14	51.7% 9	62.2% 11	58.9% 10	48.7% 7	55.9% 8	78.7% 20	57.1% 10	64.2% 11	64.6% 10	67.8% 12	62.5% 12	53.9% 8
10	6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**	58.2% 10	56.1% 9	46.8% 8	59.6% 11	61.0% 11	56.2% 11	58.3% 9	44.1% 7	58.1% 11	59.4% 10	67.7% 14	50.0% 8	56.3% 10	67.2% 12	57.7% 9	59.1% 9	59.6% 10
11	29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not made up entirely of stormwater. **A**	58.3% 11	66.9% 13	59.2% 12	66.4% 16	60.8% 10	48.2% 7	57.0% 8	67.2% 13	66.8% 12	62.6% 11	60.1% 11	67.6% 13	37.6% 5	63.5% 9	58.4% 10	58.5% 8	59.7% 11
12	18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**	63.2% 12	58.6% 11	63.2% 15	64.5% 14	59.0% 8	60.4% 12	63.8% 12	59.5% 11	57.1% 10	68.5% 14	66.3% 12	62.8% 11	67.8% 14	68.7% 15	70.6% 15	64.0% 13	64.9% 13
13	20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**	65.0% 13	66.5% 12	60.9% 13	62.4% 12	74.1% 15	60.5% 13	64.5% 13	66.6% 12	69.9% 14	63.6% 12	59.5% 10	70.4% 15	66.8% 13	68.2% 13	62.7% 11	61.5% 11	60.5% 12
14	27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**	70.5% 14	72.6% 15	60.9% 14	63.9% 13	76.2% 17	76.9% 18	66.0% 14	69.2% 14	73.1% 17	77.9% 17	56.2% 7	75.7% 19	70.6% 15	85.2% 21	70.0% 13	77.4% 16	69.8% 14
15	7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**	70.7% 15	74.6% 17	58.8% 11	59.0% 10	80.3% 21	75.8% 16	69.5% 15	69.9% 15	70.4% 15	67.3% 13	76.4% 17	72.7% 17	83.7% 20	68.6% 14	70.4% 14	71.9% 15	71.9% 16
16	10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**	72.6% 16	74.9% 18	67.1% 16	65.4% 15	79.2% 19	77.2% 19	71.9% 16	73.3% 18	71.1% 16	78.2% 18	76.7% 18	70.8% 16	73.5% 16	74.2% 16	74.9% 18	67.2% 14	71.8% 15
17	22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**	73.5% 17	75.3% 19	88.7% 22	69.2% 17	72.3% 13	71.1% 14	79.4% 18	71.1% 16	88.4% 24	77.6% 16	66.5% 13	65.4% 12	84.9% 21	66.1% 11	72.9% 16	85.6% 23	82.3% 20
18	23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**	75.1% 18	72.4% 14	76.7% 18	89.6% 23	79.3% 20	81.4% 20	75.7% 17	74.9% 19	69.8% 13	73.9% 15	73.9% 15	69.3% 14	81.9% 19	75.2% 17	73.6% 17	78% 17	75.9% 17
19	9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**	77.2% 19	78.5% 21	75.8% 17	70.1% 18	69.7% 12	83.7% 22	82.4% 19	75.4% 20	75.7% 18	83.5% 21	75.0% 16	75.6% 18	81.0% 18	77.1% 18	79.5% 19	81.8% 19	78.8% 18

Baseline Stormwater Survey Results for 16 Cities: Priority 3 Issues

Table 13. Priority 3 Issues (Over 80% Correct Responses) for Sixteen Northwest Washington Cities

Rank for Education	Question	% Correct Responses by Area																
		All Cities	Aberdeen	Centralia	Duvall	Edmonds	Enumclaw	Kenmore	Kent	Lakewood	Maple Valley	Mercer Island	Mill Creek	Mountlake Terrace	Mukilteo	Newcastle	Tukwila	Woodinville
20	13. My household recycles all used motor oil. **A Adopt**	81.1% 20	87.1% 23	87.3% 21	77.0% 19	76.1% 16	75.0% 15	91.2% 25	82.4% 21	83.7% 20	84.9% 22	86.5% 21	87.4% 20	66.7% 12	79.9% 19	83.9% 20	80.3% 18	82.0% 19
21	12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**	82.0% 21	73.9% 16	81.8% 20	88.0% 21	77.0% 18	76.5% 17	85.6% 23	72.2% 17	86.9% 22	81.6% 19	78.6% 19	88.6% 21	93.3% 23	83.8% 20	85.8% 21	82.0% 20	84.2% 21
22	11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**	87.5% 22	86.2% 22	90.0% 25	89.5% 22	89.4% 22	84.1% 23	86.0% 24	87.4% 22	86.7% 21	82.8% 20	96.3% 24	90.5% 22	78.7% 17	91.8% 25	88.7% 23	85.5% 22	94.1% 25
23	8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**	87.7% 23	75.4% 20	76.8% 19	84.9% 20	89.6% 23	82.2% 21	84.9% 21	93.8% 26	88.3% 23	89.4% 24	95.3% 22	94.2% 23	93.1% 22	85.9% 22	95.8% 26	85.4% 21	86.5% 22
24	25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**	91.1% 24	89.5% 24	93.8% 27	97.0% 25	91.1% 24	92.1% 24	83.3% 20	92.0% 25	89.7% 25	89.9% 25	95.8% 23	96.9% 25	98.7% 27	88.8% 23	88.4% 22	91.1% 24	89.4% 24
25	26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**	91.6% 25	90.9% 25	89.1% 23	92.8% 24	91.8% 25	94.2% 26	85.2% 22	89.9% 23	83.5% 19	89.0% 23	96.3% 25	98.4% 26	98.1% 25	89.0% 24	91.3% 24	93.2% 25	89.0% 23
26	14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**	94.1% 26	96.3% 27	89.8% 24	97.7% 27	93.1% 26	92.7% 25	93.7% 26	91.0% 24	90.0% 26	95.9% 26	97.2% 26	96.8% 24	98.5% 26	95.8% 26	93.1% 25	93.2% 26	98.6% 27
27	24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**	95.0% 27	95.9% 26	93.0% 26	97.3% 26	93.8% 27	94.3% 27	95.0% 27	94.5% 27	91.1% 27	99.1% 27	98.3% 27	99.7% 27	97.2% 24	98.1% 27	96.5% 27	98.2% 27	97.7% 26

THE CITY OF KENT STORMWATER COMMUNITY SURVEY

QUESTIONNAIRE – MARCH, 2011

V3.4

Hello, my name is _____ and I am calling on behalf of the City of Kent.

[IF SPEAKING TO A CHILD] May I speak to someone who is at least 18 years of age? Thank you. **[RE-INTRODUCE YOURSELF]**

Hello, my name is _____ and I am calling on behalf of the City of Kent. We are asking citizens about an important environmental issue and we would like to include your opinions. All your answers are strictly confidential and will not be connected to your name.

S1. **[SCREENING QUESTION]** Before we actually begin, I need to verify your city/county. What city/county do you live in?

1. Kent
2. Other Municipality **[THANK AND POLITELY DICONTINUE]**
3. Don't Know **[THANK AND POLITELY DICONTINUE]**
4. Refused **[THANK AND POLITELY DICONTINUE]**

1. What is your age? **[RECORD NUMBER]**

2. Great, thank you. My first question is about the water in our area. I'd like you to rate your perception of the overall quality of the water in our rivers, wetlands and lakes and in Puget Sound. By "quality of water" I mean how free it is from pollution. Rate it on a 0 to 10 scale where "0" means the water is "extremely polluted" and 10 means the water is "extremely clean." **[RECORD NUMBER]**

[READ]

Now, I'm going to read a number of statements to you regarding stormwater. Some of these statements may be true, they all may be true or they all may be false. If you believe that a statement is true, please say "Agree." If you believe the statement is false, say "Disagree." If you are not certain about the statement and need more information, you can answer with "need more information." If the question does not apply to you or your family, say "Doesn't Apply." Here is the first one. Do you Agree, Disagree or need more information about the following statement:

Responses for each:

1. Agree
2. Disagree
3. Need more information
4. Uncertain, Don't Know
5. Refused
6. Doesn't Apply

NOTE: *Following each statement, you will see the correct answer indicated by an "A" for Agree or a "D" for Disagree. When the word "Adopt" appears, it means the statement addresses whether or not the respondent has "Adopted the correct behavior."*

3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**

4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**

5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**

6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**

[ROTATE Q7-Q28] [NOTE: These questions will be asked in a random order to prevent sequencing bias.]

[AFTER ASKING THE NEXT NINE QUESTIONS, SAY: You are doing really well. We are halfway through and I'll try to get through this as quickly as I can. Here's the next one, do you Agree, Disagree or Need More Information about this statement.]

7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**

8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**

9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**

10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**

11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**

12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**

13. My household recycles all used motor oil. **A Adopt**

14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**

15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**

16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**

17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**

18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**

19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**

20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**

21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**

22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**

23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**

24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**

25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**

26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**

27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**

28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**

29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not composed entirely of stormwater. **A**

29a. The City of Kent is currently carrying out a program called *The Clean Water Project*. **A**

30. If you witnessed someone pouring a gallon of used paint thinner into a stormwater drain, which agency would you call first to report it: **[READ 1-5]**

1. The Washington Department of Ecology
2. The police department
3. The city Public Works Department **A**
4. 911 **A (for the City of Kent)**
5. Need more information
6. I would not report it
7. Don't Know/Refused
8. Other **[SPECIFY]**

That concludes our survey. I want to thank you very much for your time and cooperation. You have been very helpful. Have a good day!

POSTCODE GENDER:

1. MALE

2. FEMALE

DATE: _____INTERVIEWER: _____

THE CITY OF TUKWILA STORMWATER COMMUNITY SURVEY

QUESTIONNAIRE – APRIL, 2011

V3.4

Hello, my name is _____ and I am calling on behalf of the City of Tukwila.

[IF SPEAKING TO A CHILD] May I speak to someone who is at least 18 years of age? Thank you. **[RE-INTRODUCE YOURSELF]**

Hello, my name is _____ and I am calling on behalf of the City of Tukwila. We are asking citizens about an important environmental issue and we would like to include your opinions. All your answers are strictly confidential and will not be connected to your name.

S1. **[SCREENING QUESTION]** Before we actually begin, I need to verify your city/county. What city/county do you live in?

1. Tukwila
2. Other Municipality **[THANK AND POLITELY DICONTINUE]**
3. Don't Know **[THANK AND POLITELY DICONTINUE]**
4. Refused **[THANK AND POLITELY DICONTINUE]**

1. What is your age? **[RECORD NUMBER]**

2. Great, thank you. My first question is about the water in our area. I'd like you to rate your perception of the overall quality of the water in our rivers, wetlands and lakes and in Puget Sound. By "quality of water" I mean how free it is from pollution. Rate it on a 0 to 10 scale where "0" means the water is "extremely polluted" and 10 means the water is "extremely clean." **[RECORD NUMBER]**

[READ]

Now, I'm going to read a number of statements to you regarding stormwater. Some of these statements may be true, they all may be true or they all may be false. If you believe that a statement is true, please say "Agree." If you believe the statement is false, say "Disagree." If you are not certain about the statement and need more information, you can answer with "need more information." If the question does not apply to you or your family, say "Doesn't Apply." Here is the first one. Do you Agree, Disagree or need more information about the following statement:

Responses for each:

1. Agree
2. Disagree
3. Need more information
4. Uncertain, Don't Know
5. Refused
6. Doesn't Apply

NOTE: *Following each statement, you will see the correct answer indicated by an "A" for Agree or a "D" for Disagree. When the word "Adopt" appears, it means the statement addresses whether or not the respondent has "Adopted the correct behavior."*

3. Drains on city streets for stormwater are connected to the same sanitary sewer system used for treating human waste. **D**

4. Stormwater runoff is the leading cause of pollution in rivers, wetlands and lakes. **A**

5. Pollution in our rivers, wetlands and lakes and in Puget Sound is more the result of industrial dumping practices than individual human activity. **D**

6. All water going into stormwater drains on the street is treated before being discharged into the environment. **D**

[ROTATE Q7-Q28] [NOTE: These questions will be asked in a random order to prevent sequencing bias.]

[AFTER ASKING THE NEXT NINE QUESTIONS, SAY: You are doing really well. We are halfway through and I'll try to get through this as quickly as I can. Here's the next one, do you Agree, Disagree or Need More Information about this statement.]

7. Hard surfaces such as roads and driveways are not significant sources of pollution in stormwater. **D**

8. When I am outside with my pet, I always pick up my pet's waste. **A Adopt**

9. The best way to clean up spilled oil on the driveway is to fully absorb it using kitty litter or paper towels and deposit this waste in a garbage can. **A**

10. Scrubbing oil and grease spots on outdoor concrete or asphalt with soap and hosing it off is a good way to prevent polluting stormwater runoff. **D**

11. If my car or truck is dripping oil, I make sure the leak is fixed within three weeks. **A Adopt**

12. All of my family's auto or truck parts with oil or grease on them are stored under a roof or cover. **A Adopt**

13. My household recycles all used motor oil. **A Adopt**

14. My family stores all containers holding oil or antifreeze under a roof or cover. **A Adopt**

15. The runoff from washing a car with biodegradable soap is safe in stormwater drains. **D**

16. When I wash a motor vehicle at home, the soapy water ends up in a ditch or on the street. **D Adopt**

17. Washing a vehicle at a commercial car wash causes less pollution than washing a vehicle on the street using a biodegradable soap. **A**

18. The best place to dispose of water from cleaning a Latex paint brush is in a sink inside, not outdoors. **A**

19. Grass clippings and leaves are not regarded as harmful in stormwater. **D**

20. Chemical treatments to kill moss on roofs pose little risk for polluting stormwater. **D**

21. Sediment or dirt in stormwater is natural and not regarded as pollution. **D**

22. The downspouts at my house convey the water to an area where it is absorbed by the ground. **A Adopt**

23. Using a mulching lawnmower reduces the need to fertilize a lawn. **A**

24. My household stores all yard fertilizers and pesticides inside a building or in a covered area out of the rain. **A Adopt**

25. In the past 12 months, I may have applied a higher dose of insecticide or weed killer around my house than the directions say to use. **D Adopt**

26. In the past 12 months, I may have used more fertilizer or applied it more frequently than the label directions require. **D Adopt**

27. Carpet shampoo wastewater can be safely added to a stormwater drain. **D**

28. Bricks or pavers offer no advantage for reducing runoff over concrete or asphalt pavement. **D**

29. An *illicit* or *unlawful stormwater discharge* is primarily defined as anything that enters a storm drain system that is not composed entirely of stormwater. **A**

30. If you witnessed someone pouring a gallon of used paint thinner into a stormwater drain, which agency would you call first to report it: **[READ 1-5]**

1. The Washington Department of Ecology

2. The police department

3. The city Public Works Department **A**

4. 911

5. Need more information

6. I would not report it

7. Don't Know/Refused

8. Other **[SPECIFY]**

That concludes our survey. I want to thank you very much for your time and cooperation. You have been very helpful. Have a good day!

POSTCODE GENDER:

1. MALE

2. FEMALE

DATE: _____INTERVIEWER: _____

KTA Associates, Inc
800 Fifth Avenue, Suite 4100
Seattle, WA 98104
206.447.1450
www.KTAinc.net

KTA Associates, Inc.

Memo

To: Joe Roberto, U.S. Environmental Protection Agency (EPA)

From: Ken Taylor, KTA Associates, Inc. (KTA)

Date: January 4, 2012

Re: **Report - First Round of Duwamish Sediment Sampling – City of Tukwila**

The KTA team, including KTA Associates, Herrera Environmental and Pyron Environmental has completed the first round of Duwamish Sediment Sampling at locations controlled by the City of Tukwila. Herrera Environmental and Pyron Environmental did an excellent job with the sampling and analysis event.

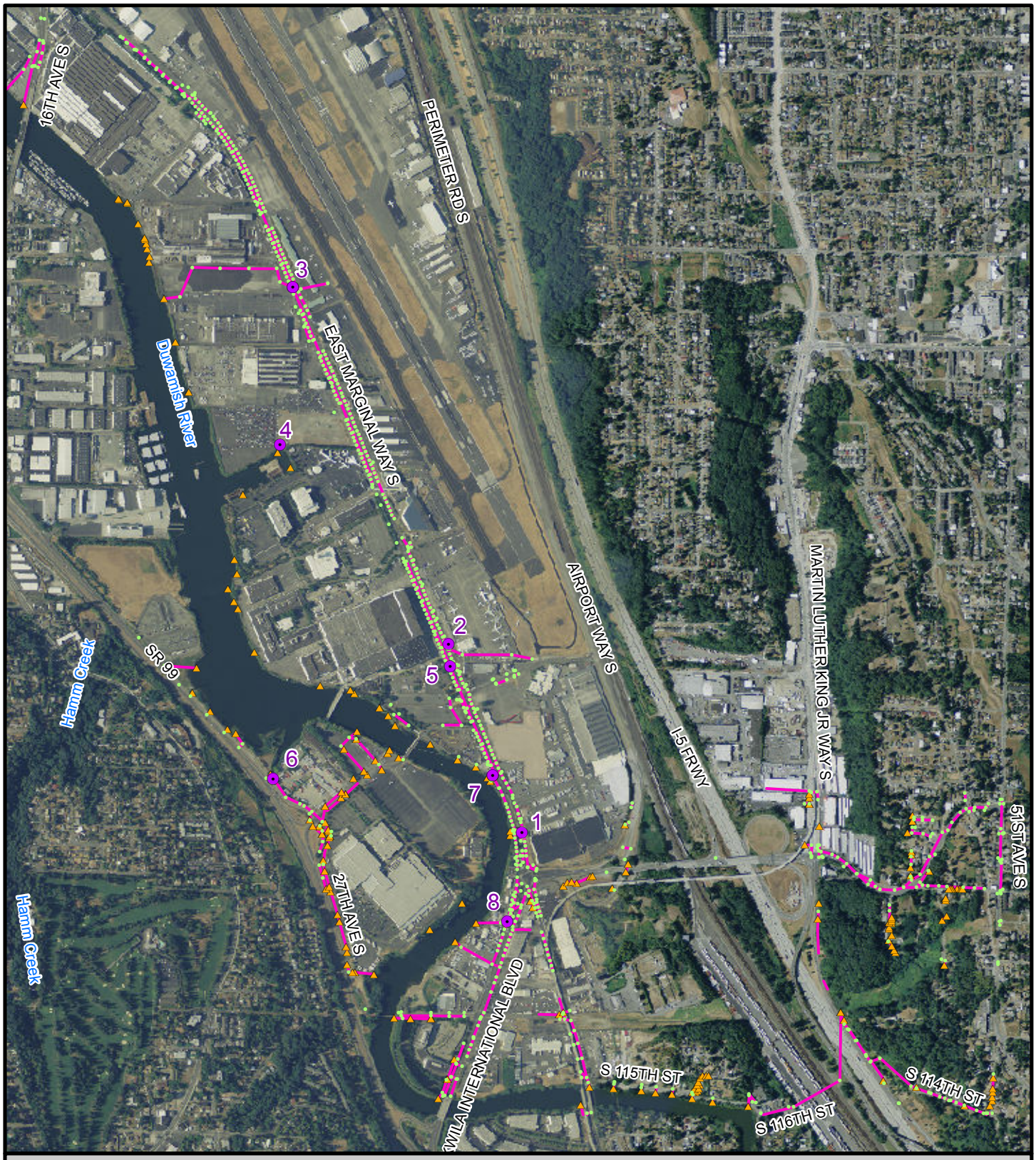
The intent of this memo is to provide a Report which summarizes the sampling event and delivers the validated data along with the associated validation report. This information is provided in the attachments to this electronic memo.

Our next step regarding this project will be to sit down in a meeting to discuss the sampling results and identify follow-on sampling requirements. We will be pleased to meet with the various stakeholders for this matter at a time that is convenient for you.

If you have any questions, please do not hesitate to contact me. Thank you for the opportunity to support the EPA with this important matter.

Attachment 1

Sample Locations



Legend

- Sample locations
- Catch basin
- Drain point
- Storm drain

Figure 1. Locations of storm drain sediment samples collected at the Tukwila site on August 23, 2011.

N

0 750 1,500 3,000 Feet

HERRERA

Aerial: King County, 2009

K:\Projects\11-04984-000\Project\Figure_X_sample_locations.mxd (12/30/2011)

Sample ID	Date	Time	X-Coordinate	Y-Coordinate
tuk-1	8/23/2011	07:42:10am	1280099.96417	188895.65363
tuk-2	8/23/2011	08:46:20am	1279291.06843	190958.92280
tuk-3	8/23/2011	09:35:45am	1277586.25749	194870.34217
tuk-4	8/23/2011	10:24:55am	1277447.02918	193142.98041
tuk-5	8/23/2011	11:04:45am	1279310.27186	190714.91216
tuk-6	8/23/2011	11:51:00am	1277374.82454	189484.82200
tuk-7	8/23/2011	12:19:50pm	1279778.06982	189525.52226
tuk-8	8/23/2011	01:26:50pm	1279935.98600	187919.42959

Attachment 2

Logbook for Sampling Event

8/23/11 Duwamish Sed Track
0750 GC at site w/ GV (Tukwila)
0800 DB + RW at site. Will wait for DT (EPA).
62°F cloudy.
0830 Location TUK-01
East Marginal Way.
Approx 18" water standing on surface.
DK brown/black sandy silt, some debris (wood) and few rocks. Sheen + organic odor. Very wet
0840 Sample TUK-01 and field dup TUK-QC-01 (1200)
2-16oz jars each + 1-8oz jar each
0905 Completed processing.
0915 at next location. LID is STUCK will move
0935 At MH along E. Marginal, in access road. Pipe to street capped. Large concrete chunks on surface of sediment round MH w/ inlet from South 12' to sediment. Collecting

EPA DUWAMISH SEDIMENT 8/23/11
~top 3" of sediment.
Compact surface.
DK brown gravelly sand.
Coarse material. Sewer odor.
0950 Collected TUK-02.
Collected 4x 16oz + 1x 8-oz
(MS/MSD site)
1030 At location in E. Marg next to Boeing property.
Some sediment.
2-3" Sediment along 1.5' trough in bottom.
10' to bottom.
Orange silt w/ fine sand
Wet
1040 Sample TUK-03.
2 x 16-oz, 1 x 8-oz jars.
1100 Arrived at next location GV + RW determining location
1110 At location in SW corner of lot.
Round vault. Connections to Slip 6, parking lot to West, and line from street.

8/23/11 EPA DUWAMISH SEDIMENT

Proved bottom, appears to have sediment. 3' of standing water.
Approximate 3' x 3" "core" of sediment in middle of MH.

08/23/11

Brown to dk brown coarse sand with gravel. A few large (~1" rocks) and wood (1-2 pieces). Sheen on water.

1125 Sample TUK-04.

1150 Arrived at next location. Just north of Norfolk on west side of street, center lane.

1200 Pulled cover.
10' to water, 3' of standing water. Approx 3" of soft sediment.
Very dark brown/black sandy silt, dense leaf litter and twigs on surface. Very wet.

1210 Collected sample TUK-05.
2 x 16-oz + 1 x 8-oz jars

EPA Duwamish Sediment 8/23/11

1235 Arrived at next location. Appears to have small amount of sediment, with 3' of standing water.
No sediment in outfall to the north.
Gathering of sediment near large outfall in MH.
Dark brown gravelly sand trace silt. Very wet.

1300 Collected sample TUK-06
2 x 16-oz + 1 x 8-oz jar.

1315 At next location
18' to water, 3-4' standing water. More than 4" of sediment

1345 Finished scooping at MH. Very dark brown sandy silt, some organic matter. Very wet.

1350 Collected sample TUK-07.
Slight sheen.

1405 Arrived at next location
EPA left site for day.
No sediment in CB. No structure between location and outfall.

8/23/11 EPA Duwamish Sediment
WM move upstream in system.
8' to water surface, 18"
standing water. Sediment
from ~6" to <3".
Dark brown sandy gravel,
wet.
1430 Collected sample TUK-08.
no sheen.
1515 Delivered samples to
laboratory.

Attachment 3

Chain of Custody Forms

Chain of Custody Record & Laboratory Analysis Request

ARI Assigned Number:	Turn-around Requested: Std.
ARI Client Company: Herrera	Phone: 2064419080
Client Contact: Rob Zisette	
Client Project Name: EPA Duwamish Sediment	
Client Project #: 11-04984-000	Samplers: Gina C. / Dan B.

Page: 1	of 1
Date: 8/23/11	Ice Present? Y
No. of Coolers: 2	Cooler Temps: 10.8, 7.1

Analytical Resources, Incorporated
Analytical Chemists and Consultants
4611 South 134th Place, Suite 100
Tukwila, WA 98168
206-695-6200 206-695-6201 (fax)

Sample ID	Date	Time	Matrix	No. Containers	Metals	PCBs	SVOCs 8270	NWTPH-DX	~~PAH SIM~~	Grain Size PSEP	TOC PSEP	Total Solids PSEP	Notes/Comments
TUK-01	8/23/11	0840	Sed	3									Invoice to KTA Report to Pylori (Mingta Lin)
TUK-QC-01	↓	1200	Sed	3									
TUK-02	↓	0950	SeD	5									MS/MSD
TUK-03	↓	1040	↓	3									
TUK-04	↓	1125	↓	3									
TUK-05	↓	1210	↓	3									
TUK-06	↓	1300	↓	↓									
TUK-07	↓	1350	↓	↓									
TUK-08	↓	1430	↓	↓									

Comments/Special Instructions
Follow SPU procedures. Mark Harris has project info

Relinquished by: (Signature) GDCat	Received by: (Signature) [illegible]	Relinquished by: (Signature)	Received by: (Signature)
Printed Name: Gina Catarra	Printed Name: A. Volgardsen	Printed Name:	Printed Name:
Company: Herrera	Company: ARI	Company:	Company:
Date & Time: 8/23/11 1455	Date & Time: 8/23/11 1455	Date & Time:	Date & Time:

Limits of Liability: *ARI will perform all requested services in accordance with appropriate methodology following ARI Standard Operating Procedures and the ARI Quality Assurance Program. This program meets standards for the industry. The total liability of ARI, its officers, agents, employees, or successors, arising out of or in connection with the requested services, shall not exceed the Invoiced amount for said services. The acceptance by the client of a proposal for services by ARI release ARI from any liability in excess thereof, not withstanding any provision to the contrary in any contract, purchase order or co-signed agreement between ARI and the Client.*

Sample Retention Policy: All samples submitted to ARI will be appropriately discarded no sooner than 90 days after receipt or 60 days after submission of hardcopy data, whichever is longer, unless alternate retention schedules have been established by work-order or contract.

Attachment 4

Pictures

Source Tracing for Contaminants of Concern in Stormwater - Duwamish Basin, Washington

Photographic Log for Tukwila Event 1 on August 23, 2011

Photo Number	Photo Description
TUK-01A	Maintenance hole in East Marginal Way where sample Tuk-01 was collected
TUK-01B	Looking down maintenance hole where sample Tuk-01 was collected
TUK-01C	Sampling equipment at site Tuk-01
TUK-02A	Looking down maintenance hole where sample Tuk-02 was collected
TUK-05A	Looking down maintenance hole where sample Tuk-05 was collected
TUK-05B	Sample collection procedure demonstrated where sample Tuk-05 was collected
TUK-05C	Sample Tuk-05 in sample compositing bowl

DUCTILE

VANPOOL

Attachment 5

Sampling Results

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	120	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	RE	170	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	57	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	57	ug/kg	U	UJ	Field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	31	ug/kg	J		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	110	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	RE	570	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	57	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	110	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	RE	570	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	1100	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	RE	5700	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	110	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	770	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	RE	3800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	80	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	1100	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	RE	5700	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	28	ug/kg	J		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	2400	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	RE	12000	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	37	ug/kg	J		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	140	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	RE	710	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	57	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	97	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	810	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	RE	660	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	140	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	RE	160	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	110	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	71	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	1800	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	RE	1400	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	1400	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	RE	1300	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	320	ug/kg	M	NJ	Ion ratios not matching reference spectrum; the detection was not confirmative; field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	RE	230	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	430	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	RE	2100	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	560	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	RE	510	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	10000	ug/kg	EB	DNR	Analyte concentration exceeded calibration range; report from dilution analysis.
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	RE	8600	ug/kg	B		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	1100	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	RE	850	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	970	ug/kg		R	Field duplicate results grossly deviated from project criteria.
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	RE	580	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	680	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	RE	560	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	450	ug/kg		R	Field duplicate results grossly deviated from project criteria.
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	RE	340	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	200	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	RE	200	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	720	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	RE	530	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	34	ug/kg	J		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	1400	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	RE	1400	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	361	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	RE	285	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	427	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	RE	370	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	401	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	RE	427	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	350	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	RE	370	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	615	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	RE	512	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	544	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	RE	541	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	840	ug/kg	Q		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	RE	754	ug/kg	Q	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	620	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	RE	555	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	31	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	23	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.73	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.56	ug/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	980	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	4200	mg/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	1690	mg/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	7	mg/kg	U		
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	107	mg/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	83	mg/kg		J	Field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.05	mg/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	512	mg/kg			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	65.1	Percent			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	7.18	Percent			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	4.2	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	9.4	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	16.6	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	18.3	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	14.2	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	9.6	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	7.2	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	7.9	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	5.1	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	3.9	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	1.9	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	1	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	0.7	%			
EPA Duwamish Sediment	TUK-01	08/23/11 08:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	27.6	%			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	99	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	57	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	45	ug/kg	J		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	130	ug/kg		J	Field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	120	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	RE	570	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	57	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	110	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	RE	570	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	340	ug/kg	J		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	RE	5700	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	100	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	770	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	RE	3800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	88	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	1100	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	RE	5700	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	34	ug/kg	J		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	2400	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	RE	12000	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	45	ug/kg	J		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	140	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	RE	710	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	85	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	280	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	RE	1400	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	99	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	57	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	570	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	890	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	RE	820	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	160	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	RE	170	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	110	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	130	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	1900	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	RE	1800	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	1600	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	RE	1600	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	610	ug/kg		J	Field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	RE	770	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	430	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	RE	2100	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	610	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	RE	570	ug/kg		DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	7800	ug/kg	EB	DNR	Analyte concentration exceeded calibration range; report from dilution analysis.
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	RE	7400	ug/kg	B		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	1100	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	RE	1000	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	57	ug/kg	U	R	Field duplicate results grossly deviated from project criteria.
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	760	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	RE	710	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	57	ug/kg	U	R	Field duplicate results grossly deviated from project criteria.
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	RE	410	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	210	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	RE	160	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	660	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	RE	510	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	31	ug/kg	J		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	RE	280	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	1600	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	RE	1700	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	377	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	RE	383	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	400	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	RE	369	ug/kg		DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	392	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	RE	383	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	366	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	RE	355	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	661	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	RE	468	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	559	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	RE	482	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	738	ug/kg	Q		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	RE	724	ug/kg	Q	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	661	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	RE	497	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	35	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	32	ug/kg		J	CCV %D value < -15% (low bias).
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.86	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.57	ug/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	920	mg/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	3800	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	1796	mg/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	7	mg/kg	U		
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	117	mg/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	140	mg/kg		J	Field duplicate results were outside the project control
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.08	mg/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	473	mg/kg			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	65.2	Percent			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	7.9	Percent			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	3.3	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	10	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	16.1	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	18.6	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	13.8	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	9.8	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	7.1	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	9.1	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	6.1	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	3.5	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	1.4	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	0.7	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	0.6	%			
EPA Duwamish Sediment	TUK-QC-01	08/23/11 12:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	28.5	%			
EPA Duwamish Sediment	20110825111 4-MB			ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	LB	20	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Phenol	SW8270D	SC	BS	306	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	38	ug/kg	J		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	SC	MS	355	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	SC	MSD	324	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	SC	BS	220	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	59	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	SC	MS	248	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	SC	MSD	200	ug/kg	Q		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	SC	BS	294	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	SC	MS	343	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	SC	MSD	306	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	SC	BS	266	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	SC	MS	260	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	SC	MSD	239	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	SC	BS	280	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	SC	MS	278	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	SC	MSD	239	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	SC	BS	290	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	SC	MS	390	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	SC	MSD	336	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	SC	BS	293	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	SC	MS	275	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	SC	MSD	268	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	SC	BS	309	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	SC	MS	378	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	SC	MSD	324	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	SC	BS	298	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	SC	MS	307	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	SC	MSD	271	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	LB	40	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	SC	BS	642	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	120	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	SC	MS	709	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	SC	MSD	642	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	SC	BS	317	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	SC	MS	381	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	SC	MSD	362	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	SC	BS	282	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	SC	MS	272	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	SC	MSD	239	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	SC	BS	309	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	SC	MS	307	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	SC	MSD	298	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Isophorone	SW8270D	SC	BS	335	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	SC	MS	319	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	SC	MSD	295	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	SC	BS	320	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	SC	MS	316	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	SC	MSD	301	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	LB	40	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	SC	BS	767	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	120	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	SC	MS	1140	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	SC	MSD	1080	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	LB	400	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	SC	BS	668	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	1200	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	SC	MS	1810	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	SC	MSD	1530	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	SC	BS	292	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	SC	MS	293	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	SC	MSD	274	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	LB	200	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	SC	BS	1110	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	590	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	SC	MS	1050	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	SC	MSD	1010	ug/kg	Q		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	SC	BS	382	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	SC	MS	405	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	SC	MSD	380	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	SC	BS	322	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	SC	MS	349	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	SC	MSD	315	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	LB	270	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	SC	BS	871	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	800	ug/kg	U	R	MS/MSD %R values <10% (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	SC	MS	798	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	SC	MSD	97.2	ug/kg	J		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	SC	BS	351	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	SC	MS	375	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	SC	MSD	333	ug/kg	Q		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	LB	100	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

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EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	SC	BS	1180	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	SC	MS	1190	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	SC	MSD	1150	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	SC	BS	341	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	SC	MS	361	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	SC	MSD	339	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	TRG	LB	400	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	SC	BS	401	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	TRG	N	1200	ug/kg	U	R	MS/MSD %R values <10% (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	SC	MS	1180	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	SC	MSD	1180	ug/kg	U		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	SC	BS	1090	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	SC	MS	1180	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	SC	MSD	1130	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	SC	BS	1180	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	SC	MS	1160	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	SC	MSD	1160	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	SC	BS	312	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	SC	MS	310	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	SC	MSD	306	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	SC	BS	1100	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	SC	MS	1060	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	SC	MSD	1020	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	SC	BS	353	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	SC	MS	358	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	SC	MSD	336	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	SC	BS	320	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	170	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	SC	MS	440	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	SC	MSD	516	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	SC	BS	870	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U	UJ	MS/MSD %R values <lower control limits (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	SC	MS	278	ug/kg	J		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	SC	MSD	336	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	SC	BS	336	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	SC	MS	367	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	SC	MSD	354	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	LB	850	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	SC	BS	1340	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	2500	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	SC	MS	996	ug/kg	J		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	SC	MSD	890	ug/kg	J		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	SC	BS	1100	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	SC	MS	1010	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	SC	MSD	1000	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	SC	BS	348	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	SC	MS	378	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	SC	MSD	351	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	SC	BS	1020	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	SC	MS	1040	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	SC	MSD	972	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	SC	BS	1170	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	SC	MS	1100	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	SC	MSD	1040	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	LB	50	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	SC	BS	366	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	150	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	SC	MS	378	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	SC	MSD	374	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	SC	BS	297	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	SC	MS	287	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	SC	MSD	321	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Fluorene	SW8270D	SC	BS	387	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	59	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	SC	MS	393	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	SC	MSD	416	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	LB	100	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	SC	BS	1110	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U	UJ	MS/MSD %R values <lower control limits (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	SC	MS	361	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	SC	MSD	519	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	LB	200	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	SC	BS	1620	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	590	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	SC	MS	1330	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	SC	MSD	1200	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	SC	BS	292	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	32	ug/kg	J		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	SC	MS	352	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	SC	MSD	321	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	SC	BS	356	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	SC	MS	319	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	SC	MSD	318	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	LB	20	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	SC	BS	378	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	SC	MS	423	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	SC	MSD	416	ug/kg	Q		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	LB	200	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	SC	BS	993	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	590	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	SC	MS	958	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	SC	MSD	961	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	SC	BS	368	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	540	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	SC	MS	1030	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	SC	MSD	1150	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Carbazole	SW8270D	SC	BS	396	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	100	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	SC	MS	470	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	SC	MSD	474	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Anthracene	SW8270D	SC	BS	323	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	91	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	SC	MS	420	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	SC	MSD	427	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	SC	BS	379	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	5600	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	SC	MS	429	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	SC	MSD	368	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	SC	BS	394	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	1100	ug/kg		J	MSD %R values > upperr control limits (high bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	SC	MS	1700	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	SC	MSD	2510	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Pyrene	SW8270D	SC	BS	356	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	810	ug/kg		J	MSD %R values > upperr control limits (high bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	SC	MS	1270	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	SC	MSD	1940	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	SC	BS	362	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	1200	ug/kg		J	MSD %R values > upperr control limits (high bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	SC	MS	446	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	SC	MSD	386	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	LB	150	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	SC	BS	418	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	440	ug/kg	U	R	MS/MSD %R values <10%; LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	SC	MS	443	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	SC	MSD	442	ug/kg	U		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	SC	BS	369	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	420	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	SC	MS	804	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	SC	MSD	1400	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	LB	16	ug/kg	J		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	SC	BS	366	ug/kg	B		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	2900	ug/kg	B		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	SC	MS	1920	ug/kg	B		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	SC	MSD	1560	ug/kg	B		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Chrysene	SW8270D	SC	BS	379	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	690	ug/kg		J	MSD %R values > upperr control limits (high bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	SC	MS	1050	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	SC	MSD	1720	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	SC	BS	337	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	250	ug/kg		J	MS/MSD %R values <lower control limits (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	SC	MS	538	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	SC	MSD	427	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	SC	BS	316	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	700	ug/kg		J	MS/MSD %R values were outside control limits .
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	SC	MS	931	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	SC	MSD	1390	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	SC	BS	405	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	600	ug/kg		J	MS %R value <lower control limits (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	SC	MS	771	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	SC	MSD	961	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	SC	BS	392	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	170	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	SC	MS	500	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	SC	MSD	578	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	SC	BS	395	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	640	ug/kg		J	MS %R value <lower control limits (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	SC	MS	700	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	SC	MSD	905	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	SC	BS	329	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	SC	MS	358	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	SC	MSD	351	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	LB	20	ug/kg	U		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	SC	BS	788	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	1700	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	SC	MS	2030	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	SC	MSD	3040	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	LB	338	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	BS	393	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	368	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	MS	364	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	MS	345	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	LB	404	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	BS	374	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	407	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	MS	387	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	MS	360	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	LB	475	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	BS	427	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	383	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	MS	381	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	MS	380	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	LB	430	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	BS	361	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	339	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	MS	367	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	MS	324	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	LB	640	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	BS	572	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	607	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	MS	650	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	MS	557	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	LB	604	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	BS	553	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	575	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	MS	567	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	MS	504	ug/kg			
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	LB	810	ug/kg	Q		
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	BS	765	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	855	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	MS	791	ug/kg	Q		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	MS	695	ug/kg	Q		
EPA Duwamish Sediment	201108251114-MB			ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	LB	663	ug/kg			
EPA Duwamish Sediment	201108251114-LCS			ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	BS	599	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	589	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	MS	633	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	MS	569	ug/kg			
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	201108260920-LCS			ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	SC	BS	71.5	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	SC	MS	54.5	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	SC	MSD	50.3	ug/kg			
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	MS	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	MSD	19	ug/kg	U		
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	57	ug/kg	Y	J	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	MS	380	ug/kg	Y		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	MSD	95	ug/kg	Y		
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	200	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	MS	2500	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	MSD	230	ug/kg			
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	201108260920-LCS			ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	SC	BS	85.8	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	67	ug/kg		J	MS %R value >upper control limit (high bias).
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	SC	MS	456	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	SC	MSD	134	ug/kg			
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	MS	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	MSD	19	ug/kg	U		
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	LB	4	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	MS	19	ug/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	MSD	19	ug/kg	U		
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	LB	5.86	ug/kg			
EPA Duwamish Sediment	201108260920-LCS			ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	BS	6.2	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.34	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	MS	5.82	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	MS	4.79	ug/kg			
EPA Duwamish Sediment	201108260920-MB			ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	LB	4.18	ug/kg			
EPA Duwamish Sediment	201108260920-LCS			ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	BS	4.48	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.64	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	MS	5.21	ug/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	MS	4.64	ug/kg			
EPA Duwamish Sediment	201108251220-MB			ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	LB	50	mg/kg	U		
EPA Duwamish Sediment	201108251220-LCS			ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	SC	BS	1410	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	99	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	SC	MS	2000	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	SC	MSD	2020	mg/kg			
EPA Duwamish Sediment	201108251220-MB			ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	LB	100	mg/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	520	mg/kg			
EPA Duwamish Sediment	201108251220-MB			ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	LB	2189	mg/kg			
EPA Duwamish Sediment	201108251220-LCS			ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	BS	2115	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	1948	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	MS	2084	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	MS	2126	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	7	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	LR	6	mg/kg	U		
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	SC	MS	232	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	53.1	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	LR	51.1	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	SC	MS	106	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	111	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	LR	124	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	SC	MS	337	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.05	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	LR	0.05	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	SC	MS	0.41	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	514	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	LR	475	mg/kg			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	SC	MS	498	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	75.2	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	LR	74.2	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	LR	74.7	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	4.66	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	LR	3.83	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	LR	3.37	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	SC	MS	63.1	Percent			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	16.6	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	LR	12.1	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	LR	7.8	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	8.1	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	LR	8.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	LR	9.6	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	19.4	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	LR	21.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	LR	21.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	32.1	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	LR	33.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	LR	34.8	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	15.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	LR	16.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	LR	16.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	3.6	%			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	LR	3.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	LR	3.8	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	1.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	LR	0.6	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	LR	2.6	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	1.1	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	LR	1.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	LR	1.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	0.8	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	LR	0.9	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	LR	1	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	0.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	LR	0.7	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	LR	0.8	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	0.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	LR	0.3	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	LR	0.4	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	0.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	LR	0.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	LR	0.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	0.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	LR	0.2	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	LR	0.2	%			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	4.9	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	LR	4.6	%			
EPA Duwamish Sediment	TUK-02	08/23/11 09:50 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	LR	6.4	%			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	29	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	17	ug/kg	J		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	40	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	400	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	270	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	400	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	840	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	99	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	50	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl· phenylether	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	99	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	20	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	60	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	44	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	150	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	18	ug/kg	J		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	88	ug/kg	B		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	47	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	11	ug/kg	J		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	36	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	46	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	16	ug/kg	J		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	39	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	130	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	344	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	357	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	362	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	337	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	577	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	527	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	681	ug/kg	Q		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	590	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	4.77	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.49	ug/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	180	mg/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	360	mg/kg	U		
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	2099	mg/kg			
EPA Duwamish Sediment	20110825-MB			ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	5	mg/kg	U		
EPA Duwamish Sediment	20110825-LCS			ARI Labs, Inc.	Sediment	Arsenic	SW6010B	SC	N	196	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	80	mg/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	20110825-MB			ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	0.2	mg/kg	U		
EPA Duwamish Sediment	20110825-LCS			ARI Labs, Inc.	Sediment	Copper	SW6010B	SC	N	47.5	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	5	mg/kg			
EPA Duwamish Sediment	20110825-MB			ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	2	mg/kg	U		
EPA Duwamish Sediment	20110825-LCS			ARI Labs, Inc.	Sediment	Lead	SW6010B	SC	N	195	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	30	mg/kg	U		
EPA Duwamish Sediment	20110825-MB			ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.02	mg/kg	U		
EPA Duwamish Sediment	20110825-LCS			ARI Labs, Inc.	Sediment	Mercury	SW7471A	SC	N	0.53	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.06	mg/kg	U		
EPA Duwamish Sediment	20110825-MB			ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	4	mg/kg			
EPA Duwamish Sediment	20110825-LCS			ARI Labs, Inc.	Sediment	Zinc	SW6010B	SC	N	49	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	130	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	29.4	Percent			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	10.3	Percent			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	0.1	%	U	UJ	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	1.6	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	4.1	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	5.9	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	5.9	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	4.9	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	4.4	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	13.1	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	7.3	%		J	Sample QA recovery <95%.

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	11.6	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	20.8	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	14.2	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	6.2	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	77.6	%		J	Sample QA recovery <95%.
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	11	ug/kg	J		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	38	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	38	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	19	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	14	ug/kg	J		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	260	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	25	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	57	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	820	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	55	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	48	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	19	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	93	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	96	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	1100	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	160	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	130	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	1600	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	1000	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	33	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	140	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	480	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	170	ug/kg	B		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	630	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	540	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	250	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	120	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	240	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	14	ug/kg	J		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	1100	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	381	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	418	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	388	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	358	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	595	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	528	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	808	ug/kg	Q		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	617	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.33	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.77	ug/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	72	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	220	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	2099	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	11	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	35.2	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	27	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.03	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	179	mg/kg			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	76.5	Percent			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	1.64	Percent			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	17.2	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	36.3	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	31.1	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	10.2	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	1.3	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	0.5	%			
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	3.4	%	U		
EPA Duwamish Sediment	TUK-04	08/23/11 11:25 AM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	3.4	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	120	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	77	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	77	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	300	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	38	ug/kg	J		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	390	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	150	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	1100	ug/kg	J		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	770	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	120	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	1000	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	200	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	TRG	N	1500	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	430	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	3300	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	330	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	490	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	770	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	46	ug/kg	J		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	770	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	2400	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	520	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	290	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	4400	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	2800	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	160	ug/kg	M	NJ	Ion ratios not matching reference spectrum; the detection was not confirmative.
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	580	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	1200	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	6500	ug/kg	B		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	2100	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	1300	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	77	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	620	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	96	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	3100	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	319	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	346	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	346	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	330	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	526	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	488	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	703	ug/kg	Q		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	542	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	49	ug/kg	Y	J	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	77	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	68	ug/kg		J	CCV %D value < -15% (low bias).
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	200	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	6.14	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	7.54	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.64	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	6.32	ug/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	1400	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	8700	mg/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	2048	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	10	mg/kg	U		
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	155	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	96	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.09	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	558	mg/kg			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	31.7	Percent			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	13.3	Percent			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	7.9	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	7.5	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	15.7	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	25.8	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	15.8	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	5.4	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	1.7	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	4.3	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	5.3	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	5	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	2.9	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	1.4	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	1.3	%			
EPA Duwamish Sediment	TUK-05	08/23/11 12:10 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	21.9	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	20	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	20	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	40	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	40	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	400	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	270	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	100	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	400	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	850	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	50	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	100	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	20	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	200	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	35	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	75	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	58	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	29	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	150	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	26	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	190	ug/kg	B		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	47	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	15	ug/kg	J		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	29	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	19	ug/kg	J		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	19	ug/kg	J		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	20	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	71	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	368	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	402	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	377	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	336	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	555	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	500	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	817	ug/kg	Q		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	584	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	19	ug/kg	U	UJ	CCV %D value < -15% (low bias).
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.25	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.97	ug/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	64	mg/kg	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	250	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	2239	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	10	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	50.2	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	30	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.02	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	199	mg/kg			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	80.2	Percent			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	1.8	Percent			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	47.7	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	22.5	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	13.4	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	7.6	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	4.1	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	1.4	%			
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	3.3	%	U		
EPA Duwamish Sediment	TUK-06	08/23/11 01:00 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	3.3	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	100	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	59	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	180	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	59	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	170	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	120	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	340	ug/kg	J		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	590	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	95	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	800	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	77	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadiene	SW8270D	TRG	N	1200	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	36	ug/kg	J		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	74	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	2500	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	56	ug/kg	J		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	150	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl-phenylether	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	68	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	300	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	590	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	42	ug/kg	J		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	590	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	1100	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	220	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	210	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	2400	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	1800	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	260	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	440	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	930	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	1900	ug/kg	B		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	1300	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	59	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	1000	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	490	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	250	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	490	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	30	ug/kg	J		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	2100	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	379	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	418	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	418	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	379	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	646	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	572	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	792	ug/kg	Q		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	646	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	39	ug/kg	Y	J	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	120	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	91	ug/kg		J	CCV %D value < -15% (low bias).
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	7.24	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	5.12	ug/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	1100	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	2800	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	1755	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	9	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	94.8	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	113	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.07	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	213	mg/kg			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	46.4	Percent			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	6.45	Percent			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	14.3	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	11.3	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	15.4	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	20.8	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	11	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	4	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	6.3	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	6.2	%			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	3.7	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	2.7	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	1.5	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	0.9	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	1.8	%			
EPA Duwamish Sediment	TUK-07	08/23/11 01:50 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	23.1	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	N	91	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenol	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-20% (low bias).
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Bis-(2-Chloroethyl) Ether	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chlorophenol	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,3-Dichlorobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,4-Dichlorobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzyl Alcohol	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2-Dichlorobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylphenol	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	N	19	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,2'-Oxybis(1-Chloropropane)	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	N	58	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Methylphenol	SW8270D	TRG	RE	760	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitroso-Di-N-Propylamine	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachloroethane	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Nitrobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Isophorone	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitrophenol	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	N	38	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dimethylphenol	SW8270D	TRG	RE	760	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	N	1500	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzoic Acid	SW8270D	TRG	RE	7600	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Chloroethoxy) Methane	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dichlorophenol	SW8270D	TRG	RE	3800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1,2,4-Trichlorobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	N	13	ug/kg	J		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Naphthalene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	N	260	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloroaniline	SW8270D	TRG	RE	5100	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobutadiene	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chloro-3-methylphenol	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Methylnaphthalene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	N	380	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorocyclopentadie ne	SW8270D	TRG	RE	7600	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Trichlorophenol	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,5-Trichlorophenol	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Chloronaphthalene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Nitroaniline	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dimethylphthalate	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	N	19	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthylene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	3-Nitroaniline	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	N	19	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Acenaphthene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	N	800	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrophenol	SW8270D	TRG	RE	16000	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitrophenol	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	N	13	ug/kg	J		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenzofuran	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,6-Dinitrotoluene	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4-Dinitrotoluene	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	N	47	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Diethylphthalate	SW8270D	TRG	RE	950	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Chlorophenyl·phenylether	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	N	21	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluorene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	N	95	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Nitroaniline	SW8270D	TRG	RE	1900	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4,6-Dinitro-2-Methylphenol	SW8270D	TRG	RE	3800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	N-Nitrosodiphenylamine	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	4-Bromophenyl-phenylether	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Hexachlorobenzene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	N	190	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Pentachlorophenol	SW8270D	TRG	RE	3800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	N	270	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Phenanthrene	SW8270D	TRG	RE	320	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	N	64	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Carbazole	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	N	98	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Anthracene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Butylphthalate	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	N	550	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fluoranthene	SW8270D	TRG	RE	490	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	N	370	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Pyrene	SW8270D	TRG	RE	440	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	N	52	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Butylbenzylphthalate	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	N	140	ug/kg	U	UJ	LCS %R < lower control limit (low bias).
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	3,3'-Dichlorobenzidine	SW8270D	TRG	RE	2800	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	N	180	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)anthracene	SW8270D	TRG	RE	250	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	N	14000	ug/kg	EB	DNR	Analyte concentration exceeded calibration range; report from dilution analysis.
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	bis(2-Ethylhexyl)phthalate	SW8270D	TRG	RE	18000	ug/kg	B		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	N	260	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Chrysene	SW8270D	TRG	RE	260	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Di-n-Octyl phthalate	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	N	200	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(a)pyrene	SW8270D	TRG	RE	250	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	N	94	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Indeno(1,2,3-cd)pyrene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	N	48	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Dibenz(a,h)anthracene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	N	98	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Benzo(g,h,i)perylene	SW8270D	TRG	RE	230	ug/kg	J	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	1-Methylnaphthalene	SW8270D	TRG	RE	380	ug/kg	U	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	N	420	ug/kg			

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Benzofluoranthenes	SW8270D	TRG	RE	470	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	N	382	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Nitrobenzene	SW8270D	SUR	RE	417	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	N	421	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorobiphenyl	SW8270D	SUR	RE	473	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	N	385	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d14-p-Terphenyl	SW8270D	SUR	RE	549	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	N	348	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-1,2-Dichlorobenzene	SW8270D	SUR	RE	436	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	N	585	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d5-Phenol	SW8270D	SUR	RE	625	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	N	526	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2-Fluorophenol	SW8270D	SUR	RE	625	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	N	788	ug/kg	Q		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	2,4,6-Tribromophenol	SW8270D	SUR	RE	987	ug/kg	Q	DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	N	610	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	d4-2-Chlorophenol	SW8270D	SUR	RE	760	ug/kg		DNR	Report from initial analysis in favor of the lower detection
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1016	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1242	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1248	SW8082	TRG	N	19	ug/kg	U	UJ	CCAL %D value <-15% (low bias).
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1254	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1260	SW8082	TRG	N	19	ug/kg	U	UJ	CCV %D value < -15% (low bias).
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1221	SW8082	TRG	N	19	ug/kg	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Aroclor 1232	SW8082	TRG	N	19	ug/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Decachlorobiphenyl	SW8082	SUR	N	5.58	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Tetrachlorometaxylene	SW8082	SUR	N	4.97	ug/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Diesel Range Hydrocarbons	NWTPHD	TRG	N	76	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Motor Oil	NWTPHD	TRG	N	400	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	o-Terphenyl	NWTPHD	SUR	N	2002	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	SW6010B	TRG	N	6	mg/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Copper	SW6010B	TRG	N	48.3	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Lead	SW6010B	TRG	N	18	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Mercury	SW7471A	TRG	N	0.02	mg/kg	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Zinc	SW6010B	TRG	N	185	mg/kg			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Solids	EPA 160.3	TRG	N	81	Percent			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Organic Carbon	Plumb,1981	TRG	N	1.58	Percent			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Gravel	GS-PSEP	TRG	N	25.6	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Coarse Sand	GS-PSEP	TRG	N	30.3	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Sand	GS-PSEP	TRG	N	25	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Sand	GS-PSEP	TRG	N	12.1	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Sand	GS-PSEP	TRG	N	2.9	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Sand	GS-PSEP	TRG	N	0.7	%			
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Coarse Silt	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Medium Silt	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Fine Silt	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Very Fine Silt	GS-PSEP	TRG	N	3.5	%	U		

EPA Duwamish Sampling Results - City of Tukwila

PROJECT NAME	SAMPLE ID	SAMPLE DATE TIME	SAMPLE METHOD	LABORATORY NAME	MATRIX	PARAMETER NAME	METHOD CODE	RESULT TYPE	ANALYSIS TYPE	REPORTED RESULT	RESULT UNITS	LAB QUALIFIER	VALIDATION QUALIFIER	VALIDATION QUALIFIER REASON
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	8-9 Phi Clay	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	9-10 Phi Clay	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	> 10 Phi Clay	GS-PSEP	TRG	N	3.5	%	U		
EPA Duwamish Sediment	TUK-08	08/23/11 02:30 PM	GRB-M	ARI Labs, Inc.	Sediment	Total Fines	GS-PSEP	TRG	N	3.5	%			
EPA Duwamish Sediment	20110825184 2-MB			ARI Labs, Inc.	Soil	Total Solids	EPA 160.3	TRG	LB	0.01	Percent	U		
EPA Duwamish Sediment	20110902113 2-MB			ARI Labs, Inc.	Soil	Total Organic Carbon	Plumb,1981	TRG	LB	0.02	Percent	U		
EPA Duwamish Sediment	20110902113 2-LCS			ARI Labs, Inc.	Soil	Total Organic Carbon	Plumb,1981	SC	BS	0.1	Percent			
EPA Duwamish Sediment	20110902113 2-SRM			ARI Labs, Inc.	Soil	Total Organic Carbon	Plumb,1981	SC	RM	2.93	Percent			
EPA Duwamish Sediment	20110902-MB			ARI Labs, Inc.	Sediment	Arsenic	E200.8	TRG	N	0.2	mg/kg	U		
EPA Duwamish Sediment	20110902- LCS			ARI Labs, Inc.	Sediment	Arsenic	E200.8	SC	N	27.7	mg/kg			
EPA Duwamish Sediment	TUK-03	08/23/11 10:40 AM	GRB-M	ARI Labs, Inc.	Sediment	Arsenic	E200.8	TRG	N	33.7	mg/kg			

Attachment 6

Sampling Data Validation Report

Data Validation Report

U.S. Environmental Protection Agency
Duwamish Waterway Slip 4 Source Control Sediment Sampling
City of Tukwila August 2011 Samples

Laboratory SDG Numbers:

TJ50 & TK76

Prepared for:

KTA Associates, Inc.
800 5th Avenue, Suite 4100
Seattle, WA 98104

Prepared by:

Pyron Environmental, Inc.
3530 32nd Way NW
Olympia, WA 98502

Approved By: _____ Date: ***December 2, 2011***
Mingta Lin

ACRONYMS

%D	percent difference
%D$_f$	percent drift
%R	percent recovery
%RSD	percent relative standard deviation
ARI	Analytical Resources, Inc.
CCB	continuing calibration blank
CCV	continuing calibration verification
CF	calibration factor
CLP	Contract Laboratory Program
DFTPP	decafluorotriphenylphosphine
EPA	U.S. Environmental Protection Agency
ICAL	initial calibration
ICB	initial calibration blank
ICP	inductively coupled plasma
ICV	initial calibration verification
IS	Internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
PCBs	polychlorinated biphenyls
PSEP	Puget Sound Estuary Program
QA/QC	quality assurance/quality control
RF	response factor
RL	reporting limit
RPD	relative percent difference
SAP	sampling and analysis plan
SDG	sample delivery group
SRM	standard reference material
SVOCs	semi-volatile organic compounds
TOC	total organic carbon

TPH	total petroleum hydrocarbon
TS	total solids

SUMMARY

I. The data validation was performed on the following samples and analyses:

Field Sample ID	Lab Sample ID	Sampling Date	Matrix	Analysis				
				SVOCs	PCBs	TPHs	Metals	Conventionals
TUK-01	TJ50A	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-QC-01	TJ50B	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-02	TJ50C	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-03	TJ50D	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-04	TJ50E	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-05	TJ50F	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-06	TJ50G	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-07	TJ50H	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-08	TJ50I	08/23/11	Sediment	X	X	X	X	TS,TOC.GS
TUK-03	TK76A	08/23/11	Sediment				Arsenic	

Note:
Arsenic – The sample was analyzed for arsenic only, with the ICP/MS technique (EPA Method 200.8) for the lower detection limit.
GS – Grain size
Metals - Arsenic, copper, lead, mercury, and zinc
NA – The analysis was not performed due to insufficient sample volume.
PCBs- Polychlorinated biphenyls
SVOCs - Semi-volatile organic compounds
TOC – Total organic carbon
TPHs – Total petroleum hydrocarbons
TS – Total solids
X – The analysis was requested and performed on the sample.

II. The analytical parameters requested for samples under this sample delivery group (SDG), the analytical methods, and the laboratory performing the analyses are summarized as follows:

Analytical Parameter	Analytical Method	Laboratory
SVOCs	SW846 Methods 3550B/8270D	Analytical Resources, Inc. (ARI), Tukwila, Washington
PCB Aroclors	SW846 Methods 3550B/8082	
Metals	SW846 Method 6010B/7471A	
Arsenic (low-level only)	EPA Method 200.8	
TPHs-Diesel & Motor Oil	NWTPH-Dx	
TOC	Plumb 1981	
TS	EPA Method 160.3	
Grain Size	Puget Sound Estuary Program (PSEP) Protocols	

Notes:

1. EPA Methods - *USEPA Methods for Chemical Analysis of Water and Wastes,* EPA–600/4-79-020, March 1983 Revision.
2. SW846 - *USEPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,* SW-846, Third Edition, December 1996.
3. PSEP Protocols - *PSEP Recommended Protocols for Measuring Conventional Sediment Variables in Puget Sound,* Puget Sound Water Quality Authority, March 1986.
4. *Analytical Methods for Petroleum Hydrocarbons,* ECY 97-602, Washington State Department of Ecology, June 1997.
5. Plumb 1981 - *Procedures for Handling and Chemical Analysis of Sediment and Water Samples.* Technical Report, EPA/CE-B1-1. U.S. Army Corps of Engineers. Plumb, R.H. 1981.

III. The quality assurance/quality control (QA/QC) parameters used to validate each analysis type are summarized as follows:

QC Parameter	Analyses Performed						
	SVOCs	**PCBs**	**Metals**	**TPHs**	**TOC**	**TS**	**Grain Size**
Holding Time	√	√	√	√	√	√	√
Instrument Performance Check	√	NA	NA	NA	NA	NA	NA
Initial Calibration	**3.3**	√	**5.2**	√	√	NA	NA
Calibration Verification	**3.4**	**4.3**	√	√	√	NA	NA
Method Blanks & Calibration Blanks	**3.5**	√	√	√	√	√	NA
ICP Interference Check Sample	NA	NA	√	NA	NA	NA	NA
Surrogate Spikes	√	√	NA	√	NA	NA	NA
Matrix Spike & Matrix Spike Duplicate	**3.7**	4.6	**5.8**	√	√	NA	NA
Laboratory Control Sample & Duplicate Laboratory Control Sample	**3.8**	√	√	√	√	NA	NA
Internal Standards	√	√	NA	NA	NA	NA	NA
Duplicate/Triplicate Analysis	NA	NA	**5.7**	NA	√	√	√
Standard Reference Material	NA	NA	NA	NA	√	NA	NA
Recovery QA	NA	NA	NA	NA	NA	NA	**7.9**
Target Compound Identification	NA	**4.10**	NA	**6.8**	NA	NA	NA
Reporting Limits	**3.10**	**4.8**	**5.9**	√	√	√	√
Overall Data Usability Assessment	√	√	√	**6.10**	√	√	√

Notes:

1. "**√**" denotes that the QA/QC parameter met the criteria for the analytical parameter.
2. A number (e.g., "**3.3**") denotes the section number in this report where additional details are discussed, because the QA/QC parameter did not meet the criteria and/or required further discussion.
3. NA – The QC parameter is not applicable or not reported for the analytical parameter.

IV. Data qualification and assigned data qualifiers are summarized as follows:

SDG	Sample ID	Analyte	Data Qualifier	Reason	Report Section
TJ50	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	*bis*(2-Chloroethyl)ether	**UJ**	Calibration verification %D value <-20% (low bias).	**3.4**
	TUK-02	4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 4-Nitroaniline Fluoranthene Pyrene Butylbenzylphthalate 3,3'-Dichlorobenzidine Benzo(a)anthracene Chrysene Di-n-octyl phthalate Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Benzo(g,h,i)perylene	**R** **R** **UJ** **UJ** **J** **J** **J** **R** **J** **J** **J** **J** **J** **J**	MS and/or MSD %R value was <10% (R) or outside control limits (J or UJ).	**3.7**
	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	3,3'-Dichlorobenzidine	**UJ**	LCS %R < lower control limit (low bias).	**3.8**
	TUK-01 TUK-QC-01 TUK-08 (Initial Analysis)	*bis*(2-Ethylhexyl)phthalate	**DNR**	Analyte concentration exceeded calibration range; report from dilution analysis.	**3.11**
	TUK-01 TUK-QC-01 TUK-08 (Dilution Analysis)	All SVOCs, except: *bis*(2-Ethylhexyl)phthalate	**DNR**	Report from the initial analysis in favor of the lower detection limit.	**3.11**
	TUK-01 TUK-05	Butylbenzylphthalate	**NJ**	The reported detection had a low ion spectrum match with the reference.	**3.11**

SDG	Sample ID	Analyte	Data Qualifier	Reason	Report Section
TJ50	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	Aroclor 1242 Aroclor 1248	**J/UJ**	Calibration verification %D value <-15% (low bias).	**4.3**
	TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	Aroclor 1260	**J** **J** **UJ** **J** **UJ**	Calibration verification %D value <-15% (low bias).	**4.3**
	TUK-02	Aroclor 1260	**J**	MS %R value > upper control limit (high bias).	**4.6**
	TUK-05 (1:50 Dilution Analysis)	All Aroclors	**DNR**	Report from the 1:5 dilution analysis in favor of the lower detection limits.	**4.8**
	TUK-03	Grain Size	**J**	The QA recovery was <95%; sample did not resemble a typical sediment texture.	**7.9**
	TUK-01 TUK-QC-01	Benzyl Alcohol Butylbenzylphthalate Di-*n*-octyl phthalate Indeno(1,2,3-cd)pyrene Lead	**UJ/J** **J** **R** **R** **J**	The field duplicate RPD or concentration difference was outside project criteria.	**Appendix A**

Note: J/UJ – Detections are qualified (J) and non-detects are qualified (UJ).

V. Data qualifiers are defined as follows:

Data Qualifier	Definition
DNR	The result is to be rejected and reported from another valid analysis.
J	The value is an estimate.
NJ	The reported detection of this analyte is assumptive and the reported concentration for the analyte is an estimated value.
R	The analytical result is rejected and cannot be used.
U	The analyte is considered not detected at the reported detection limit or concentration.
UJ	The analyte is not detected at the reporting limit, and the reporting limit is an estimated value.

DATA VALIDATION FINDINGS

1. Introduction

This report presents the findings of data validation performed by Pyron Environmental, Inc. on two sample delivery groups (SDGs) from Analytical Resources, Inc. (ARI). These data packages contained analytical results for nine sediment samples collected in August 2011 for the referenced project.

A level III data validation was performed on the laboratory report. The validation followed the procedures specified in United States Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) National Functional Guidelines (EPA 2008 – Organics and EPA 2010 – Inorganics) with modifications to accommodate project and analytical method requirements. The numerical quality assurance/quality control (QA/QC) criteria applied to the validation were in accordance with those specified in the *Sampling and Analysis Plan* ([SAP], City of Seattle Public Utilities and Pyron Environmental, Inc., 2009) and the current performance-based control limits established by the laboratory (laboratory control limits). Instrument calibration, frequency of QC analyses, and analytical sequence requirements were evaluated against the respective analytical methods. No raw data (i.e., instrument logs, laboratory bench sheets, etc.) were reviewed. QA/QC parameters reviewed in this validation effort are outlined in the **Summary, Section III** at the beginning of this report.

Validation findings are discussed and presented in the section pertinent to each analysis type. Qualified data and assigned qualifiers are summarized in the **Summary, Section IV** at the beginning of this report.

2. Sample Delivery Documentation and Preservation

No anomalies in relation to sample delivery and preservation were noted, according to the completed chain-of-custody forms submitted by the laboratory.

The temperature for the two coolers was measured at greater than 6°C upon arrival at the laboratory. Samples were hand-delivered to the laboratory the same day of collection, and samples were in the process of cooling. Data quality was not adversely affected.

3. Semi-Volatile Organic Compounds (SVOCs; EPA Method 8270D)

3.1 Holding Times

Sediment samples should be extracted within 14 days (or one year if samples stored frozen at -20°C) of collection, and extracts analyzed within 40 days of extraction for SVOC analyses. All samples were extracted and analyzed within the required holding times.

3.2 Instrument Performance Check

Decafluorotriphenylphosphine (DFTPP) tuning analysis was performed at the required frequency (at the beginning of each analytical sequence and within a 12-hour window). Relative abundance of all required ions met the method requirements.

3.3 Initial Calibration

The method requires that (1) if average response factor (RF) is chosen as the quantitation option, the percent relative standard deviation (%RSD) value of the average RF should be ≤15%, (2) if least-square linear regression is chosen for quantitation, the correlation coefficient (r) should be ≥0.99, (3) if six-point non-linear (quadratic) curve is chosen for quantitation, the coefficient of determination (r^2) should be ≥0.99, and (4) the average RFs should be ≥0.05 (0.01 for poor responders) for all target and surrogate compounds. The initial calibrations met the method requirements, or the outliers had no effects on data usability (*e.g.*, %RSD >15% for a target compound not detected at or above the reporting limit in associated samples).

3.4 Calibration Verification

Continuing calibration verification analyses were performed at the required frequency (the beginning of each 12-hour analysis period prior to analysis of the method blank and samples), and the RFs were ≥0.05 (≥0.01 for poor responders) for all target and surrogate compounds.

The calibration verification %D values either met the criteria or the outliers had no effect on associated data (*e.g.,* biased-high %D value for a compound not detected in the samples), except for the following:

SDG	CCAL ID	Analyte	%D	Bias	Affected Sample	Data Qualifier
TJ50	Instrument: NT10 08/31/11, 09:24	*bis*(2-Chloroethyl)ether	-28.8%	Low	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	**UJ**

Note: UJ/J – Non-detects are qualified (UJ) and detects qualified (J).

3.5 Method Blank

Method blanks were prepared and analyzed as required. *bis*(2-Ethylhexyl)phthalate was detected in multiple method blanks at levels less than their reporting limits (RLs). *bis*(2-Ethylhexyl)phthalate results in samples associated with these method blanks were all greater than RLs, and were considered not affected.

3.6 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All percent recovery (%R) values were within the laboratory control limits.

3.7 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on sample TUK-02. The %R and relative percent difference (RPD) values were either within the laboratory control limits, or the outlier had no adverse effects on data quality (*e.g.,* biased high MS/MSD recovery or elevated RPD for a compound not detected in the parent sample), except for the following:

Parent Sample	Compound	MS %R (%)	MSD %R (%)	%R Control Limit (%)	RPD[(A)] (%)	Data Qualifier
TUK-02	4-Chloroaniline	0	6.6	17-149	NC	**R**
	Hexachlorocyclopentadiene	0	0	23-149	NC	**R**
	3-Nitroaniline	18.8	22.8	39-142	19	**UJ**
	4-Nitroaniline	24.4	35.2	47-124	36	**UJ**
	Di-*n*-Butylphthalate	0	0	60-119	NC	**No Action**
	Fluoranthene	114	279	52-129	38	**J**
	Pyrene	92.8	229	49-134	42	**J**
	Butylbenzylphthalate	0	0	44-144	NC	**J**
	3,3'-Dichlorobenzidine	0	0	37-140	NC	**R**
	Benzo(a)anthracene	78.8	200	56-124	54	**J**
	bis(2-Ethylhexyl)phthalate	0	0	63-128	NC	**No Action**
	Chrysene	73.1	210	53-124	48	**J**
	Di-n-octyl phthalate	58.5	36	59-114	23	**J**
	Benzo(a)pyrene	47.9	142	53-109	40	**J**
	Indeno(1,2,3-cd)pyrene	33.9	72.7	40-128	22	**J**
	Benzo(g,h,i)perylene	12.4	54.2	44-125	26	**J**

Note:
[(A)] – Control criterion for RPD is 35%.
NC- Not calculated.
No action – The parent sample concentration was >4X spiking level; data were not qualified.

3.8 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method, and in lieu of matrix spike and laboratory duplicate analyses in cases where project sample-specific matrix spike or duplicate analyses were not performed in a preparation batch. All reported %R and RPD values met the laboratory control limits, except for the following:

LCS ID	Compound	%R (%)	Control Limit (%)	Affected Sample	Data Qualifier
201108251114	3,3'-Dichlorobenzidine	27.9	37-140	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	**UJ**

3.9 Internal Standards

Proper internal standards (IS) were added to all samples. Internal standard retention times were within the ±0.5 minute window of the associated standard in all samples. All internal standard intensity met the method requirement of –50% to +100% of the associated standard.

3.10 Field Duplicates

Samples TUK-01 and TUK-01QC were field duplicates. The results, RPD values (or concentration difference) values, and data qualification was presented in **Appendix A**.

3.11 Reporting Limits

Sample-specific reporting limits (RLs) were significantly elevated from the standard RLs for all samples in these SDGs due to the excessive moisture content (>30%) and less-than-normal amount of sample aliquot used for extraction (to accommodate the complex sample matrix). Selected sample extracts were also diluted due to the dark coloring of the extracts to prevent analytical instrument failure as per the laboratory standard operating procedures. The elevated RLs were considered the best-possible detection limits given the sample conditions and were acceptable.

3.12 Overall Assessment of SVOC Data Usability

In cases where the analyte concentrations exceeded the instrument calibration ranges, the results for the analytes were to be reported from the diluted analyses.

A number of results were flagged (M) by the laboratory indicating that the ion ratios had a low match with the reference ion spectra. These results were qualified (NJ) to indicate that the detections were presumptive and the reported values should be used as estimated values. Qualified results were presented in **Table IV** in the beginning of this report.

Based on the information submitted by the laboratory, SVOC data are of known quality and acceptable for use, as qualified.

4. Polychlorinated Biphenyl (PCB) Aroclors (EPA Method 8082)

4.1 Holding Times

Sediment samples should be extracted within 14 days of collection, and extracts analyzed within 40 days of extraction for PCB Aroclor analyses. All samples were extracted and analyzed within the required holding times.

4.2 Initial Calibration

The method requires that (1) a minimum of 5-point calibration be performed using the mixture of Aroclor 1016 and 1260, (2) a single-point calibration be performed for the other five Aroclors to establish calibration factors (CFs) and for Aroclor pattern recognition, (3) at least 3 peaks (preferably 5 peaks) must be chosen for each Aroclor for characterization, (4) %RSD values of Aroclor 1016 and 1260 CFs must be ≤ 20%, and (5) if dual column analysis is chosen, both columns should meet the requirements. The laboratory chose internal calibration approach to establishing initial calibration curve; all %RSD values were ≤ 20%. The initial calibrations met the method requirements.

4.3 Calibration Verification

The method requires that (1) the initial calibration be verified prior to any analysis for each 12-hour analysis sequence, and (2) the percent drift (%D_f) be within ±15% to demonstrate the linearity of the initial calibration.

Calibration verification analyses were performed at the required frequency. The %D values either met the criteria or the outliers had no effects on associated data (*e.g.,* biased-high %D value for a compound not detected in the samples), except for the following:

SDG	CCAL ID	Analyte	%D	Bias	Affected Sample	Data Qualifier
TJ50	Instrument: ECD5 09/01/11, 13:59 Column: ZB5 09/02/11, 13:15 Column: ZB5 Column: ZB35	Aroclor 1248	-17.4% -42.7% -38.2%	Low	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	**UJ** **UJ** **J** **UJ** **UJ** **J** **UJ** **J** **UJ**
	Instrument: ECD 09/02/11, 16:12 Column: ZB5 Column: ZB35	Aroclor 1242	-25.0% -16.3%	Low	TUK-01 TUK-QC-01 TUK-02 TUK-03 TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	**UJ**

SDG	CCAL ID	Analyte	%D	Bias	Affected Sample	Data Qualifier
TJ50	Instrument: ECD7 09/02/11, 11:40 Column: ZB5 Column: ZB35	Aroclor 1260	-21.2% -16.9%	Low	TUK-04 TUK-05 TUK-06 TUK-07 TUK-08	**J** **J** **UJ** **J** **UJ**

4.4 Method Blanks

Method blanks were prepared and analyzed as required. No target analytes were detected at or above their respective MDLs in the method blank.

4.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

4.6 Matrix Spike and Matrix Spike Duplicate (MS/MSD)

MS/MSD analyses were performed on sample TUK-02. The Aroclor 1260 %R in the MS (406%) was greater than the upper control limit; the Aroclor 1260 result for TUK-02 was qualified (J) as estimated. All other %R and RPD values were within the laboratory control limits for spiked Aroclors.

4.7 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method, and in lieu of matrix spike and laboratory duplicate analyses in cases where project sample-specific matrix spike or duplicate analyses were not performed in a preparation batch. All reported %R and RPD values met the laboratory control limits.

4.8 Reporting Limits

The RLs met the quantitation limit goals specified in the SAP for PCB Aroclors. Sample-specific RLs were adjusted with sample moisture content and amount extracted as required.

Sample TUK-05 was analyzed at 1:5 and 1:50 dilutions. All Aroclor results were to be reported from the 1:5 dilution analysis for this sample, in favor of the lower detection limits.

4.9 Internal Standards

The laboratory chose internal calibration approach to quantitating target compounds. According to SW846 Method 8000, internal standard retention times were to be within the ±0.5 minute window of the associated standard in all samples. All internal standard intensity was to be within –50% to +100% of the associated standard.

4.10 Field Duplicates

Samples TUK-01 and TUK-01QC were field duplicates. The results, RPD values (or concentration difference) values, and data qualification was presented in **Appendix A**.

4.11 Target Compound Identification

Aroclors 1242, 1248, Aroclor 1254, and/or Aroclor 1260 were reported at levels above the RLs in selected samples. Sample chromatograms and peak responses indicated no anomalies in relation to Aroclor identification. Dual column RPD values for detections greater than their RLs were all less than 40%.

4.12 Overall Assessment of PCB Aroclors Data Usability

Based on the information submitted by the laboratory, PCB Aroclors data are of known quality and acceptable for use as qualified.

5. Metals (EPA Methods 6010/7471A/200.8)

5.1 Holding Times

Sediment samples should be analyzed within 180 days for all metals except mercury, which has a holding time of 28 days. All samples were analyzed within the required holding times.

5.2 Initial Calibration

Initial calibration information for ICP metals (arsenic, copper, lead, and zinc), mercury, and arsenic by ICP/MS (EPA Method 200.8) was not included in data packages reviewed herein.

5.3 Initial and Continuing Calibration Verification (ICV and CCV)

ICV and CCV analyses were performed at the required frequency. All %R values were within 90-110% for all target analytes.

5.4 Blanks

Calibration Blanks: Initial calibration blanks (ICBs) and continuing calibration blanks (CCB) were analyzed at the required frequency for metals analyses. Target analytes were not detected at or above the MDLs in the ICBs and CCBs, or were detected at levels that had no significant effects on associated results (*e.g.,* sample result was greater than 10 times the detection in the CCB). Negative detections in ICBs and CCBs were evaluated and determined to have no significant effects on associated sample results.

Method Blanks: Method blanks were analyzed at the required frequency. Zinc was detected at 4 mg/kg in the method blank associated with SDG TJ50. Zinc results in all samples in this

SDG were greater than 10 times of the method blank detection. Data were not qualified on this basis.

5.5 ICP Interference Check Sample (ICS)

ICS analyses were performed as required. The %D values met the method criteria (±20%) for all target analytes.

5.6 Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method, and in lieu of matrix spike and laboratory duplicate analyses in cases where project sample-specific matrix spike or duplicate analyses were not performed in a preparation batch. All reported %R and RPD values met the laboratory control limits.

5.7 Duplicate Sample Analysis

Laboratory duplicate analyses were performed on sample TUK-02 for ICP metals and mercury and on sample TUK-03 for arsenic (by ICP/MS). The RPD values were within 20% (or concentration difference <2xRL if either of the duplicate results <5x RL).

5.8 Matrix Spike (MS)

MS analyses were performed on sample TUK-02 for ICP metals and mercury and on sample TUK-03 for arsenic (by ICP/MS). The %R values were either within the laboratory control limits, or the outlier was a result of high analyte concentration (> 4X the spiking level) in the parent samples.

5.9 Field Duplicates

Samples TUK-01 and TUK-01QC were field duplicates. The results, RPD values (or concentration difference) values, and data qualification was presented in **Appendix A**.

5.10 Reporting Limits

The RLs met the quantitation limit goals specified in the SAP for copper, lead, mercury, and zinc. The RLs for arsenic were raised in some samples and exceeded the project-expected RL of 10mg/kg, due to the required sample dilution as a result of matrix interference in the samples. Samples were then analyzed with the ICP/MS method (EPA 200.8) for lower detection limits. The project reporting limit requirements were met.

5.11 Overall Assessment of Metals Data Usability

Based on the information submitted by the laboratory, metals data are acceptable for use, as qualified.

6. Total Petroleum Hydrocarbon - Diesel & Motor Oil (Method NWTPH-Dx)

6.1 Holding Times

Sediment samples should be extracted within 14 days of collection; and extracts should be analyzed within 40 days of extraction. All samples were extracted and analyzed within the required holding times.

6.2 Initial Calibration (ICAL)

The method requires that (1) a minimum of 5-point calibration be performed using individual petroleum product reference standards to ensure the proper identification and quantitation of petroleum hydrocarbons in samples, (2) the calibration curve includes a sufficiently low standard to provide the necessary reporting limits, and (3) the linear working range of the instrument be defined. The ICAL met the method requirements. The linearity of the ICAL curve was verified with %RSD values of RFs (%RSD ≤ 20%, according to EPA SW 846 Method 8000), and was acceptable for both diesel and motor oil range TPH.

6.3 Calibration Verification

The method requires that (1) a mid-range check standard be analyzed prior to and after each analytical batch, and (2) the $\%D_f$ value be within ±15% of the true value. Calibration verification was performed at required frequency. The $\%D_f$ t met the ±15% criterion.

6.4 Method Blanks

Method blanks were prepared and analyzed as required by the method. TPH-Diesel and Motor Oil were not detected at or above the MDLs in the method blanks.

6.5 Surrogate Spikes

Surrogate spikes were added to all samples as required by the method. All surrogate spike %R values were within the laboratory control limits.

6.6 Matrix Spike (MS) and MS Duplicate (MSD)

MS/MSD analyses were performed on sample TUK-02 (SDG: TJ50). The %R and RPD values were within the laboratory control limits.

6.7 Laboratory Control Samples (LCS) and LCS Duplicate (LCSD)

LCS and LCSD analyses were performed as required by the method. %R and RPD values met the laboratory control limits.

6.8 Target Compound Identification

The results were reported as diesel #2 (C12 - C24) and motor oil (C24 - C38), as specified by the method. Diesel and motor oil range petroleum hydrocarbons were reported at levels above their respective RLs in all samples. However, chromatographic patterns of the TPH in the samples resembled a motor oil range petroleum product, although the patterns did not match those of the standards.

6.9 Field Duplicates

Samples TUK-01 and TUK-01QC were field duplicates. The results, RPD values (or concentration difference) values, and data qualification was presented in **Appendix A**.

6.10 Reporting Limits

The RLs met the quantitation limit goals specified in the SAP for diesel and motor oil range TPHs. Sample-specific RLs were adjusted with sample moisture content and amount extracted as required.

6.11 Overall Assessment of TPH Data Usability

Based on the information submitted by the laboratory, all TPH data are of known quality and acceptable for use as qualified.

7. Total Organic Carbon (TOC), Total Solids (TS), and Grain Size

7.1 Holding Times

Sediment samples should be analyzed within 28 days of collection for TOC and 6 months for TS and grain size. All samples were analyzed within the required holding times.

7.2 Initial Calibration

Initial calibrations were performed as required for TOC analysis. The linear regression correlation coefficients (r) were >0.995 for all initial calibration curves.

7.3 Calibration Verification

Initial calibration verification (ICV) and continuing calibration verification (CCV) analyses were performed at the required frequency for all TOC analyses. All percent recovery values were within the control limits of 90 – 110%.

7.4 Blanks

Method Blanks: Method blanks were analyzed at the required frequency for TOC and TS. TOC and TS were not detected at or above the RLs in the method blanks.

7.5 Replicate Analysis

Triplicate analyses were performed for Grain Size, TOC, and TS on sample TUK-02 (SDG: TJ50). All %RSD values were within the acceptance criterion (20%).

7.6 Laboratory Control Samples (LCS)

The LCS analysis for TOC was performed as required by the method. The %R value was within the laboratory control limits.

7.7 Standard Reference Material (SRM)

SRM analyses were performed for TOC in association with the sediment samples. The SRM %R values met the laboratory control limits (80 – 120%).

7.8 Matrix Spike (MS)

TOC matrix spike analysis was performed on sample TUK-02 (SDG: TJ50). The %R value met the laboratory control criterion (75 – 125).

7.9 Recovery QA

The recovery QA value for the grain size analysis was calculated for each sample to compare the sample weight prior to and after the analysis. The recoveries for all samples were within the laboratory control limits of 95 – 105%, except TUK-03 (85.3%). This sample resembled a texture significant different from that for typical sediments, and the analytical method might not be applicable to this .sample. The grain size results for this sample were qualified (J) as estimated.

7.10 Field Duplicates

Samples TUK-01 and TUK-01QC were field duplicates. The results, RPD values (or concentration difference) values, and data qualification was presented in **Appendix A**.

7.11 Reporting Limits

The RLs met the quantitation limit goals specified in the SAP for TOC, TS, and grain size.

7.12 Overall Assessment of TOC, TS, and Grain Size Data Usability

Based on the information submitted by the laboratory; TOC, TS, and grain size data are acceptable for use, as qualified.

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APPENDIX A

The precision criterion (≤ 50%) was applied to evaluating the relative percent difference (RPD) values of field duplicate results greater than five times the MRL (5xRL). For results less than 5xRL, an advisory criterion of 2xRL was applied to evaluating the concentration differences. The RPD and concentration difference values for detected analytes and data qualification are presented as follows:

Detected Analyte	Unit	RL	Field Duplicate ID & Concentration		RPD (%)	Conc. Difference	Data Qualifier
			TUK-01	TUK-01QC			
Phenol	µg/kg	57	120	99	-	21	
1,4-Dichlorobenzene	µg/kg	57	ND	45 J	-	45	
Benzyl Alcohol	µg/kg	57	ND	130	-	130	**UJ/J**
2-Methylphenol	µg/kg	57	31	ND	-	31	
4-Methylphenol	µg/kg	110	110	120	-	10	
Naphthalene	µg/kg	57	110	100	-	10	
2-Methylnaphthalene	µg/kg	57	80	88	-	8	
Acenaphthene	µg/kg	57	28 J	34 J	-	6	
Dibenzofuran	µg/kg	57	37 J	45 J	-	8	
Fluorene	µg/kg	57	57	85	-	28	
N-Nitrosodiphenylamine	µg/kg	57	97	99	-	2	
Phenanthrene	µg/kg	57	810	890	9%	-	
Carbazole	µg/kg	57	140	160	-	20	
Anthracene	µg/kg	57	110	110	-	0	
Di-n-Butylphthalate	µg/kg	57	71	130	-	59	
Fluoranthene	µg/kg	57	1800	1900	5%	-	
Pyrene	µg/kg	57	1400	1600	13%	-	
Butylbenzylphthalate	µg/kg	57	320	610	62%	-	**J/J**
Benzo(a)anthracene	µg/kg	57	560	610	9%	-	
bis(2-Ethylhexyl)phthalate	µg/kg	360	8600	7400	15%	-	
Chrysene	µg/kg	57	1100	1100	0%	-	
Di-n-Octyl phthalate	µg/kg	57	970	57 U	-	913	**R/R**
Benzo(a)pyrene	µg/kg	57	680	760	11%	-	
Indeno(1,2,3-cd)pyrene	µg/kg	57	450	ND	-	450	**R/R**
Dibenz(a,h)anthracene	µg/kg	57	200	210	-	10	
Benzo(g,h,i)perylene	µg/kg	57	720	660	9%	-	
1-Methylnaphthalene	µg/kg	57	34 J	31 J	-	3	
Total Benzofluoranthenes	µg/kg	57	1400	1600	13%	-	
Aroclor 1254	µg/kg	19	31	35	-	4	
Aroclor 1260	µg/kg	19	23	32	-	9	
TPH-Diesel	mg/kg	81	980	920	6%	-	
TPH-Motor Oil	mg/kg	160	4200	3800	10%	-	

Detected Analyte	Unit	RL	Field Duplicate ID & Concentration		RPD (%)	Conc. Difference	Data Qualifier
Arsenic	mg/kg	7	ND	ND	-	0	
Copper	mg/kg	0.3	107	117	9%	-	
Lead	mg/kg	3	83	140	51%	-	**J/J**
Mercury	mg/kg	0.04	0.05	0.08	-	0.03	
Zinc	mg/kg	1	512	473	8%	-	
Total Solids	%	0.01	65.1	65.2	0%	-	
Total Organic Carbon	%	0.02	7.18	7.9	10%	-	
Gravel	%	0.1	4.2	3.3	24%	-	
Very Coarse Sand	%	0.1	9.4	10	6%	-	
Coarse Sand	%	0.1	16.6	16.1	3%	-	
Medium Sand	%	0.1	18.3	18.6	2%	-	
Fine Sand	%	0.1	14.2	13.8	3%	-	
Very Fine Sand	%	0.1	9.6	9.8	2%	-	
Coarse Silt	%	0.1	7.2	7.1	1%	-	
Medium Silt	%	0.1	7.9	9.1	14%	-	
Fine Silt	%	0.1	5.1	6.1	18%	-	
Very Fine Silt	%	0.1	3.9	3.5	11%	-	
8-9 Phi Clay	%	0.1	1.9	1.4	30%	-	
9-10 Phi Clay	%	0.1	1	0.7	35%	-	
> 10 Phi Clay	%	0.1	0.7	0.6	15%	-	
Total Fines	%	0.1	27.6	28.5	3%	-	

Notes:

J – The analyte was detected at a level greater than the method detection limit (MDL) and reporting limit (RL).
µg/kg – microgram per kilogram
mg/kg – milligram per kilogram
ND – The analyte was not detected at or above MDL.
RPD – Relative percent difference