Sample Collection/Creation Procedures

December 14, 2007 09:45:57

0800257 **Clear Creek Superfund**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0800597 Ogden Railyard (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SRC01	SRC01			
SRC02	SRC02			
SRC04	SRC04			
UNKNOWN	unknown			

0800650 International Smelter (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0800852 Mystery Bridge Road - US Highway 20

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

Sample Collection/Creation Procedures

0801194 Summitville Superfund site (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0801417 Red Mountain Pass Zinc (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0801478 California Gulch (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0801505 French Gulch Superfund site (US EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0801544 Region 8 Superfund: Vernal Ave TCE Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

0801600 Captain Jack Mine (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

0801695 Region 8 Superfund: Delta 400 West Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

Sample Collection/Creation Procedures

0801696 Region 8 Superfund: Historic Heber Creeper Rail Yard

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

Sample Collection/Creation Procedures

0801698 Region 8 Superfund: 3700-3800 West 2100 South Solvent Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UKNOWN			

0801800 Region 8 Superfund: Colorado and Evans PCE

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

0801801 Region 8 Superfund: Fillmore and Cascade PCE Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

0801812 Region 8 Superfund: Murray Laundry 4200 S State Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

Sample Collection/Creation Procedures

0801845 Region 8 Superfund: 5400 South 3600 West Plume

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

Sample Collection/Creation Procedures

0801966 Region 8 Superfund: Upper Uncompahgre River

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

081575 Slide Mine Boulder County Colorado

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

081577 Vasquez Blvd and I-70

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

081700 Gilt Edge Mine

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

0834QB00 Cheyenne River

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

11113300 New Hampshire Dept. of Environmental Services

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BEACHPROG	Beach Program Sampling Procedures	Water Sampler	Wade into the water to knee depth. Wait for the water to be clear of debris that may have been disrupted when walking into the water. Or sample away from the disturbed area. Unscrew the bottle cap making sure not to touch the inside of the cap or neck with fingers or any other object. Hold the cap in one hand, and with the other hand turn the bottle upside down so the opening is facing the water surface. Make sure you never touch the opening of the bottle neck. With a downward thrust moving away from your body, dip the bottle at least a foot below the surface. Fill the bottle with one sweeping motion, and discard a few milliliters to allow some head (air) space. Replace the cap carefully over the bottle and tighten.	
BMBPROG	Biomonitoring Benthic Sampling Procedures	Trap/Substrate		
BMFPROG	Biomonitoring Fish Sampling Procedures			
RIVERPROG	Ambient and VRAP Sampling procedures	Water Sampler	If a bridge station, bucket is lowered into main channel mid-river (width), rinsed 3x w/river water, and bucket is used to fill sample bottles. For other stations, sample bottle is held in main channel mid-river (width) and filled on the samplers' upstream side.	
SHELLPROG	Shellfish Program Sampling Procedures	Water Sampler	Water samples are collected in 250 mL-clear, polyehtylene, sterilized bottles supplied by the DHHS/DES laboratories or 18-oz. Whirl-Paks. Water sample is collected by positioning the mouth of the bottle/Whirl-Pak opposite the direction of tidal flow and thrusting the bottle/Whirl-Pak 8-12 inches under the surface of the water using a continuous "U" shaped motion until almost full, leaving a one-inch air space.	

1111REG1 USEPA, Region I

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB001	Charles River Water Sample Collection			Ray Thompson, 1998, Charles River Baseline Water Quality Study Sampling Procedures, U.S. EPA Office of Environmental Measurement and Evaluation, 1998 QAPP, page 9
MEAS001	Charles River Baseline Study Water Quality Field Measurement			Ray Thompson, 1998, Charles River Baseline Water Quality Study Field Measurement Procedures, U.S. EPA Office of Environmental Measurement and Evaluation, 1998 QAPP, page 22

1117MBR US EPA Region 7

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FISH-BMES	Floatable Stream/Lake Game & Rough Fish Survey	Electroshock	Boat-mounted electroshock, DC or AC current.	Kansas Biological Survey, 1993, Watershed Monitoring Manual, Ecotoxicology Program. U of Kansas, Lawrence, KS., 47pp.
FISH-BPES	Wadable Stream Game & Rough Fish Survey	Electroshock	Uses backpack electroshock unit	Kansas Biological Survey, 1993, Watershed Monitoring Manual, Ecotoxicology Program. U of Kansas, Lawrence, KS., 47pp.
FYKE NET	Fyke Net	Miscellaneous/Other	Fyke Trap !" Mesh	
SOP2333.2	Flow Measurement	Miscellaneous/Other		USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.1	Routine Sample Collection (water)			USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.11	Biological Sample Collection	Miscellaneous/Other		USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.12	Collection & Id of Surface Floating Pupal Exuviae Chrironomi		"Collection & Identification of Surface Floating Pupal Exuviae of Chrironomidae for Use in Studies of Surface Water Quality"	USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.13	Sampling Fish for Tissue Residue Determinations	Electroshock	This SOP establishes uniform procedures for the collection, identification and preservation of fish whose tissues are to be chemically analyzed.	USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.14	Tubing Blanks	Water Sampler		USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.16	Spiking Samples of Whole Fish in the Field for Total Bias &	Miscellaneous/Other	"Spiking Samples of Whole Fish in the Field in Preparation for Estimating the Total Measurement Bias and Total Measurement Precision of a New Analyte"	USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.18	Technical Considerations in Design of Fish Collection for		"Technical Considerations in the Design of Fish Collection Activities for Water Quality	USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS

1117MBR US EPA Region 7

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	WQ		Assessments"	AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.19	Technical Considerations in Selection of Ref and Control Sit		"Technical Considerations in the Selection of Reference and Control Sites for Water Quality Evaluation"	USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP2334.2	Priority Pollutant Sample Collection	Water Sampler		USEPA, REGION 7, ENVIRONMENTAL SERVICES DIVISION, 2000, OPERATIONS AND QUALITY ASSURANCE MANUAL, EPA, R7, .
SOP4230.8	Sediment Sample Collection			

1119USBR Bureau of Reclamation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COMPOSITE	Composite			

11DELMOD Delaware River Basin Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BFN	Delaware River Macroinvertebrates	Net/Non-Tow	Big-River Frame Net - 2x3ft 500u rectangular frame net with bottom frame 2x2ft (mfd by Wildco)	
DFRAME	Macroinvertebrate Sampler - D-Frame Kick net	Net/Non-Tow	D-Frame Kick Net, standard RBP size, 595u (mfd by Wildco)	
KICKRECT	Macroinvertebrate Sampler - Rectangular Frame Kicknet	Net/Non-Tow	Rectangular Frame Kicknet, standard size, 595u (mfd by Wildco)	
WATER	Water Samples - Ambient River or Tributary Samples	Water Sampler	Bottle attached to line lowered from bridge or collected by wading	

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CABR_OMP_1	OMP Offshore Sample Collection	Water Sampler	City of San Diego Ocean Monitoring Program-Whenever possible water samples were retrieved by a Seabird SBE-32 Carousel Sampler System equipped with 1.7 liter Niskin bottles. If that sampler is unavailable a davit and winch with 1 or 3 liter Van Dorn Bottles rigged in a series on a the winch cable, and triggered closed at the required depth with a weighted messenger were used. Bacterial samples are then drawn from these bottles into sterile 250-mL or 500-mL polypropylene bottles. Water samples for oil and grease and suspended solids analysis are collected at pre-determined stations and specified depths in either 1.7-L Niskin or 3-L Van Dorn bottles. Upon return to the surface, suspended solids sub-samples are collected into plastic one-liter bottles. An oil and grease sub-sample is transferred to 1-L glass bottles and kept cool until transferred to the Wastewater Chemistry Laboratory. Sample replicates of suspended solids and oil and grease are collected at approximately 10% of the water quality stations. All of the oil and grease and suspended solids samples are transferred to the Wastewater Chemistry Laboratory for further preparation and storage until analyzed.	CABR_OMPQA03 - City of San Diego, Ocean Monitoring Program, Technical Editor Timothy Stebbins, PhD, Jan. 2004, City of San Diego Quality Assurance Manual Ocean Monitoring Program 2003, City of San Diego, Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring Division, 106 pages
CABR_OMP_2	OMP Beach Sample Collection	Water Sampler	City of San Diego Ocean Monitoring Program-Beach samples were collected in a sterilized 250 mL polypropylene bottles. The bottles were attached to a special sampling pole and dipped in the water with the bottle opening facing the surf. Samples were then placed on ice and analyzed within 6 hours.	CABR_OMPPL01 - City of San Diego, Ocean Monitoring Program Technical Editor Dean Pasko, June 2002, Annual Receiving Waters Monitoring Report for the Point Loma Ocean Outfall 2001, City of San Diego, Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring Division, 150 pages
CABR_OMP_3	OMP Kelp Beds 2001 Sample Collection	Water Sampler	City of San Diego Ocean Monitoring Program-All water samples at the kelp stations (A1, A6, A7,C4, C5, C6, C7, C8) in 2001 were collected using Van Dorn bottles arrayed at the required depths and messenger-tripped in series. Aliquots for bacteriological analyses were drawn from these bottles into sterile sample bottles for processing at	CABR_OMPPL02 - City of San Diego, Ocean Monitoring Program Technical Editor Dean Pasko, June 2003, Annual Receiving Waters Monitoring Report for the Point Loma Ocean Outfall 2002, City of San Diego, Ocean Monitoring Program, Metropolitan Wastewater Department, Environmental Monitoring Division,

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			the City¿s Marine Microbiology Laboratory.	230 pages
CACO_GRAB	Cape Cod N.S. Water Quality Sample Collection	Water Sampler	Grab a sample of water at the appropriate depth and with the right container. Reference the specific chemical analysis for details.	
CACO_KP_CH	Cape Cod N.S. Kettle Pond Water Chemistry Sampling		Three samples are collected from specified depth into the correct container. Reference the specific chemical analysis for details.	
CACO_KP_PR	Cape Cod N.S. Kettle Pond Water Quality Profile		YSI Procedure for measuring water kettle pond depth profiles. Take readings at 0.1 meters, 0.5 meters, 1 meter and every meter thereafter until the probe hits the bottom.	YSI 6-SERIES - YSI Incorporated, 2004, YSI 6-Series Environmental Monitoring Systems, YSI Incorporated, Section 2
CACO_SE_NV	Cape Cod N.S. Secchi disk measurement without viewscope	Miscellaneous/Other	Secchi disk depth measurement without a viewscope. This procedure was used prior to 1999.	
CACO_SE_VS	Cape Cod N.S. Secchi disk measurement with viewscope	Miscellaneous/Other	Secchi disk measurement (with the viewscope).	
CUPN_GRAB	Cumberland Piedmont Network Grab Sample Procedure	Miscellaneous/Other	Simple non-integrated grab sample.	
GLKNRVWQ	Large Rivers Water Quality Monitoring Protocol			GLKN_0000001 - Magdalene, S., D.R. Engstom, and J. Elias, 2007, Great Lakes Inventory & Monitoring Network Large Rivers Water Quality Monitoring Protocol: Standard Operation Procedure #6: Field Measurements and Water Sample Collection, National Park Service, Great Lakes Network, 40p.
GRBA_GRAB	Standard Grab Sample Procedure	Water Sampler	Clean Nalgene bottle taken into the field. Rinsed three times with sample water, then held upside down completely underwater, filled and cap screwed on while bottle still underwater. Water sample kept as cool as possible until reaching the Resource Management office, then placed in the refrigerator and processed within 24 hours. Turbidity, phosphate, nitrate, sulfate, and silica are measured with a LaMotte SmartColorimeter. Alkalinity and hardness are measured with LaMotte Test Kits.	GRBA_0000003 - Schenk, G., N. Darby, and B. Hamilton, 2003, Aquatic Resources Protocols Manual, Great Basin National Park, Great Basin National Park, 76 pp
GRCA_ALKA	Alkalinity Sample Technique in	Water Sampler	A rinsed 25 ml pipette was used to place 50 ml of	Unknown, 19--, No Cite - Method Not Cited,

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	Grand Canyon NP		sample directly from the stream or spring into a small Nalgene Erlenmeyer flask. The Alkalinity result was then determined on site.	Unknown, Vol --
GRCA_FIT	Fitzgerald South Rim Aquifer Collection Procedures	Water Sampler	Springs were sampled as much as possible from the point of issuance. For "outcrop" type springs (i.e., contact springs), water samples were collected at the same location, whereas, samples collected from inner basin alluvium, were sampled where the water first surfaced. Major ion samples were filtered in-situ through a 0.45 um filter, using a hand-held peristaltic pump. Fitzgerald described the samples used for Uranium and Tritium analyses as grab samples. No additional information is given for the methods used to collect alkalinity and stable isotope samples, though it is likely grab samples were used for their analyses, also. Collection techniques for the well, stream, and rain stations were not described in the Fitzgerald paper.	Fitzgerald, J., 1996, Residence Time of Groundwater Issuing from the South Rim Aquifer in the Eastern Grand Canyon, Department of Geosciences, University of Nevada Las Vegas, 103 pages
GRCA_GS_SP	Grand Canyon USGS/NPS Spring Water Sample Collection	Water Sampler	Water samples were collected from each spring at or as near as possible to the point of issuance from the water-bearing rock. Ground water discharge generally occurs along bedding planes or through fractures. Most water samples were collected from the area of greatest discharge. Where the point of issuance could not be accessed, water samples were collected at the first accessible location downstream from this point. Efforts were made to minimize contact of spring water with the atmosphere. Because different analytical methods required different sample treatments, each spring sample was collected into 10 distinct bottles for analysis. Samples were handled in a proper and consistent manner to minimize contamination. All bottles were pre-cleaned before sample teams entered Grand Canyon. The metals, anions, nutrients, dissolved organic carbon (DOC), and oxygen-18 and hydrogen-2 (D or deuterium) bottles for each site were sequestered into a separate zippered plastic bag, which also contained two pairs of polypropylene gloves, a new 60-mL polystyrene syringe, and four Acrodisk 0.45-micron	Monroe, S.A., R.C. Antweiler, R.J. Hart, H.E. Taylor, M. Truini, J.R. Rihs, and T.J. Felger, 2005, Chemical Characteristics of Ground-Water Discharge along the South Rim of Grand Canyon in Grand Canyon National Park, Arizona, 2000-2001, U.S. Geological Survey, S.I.Report 2004-5146

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			nominal pore-size Luer-Lock filters (contained in their own zippered plastic bag). Mercury bottles were pre-dosed with 2.5 mL of potassium dichromate/nitric acid and were sealed in their own individual Whirl-pak bags and kept separate from the rest of the sampling equipment and bottles. The remaining four bottles were kept together, but separate from all the other sample bottles. Because the large-volume radiochemistry, carbon-isotope, and strontium-isotope samples also required filtration, a hand-vacuum pump, a filtration manifold, and 0.45-micron polysulfone filters were also packed, but kept separate from the other sampling equipment. Field teams wore polypropylene gloves for all sample processing and collected samples in a certain order to minimize the potential for contamination. The non-isotope samples were collected and filtered first. A new syringe and Acrodisk filter were used, after field rinsing with spring water, to collect samples at each site. The anions bottle was filled first, followed by the nutrients, metals, and DOC bottles. Because the mercury bottle already contained preservative, it was filled last, after all other non-isotope sample bottles were filled, to minimize the possibility of cross-contaminating the other samples with the potassium dichromate preservative. A second or third Acrodisk filter was used for some non-isotope samples because the original filter became clogged. The oxygen-18 and deuterium sample was collected unfiltered and care was taken to eliminate head-space within the bottle. Tritium samples were also unfiltered. The radiochemistry, carbon-, and strontium-isotope samples were filtered using a filtration setup that consisted of a hand vacuum pump, which was connected to a polyethylene side-arm Erlenmeyer flask by plastic tubing. A magnetic filter holder on which was mounted a new 47-mm, 0.45-micron polysulfone filter was placed on the side-arm flask. The first 20 mL of the filtered sample was used to rinse the flask. Thereafter the sample was collected in the flask and distributed to	

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			either the radiochemistry bottle, the carbon-isotope bottle, or the strontium-isotope bottle. All samples were kept as cool as possible in the absence of ice; these samples were refrigerated as soon as possible after leaving the field, and analyzed as quickly as possible thereafter. The metals and radiochemistry samples were acidified as soon as possible after leaving the field¿metals bottles with 1 mL of doubly distilled concentrated nitric acid and the radiochemistry bottles with 5 mL of concentrated hydrochloric acid. The remaining samples did not require any additional preservation procedures.	
GRCA_GS_WE	Grand Canyon USGS/NPS Well Water Sample Collection	Water Sampler	Samples were collected after purging a minimum of three casing volumes of water from each well as temperature, pH, and specific conductance were monitored. Samples were collected after confirming that successive measurements of these field properties showed negligible change. Because different analytical methods required different sample treatments, each well sample was collected into 10 distinct bottles for analysis. Samples were handled in a proper and consistent manner to minimize contamination. All bottles were pre-cleaned before sample teams entered Grand Canyon. The metals, anions, nutrients, dissolved organic carbon (DOC), and oxygen-18 and hydrogen-2 (D or deuterium) bottles for each site were sequestered into a separate zippered plastic bag, which also contained two pairs of polypropylene gloves, a new 60-mL polystyrene syringe, and four Acrodisk 0.45-micron nominal pore-size Luer-Lock filters (contained in their own zippered plastic bag). Mercury bottles were pre-dosed with 2.5 mL of potassium dichromate/nitric acid and were sealed in their own individual Whirl-pak bags and kept separate from the rest of the sampling equipment and bottles. The remaining four bottles were kept together, but separate from all the other sample bottles. Because the large-volume radiochemistry, carbon-isotope, and	Bills, D.J., M.E. Flynn, and S.A. Monroe, 2007, Hydrogeology of the Coconino Plateau and adjacent areas, Coconino and Yavapai Counties, Arizona, U.S. Geological Survey, S.I.Report 2005¿5222

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			strontium-isotope samples also required filtration, a hand-vacuum pump, a filtration manifold, and 0.45-micron polysulfone filters were also packed, but kept separate from the other sampling equipment. Field teams wore polypropylene gloves for all sample processing and collected samples in a certain order to minimize the potential for contamination. The non-isotope samples were collected and filtered first. The anions bottle was filled first, followed by the nutrients, metals, and DOC bottles. Because the mercury bottle already contained preservative, it was filled last, after all other non-isotope sample bottles were filled, to minimize the possibility of cross-contaminating the other samples with the potassium dichromate preservative. The oxygen-18 and deuterium sample was collected unfiltered and care was taken to eliminate head-space within the bottle. Tritium samples were also unfiltered. The radiochemistry, carbon-, and strontium-isotope samples were filtered using a filtration setup that consisted of a hand vacuum pump, which was connected to a polyethylene side-arm Erlenmeyer flask by plastic tubing. A magnetic filter holder on which was mounted a new 47-mm, 0.45-micron polysulfone filter was placed on the side-arm flask. The first 20 mL of the filtered sample was used to rinse the flask. Thereafter the sample was collected in the flask and distributed to either the radiochemistry bottle, the carbon-isotope bottle, or the strontium-isotope bottle. All samples were kept as cool as possible in the absence of ice; these samples were refrigerated as soon as possible after leaving the field, and analyzed as quickly as possible thereafter. The metals and radiochemistry samples were acidified as soon as possible after leaving the field¿metals bottles with 1 mL of doubly distilled concentrated nitric acid and the radiochemistry bottles with 5 mL of concentrated hydrochloric acid. The remaining samples did not require any additional preservation procedures.	

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRCA_IN_WS	INSTAAR Stable Isotopes Sample Collection	Water Sampler	Samples were collected in 30 ml clear glass bottles, with poly seal caps and minimum head space by staff from the Institute of Arctic and Alpine Research (INSTAAR).	
GRCA_WELL	Well Sampling with Bucket and Rope in Grand Canyon NP	Water Sampler	Water samples were collected from the well with a bucket on a rope. Analytical measurements were then determined in the field.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
GRCA_ZUK	Zukosky Water Sample Collection Procedure	Water Sampler	Spring, well, and Clearwell Overflow samples were collected by Kim Zukosky with the same procedures. Clean polyethylene gloves were worn during sample collection and preservation. All equipment was rinsed and purged with one liter of de-ionized water and then rinsed again with one liter of sample water between sampling field sites in the field.	Zukosky, K., 1995, An Assessment of the Potential to Use Water Chemistry Parameters to Define Ground Water Flow Pathways at Grand Canyon National Park, Arizona., University of Nevada, Las Vegas, 105 pages
GRPO_TRANS	Grand Portage N.M. Level 1 Monitoring-Transparency Tube	Water Sampler	Unknown	GRPO_LEV1 - Division of Resource Management, Grand Portage National Monument, 2002, Grand Portage National Monument Level I Water Quality Survey, 2000, National Park Service, 24 pages
GRPO_WATGR	Grand Portage N.M. Level 1 Monitoring-Water Grab Samples	Water Sampler	Water grab samples of the small streams were taken from the midpoint of the water column within the area of strongest flow. Submerged sample containers were uncapped by the investigator who stood downstream in the water or on the bank and leaned into an area where stream bottom sediments were undisturbed. Whole water samples for ions, metals, biological components and toxic components were collected in sterile containers prepared with any necessary preservatives, and placed on ice for transport.	GRPO_LEV1 - Division of Resource Management, Grand Portage National Monument, 2002, Grand Portage National Monument Level I Water Quality Survey, 2000, National Park Service, 24 pages
GRYN_DH81	Depth integrated sample with DH81 isokinetic sampler	Water Sampler	When collecting water samples, an integrated water sample taken from the centroid of flow is preferred. For isokinetic sampling with a bottle sampler, the mean velocity of the vertical that is sampled must exceed 1.5 ft/s. If this minimum velocity is not met, collect grab samples (GRYN_WQ13) using an open mouth sampler at the centroid of flow approximately 12 inches below the water surface, if possible.	GRYN_0000022 - O'Ney, S.E., April 1, 2006, Standard operating procedure #6: Procedures for collection of regulatory parameters, Version 1.1. In: Regulatory water quality monitoring protocol, Version 2.0, Appendix E. Bozeman (MT), National Park Service, Greater Yellowstone Network, 29 pp

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRYN_WQ06	Metals in Sediment	Trap/Substrate	Sediment is scooped from several depositional zones and filtered in a Buchner funnel through a 60 um pore mesh nylon filter.	GRYN_0000022 - O'Ney, S.E., April 1, 2006, Standard operating procedure #6: Procedures for collection of regulatory parameters, Version 1.1. In: Regulatory water quality monitoring protocol, Version 2.0, Appendix E. Bozeman (MT), National Park Service, Greater Yellowstone Network, 29 pp
GRYN_WQ12	Lake Samples for Silica			
MONO_00001	Montgomery County DEP Benthic Macroinvertebrate Sampling	Net/Non-Tow	A one meter square kicknet was used to collect two separate samples from riffles representing fast and slow stream velocities. The two individual samples were composited and the benthic macroinvertebrates were then counted from that composited sample. Results were divided by 2 in order to report on a square meter basis.	
MORR_00001	NJDEP Field Sampling Procedure	Water Sampler	Field technicians followed the New Jersey Department of Environmental Protection (NJDEP) Field Sampling Procedures Manual (NJDEP, 1992) to prevent the contamination of samples and wells during all aspects of the sampling process. Field equipment (i.e., tubing and bailers used for purging and sampling piezometers) were manually decontaminated according to the NJDEP procedures. Samples were placed in decontaminated sample containers and coolers for delivery to the laboratory. Technicians used latex gloves that were changed after each individual sampling event to prevent cross contamination of samples. The seven piezometers reached a depth of approximately eight feet below the ground surface. The ground water sampling process began by purging each piezometer prior to sampling with a decontaminated PVC bailer, or a gas powered pump and decontaminated tubing. The two manually installed wells (G-1, G-7) are shallower than the wells installed with an Earth Probe (G-2, G-3, G-4, G-5, G-6) and do not hold enough volume	WRD_00000002 - New Jersey Department of Environmental Protection, 1992, Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, p. 1-360

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			of water to permit use of the gas powered pump. Thus, G-1 and G-7 were purged with bailers. Purging with the pump and/or bailer proceeded until sediments at the bottom of the well were accumulating in the discharge of the pump or bailer. The wells were then allowed to recharge for approximately one hour before sampling began. Well sampling was initiated using PVC bailers on decontaminated fishing or nylon line. The bailers were lowered into the wells as many times as necessary to obtain approximately 200 milliliters. Then the sample water was transferred to containers and coolers for delivery to the analytical laboratory. Ground water levels at G-4 were measured prior to purging. The readings were measured from the top of the well, approximately two feet above the ground surface, to the water surface.	
MULT_SSCR	Collection Techniques from Colorado River Survey of Springs	Water Sampler	The sample collection procedures were implemented at four parks as described in the report, 'Water quality and quantity of selected springs and seeps along the Colorado River Corridor, Utah and Arizona: Arches National Park, Canyonlands National Park, Glen Canyon National Recreation Area, and Grand Canyon National Park, 1997-98': U.S. Geological Survey Open-File Report 2003-496, 33 pages. Water samples were collected using ultra-pure techniques in use by the USGS lab in Denver, CO. A disposable sterilized syringe with attached filters was used to collect water samples from cracks or other locations where water was issuing, as close to the source as possible. Sampling kits consisting of filtration equipment, pre-cleaned bottles, and labels were hermetically sealed in a plastic bag, and were prepared in the laboratory prior to a sampling trip. Each sampling kit was designated for use only once at a specific site. New kits were used at each subsequent site. The filtration equipment consisted	USGS03-496 - Taylor, H.E., J.R. Spence, R.C. Antweiler, K. Berghoff, T.I. Plowman, D.B. Peart, and D.A. Roth, 2004, Water quality and quantity of selected springs and seeps along the Colorado River Corridor, Utah and Arizona: Arches National Park, Canyonlands National Park, Glen Canyon National Recreation Area, and Grand Canyon National Park, 1997-98: U.S. Geological Survey Open-File Report 2003-496, U.S. Geological Survey, OFR03-496

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			of one 60-ml polystyrene syringe that had been nitric acid soaked in the laboratory prior to inclusion in the field kit. Eight disposable polysulfone membrane syringe filters with a nominal pore size of 0.45 micrometers were also included in the kit, along with several polyvinylchloride gloves to reduce handling contamination. Sample bottles included in the kit, were: one 60-ml baked glass bottle, one 30-ml deionized water soaked opaque brown polyethylene bottle, one deionized water soaked clear polyethylene bottle, and one 125-ml nitric acid-soaked polyethylene bottle with 1 ml concentrated ultra-pure nitric acid included in the bottle. In addition, one 125-ml nitric acid-soaked glass bottle with 5 ml of mixture of concentrated ultra-pure nitric acid and 1% w/v ultra-pure potassium dichromate included in the bottle was included in the kit. The samples were collected as follows: 1. The kit was unsealed and the polyvinylchloride (PVC) gloves were immediately placed on the hands of the person collecting the sample. 2. The 60-mL syringe was removed from its container and without a filter in place was filled with sample directly from the spring or seep. If it was not possible to fill the syringe from the back with the plunger removed, the syringe was filled by using the suction of the plunger to draw small volumes from shallow depressions near the source of the spring. This is a particularly important technique for sampling springs with small volumes of running water. 3. The initial filling of the syringe was discarded as a sample rinse prior to the filtration step. 4. A disposable filter was placed on the syringe (using the Luer-lock connector), and a small quantity of sample was forced through the filter to rinse it (approximately 10-mL). A portion of this rinse solution was transferred to the appropriate sample bottle for rinsing prior to filling with filtered sample. 5. After rinsing, the remainder of the sample in the syringe was filtered into the appropriate sample bottles. 6. The sample bottles were filled in the following order: 30-mL nutrient	

11NPSWRD National Park Service

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			bottle, 60-mL anion bottle, 125-mL trace constituent bottle and finally, the 125-mL mercury bottle. Each bottle was thoroughly sealed before a subsequent bottle was opened. Nutrient samples were immediately chilled. 7. As the disposable filters became clogged, reducing the filtration rate, the old filter was discarded and replaced with a new filter. Each new filter was rinsed as described in step 4 above. 8. Dissolved organic carbon samples were chilled after processing.	
NPS_DI_SS	Depth Integrated Procedure for Suspended Sediment	Water Sampler	Sampling for suspended sediment used a depth-integrated suspended sediment sampler. Details of the collection procedure or sampler model are unknown.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
NPS_DNET	D-Frame Net	Net/Non-Tow	Method for sampling aquatic invertebrates in a stream environment.	
NPS_GRAB	Unspecified Standard Grab Sample Procedure	Water Sampler	Unspecified grab sample procedure.	
NPS_INSITU	In Situ Measurements with Probes or Other Devices	Miscellaneous/Other	Measurements/observations made on site with probes or other devices.	
NPS_LEGACY	LEGACY			
OZAR_GRAB1	Grab Samples - 500 ml and 1000 ml Nalgene Bottles	Water Sampler	Collect samples far enough from the bank to be in running water and ALWAYS collect water upstream of your body. 1.Triple rinse the 500 ml and 1000 ml sample bottles and lids in the stream before collecting a sample. 2.Collect samples below the water surface to avoid including surface film in the samples. Inserting the sample bottles into the water column upside down and then filling works well for avoiding surface film. Leave a slight amount of air in the 1000 ml-sample bottle to allow for mixing. 3.Completely fill the 500 ml sample bottle used for nitrogen and phosphorous analysis to allow a small amount of water to be used for the field turbidity sample. 4.Transport the samples on ice to laboratory for analysis within 6 hours	OZAR_0000001 - Ozark National Scenic Riverways, August 25, 2005, Standard Operating Procedures for Water Quality Monitoring-Ozark National Scenic Riverways, Ozark National Scenic Riverways, 50 pages

11NPSWRD National Park Service

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
OZAR_GRAB2	Grab Samples-Whirl Pak Sterile	Water Sampler	1.Grasp the pre-labeled Whirl-Pak sample bag near the top left side and remove the sealed, perforated top by tearing it off. Note: Do not touch the open rim or interior of the bag to avoid any possibility of contamination 2.Grasp the small white tabs at the center of the bag with thumbs and forefingers. 3.Place the CLOSED bag 6-10 inches under the surface of the water upstream of the collector¿s position (ideally the middle of the water column) and pull the bag open using the small white tabs. Bag will fill easily in flowing water but may need a gentle sweeping movement in areas of low flow. 4.Remove bag from stream and close the bag by pulling the long wire tabs on the side. Push out about 1 inch of water. Fold the top towards you once and then twirl bag over top to seal. 5.Twist and fold wire tabs toward bag. 6.Bag is properly sealed if air trapped inside the bag is firm. 7.Whirl-Pak samples are placed in a cooler with ice and transported back to the lab. They must be received in the lab within 6 hours of obtaining the sample.	OZAR_0000001 - Ozark National Scenic Riverways, August 25, 2005, Standard Operating Procedures for Water Quality Monitoring-Ozark National Scenic Riverways, Ozark National Scenic Riverways, 50 pages
OZAR_GRAB3	Grab Samples - Idexx Bottles - E. coli Samples	Water Sampler	1.Use 125 ml bottle pre-labeled for this sample site. 2.Remove sterile seal. 3.Immerse bottle about 6-10 inches under the surface of the water upstream of the collector¿s position (ideally the middle of the water column) point up stream and remove cap to fill. 4.Lift bottle out of water and decant off to sample line (100 ml). 5.Replace and tighten cap to seal bottle. 6.Transport on ice back to the lab within 6 hours for analyses.	OZAR_0000001 - Ozark National Scenic Riverways, August 25, 2005, Standard Operating Procedures for Water Quality Monitoring-Ozark National Scenic Riverways, Ozark National Scenic Riverways, 50 pages
SHIL_MACIN	Shiloh NMP-UM Macroinvertebrate Sample	Net/Non-Tow	Shiloh National Military Park biological sampling was conducted by University of Memphis teams under the supervision of Professor Jack Grubaugh. Grubaugh noted that collection procedures followed EPA Rapid Bioassessment Protocol manuals. Specific RBP manuals were not cited.	

11NPSWRD National Park Service

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			Invertebrates were collected from one kicknet sample and three bank stab samples using a D-net. The samples were combined into one sample that was picked stream-side for a total of one hour. All collected inverterbrates were preserved in 70% EtOH.	
SHIL_PCA_1	PCA-Grab Procedure at Tennessee River Mile 205.5	Water Sampler	This procedure applies only to water samples collected and composited at the PCA station at Tennessee River Mile 205.5. If spillway gates are closed, composite samples consist of 2 grab samples collected at equally spaced points across the channel (1/3 and 2/3 distance between banks), if spillway gates are open, composite grab samples consist of 3 points across the channel (1/4, 1/2, 3/4 distance between banks). Details about the collection containers are not known.	State of Tennessee, 2003, Packaging Corporation of America, Counce Mill NPDES Permit No. TN0002232, Tennessee Department of Environment and Conservation, 29 pages
SHIL_PCA_2	PCA-Grab Procedure at Tennessee River Mile 205.2 and 203.8	Water Sampler	This procedure applies only to water samples collected and composited at the PCA station at Tennessee River Mile 205.2 and 203.8. Composite samples consist of 4 samples collected at equally spaced points across the channel. Details about the collection containers are not known.	State of Tennessee, 2003, Packaging Corporation of America, Counce Mill NPDES Permit No. TN0002232, Tennessee Department of Environment and Conservation, 29 pages
SHIL_PCA_3	PCA-Grab Procedure at TN River Mile 202.2, 198.0 and 190.0	Water Sampler	This procedure applies only to water samples collected and composited at the PCA station at Tennessee River Mile 202.2, 198.0, and 190.0. Composite samples consist of 3 samples collected at 1/4, 1/2, and 3/4 the distance between banks. Details about the collection containers are not known.	State of Tennessee, 2003, Packaging Corporation of America, Counce Mill NPDES Permit No. TN0002232, Tennessee Department of Environment and Conservation, 29 pages
SHIL_PCA_4	PCA-Tennessee River Tributaries-Single Point Sampling	Water Sampler	Samples consist of a single water grab sample collected from the center of the channel. This procedure applies only to water samples collected at the PCA stations at the mouths of Chambers, Snake, and Lick Creeks. Details about the collection containers are not known.	State of Tennessee, 2003, Packaging Corporation of America, Counce Mill NPDES Permit No. TN0002232, Tennessee Department of Environment and Conservation, 29 pages
SHIL_TSS	Shiloh NMP-UM TSS Sample	Water Sampler	Shiloh National Military Park water samples were collected by University of Memphis teams under the supervision of Professor Jack Grubaugh. For Total Suspended Solids, approximately 3 liters of sample were collected in 4 liter jugs. Other details of the	

11NPSWRD National Park Service

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			collection procedure are unknown.	
WABA_CT	SHMAK Water Clarity Tube Sample Collection	Water Sampler	The New Zealand Stream Health Monitoring and Assessment Kit (SHMAK) stream monitoring manual recommends using a 2 liter container to collect the sample from undisturbed water in the main flow of the stream.	Biggs, B.J.F., C. Kilroy, C.M. Mulcock, and M.R. Scarsbrook, 2002, New Zealand Stream Health Monitoring and Assessment Kit. Stream Monitoring Manual. Version 2. NIWA Technical Report 111, National Institute of Water and Atmospheric Research, 190 pages
WABA_FISH	Quantitative Fish Sample	Net/Non-Tow	Fish from the Washita River in Washita Battlefield NHS were collected using a fine-meshed seine net. Discrete sampling events from several unique stations yielded individual results which the researchers summed by species and attributed to a 0.8 mile length of the Washita River inside the park. Results were not reported per unique station. Other details of the collection procedure are unknown.	Bergey, E.A., 2003, Aquatic invertebrates and fishes of the Washita River in the Washita Battlefield National Historic Site Final Report, Department of Zoology, University of Oklahoma, 29 pages
WABA_ILT	Invertebrate Light Trapping	Trap/Substrate	Light trapping involved setting out one or two battery-operated, self-collecting UV light traps on the river bank. Traps were set for approximately two hours. Light trapped adults of mayflies, stoneflies, and caddisflies were sent to experts for identification.	Bergey, E.A., 2003, Aquatic invertebrates and fishes of the Washita River in the Washita Battlefield National Historic Site Final Report, Department of Zoology, University of Oklahoma, 29 pages
WABA_QUALI	Qualitative Aquatic Macroinvertebrate Sample	Net/Non-Tow	Qualitative samples were taken in the Washita River at the Washita Battlefield NHS using hand nets (mesh size = 0.25 or 1.5 mm) to sweep though an area or to catch dislodged materials. Sometimes substrates were individually searched and organisms directly removed. Species collected with this method may have been caught from the water column or the streambed. Qualitative samples provided presence/absence data, habitat associations, and were valuable for compiling a more complete taxonomic list for the park.	Bergey, E.A., 2003, Aquatic invertebrates and fishes of the Washita River in the Washita Battlefield National Historic Site Final Report, Department of Zoology, University of Oklahoma, 29 pages
WABA_SUM02	WABA_SUM02	Miscellaneous/Other	Generally, two quantitative and two qualitative samples were collected for each habitat type among the five sampling sites during the Summer 2002 station visits in the Washita River at Washita Battlefield NHS. Researchers, however, did not identify which species were collected with the quantitative method and which species were	Bergey, E.A., 2003, Aquatic invertebrates and fishes of the Washita River in the Washita Battlefield National Historic Site Final Report, Department of Zoology, University of Oklahoma, 29 pages

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Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			collected with the qualitative method for the summer monitoring. Quantitative samples were taken with a Hess sampler (mesh size = 0.5 mm; sampled area = 690 cm2), which provides an estimate of species abundance and habitat associations. Qualitative samples were taken using hand nets (mesh size = 0.25 or 1.5 mm) to sweep though an area or to catch dislodged materials; or substrates were individually searched and organisms directly removed. Species collected with this method may have been caught from the water column or the streambed. Qualitative samples provided presence/absence data, habitat associations, and were valuable for compiling a more complete taxonomic list for the park.	
WRST_MAC_1	Hecht Specific Conductance Sampling for McCarthy, AK	Water Sampler	Grab samples were collected in 4-oz polyethylene bottles.	WRST_MAC_HEC - Hecht, B. and E. LaChapelle, 1999, Hydrologic and Hydrogeologic Factors Affecting Aquifer Protection, McCarthy Area, Alaska. Geotechnical Report for Alaska Department for Environmental Conservation. Grant C9000652-94-0. Report prepared for The McCarthy Area Council, Glennallen, Alaska. , Balance Hydrologics, Inc., 90 pages

11TOX09 U. S. EPA Region 9 (Monitoring & Assessment Office)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BIO-003	fish sampling	Electroshock		
LEGACY	Legacy STORET Sample Collection Procedure			

1CTDPHBM Connecticut Department of Public Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ENTERO_1	Enterococcus marine water samples	Water Sampler		

1VTDECWQ Vermont Dept of Environmental Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COLL-01	Water Bottle Sampling	Water Sampler	Grab sample from surface at about 0.2 meter depth (Method 2.2.1).	VTDEC-02 - Vermont Department of Environmental Conservation, 1989, Field Methods Manual, Vermont Department of Environmental Conservation, entire manual
COLL-02	Water Kemmerer Sampling	Water Sampler	Kemmerer sample at depth (Method 2.2.3).	VTDEC-02 - Vermont Department of Environmental Conservation, 1989, Field Methods Manual, Vermont Department of Environmental Conservation, entire manual
COLL-03	Water Hose Sampling	Water Sampler	Composite sample using hose at depth (Method 2.2.2).	VTDEC-02 - Vermont Department of Environmental Conservation, 1989, Field Methods Manual, Vermont Department of Environmental Conservation, entire manual
COLL-04	Water Vertical Composite - Champlain	Water Sampler	A single, vertically integrated sample was collected using a compositing procedure that was designed so that the sample concentration results would correspond approximately to the vertical "mixed-reactor" assumption to be used in the lake model. The sample depths for the vertical composite samples were chosen to represent the midpoints of lake strata having approximately equal volumes. The composite samples were intended to represent the concentration that would exist if the water column were completely mixed vertically.	VTDEC-04 - Vermont Dept. of Environmental Conservation, 1997, A Phosphorus Budget, Model, and Load Reduction Strategy for Lake Champlain, Vermont Dept. of Environmental Conservation, p 8
COLL-05	Water Vertical Composite - Streams	Water Sampler	In smaller, well-mixed streams where lateral concentration gradients wre unlikely to exist (based on visual judgement), only one vertically integrated sample was collected on each sampling date at the centroid of flow (point-fo greatest depth-velocity product). At sites where the stream width was greater, up to five vertical samples were obtained at equal width increments across the stream and proportionately composited into a single sample.	VTDEC-04 - Vermont Dept. of Environmental Conservation, 1997, A Phosphorus Budget, Model, and Load Reduction Strategy for Lake Champlain, Vermont Dept. of Environmental Conservation, p 8
COLL-06	Water Vertical Composite - Unstratified	Water Sampler	A composite sample collected that represents three discrete depths in the water column: 2 meters below the lake surface, mid-depth, and approximately 2 meters above the lake bottom.	VTDEC-06 - Vermont Department of Environmental Conservation; New York State Department of Environmental Conservation, 2003, Lake Champlain LTM Workplan/QAPP, Vermont Department of Environmental Conservation, 28
COLL-07	Water Vertical Composite -	Water Sampler	A composite sample collected that represents three	VTDEC-06 - Vermont Department of

1VTDECWQ Vermont Dept of Environmental Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	Epilimnion		discrete depths in the water column in the epilimnion: 2 meters below the lake surface, mid-depth in the epilimnion, and approximately 2 meters above the upper knee of the thermocline.	Environmental Conservation; New York State Department of Environmental Conservation, 2003, Lake Champlain LTM Workplan/QAPP, Vermont Department of Environmental Conservation, 28
COLL-08	Water Vertical Composite - Hypolimnion	Water Sampler	A composite sample collected that represents two discrete depths in the water column in the hypolimnion: mid-depth in the hypolimnion, and approximately 2 meters above the lake bottom.	VTDEC-06 - Vermont Department of Environmental Conservation; New York State Department of Environmental Conservation, 2003, Lake Champlain LTM Workplan/QAPP, Vermont Department of Environmental Conservation, 28
COLL-09	Water Plastic Kemmerer Sampling	Water Sampler	Plastic kemmerer sample at depth (Method 2.2.3).	VTDEC-02 - Vermont Department of Environmental Conservation, 1989, Field Methods Manual, Vermont Department of Environmental Conservation, entire manual

211WVOWR Division of Water and Waste Management

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB01	Grab Sampling		Use Bucket to get water from stream. Pour contents of bucket into containers. Otherwise dip containers into waters	
SAMPLING02	Sampling at various depths from Surface to Bottom	Water Sampler		

21AKBCH Alaska Department of Environmental Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SM 9213D	Recreational Waters beaches	Water Sampler	Sterile sampling bottle	

21ALBCH Alabama Department of Environmental Management

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ALBCH	Water Grab Sample	Water Sampler	For all beaches, samples are taken at knee depth and a plastic water bottle is used to collect samples	USEPA, 1999, EPA Methods and Guidance for the Analysis of Water, Version 2.0., USEPA, EPA 821/C-99-008

21AQ Commonwealth Northern Mariana Islands

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CNMI-001	CNMI sample collection method			

21ARIZ Arizona Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
STANDARD	Arizona Standard Collection Procedures		See the Arizona Department of Environmental Quality Quality Assurance Program Plan.	

21ARIZGW Arizona Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
STANDARD	Arizona Standard Collection Procedures		See the Arizona Department of Environmental Quality Quality Assurance Program Plan.	

21AS American Samoa Environmental Protection Agency

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SAMOA-01	Samoa Enterrococus Sample Collection			

21CABCH Calif State Water Resources Control Board

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP_001	Container_collect_sample	Miscellaneous/Other	Use a container to collect the water sample from the ocean.	

21CAOCSD Orange County Sanitation District California

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
OCFP-001	Water Quality and CTD profiles	Water Sampler	CTD (conductivity-temperature-depth) measured with array of sensors attached to SeaBird unit.	
OCFP-002	Benthic Infauna	Benthic Grab	Benthic sediment and infauna samples collected with paird Van-Veen grab sampler. Sediments are washed into plastic tray using hose spray. Washings drain into 1.0 mm screen.	
OCFP-003	Trawls	Net/Horizontal Tow	Marinovitch otter trawl used to take duplicate trawls over 0.45 km transect at speed between 2.0 and 2.5 knots. Specimens idenitfied and measured, target species used for tissue analysis.	
OCFP-004	Sediment grainsize	Benthic Grab		
OCFP-005	Bioaccumulation	Net/Horizontal Tow		
OCFP-006	Fish pathology	Net/Horizontal Tow		
OCFP-007	Sediment chemistry	Benthic Grab		

21COL001 Colorado Dept. of Public Health & Environment

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BDC_FLD	Default collection procedure for Big Dry Creek Monitoring			
HISTORIC	Historic procedure used for legacy data	Miscellaneous/Other		
LAKE_1	WQCD Vertically Integrating Lake Sample Procedure	Water Sampler	When sampling lakes, the WQCD uses an integrating sampler to obtain all water for routine analyses. The device, which is patterned after a design published by Lewis and Saunders (1979), captures a 2-m "core" from the water column. It is open while it is being lowered, allowing lake water to flush the sampler before reaching the target depth. A messenger is used to close the sampler and retain the vertically-integrated sample while the device is retrieved. The contents are mixed thoroughly before sample bottles are filled. An integrating sampler is an efficient way to obtain representative samples within discrete layers (e.g., epilimnion).	VERT. SAMPLE - Lewis, WM, Jr., and JF Saunders, III., 1979, Vertically integrated sampling device for lakes., Archiv fur Hydrobiologie, 85:244-249
METER_1	Hydrolab Multi-probe Datasonde	Miscellaneous/Other		
STREAM_1	WQCD Stream Sampling			
UNKNOWN	UNKNOWN			

21DCBAWQ District of Columbia Dept of Health, Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Grab Sampling	Water Sampler		
SP-002	Plankton collection, open water	Net/Vertical Tow	Conical tow net, micrograms	
SP-003	Micro Invertebrate sampling	Net/Non-Tow	This procedure for the deployment and handling of 1-meter kick net is used for small stream riffle collection of micro invertibrate.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
SP-004	Netting fish for Tissue samples	Net/Non-Tow		
SP-005	Sediment Sampling	Benthic Grab		

21DEBCH Delaware Department of NREC

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Grab Sample	Water Sampler	water grab sample from surf	

21FLA FL Dept. of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WQ01	Routine Water Quality Samples	Water Sampler	All samples taken at mid depth unless other wise noted.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
WQ02	Water nutrient samples	Water Sampler	All samples taken at mid depth unless otherwise noted.	
WQ03	Water algal samples	Water Sampler	Includes chlorophyll/phaeophytin and phytoplankton samples. These are collected at mid secchi depth.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
WQ04	Water Quality Metal Sampling	Water Sampler		
WQ05	Bacteria Sampling	Water Sampler	Whirl pack bags filled directly. Placed in wet ice immediately after collection. Delivered to lab within 6 hours of collection.	

21FLACEP Alachua County Environmental Protection Department (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab			

21FLANER Apalachicola National Estuarine Research Reserve (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DIEL	DIEL sampler			
GRAB	ANERR GRAB			

21FLAVON Avon Park Air Force Range - 18 ASOG DET 1 OL A/CEV

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FIELD	Field Data Collection Procedure	Miscellaneous/Other	Flow velocity measured with Pygmy flow meter; physical/chemical measurements with Horiba YSI multi-probe	de Vivero, Richard, Melisa Diolosa, Thomas F. Roach, Jr., 2004, Draft Watershed Monitoring Plan, URS Group, Inc., Orlando, FL, pp. 9-16
LAB	Lab Sample Collection Procedure	Water Sampler		de Vivero, Richard, Melisa Diolosa, Thomas F. Roach, Jr., 2004, Draft Watershed Monitoring Plan, URS Group, Inc., Orlando, FL, pp. 9-16

21FLBFA FL Dept. of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	DEP-SOP-001/01 FS2100		Surface Water Sampling SOP	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

21FLBRA Biological Research Associates (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sampling			

21FLBREV Brevard County Stormwater Utility Department (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DREDGE	Petit Ponar dredge composite		Following the DEP-SOP-001/01, FS 7450, 5 dredges are taken and composited in a U.S. 30 mesh box seive. Fine sediments are filtered out and ambient water is used to fill sample container with the sample. Samples are preserved with a 10% buffered formalin solution and rose bengal dye.	
GRAB	grab sampling			

21FLBROW Broward Co Dept of Natural Resource Protection (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FP-001	Grab sample		Kemmerer sample bottle is used to obtain a water sample which is then transferred to individual sample bottles.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
FP-002	BIOPIGMENT FILTRATION		MAGNESIUM CARBONATE IS ADDED TO 100 ML OF WHOLE WATER SAMPLE WHICH IS FILTERED THROUGH A 0.45 MICRON MEMBRANE FILTER AND PLACED INTO A 20 ML GLASS VIAL COVERED IN FOIL. TWEEZERS ARE USED TO PREVENT CONTACT WITH THE FILTER.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
FP-003	Equipment blank	Water Sampler	Laboratory water is poured into the Kemmerer sample then distributed to the various sample bottles.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

21FLBSG City of Tampa Bay Study Group (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	To be updated			

21FLCBA Choctawhatchee Basin Alliance (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ANALYSIS	TN, TP & CHLA		WATER WHICH IS FROZEN OR FILTERED SENT TO LAKEWATCH LAB FOR ANALYSIS.	
REALTIME	HYDROLAB AND SECCHI DISK READINGS		HYDROLAB READINGS OBTAINED FOR SURFACE & BOTTOM SAMPLES. SURFACE SAMPLES ARE TAKEN 1.5 FT FROM THE SURFACE OF THE WATER. BOTTOM SAMPLES ARE TAKEN 1-1.5 FT FROM THE SURFACE OF THE SEDIMENT. SECCHI DISK - MEASURED BY FT. WHERE VANISHES IN THE WATER.	

21FLCEN Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COMPLAINT	Special investigations in response to complaints			
GRAB-1	Standard Operation Procedure			
LAKES	Reference lakes sampling protocols	Water Sampler	Samples are taken 0.3 meters subsurface.	
SEDIMENT	Sediment Collection	Benthic Grab		
STREAMS	Stream Condition Index and Fixed Trend Monitoring Protocols	Water Sampler	Samples are taken at mid-depth with a van Dorn water sampler, and transported on ice in HDPE bottles. Water samples for coliform analysis are obtained at sub-surface levels.	
TMDL	Total Maximum Daily Load			

21FLCHAR FDEP Charlotte Harbor Aquatic/Buffer Preserves

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Water Quality Samples			

21FLCMP FL Dept. of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	DEP-SOP-001/01 FS2100 Surface Water Sampling		Water Quality Sampling - Grab Sampling Procedure/DEP-SOP-001/01 FS2100 Surface Water Sampling	

21FLCOLL Collier County Pollution Control (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FIELD	Collier County Field Measurements			
GRAB	Collier County Water Sampling Collection Procedure			

21FLCOT City of Tallahassee Stormwater Management Division (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

21FLCPSJ City of Port St. Joe Wastewater Treatment Plant (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCP-001	Water Grab Sampling			

21FLCPSL City of Port St. Lucie (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Sample Collection			

21FLDADE Dade Environmental Resource Management (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BB-001	FB		Field Blank	DERM QAP, 1991, SOP, DERM, 1
BB-002	G		Grab Sample	DERM QAP, 1991, SOP, DERM, 1
BB-003	FP		Field Procedure	DERM QAP, 1991, SOP, DERM, 1
BB-004	Blk		Blank	DERM QAP, 1991, SOP, DERM, 1
BB-005	GB		Grab Bailer	DERM QAP, 1991, SOP, DERM, 1
BB-006	GP		Grab Pump	DERM QAP, 1991, SOP, DERM, 1
SOP	DERM SOP		SOP	DERM QAP, 1991, SOP, DERM, 1

21FLDOH Division of Environmental Health, Bureau of Water (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			

21FLEECO Lee County (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LCEL	Lee County Environmental Labs SOP		Lee County Environmental Laboratories SOP	Lee County Environmental Laboratory, 2002, Standard Operating Procedures, Lee County, unknown

Sample Collection/Creation Procedures

21FLERDI Environmental Research and Design, Inc (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCP-001	Water Grab			

21FLFMRI Florida Fish & Wildlife C C / Marine Research Institute

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
110.2	Color Analysis Using Platinum/Cobalt			
180.1	Turbidity by Nephelometry			
180.10	Turbidity			
349	NH4		EPA 349 EPA/600/R-97/072	
350.1	Ammonia Nitrogen by Colorimetry			
353.2	Nitrate-Nitrate Nitrogen by Colorimetry			
353.4	NOX		EPA/600/R-97/072	
365.1	Phosphorus by Colorimetry			
365.5	FRP		EPA/600/R-97/072	
366	SIO4		EPA/600/R-97/072	
370.1	Dissolved Silica by Colorimetry			
445	In-Vitro Determination of Chlorophyll			
NITPHOS	DON, TDN, TN, TDP, DOP, PN, PP Analysis		Total Nitrogen, Total Phosphorus, Total Dissolved Nitrogen, Total Dissolved Phosphorus: D'Elia, C.F., P.A. Steudler and N. Corwin. 1977. Determination of total nitrogen in aqueous samples using persulfate. Limnol. Oceanogr. 22:760-764; and Valderrama, J.C. 1981. The simultaneous analysis of total nitrogen and total phosphorus in natural waters. Marine Chemistry 10:109-122, followed by phosphate and NOX analyses on the TRAACS analyzer.	
PROC 1	Hydrolab Water Measurements	Water Sampler		
PROC 7.4	Sediment Toxcity Sampling			
SCP-ALL	Field Sample Collection Procedures			ORG-01 - U.S. Environmental Protection Agency, 2001, National Coastal Assessment Field Operations Manual, USEPA, Unknown

21FLFTM Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AUTOSAMPLR	Teledyne ISCO Auto-sampler			
COMPOSITE	Composite Sample Collection	Water Sampler		
FP	Field probe - datasonde			
GRAB	water sample collection			
GRAB-1	To be updated			
HYDRO	Hydrolab Sample Procedure			

21FLGAEP Georgia Environmental Protection Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	GRAB			

21FLGBO1 National Health and Environmental Effect Research-NHEERL(FL)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GB-SCP	Gulf Breeze Sample Collection Procedure			

21FLGCWW Gilcrist County Well Watch (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
M001	Bacteria - coliform/strep	Water Sampler		
N001	Nutrients - sulfuric acid	Water Sampler	Nutrient samples acidified to pH 2 with sulfuric acid	

21FLGFWF Florida Fish and Wildlife Conservation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Routine water chemistry grab sampling	Water Sampler	Collect water sample from side of boat or off bridge in triple-rinsed sampbottle from just below surface of water (approximately 10 cm). Specific depth samples collected with a plastic Van Dorn water sampler then placed in a triple-rinsed sample bottle.	
SP-002	Mercury lakes water chemsitry sampling	Water Sampler		

21FLGPC Gulf Power Company (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Surface Water Grab Sample			

21FLGTM Guana Tolomato Matanzas (GTM) Esturarine (NERR - Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DIEL	Diel sampler			
GTMGRAB	Monthly grab sampling			

21FLGW FL Dept. of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
900456	SOP		Sample procedures are given in QA Plan.	Laura Morse, 2000, Florida Ambient Monitoring Network Quality Assurance Plan, FDEP, vol 1
SPRING-1	Spring Sampling SOP #1			Scott and others, 2002, Florida Geological Survey Open File Report No. 85, Florida Geological Survey, vol 1

21FLHBOI Harbor Branch Oceanographic Institution (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample collection			

21FLHILL Hillsborough County Environmental (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WS-1	Grab			

21FLIMCA IMC Agrico (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			

Sample Collection/Creation Procedures

21FLJXWQ City of Jacksonville

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Unspecified grab			
SCP-001	Discrete grab with bottle			
SCP-002	Discrete grab with VanDorn			
SCP-003	Integrator tube 2.5 meters			

21FLKEYW City of Key West (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

Sample Collection/Creation Procedures

21FLKTNC The Nature Conservancy of the Florida Keys

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCP-001	Water Grab			

21FLKWAT Florida LAKEWATCH

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

21FLLCHD Lee County Hyacinth Control District (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			

21FLLCPC Lake County Water Resource Management (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FP001	SURFACE WATER GRAB SAMPLE		DEP-SOP-001/01, FS2100	FDEP, 2001, DEP STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, ALL PAGES
FP002	GROUND WATER GRAB SAMPLE		DEP-SOP-001/01 FS2200	FDEP, 2001, DEP STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, ALL PAGES
FP003	WASTE WATER GRAB SAMPLE		DEP-SOP-001/01, FS2400	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
FP004	DRINKING WATER GRAB SAMPLE		DEP-SOP-001/01, FS2300	FDEP, 2001, DEP STANDARD OPERATING PROCEDURES FOR FIELD ACTIVITIES, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, ALL PAGES
FP005	SJRWMD SAMPLE PROCEDURES FOR VOLUNTEERS			ROBERT FREASE, Ph.D, 1998, WATER QUALITY MONITORING MANUAL FOR VOLUNTEERS IN THE ST. JOHNS RIVER WATER MANAGMENT DISTRICT, ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, ALL PAGES

Sample Collection/Creation Procedures

21FLLEON Leon County Public Works (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COMPOSITE	Composite w/o Parents			
GRAB	Grab Sample			

21FLLOX Loxahatchee River District (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-01	Water Sampling, grab			
GRAB-02	Water Sampling from Bridge, grab	Water Sampler		

21FLLOXB Loxahatchee River District (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CORE	Benthic Corer	Benthic Corer		
H-D	Hester-Dendy	Trap/Substrate		

21FLMANA Manatee County Environmental Management Dept (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FPRMP	RAMP Sample Collection Procedure	Water Sampler	EMD RAMP program sample collection procedure.	
FPSWP	SWAMP Sample Collection Procedure	Water Sampler	EMD SWAMP program sample collection procedure.	

21FLMCGL McGlynn Laboratories, Inc

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-1	Lake Ecology		Water surface sample and bottom. Surface sample is a grab. Bottom sample is a niskin sampler. Water must be over 1.5 meters deep to have a surface in the bottom otherwise a mid-water is taken.	STAFF, 1992, FDEP Field Sampling SOP, FDEP, v1

21FLNAPL City of Naples (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FDEP SOPS	Surface sampling	Water Sampler	Surface grab samples are collected using the original sample containters.	
GRAB	Surface sample			

21FLNWFD Northwest Florida Water District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COLLECT-S	Ponar dredge sediment sample collection	Benthic Dredge	Stainless steel petite ponar dredge	
COLLECT1	Surface Water Sample			DEP, 2001, Surface water sample collection, DEP, 1

21FLORAN Orange County Environmental Protection (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	Grab Sample			
SP-001	Grab		Grab Sample	USEPA, 1999, EPA Methods and Guidance for the Analysis of Water, Version 2.0., USEPA, EPA 821/C-99-008

21FLORL Orlando Streets Drainage Stormwater Utility Bureau(Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab			

21FLPBCH Palm Beach County Environmental Resources Managemnt(Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample		Grab sample is collected with a Wildco (Wildlife Supply Company) Kemmerer, performed according to the DEP Standard Operating Procedures Manual (previously CompQAP).	

21FLPCSW PROJECT COAST - Southwest Florida Water Management District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Univ. of Fla - T.K. Frazer - Springs Coast Project Methods			PASCO - Frazer, T.K., S.K. Notestein, J.A. Hale, M.V. Hoyer, D.E. Canfield, 2003, Water Quality Characteristics of the Nearshore Gulf Coast Waters Adjacent to Pasco County, Florida, Southwest Florida Water Management District, Methods Pg. 5

21FLPDEM Pinellas County Dept. of Environmental Management (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP	SOP			
SP-001	water grab sampling	Water Sampler	see below, use of any configurations of water samplers - alpha horizontal bottle, buckets, or container immersion as cited in section 6.0	Pinellas County Department of Environmental Management, 1998, 1998 Comprehensive Quality Assurance Plan, Pinellas County Department of Environmental Management, 1
SP-002	sediment sampling	Benthic Grab		
SP-003	seagrass sampling	Miscellaneous/Other		
SP-004	fish sampling	Net/Non-Tow		
SP-005	wildlife sampling	Trap/Substrate		

21FLPNS Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	NWD Water Quality Parameters			Bureau of Laboratories Environmental Assessment Section, 2002, DEP Standard Operating Procedures for Field Activities, FDEP, VOL 1 and FS2100
SEDGRAB	DEP SOP FS4000 Sediment Collection Procedure		FDEP SOP FS4000	FDEP, UNK, USEPA - Modified, Central Lab, Unknown, unk

21FLPOLK Polk County Water Resources (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-01	Water Grab Sampling			DEP Methods, 1992, DEP Standard Methods, DEP, ALL
SP-02	Sample Collection Procedure			DEP Methods, 1992, DEP Standard Methods, DEP, ALL
SP-03	Secchi			DEP Methods, 1992, DEP Standard Methods, DEP, ALL

21FLRCID Reedy Creek Improvement District - Env Services (FLORIDA)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SW1-WS	Stainless Steel Bucket	Water Sampler		

21FLSARA Sarasota County Environmental Services (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	Standard method			
SOP-3	Grab Sample Collection		Collection of a sample from a specific depth using either a Kemmerer-type sampling bottle or a pumped sample into either an intermediate container or through a non-contaminating pump.	

21FLSCCF Sanibel Captiva Conservation Foundation (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	grab sample			

21FLSEAS Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-001	Water Grab			

Sample Collection/Creation Procedures

21FLSEM Seminole County (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	Grab Sample			

21FLSFWM South Florida Water Management District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
1	RAIN WATER SAMPLES			SFWMD, 2004, SFWMD SOP's For Water Quality Monitoring, South Florida Water Management District, 1
ACF	Auto-Sampler Composite Flow Proportional		Auto-Sampler Composite Flow Proportional	
ACT	Auto-Sampler Composite Time Proportional		Auto-Sampler Composite Time Proportional	
ADF	Auto-Sampler Discrete Flow Proportional		Auto-Sampler Discrete Flow Proportional	
ADT	Auto-Sampler Discrete Time Proportional		Auto-Sampler Discrete Time Proportional	
BLK	Bulk		Bulk	
CDI	Composite Depth Integrated		Composite Depth Integrated	
CIC	Composite Integrated Core		Composite Integrated Core	
CSI	Composite Site Integration - Sediment/Soil Only		Composite Site Integration - Sediment/Soil Only	
CWI	Composite Width Integrated		Composite Width Integrated	
CXC	Composite Cross Section Core		Composite Cross Section Core	
CXI	Composite Cross Section Integration		Composite Cross Section Integration	
DRY	Dry		Dry	
ELC	Electro Shock		Electro Shock	
FP	Field Parameters (No sample, In Situ Meas.)		Field Parameters (No sample, In Situ Meas.)	
G	Grab		Grab	
GB	Grab Bailer		Grab Bailer	
GP	Grab Pump		Grab Pump	
HAL	Hook and Line		Hook and Line	
MAN	Manual		Manual	
NET	Seine or Dip Net		Seine or Dip Net	
TRP	Trap		Trap	
UNK	Unknown		Unknown	

21FLSFWM South Florida Water Management District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WET	Wet		Wet	
WS1	WATER SAMPLING			USEPA, 1999, EPA Methods and Guidance for the Analysis of Water, Version 2.0., USEPA, EPA 821/C-99-008

21FLSJWM St. Johns Water Management District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SJR-SOP	Generic SJRWMD Sample Collection Procedure		Generalized SJRWMD sampling methodology as set forth in guidelines of District standard operating procedures.	
SJR-SOP	Generic SJRWMD Sample Collection Procedure		Generalized SJRWMD sampling methodology as set forth in guidelines of District standard operating procedures.	
SJR-SOP	Generic SJRWMD Sample Collection Procedure		Generalized SJRWMD sampling methodology as set forth in guidelines of District standard operating procedures.	
SJR-SOP	Generic SJRWMD Sample Collection Procedure		Generalized SJRWMD sampling methodology as set forth in guidelines of District standard operating procedures.	

21FLSUW Suwannee River Water Management District (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

21FLSWFD Southwest Florida Water Management District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	SWFWMD SOP's for the Collection of Water Quality Samples			

21FLTBW Tampa Bay Water

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WQ-1	Grab Sample		Surface grab sample (see Chapter 5 of HBMP QAQC Plan)	PBS&J, 2002, Tampa Bypass Canal/Alafia River Water Supply Projects Hydrobiological Monitoring Program - Quality Assurance and Quality Control Plan, PBS&J, Version 1.1

Sample Collection/Creation Procedures

21FLTPA Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	Standard Grab Sampler			

21FLVEMD Volusa County Environmental Health Lab (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SOP-1	Water Sampler Standard Operation Procedure			
SP-001	Water Grab Sampling		Horizontal Van Dorn used to collect mid-depth sample for physical, filtered nutrient, and unfiltered nutrient fractions, and mid-secchi sample for chlorophyll fraction.	Compiled by Melissa Bouchelle, 1993, Indian River Lagoon Water Quality Monitoring Network QA / QC Manual, SJRWMD Indian River Lagoon National Estuary Program, Section 7.0, Page 1

21FLWPB Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Direct Field Measurements using Intrumentation	Miscellaneous/Other		
SP-002	SEDIMENT SAMPLING	Benthic Dredge		
SP-003	Water quality grab sampling			
SP-004	sampling in field	Miscellaneous/Other		
SP-005	Fish Tissue Sampling	Miscellaneous/Other		
SP-011	AMBIENT AIR SAMPLING			

Sample Collection/Creation Procedures

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21FLWPBH City of West Palm Beach (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCP-001	Sample Collection Procedure			

21FLWQA Florida Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample		Involves the attainment of a water sample by filling a container in the stream, lake, river or estuary itself.	

21GACRD Georgia Coastal Resources Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GASP01	Beach Sample Procedure 1	Water Sampler	Nalgene bottle	

21GAEPD Georgia Environmental Protection Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
EPD SC002	EPD/WPB Lake Water sampling procedure	Water Sampler	Standard EPD/WPB Method for collecting water samples from Reservoirs.	
EPD-PRO-1	EPD Sample Collection Procedure for DNR GA			
UGA-PRO-1	UGA Sample Collection Procedure for DNR GA			
USGS-PRO-1	USGS Sample Collection Procedure for DNR GA		USGS Water Sample Collection Procedure. Horizontal and depth integrated stream sample taken from either a bridge or culvert or by wading stream. Ten depth integrated samples taken at equal intervals across stream width with isokenetic sampler device.	Wilde, Franceska D.: Radtke, Dean B.; Gibs, Jacob; Iwatsubo, Rick T., 1998, Handbook for Water Resources Investigations, National Field Manual for the Collection of Water-Quality Data, Book 9, USGS, Chapter A-4

21GUAM Guam Environmental Protection Agency

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GUAM-01	Guam EPA Legacy Sampling Procedures			
GUBEACH	Sample collection procedure ror BEACHES program			

21HI Hawaii Dept. of Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB01	Ambient Bacti Sampling	Water Sampler	Direct collection of a water sample using the sample bottle/bag. Or use of a container to collect a water sample.	
GRAB02	Ambient monitoring using an instrument	Water Sampler	Measurement of water quality parameters using an electronic instrument such as the Hydrolab/datasonde, YSI DO meter or a pH meter.	
GRAB03	Ambient physical/chemical parameter monitoring	Water Sampler	Collection of water samples for laboratory analysis. Does not include in situ measurements using an instrument.	
HISTORIC-1	Historic Hawaii Sample Collection methods for legacy STORET			

21HISPEC Hawaii Department of Health Special Monitoring (HI)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HISPEC	Legacy Special Monitoring Procedures			

21IOWA Iowa Dept. of Natural Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BEA001	IDNR Parks Beach Sampling - Grab Sample	Water Sampler		
BEA002	IDNR Parks Beach Sampling - Composite Sample	Water Sampler	Sample is a composite of water collected at 9 sites (3 transects along the beach, collected samples in 3 different depths of water). DO, water temp., turbidity and pH are also collected in the field. Rainfall provided by parks staff.	
DRC	Dry Run Creek Standard Sampling Procedure	Water Sampler	Samples collected either directly in the stream or in bucket on the upstream side of a bridge. Water temp, DO, pH, and turbidity are measured with meters. Water transparency is measured with an IOWATER transparency tub. Samples for ortho P are field filtered.	
FM001	Standard IDNR-GSB Sampling procedure for Floyd-Mitchell	Water Sampler	For well nests, the sample is collected after either airlifting or bailing the well until 3 well volumes have been removed. For private wells, the sample is collected by turning on a hydrant and letting water flow for a couple of minutes. Tiles and streams collected directly	
HEHO1	Herbert Hoover Creek Monitoring Procedures	Water Sampler	Samples are collected either directly from the stream or with a sampling bucket on the upstream side of a bridge. Water temperature, dissolved oxygen, and turbidity are measured with meters	
SNY001	Standard IDNR-GSB Sampling Procedure for Sny Magill	Water Sampler	Samples collected in runs in the stream in the main flow while facing upstream. Water temperature, dissolved oxygen, turbidy, and conductivity measured at the same time.	
UHL001	Standard UHL Sampling Procedure - Grab Samples	Water Sampler	Grab samples are collected by dipping a HPDE bottle from bridge. When there is ice cover, a hole in the ice is chopped and the HPDE bottle is dipped for sample collection at the ice surface. Dissolved Oxygen collected in stainless steel container.	
UHL002	UHL-Composite Sampling Procedure for TMDL	Water Sampler	Samples collected in an automated sampler, which typically collects a sample every 20 minutes and run for 24 hours total. The samples are brought back to the UHL, where the samples are composited based on flow (pre-peak vs. post peak	

21IOWA **Iowa Dept. of Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			periods).	
UHLLAKE	UHL Lake sampling procedure	Water Sampler	A 1 1/4" water column sampler is used to collect the water sample. The exact sampling procedure is dependent upon the presence of a thermocline. If a thermocline is detected, the sampler is lowered to withing 0.5 meters of the thermocline. The sampler is the capped and retrived. The water is the mixed in an HDPE container and pour into sampling bottles. If a thermocline is not present, the sampler is lowered to within 0.5 meters of the bottom or 9 meters (which ever comes first). The sampler is the capped and retrived. The water is the mixed in an HDPE container and pour into sampling bottles.	
UHLLAKESED	UHL Lake Sediment Collection Procedure	Benthic Grab	A ponar dredge is lowered to the lake bottom and a sample is collected. The dredge is raised to the surface and its contents are deposited in a plastic tray. A plastic spoon is then used to mix the sample and then place the sample in to the sample containers.	
USGSGWM	USGS Groundwater Sampling Procedure	Water Sampler	The standard procedure is to pump three well bore volumes (determined from the static water level to pump intake) before collecting the water samples. In practice, that is not always possible for wells that service small comunities with limited surface storage capacity, or that have no means to otherwise divert excess water, or other considerations that may preclude the 3-bore volume standard. In those cases, we begin collecting samples as soon as most of the field parameters (Spec Cond, pH, Temp, DO) have stabilized, DO usually being the last.	
YLR001	Standard IDNR-GSB Sampling Procedure for the Yellow River	Water Sampler	Samples collected either directly in the stream or in bucket on the upstream side of a bridge. Water temp, DO, specific conductance, and turbidity are measured with meters. Samples for ortho P are field filtered.	

21KAN001 Kansas Dept. of Health & Environment

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
STD_SC	standard water quality sampling method		stainless steel bucket	

21KY Kentucky Division of Water

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AWM-SOP	KENTUCKY AMBIENT/WATERSHED WATER QUALITY MONITORING SOP		The Kentucky Ambient/Watershed Water Quality Monitoring SOP provides the KDOW's standard water quality collection procedures for rivers and lakes.	KENTUCKY DIVISION OF WATER, WATER QUALITY BRANCH, 2002, KENTUCKY AMBIENT/WATERSHED WATER QUALITY MONITORING STANDARD OPERATING PRODEDURE MANUAL, KENTUCKY DIVISION OF WATER, 1

21LABCH Louisiana Department of Health and Hospitals

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LA_STDCM	LA Beach Standard Collection	Water Sampler	See SOP in QAPP	LA QAPP - Robert Wagner, PhD, 2003, Louisiana's Beach Program Quality Assusrance Project Plan, Louisiana Department of Health and Hospitals, Office of Public Health, 1-35

21MABCH Massachusetts Department of Public Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WATERSAMPL	Water sample collection	Water Sampler	8 oz. sterile plastic screw cap container	American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition

21MEBCH State Planning Office (EPA Region 1)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCCPG-01	Water Grab Sampling	Water Sampler	See below, using any of the water sampler listed in the gear configuration section	USDOC, NOAA, 19--, Compendium of Methods for Estuarine and Marine Environmental Studies, NOAA, NOAA_METHODS

21MICH Michigan Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CORE	Sediment Core Sampling			
GRAB	Grab Sample	Water Sampler		

21MSBCH Mississippi Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BCH-GCRL	Beach Water Sample from GCRL	Water Sampler	As Per QAPP	

21MSWQ MS. Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	MDEQ GRAB SAMPLES		Grab sample. Refer to Project documentation for further details.	

21NC01WQ NCDENR-DWQ

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample		Grab water sample taken just below the surface.	NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All
ISCO	ISCO sample	Water Sampler	Grab sample taken by automated ISCO sampler.	NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All
LEGACY	LEGACY			
PHOTIC	Photic zone composite sample	Water Sampler	Composite sample of the entire photic zone (defined as twice the secchi depth); taken using a LabLine PolyPro sampler.	NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All

21NC02WQ NCDENR-DWQ (2nd)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample		Grab water sample taken just below the surface.	WQS SOP - NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All
ISCO	ISCO Sample	Water Sampler	Grab sample taken by automated ISCO sampler.	WQS SOP - NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All
PHOTIC	Photic Zone Composite Sample	Water Sampler	Composite sample of the entire photic zone(defined as twice the secchi depth); taken using a LabLine PolyPro sampler.	WQS SOP - NC DWQ Water Quality Section, 1996, Standard Operating Procedures Manual Physical and Chemical Monitoring, NC DWQ Water Quality Section, All

21NCBCH North Carolina Shellfish Sanitation Section

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
NCSP01	NC General WQ Sampling	Water Sampler	Water sampling bottles are on telescoping poles to take samples beyond samplers' disturbance.	ASTMD6503-99 - IDEXX, 2004, Enterolert testing method for enterococcus bacteria, coastal recreational water quality, IDEXX, 12 111

21NDHDWQ North Dakota Department of Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BEN_02	Benthic Dip Net	Net/Non-Tow		
BEN_03	Benthic Surber	Net/Non-Tow		
FISH_01	Fish ElectroShock	Electroshock	Stream Side Electroshock Equipment	
SP-007	Fish Gill Nets	Net/Non-Tow		
STANDARD	Standard Sample Collection Procedure for North Dakota			SOPSAMPLES - Michael J. Ell, 1993, Standard Operating Procedures for Field Samplers, N.D. State Department of Health and Consolidated Laboratories, 1

21NEB001 Nebraska Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
205(J) F1	Fish Collection Procedures for Stream Collections	Electroshock	Collection Methods for old 205(J) stream studies ESBM-Boat-Mounted Shock, ESBP-Backpack Shock, ESOTH-Electroshock, ESSS-Stream-Side Shock	USEPA, 1999, Rapid Bioassessment Protocols for Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, 2nd ed, USEPA, EPA 841/B-99-002
205(J) F2	Net/Non-tow Collection Gear	Net/Non-Tow	Collection Methods For Fish NNPG-Set (Passive) Gill Net NNSN-Seine Net NNBK-Block Net NNFY-Fyke Net NNDP-Dip Net NNTRP-Trap Net	
205(J) F3	Miscellaneous Other Fish Sampling Methods	Miscellaneous/Other	MSCC-Concussion Sampling	
205(J) M1	Macroinvertebrate Collection procedures for Streams	Benthic Corer	BCOTH- Benthic Corer	USEPA, 1990, Macroinvertebrate field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters., USEPA, EPA 600/4-90-030
205(J) M2	Ponar Grab	Benthic Grab	BGPON-Ponar Grab	
205(J) M3	Net/Non-tow Macroinvertebrate Nets	Net/Non-Tow	NNDP-Dip net NNOTH-Other nets and Sieves	
205(J) M4	Trap Substrate Macroinvertebrate Collections	Trap/Substrate	TRHD-Hester-Dendy TRNS-Natural Substrate TRSU-Surber Sampler	
205(J) M5	Miscellaneous Other Macroinvertebrate Collections	Miscellaneous/Other	MSOTH-Miscellaneous other- multiple gear macroinvertebrate sampling	
CUBIE1	Cubie Transport Container	Miscellaneous/Other	COLLECT AND PRESERVE SAMPLES IN ACCORDANCE WITH SOP	John Bender, 1998, DEQ SOP, NDEQ, 1
FIELDPARAM	FIELD COLLECTION PROCEDURES	Miscellaneous/Other	PARAMETERS TO BE COLLECTED IN THE FIELD: DO, pH, CONDUCTIVITY, TEMPERATURE (C)	John Bender, 1998, DEQ SOP, NDEQ, 1
GRAB	GRAB	Miscellaneous/Other	GRAB SAMPLE FROM SURFACE OR AS SPECIFIED BY THE SAMPLING PLAN	
REMAP	BIOLOGICAL SAMPLING PROCEDURES	Electroshock	FISH SAMPLING WHILE DOING STREAM ASSESSMENTS STATEWIDE	SURFACE WATER SECTION, 1995, S.O.P. on the Development of Data Quality Objectives., Nebraska Department of Environmental Quality, 1

21NEB001 Nebraska Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WATERB	Water bottle	Water Sampler	COLLECT AND PRESERVE WATER SAMPLES IN APPROPRIATE CONTAINERS IN ACCORDANCE WITH S.O.P.	John Bender, 1998, DEQ SOP, NDEQ, 1

Sample Collection/Creation Procedures

21NEV-1 Nevada Dept. of Conservation and Natural Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
01	rountine sample	Miscellaneous/Other		

21NJBCH New Jersey Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
NJSP01	BEACH Act grab sample	Water Sampler	Samples are collected in sterile containers in an area with a stabilized water depth between the sampler¿s lower thighs and chest with the optimum depth being at the sampler¿s waist.	

21NJDEP1 NJ Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
10	Equal width increment (EWI)			
30	Single Vertical			
303D-SED	303(d) Sediment Samples		Samples collected from multiple points across the stream, composited, filtered through a sieve and placed in sample containers.	
303D-WAT	303(d) Water Samples		Metals samples collected from centroid of flow into metals grade containers by a gloved "clean hands" person. VO samples as grabs. Other samples collected as multi-point composits. Dissolved sample filtered in the field (in bag chamber for metals).	
40	Multiple Verticals			
50	Point Sample			
70	Grab Sample (DIP)			
8010	USGS Groundwater Sampling Procedure	Water Sampler		
BACT	Bacteriology sample collection procedure	Water Sampler	Samples are collected directly into steralized bacteriological containers. Sample bottles are filled to shoulder of bottle, stoppered and then shaken to aerate and mix.	NJDEP, 1992, Field Sampling Procedures Manual, New Jersey Department of Environmental Protection, p. 1-360
ES1	Electroshocking	Electroshock		
EWI	Equal Width Increment - Equal Transite Rate	Water Sampler	A stream transect is divided into equally spaced verticals. A sample bottle is lowered and raised at a uniform rate at each vertical. The bottle's contents are poured into a churn splitter. The churn's contents are mixed & dispensed into sample bottles .	
EWI-CHURN	Equal Width Increment (EWI) Equal Transit Rate (ETR)	Water Sampler	A stream transect is divided into equally spaced verticals. A sample bottle is lowered and raised at a uniform rate at each vertical. The bottle's contents are poured into a churn splitter. The churn's contents are mixed & dispensed into sample bottles .	
EWI-CLEAN	Equal Width Increment - Equal Transit Rate Clean Methods			
EWI-DISS	Equal With Increment - Equal	Water Sampler	A stream transect is divided into equally spaced	

21NJDEP1 NJ Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	Transit Rate (Dissolved)		verticals. A sample bottle is lowered and raised at a uniform rate at each vertical. The bottle's contents are poured into a churn splitter. The churn's contents are mixed, filtered through a 0.45 um membrane filter on site & dispensed into sample bottles .	
FSPM-7F1	Stream Sampling Procedures	Water Sampler		
FSPM-7F3	Grab samples from marine and estuarine waters	Water Sampler		
GRAB	Grab Sample	Water Sampler	Water sample collected from centroid of flow directly into sample container.	
GRAB-BN/AE	Grab Sample - Base Neutral Acid Extractables	Water Sampler	Samples are collected from the surface directly into the sample container	
GRAB-CD	Grab Sample - Clean Methods Dissolved	Water Sampler	Gloved "clean hands" person collects sample from centroid of flow into metals grade container. Sample pumped through filter in bag chamber in field. Metals grade sample containers rinsed 3x with sample then filled.	
GRAB-CLEAN	Grab Sample - Clean Methods	Water Sampler	Gloved "clean hands" person collects samples directly into trace metal grade containers from centroid of flow.	
GRAB-DISS	Grab Sample - Dissolved	Miscellaneous/Other	Sample is collected from the centroid of flow and filtered through a 0.45 micron filter into clean sample containers the field.	
GRAB-LO-HG	Grab Sample - Low Level Dissolved Mercury	Miscellaneous/Other	Grab samples are taken at the centroid of flow while facing upstream by two person teams (Clean Hands/Dirty Hands). If the sampler can not wade safely to the certroid of flow, the sample is collected as far into the flow channel as the sampler can proceed. Samples are collected by into a 1 liter teflon container (pre-cleaned, partially filled with 1% hydrochloric acid solution, and double-bagged by the laboratory). The 1% hydrochloric acid solution is discarded and the collection bottle is rinsed three times with sample water prior to collecting the sample.	Horowitz, A.J., Demas, C.R., Fitzgerald, K.K., Miller, T.L., and Rickert, D.A, 1994, U.S. Geological Survey Protocol For The Collection And Processing Of Surface-Water Samples For The Subsequent Determination Of Inorganic Constituents In Filtered Water, U.S. Geological Survey, 57p

21NJDEP1 NJ Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			The sample is then filtered into a 500 ml teflon container Inside a processing chamber . A small amount of sample water is run through the filter and used to rinse the 500 ml teflon container prior to filling. The 500 ml teflon container is then filled, leaving an air space. Both "Clean Hands" and "Dirty Hands" wear Tyvek coveralls, R95 particulate respirators (3M model 8247), and shoulder-length, clear, powderless nitrile, latex or polyethylene gloves. "Dirty Hands" handles all aspects of sampling not directly in contact with the sample bottle (i.e., opening and closing the outer bags, operating the persitaltic pump for filtering), and "Clean Hands" handles all aspects of sampling in direct contact with the sample bottle (i.e., opening and closing the inner bags, sample collection).	
GRAB-PTHC	Grab Sample - Petroleum Hydrocarbons	Water Sampler	Samples are collected from the surface water directly into the sample container. Sample cascades down then inside of the container without bubbling. The container is not filled completely; an airspace is left.	
GRAB-VO	Grab Sample - Volatile Organics	Water Sampler	Septum vials are filled so as to minimize agitation. Vials are sealed and checked to be sure that no air bubbles are present.	
MW-M-COL	Marine Water Metals collection	Miscellaneous/Other	Several methods are used. Dredge, rake, and tongs.	
MW-N-COL	Marine Water Nutrient collection for majority of nutrients		All nutrients with exception of Ammonia are collected in 1 50mL centrifuge tube. All bottles are put on ice.	
MW-N-COL1	Marine Water Collection of Dissolved Oxygen		Collected in 250mL glass BOD bottle. 1mL alkali iodide azide and 1mL of manganous sulfate are added while in the field. When the lab receive this, they add 1 mL of concentrated sulfuric acid.	
MW-N-COL2	Marine Water collection of chloraphyll a		Collected in 250mL amber bottle. It is then put on ice.	
MW-N-COL3	Marine Water Collection of Ammonia		Ammonia samples are collected in a 50mL centrifuge tube. In the field, 1 mL of 3.5% phenol	

21NJDEP1 NJ Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			is added to the tube. It is then put on ice.	
NWIS	Not able to be determined from NWIS data		Sample collection procedure could not be determined from NWIS data	
POINT	Point Sampling - Single Depth	Water Sampler	Sample is collected from a single depth	
QA PLAN	See QA Plan for this project			
RBP-1	Macroinvertebrates sampling	Benthic Grab		Michael T. Barbour, Jeroen Gerritsen, Blaine D. Snyder, James B. Stribling, 1999, Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers, USEPA, Office of Water, 7-7
RBP-KICK	EPA Rapid Bioassessment Protocols Kick Net	Net/Non-Tow		
SED	Sediment Sampling	Miscellaneous/Other		
SED-COMP	Sediment - Composite	Miscellaneous/Other	Sample is collected from multiple points in the streambed, mixed in a tray, filtered through a sive and placed in a sample container.	
SED-GRAB	Sediment - Grab Sampling	Miscellaneous/Other	Sample collected from a single point	
SED-PONAR	Sediment Composit Sampling with Petite Ponar Dredge	Benthic Dredge		
SONDE	Data Sonde	Miscellaneous/Other		
TWRI	Techniques of Water-Resources Investigations Reports			
UNKNOWN	Unknown Procedure			
XCOMPOSITE	Cross Section Composite	Water Sampler	A stream transect is divided into equally spaced verticals. A sample bottle is lowered and raised at a uniform rate at each vertical. The bottle's contents are poured into a churn splitter. The churn's contents are mixed & dispensed into sample bottles .	

21NMEX NM Environmental Dept./SWQB

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Grab Sampling			American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition
SP-002	Water Composite Sample			

21NYDECA NYS Dept. of EnCon, Division of Water

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
RIBS-BSED	RIBS Bottom (Surficial) Sediment Collection	Miscellaneous/Other		J.A.Myers, etal., 2000, Program Plan for Statewide Waters Monitoring Program, NYSDEC, 47 pgs (plus append)
RIBS-WCOL	RIBS Water Column Grab/Composite Collection	Water Sampler	This generalized procedure refers to the collection of a representative ambient water column sample to be analyzed for specific constituents in an analytic laboratory. For details of specific procedures, see citation below.	J.A.Myers, etal., 2000, Program Plan for Statewide Waters Monitoring Program, NYSDEC, 47 pgs (plus append)

21OHBCH Ohio Department of Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Sample	Water Sampler	Sampler wades out until water is about 3 ft. deep. Sampler uncaps sample bottle, inverts bottle and submerges it about elbow depth. Bottle is turned right-side-up and lifted out of water. Bottle is re-capped.	

21OHDGW Division of Drinking and Ground Water (Ohio)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SCCP-001	Water Grab Sampling		Field acquisition of a ground water grab sample for the Ambient Ground Water Monitoring Network	Ohio EPA-DDAGW, 2002, Operating Procedures Document, Ohio EPA, 3-1 to 3-15

21OHIO Division of Surface water (Ohio)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
A	Boat, Day, Straight Array	Electroshock	Boat (day sampling) straight electrode array	
BUG-QUAL	qualitative bug sample	Net/Non-Tow	Qualitative samples of macroinvertebrates from wadeable streams and large rivers are collected with substrate kicks and bank jabs using triangular ring frame dip nets (#30 or #40 mesh) supplemented with direct handpicking of rocks and other available substrates. All available natural habitats at the sampling location are sampled and a presence/absence inventory of taxa is compiled. Sampling proceeds for a minimum of 30 collective minutes and then continues until no new taxa are being observed and collected.	
BUG-QUAN	quantitative bug sample	Trap/Substrate	Quantitative collections of macroinvertebrates in wadeable streams and large rivers are obtained using modified multiple-plate artificial substrate sampler (Hester and Dendy 1962). The sampler is constructed of 1/8 inch (3 mm) tempered hardboard cut into 3 inch (7.5 cm) square plates and 1 inch (2.5 cm) square spacers. A total of eight plates and twelve spacers are used for each sampler. The plates and spacers are placed on a 3 inch (7.5 cm) long, 1/4 inch (6 mm) diameter eyebolt so that there are three single spaces, three double spaces, and one triple space between the plates. The total surface area of the sampler, excluding the eyebolt, approximates 1 square foot (roughly 0.1 square meter). A sampling unit consists of a composite cluster of five substrates tied to a construction block that is colonized in-stream for a six week period beginning no earlier than June 15 and ending no later than September 30.	
C	Boat, Longline	Electroshock	Boat longline, used for riffles in large rivers	
D	Wading With Generator	Electroshock	Wading, generator in floatable device	
E	Wading With Longline	Electroshock	Wading, generator on shore with longline	
F	Backpack Shocking Unit, Battery	Electroshock	Backpack shocking unit (battery operated)	
G	Backpack/Seine Combination	Electroshock	Backpack/seine combination	
H	Seine	Net/Non-Tow	Seine	

21OHIO Division of Surface water (Ohio)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
I	Fyke Net	Net/Non-Tow	Fyke net	
J	Hoop Net	Net/Non-Tow	Hoop net	
K	Gill Net	Net/Non-Tow	Gill net	
L	Backpack Shocking Unit, Generator	Electroshock	Backpack shocking unit (generator operated)	
M	Boat, Night, Circular Array	Electroshock	Boat (night sampling), circular electrode array	
N	Boat, Night, Straight Array	Electroshock	Boat (night sampling), straight electrode array	
O	Boat, Day, Electro-sphere	Electroshock	Boat (day sampling), electro-sphere	
P	Boat, Night, Electro-sphere	Electroshock	Boat (night sampling), electro-sphere	
Q	Boat, Trawl	Net/Horizontal Tow	Boat, trawl	

21ORBCH Oregon Department of Human Services

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SPL_SALTMP	Salinity and Temperature	Water Sampler	An in-situ temperature and salinity reading is taken at knee depth immediately following the grab sample using an SCT Meter.	
SPL_WTRGRB	Water Grab Sample	Water Sampler	Water samples of approximately 100ml (with adequate head space for mixing) are collected at knee depth, and are stored on ice and held for up to 8 hours prior to incubation	

21PA Pennsylvania Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CHLORO	1-47mm glass fiber filter in petri dish	Miscellaneous/Other		
CONT 10	500 ml non-precleaned plastic bottle	Water Sampler		
CONT 11	125 ml prefixed plastic bottle (fecal coliform)	Water Sampler		
CONT 2	Ziplock bag 9"X13"	Water Sampler		
CONT 3	1000 ml wide mouth Nalgene polypropylene bottle	Water Sampler		
CONT 4	500 ml precleaned plastic bottle	Water Sampler		
CONT 5	125 ml precleaned plastic bottle	Water Sampler		
CONT 6	500 ml glass bottle (white cap and special label)	Water Sampler		
CONT 7	500 ml glass bottle (black cap and wide mouth)	Water Sampler		
CONT 8	1 Liter Amber glass bottle	Water Sampler		
CONT 9	125 ml plastic bottle (sterilized, blue cap)	Water Sampler		
SHOCK	Electrofishing using fish shocker	Electroshock		

21RIBCH Rhode Island Department of Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FOLLOWUP	Follow Up Sample	Water Sampler	500 mL sterile Nalgene bottle for the collection of a follow up beach water sample.	
PIPERUNOFF	Pipe/Runoff Sample	Water Sampler	500 mL sterile Nalgene bottle for the collection of a pipe/runoff sample for the investigation of pollution sources at RI's bathing beaches.	
ROUTINE	Routine Sampling	Water Sampler	500 mL sterile Nalgene bottle for beach water collection	
WETWEATHER	Wet Weather Sampling	Water Sampler	500 mL sterile Nalgene bottle for the collection of wet weather beach samples.	

21SC60WQ SC Dept. of Health & Environmental Control

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WQ SAMP	Collection of water for field analysis	Water Sampler		South Carolina DHEC Environmental Control Office - Bureau of Water, 1997, Envrionmental Investigations Standard Operating Procedures and Quality Assurance Manual, Environmental Quality Control, South Carolina Department of Health and Environmental Control, Entire Document

21SCBCH SC Dept of Health & Environmental Control

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BCHWATSM	Beach Monitoring Water Sampling	Water Sampler		

21SCESOP SC Dept. of Health & Environmental Control

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SWCS	Surface Water Composite Sample	Water Sampler	A volume of two liters was collected weekly and put in a five gallon (19.0L) Nalgene carboy for the individual locations of Jackson Boat Landing (SV-2010), Upper Three Runs (SV-325), Beaver Dam Creek (SV-2040), Fourmile Branch (SV-2039), Pen Branch (SV	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
SWGS	Surface Water Grab Sample	Water Sampler	Collecting a sample using the grab method involved filling a container with water directly from the water body.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

21SCGW SC Dept. of Health & Environmental Control

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AGWSC	Ambient Groundwater Sample Collection	Water Sampler		

21SCSANT Santee Cooper - South Carolina Public Service Authority

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AIR TEMP	Ambient Air Temperature (C)	Miscellaneous/Other	Ambient temperature is measured utilizing a Fisher Scientific Model 15-021-5B thermometer in shade.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
CHPYL A	Chlorophyll a (ug/l)	Miscellaneous/Other	Chlorophyll a samples are collected in an amber 250 ml opaque HPDE bottle. Samples are filtered in the laboratory in 15 ml triplicates utilizing 25 mm type A/E filters treated with magnesium carbonate solution (1% by volume).	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
COND	Conductivity (mmhos)		Conductivity is measured in-situ, utilizing a cell with four nickel electrodes.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
DO	Dissolved Oxygen (mg/l)		Dissolved Oxygen measurements are sampled in-situ, utilizing the electrode membrane method.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
FLOW	Stream Flow (cfs)	Miscellaneous/Other	Stream flow data is collected utilizing a Price pygmy or AA flow meter.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
LAB	General Laboratory Analyses	Water Sampler		American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
LEGACY SCP	Legacy Sample Collection Procedure			
METALS-S	Metals (Sediment)	Benthic Dredge	Samples are collected utilizing a Ponar mini-dredge. All debris is removed before placement in a 250 ml nalgene container. All samples are preserved in ice only - no acidification is required.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
NUTRNT-S	Nutrients (Sediment)	Benthic Dredge	Samples are collected utilizing a Ponar mini-dredge. All debris is removed before placement in a 250 ml nalgene container. All samples are preserved in ice only - no acidification is required.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
PH	pH (SU)	Miscellaneous/Other	pH measurements are sampled in -situ utilizing a glass probe which is part of a YSI multi-parameter sonde.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
WTR TEMP	Water Temperature (C)	Miscellaneous/Other	Water temperature is measured in-situ by lowering the temperature probe in the water, profiling from top to the bottom of the water column.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

21SCSHL SC Dept of Health and Environmental Control

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WQ SAMP	Collection of water for field analysis	Water Sampler		

21SDAK01 SD Dept of Environmental & Natural Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FISH001	Fish Flesh Collection Procedure	Net/Non-Tow	Gill nets are used	
SD WRAP	SD WRAP	Water Sampler	This is the procedure used by the WRAP for the collection of water samples.	
WQM001	WQM Sample collection	Water Sampler	This field procedure is used for the collection of surface water grab samples.	

21TXBCH Texas General Land Ofiice

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SPL_WTRGRB	Sample Water Grab	Water Sampler	Using 125-ml polypropylene bottle to collect sample	

21VABCH Virginia Department of Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
1600	Enterococci	Water Sampler	Enterococci in Water by Membrane Fittration Using membrane-Enterococcus Indoxyl-B-D-Glucoside	USEPA, 1997, Method 1600: Membrane Filter test Method for Enterococci in Water., USEPA, EPA 821/R-97-004
PROC1	Enterococci1	Water Sampler	Enterococci in Water by Membrane Fittration Using Membrane-Enterococcus-Esculin Iron Agar	

21WABCH Washington State Department of Ecology

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
D6503-99	ENTEROLERT	Water Sampler	STANDARD METHOD FOR ENTEROLERT	D6503-99 - AMERICAN SOCIETY FOR THE WATER TESTING AND MATERIALS (ASTM) COMMITTEE ON WATER, 1999, D6503-99 STANDARD TEST METHOD FOR ENTEROCOCCI IN WATER USING ENTEROLERT, AMERICAN SOCIETY FOR THE WATER TESTING AND MATERIALS (ASTM) COMMITTEE ON WATER, LOOK IT UP
SPL_WTRGRB	water grab	Water Sampler	sample collection in accordance with collection methods in "Standard Methods for the Examination of Water and Wastewater, 18th - 20th editions"	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition

21WIBCH Wisconsin Department of Natural Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP001	water grab sample	Water Sampler	Brief: water grab sample Detail: Taken from online document: http://www.dnr.state.wi.us/org/water/wm/WQS/Beaches/OverviewPublicNoticicationProgram.pdf, accessed 3/25/04 WDNR memo dated 11/22/2002, subject "Wisconsin's Proposed Beach Monitoring and Public Notification Program" Contact Toni Glymph at (608) 264- 8954/glympt@dnr.state.wi.us for more information Sampling Protocol To assure consistency in collecting samples for analysis, the following procedures will be used: 1) Specific sites will be designated for collecting samples during the bathing season. Samples will be collected exclusively at these sites for the duration of the sampling period. 2) Sample bottles will be prepared and provided by the laboratories charged with conducting bacteria analyses. General Rules of Sampling a. Take extreme care to avoid contaminating the sample and sample container. ? Do not remove bottle covering and closure until just prior to obtaining each sample. ? Do not touch the inside of the sample container. ? Do not rinse the sample container. ? Do not put caps on the ground while sampling. ? Do not transport the samples with other environmental samples. b. Adhering to sample preservation and holding time limits is critical to the production of valid data. ? Samples should be labeled, iced or refrigerated at 1 - 4 degrees C immediately after collection and during transit to the lab. ? Care should be taken to ensure that sample bottles are not totally	

21WIBCH **Wisconsin Department of Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			immersed in water during transit or storage. ? Samples should arrive in the lab no later than 24 hours after collection. Whenever possible samples should arrive at the lab on the day of collection, preferably before 2 p.m. c. The sampler will complete the laboratory data form noting time, date, and location of sample collection, current weather conditions (including wind direction and velocity), water temperature, clarity, wave height and any abnormal water conditions. Sampling Method ? Carefully move to the first sampling location. Water should be approximately knee deep. While wading slowly in the water, try to avoid kicking up bottom sediment at the sampling site. ? Open a sampling bottle and grasp it at the base with one hand and plunge the bottle mouth downward into the water to avoid introducing surface scum. ? The sampling depth should approximately 6 to 12 inches below the surface of the water. ? Position the mouth of the bottle into the current away from your hand. If the water body is static, an artificial current can be created by moving the bottle horizontally with the direction of the bottle pointed away from you. ? Tip the bottle slightly upward to allow air to exit and the bottle to fill. ? Make sure the bottle is completely filled before removing it from the water. ? Remove the bottle from the water body and pour out a small portion to allow an air space of 2 cm for proper mixing of the sample before analyses. ? Tightly close the cap and label the bottle. ? Store sample in a cooler filled with ice or suitable	

21WIBCH **Wisconsin Department of Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			coldpacks immediately.	

Sample Collection/Creation Procedures

21WVWQAS WV Div of Environmental Prot, Office of Water Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
XYZGRAB	XXX Grab			

22LAGWTR Louisiana Dept of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BMP-QAPP	Baseline Monitoring Project Quality Assurance Project Plan			Baseline Monitoring Project, 1999, Baseline Monitoring Project, Quality Assurance Project Plan, LDEQ, 198pp

31DELRBC Delaware River Basin Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Water Sample		Unknown	
MACROINVER	Macroinvertebrates	Trap/Substrate		
WATER1	Water Sample Collection	Water Sampler	Niskin sample taken at .6 of total depth	

31DRBCSP Delaware River Basin Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DEWAWATER	Routine Ambient Water Collection by NPS-DEWA	Water Sampler	Sample bottle attached to rope dropped from various bridges to collect ambient water sample	
TRISTATE	Sample Collection Methodology for Tri State Monitoring	Water Sampler	Sample Composited from 3 points across a transect at .6 depth	
UPDEWATER	Routine Ambient Water Collection by NPS-UPDE	Water Sampler	Water Collected either from bridge or by wading into stream where applicable and safe.	
WATER	Water Sample	Water Sampler	Bottle attached to line or collected by wading	

31ISC2RS Interstate Sanitation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ISC-SC-1	Ambient water sample collection	Water Sampler	Using the gear identified in the Gear and Equipment section, samples are collected from ambient waters for the examination of coliform species, chlorophyll a or phytoplankton.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
ISC-SC-2	Point Source Water Sample Collection	Water Sampler	Using the gear identified in the Gear and Equipment section, samples are collected from point source waters for the examination of coliform species	

31ORWUNT Ohio River Sanitation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
01	Grab Sample	Water Sampler	A Bailer is lowered into the river at the depth of 1.5 meters. When the Bailer is full, it is retrieved and the water is transferred to a 2 liter plastic carboy. Transfer water from the carboy to laboratory bottles with proper preservative.	USEPA, 1983, Methods for Chemical Analysis of Water and Wastes, USEPA, EPA 600/4-79-020
02	Clean Metals Grab Sample	Water Sampler	Sealed self-filling 4L bottle weighted and lowered into the river has both a vent tube and fill tube. Dissolved metal samples are transferred by perstaltic pump using the vent tube through a 0.45 um capsule filter into 1L sample bottles fitted with a sealable fill tube in cap. Total recoverable metals samples are transferred using the same pump and vent tube without capsule filter.	USEPA, 1983, Methods for Chemical Analysis of Water and Wastes, USEPA, EPA 600/4-79-020

42SRBCWQ Susquehanna River Basin Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Depth Integrated Sample	Water Sampler	Water samples are collected using depth-integrated samplers. The sampler faces upstream into the current and lowered through water column. Several samples are taken across a stream and composited into a churn for a verticla and horizontal integrated sample.	
SP-002	Stream Velocity Measure	Miscellaneous/Other	Stream flow determination from a series of cross sectional velocitiy measurements	Buchanan and Somers, 1969, Disharge Measurements in free flowing streams, United States Geological Survey, Unknown

ALASSWCD Alaska Soil and Water Conservation District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample	Water Sampler		

AQUINNAH Wampanoag Tribe of Gay Head (Aquinnah) - Massachusetts

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACTI	Microbiology Analysis-Total Coliform, E.coli, Fecal, Enteroc	Water Sampler	For the Bacteria analysis, a 125ml bottle is attached to the sampling pole and lowered into the water body at an approx. depth of 1 foot below the surface and at a minnimum of 6 inches above the bottom sediment. Care is taken not to cause to much sediment disruption while sampling.	
CHEMICAL	N02, NO3, NH3-N, SiO2, PO4's, COD, BOD-5	Water Sampler	A combined sample of at least 250ml's is collected in one unit. This sample is then delivered to the Laboratory for analysis. Sample collected at approx. 1 foot below the surface of the water body	
CHLR-A	Chloraphyll-A	Water Sampler	1 Liter Brown acid washed bottle. Collected approx. 1 foot below the surface of the water	
ON SITE	YSI 6600 data logger			

ARDEQH2O Arkansas Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AMBIENT	Ambient and routine water samples	Water Sampler	Water samples are taken from streams and other waterbodies using a variety of gear. They include using only the sample bottle or using a sample bucket to take the sample.	
LAKES	Lake Samples	Water Sampler	Surface water samples collected in lakes are usually collected by submerging the water bottle and filling to a specified capacity. Samples collected at depth are taken using a horizontal, alpha water sampling bottle.	

Sample Collection/Creation Procedures

AURORA City of Aurora (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

AWC_WQ American Water Company (Illinois)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AWC_RTN	American Water Routine Raw Water Collection		Water is pumped from intake main with drawing from Mississippi River with centrifugal pump to sampling tap.	

Sample Collection/Creation Procedures

AWQDECJN Alaska Dept. of Environmental Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample	Water Sampler		
WATER1	Water Sampler	Water Sampler		

BEAR_CRK Bear Creek Reservoir (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			
SAMPLER	Van Dorn Bottle			

Sample Collection/Creation Procedures

BLCKFOOT **Region 8 Superfund: Black Foot Post and Pole**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

BMIC Bay Mills Indian Community

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BMIC_SCP	Standard Collection Procedure		Bay Mills Standard Collection Procedure	

BOISNETT **BOIS FORT / NETT LAKE Band of CHIPPEWA INDIANS (Minnesota)**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BF QAPP	BF QAPP	Water Sampler	Grab Sample	

BOUNTIFL **Superfund Bountiful UT**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Uhnknown			

BRIGHTON **City of Brighton (Colorado)**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknow			

BUNKER Bunker Hill Mining and Metallurgical Complex

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BHGSP	Bunker Hill Generic Sampling Procedure		This is a generic sampling procedure placeholder for all of the CdA - Bunker Hill sampling activities	

CADPR California Department of Pesticide Regulation Surface Water

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DPRSP-001	dpr method			

CADWR California Department of Water Resources

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DWREMP	DWR Sample Collection Procedures	Water Sampler		

CAFRESNO Fresno River Water Quality Monitoring

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FRS-001	Sample Collection Methods For Fresno River Monitoring			

CALSWAMP CA Surface Water Monitoring Program (California)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FIELD01	Field measurements	Water Sampler		
SAMPLE01	Water Sample Procedures			

CAPECRD City of Cape Coral (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BIO-GRAB	Water grab sampling for biocides		Water sample taken by hand by submerging bottle just below the surface.	
HM-PONAR	Heavy Metal Sediment Sampling		Petite Ponar grab of sediments for heavy metal analysis.	
WQ-GRAB	Water quality grab sampling.		Water samples collected for water quality sampling. Surface samples normally taken by submerging bottles just below the surface. Middle and bottom samples taken with a VanDorn water sampler.	
WQ-WPAK	Coliform bacteria sampling.		Water sample taken just below the surface in a Whirl Pak for bacteria testing.	

Sample Collection/Creation Procedures

CARPENTR **SUPERFUND CARPENTER SNOW CREEK MINING DISTRICT**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

CCAMP Central Coast Ambient Monitoring Program (California)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CCAMP03	Water Column Grab Sampling			
CCAMP_FP01	Water Quality Grab Sampling	Water Sampler	Water samples are collected below the water surface, facing the current, by inverting the bottle before submerging. Lids are immediately applied, and physical contact with lid and rim of bottle are avoided. Bottles are labled and stored at 4C.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
CCAMP_FP02	Multi-probe Deployment	Water Sampler	The multi-analyte probe is maintained on a stable stand inside the field vehicle. A sampling container is rinsed several times with water from the site and is filled for immediate analysis by the probe. Data is both stored electronically and on paper.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

Sample Collection/Creation Procedures

CENWWEDH U.S. Army Corps of Engineers Walla Walla District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BOD 5	5 Day BOD Test	Water Sampler		
WATER SAMP	Water Sample	Water Sampler		

CHATFLD Chatfield Reservoir (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FIELD	Unknown			
GRAB	Grab Sample			
METER	Field Measurements Using Horriba U-10 Meter		Meter measures conductivity, dissolved oxygen, pH, and temperature in the field at the site	
SAMPLER	Kemmerer -type sample device			
SEDIMENT	Sediment Sampling			

CHEROKEE Cherokee Nation (Oklahoma)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CN_SCP	Cherokee Nation Sample Collection Procedure			

CHNEPCHB Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPCHE Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

Sample Collection/Creation Procedures

CHNEPCHP Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPCHW Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPEB Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPLLB Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			

Sample Collection/Creation Procedures

CHNEPMP Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPPIS Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPSCB Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	GRAB SAMPLE			

CHNEPTCR Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

Sample Collection/Creation Procedures

CHNEPTMR Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CHNEPTPR Charlotte Harbor National Estuaries Program (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

CIKEEPAK Cook Inlet Keeper (Alaska)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WATER1	Water Sampler	Water Sampler		

Sample Collection/Creation Procedures

CITYFTCO City of Fort Collins (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Sampling Procedure, River	Water Sampler		

Sample Collection/Creation Procedures

CITYOFPG City of Punta Gorda (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample			

COE/ISU Des Moines River - Corp of Engineers (IOWA)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CCELAK	ISU CCE Standard Procedures for Sampling Lakes	Water Sampler		
CCERIV	ISU CCE Standard Procudures for Sampling Rivers	Water Sampler	Grab samples of river water are collected in a DO dunker as described in SMEWW. The bucket hold 2 BOD bottles that are filled for DO and alkalinity. The bucket is lowered twice to get a sample sufficient for replicates of the two test. The excess water and water from addition collections with a Nalgene polyethylene pail are used for the remaining test.	

CORIVWCH The Rivers of Colorado Water Watch Network (RiverWatch)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
1	Water Grab	Water Sampler		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
2	Water Composite	Water Sampler		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
3	Macroinvertebrate Sampling	Net/Non-Tow		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
4	Cross Section - XS	Miscellaneous/Other	Cross Section of stream/river segment.	CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
5	Physical Habitat Sampling	Miscellaneous/Other		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
6	Metals Sampling	Water Sampler		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
7	Metal QA/QC	Water Sampler		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114
8	Nutrient Sampling	Water Sampler		CORIVWCH - The Rivers of Colorado Water Watch Network, 2003, Sample Plan 2003, Colorado Division of Wildlife, 1-114

CT_DEP01 Connecticut Dept. of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACTGRAB	Indicator Bacteria Grab Sample	Water Sampler	A 125 ml sterile nalgene water bottle is dipped below the surface of waste deep bathing water. An air space of 1" is left in the bottle to facilitate mixing prior to analytical prep.	CTBEACHQAPP - Ernest Pizzuto, 2003, QAPP-Indicator bacteria monitoring of state-owned and managed bathing areas, CT DEP Ambient Monitoring Program, revison 1 page 1

Sample Collection/Creation Procedures

CWSD Centennial Water and Sanitation District

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN DEFAULT			

DDEH Denver Department of Environmental Health

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample using water sampler			
UNKNOWN	Default Unknown			

EMAP-CS **Environmental Monitoring and Assessment Program**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COLLECT-01	Water, Subsamples-Nutrient, Chlorophyll a, and TSS: NCA-NE	Water Sampler	A seawater sample was collected from 1m below the surface, mid-water and 1m above the bottom (depth dependent) with a 5L Go-Flo® sampling bottle. At some shallow locations (water depth < 3 m) only one mid-depth water sample was taken. Duplicate water samples from the same cast were filtered aboard ship with 0.7-micron glass-fiber filter pads (not all duplicates were analyzed). The filtered water (stored in a 60 ml Nalgene bottle for nutrient analyses) and the filters (foil wrapped and placed in whirlpack for chlorophyll analysis) were immediately frozen on dry ice for shipping. Approximately 1 liter of unfiltered seawater was stored in a 1 L polypropylene bottle and stored at 4 deg C to await analysis for suspended solids.	C.J. Strobel, 2000, Coastal 2000 - Northeast component: field operations manual, USEPA NHEERL, Atlantic Ecology Division, Narragansett, RI, 68 p
COLLECT-02	Biota, Benthic Infaunal Community - Van Veen Grab	Benthic Grab	Generally three Van Veen sediment grabs were sieved through a 0.5 mm sieve. All materials retained on the sieve were placed in a separate plastic container and fixed with buffered formalin/Rose Bengal fix.	D. Reifsteck, C. Strobel (SAIC) and D. Keith (USEPA), 1993, EMAP-Near Coastal 1993 Virginian Province Field Operations and Safety Manual, U.S. Environmental Protection Agency, 172 p
COLLECT-03	Biota, Benthic Infaunal Community-Benthic Grab: EMAP-West	Benthic Grab	One sediment grab collected with a 0.1 m2 Van Veen grab sampler was sieved through a stacked (nested) set of sieves; 1.0 mm sieve prior to a 0.5 mm sieve. All organisms retained on each sieve were placed in separate wide-mouth, Nalgene containers and preserved with buffered formalin (10% final concentration with Rose Bengal added). At the laboratory, the formalin-fixed samples were transferred to 70% ethanol within 2 weeks of field collection to avoid undue deterioration of sample integrity that would further complicate identification (e.g., loss of heads/appendages and erosion of shells or exoskeletons).	U.S. Environmental Protection Agency, 2001, EMAP-National Coastal Assessment Quality Assurance Project Plan 2001-2004, USEPA, NHEERL Gulf Ecology Division, Gulf Breeze, FL, 202 p
COLLECT-04	Biota, Trawl Fish and Shellfish Collection	Net/Horizontal Tow	Trawls will be conducted by using a 16-ft otter trawl and the duration of the trawl will be for 10+-2 minutes at an over bottom speed of 3-4 knots. Replicate (two) trawls will be performed. The trawl straight line tow has Sampling Station at its center.	Tom Heitmuller, USGS, 2001, Quality Assurance Project Plan; EMAP-West-Coastal Monitoring, USEPA: EMAP, Gulf Breeze Laboratory, 152 p
COLLECT-05	Sediment, Surficial	Benthic Grab	Multiple sediment grabs were collected from each	U.S. Environmental Protection Agency, 2001,

EMAP-CS **Environmental Monitoring and Assessment Program**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	Layer:Grain/TOC/Toxicity Composites-NCA		site using a Young-modified Van Veen grab or similar sampler. Each grab was nominally 440 cm2 in area and up to 10 cm in depth, but only the top two centimeters of a grab were retained for the analyses described here. A sufficient number of grabs were processed to provide three liters of sediment. The sediment composite was homogenized and separated into two fractions for storage until analysis. One fraction was frozen and used in the analysis of TOC, percent moisture and the measurement of the chemical contaminants. The second fraction was chilled but never frozen during storage, and was used for grain-size and toxicity analyses.	EMAP-National Coastal Assessment Quality Assurance Project Plan 2001-2004, USEPA, NHEERL Gulf Ecology Division, Gulf Breeze, FL, 202 p
COLLECT-06	Water column sampling: EMAP-West	Water Sampler	Water column data loggers with probes used to make in situ measurements on a down cast through the water column. Equipment includes Seabird CTDs, Hydrolabs, YSI meters and LICOR light meters, including Li-Cor LI-193SA and Li-Cor LI-190SA models.	U.S. Environmental Protection Agency, 2001, National Coastal Assessment: Field Operations Manual, USEPA NHEERL, Gulf Ecology Division, Gulf Breeze, FL, 72
COLLECT-07	Biota, Benthic Infaunal/Epifaunal Community - Van Veen Grab	Benthic Grab	One Van Veen sediment grab is sieved through a 0.5 mm sieve. Organisms retained on the screen were placed in plastic containers and fixed in 10% buffered formalin with rose bengal stain for preservation.	C.J. Strobel, 2000, Coastal 2000 - Northeast component: field operations manual, USEPA NHEERL, Atlantic Ecology Division, Narragansett, RI, 68 p
COLLECT-4F	Trawl-Fish Collection: NCA-NE	Net/Horizontal Tow	The EPA standard fish trawl was conducted which filters fish from the near bottom waters. The trawl net is a funnel-shaped high-rise sampling trawl. The net includes a 16 meter tow line, a chain sweep, 5 cm mesh wings, and a 2.5 cm cod end. Fish were herded into the net by ground wire and an overhanging panel. Standard trawls were 10 ± 2 minutes in duration with a towing speed of 2-3 knots through the water against the prevailing current (1-3 knots relative to the bottom). Different state cooperative agreements used different standard procedures: CT, MA and RI trawl duration was 20 minutes; NH was 4 minutes. Therefore, fish commnunity measures cannot be easily compared across all states.	J. Kiddon, H. Buffum, 2002, EMAP-NCA Northeast 2000 Fish Trawl Metadata, U.S. Environmental Protection Agency, 9 p

EMAP-CS Environmental Monitoring and Assessment Program

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CREATES-1	Sediment, composite subsample:Organic contaminants-EMAP-West	Benthic Grab	Sediment from a minimun of two grabs will be mixed and approximately 500 cc of the composited sediment will be placed in a clean, prelabeled, glass wide-mouth, 1-pint Mason jar or I-Chem jar.	Tom Heitmuller, USGS, 2001, Quality Assurance Project Plan; EMAP-West-Coastal Monitoring, USEPA: EMAP, Gulf Breeze Laboratory, 152 p
CREATES-2	Sediment, composite subsample:inorganic contaminants-E-West	Benthic Grab	Sediment from a minimum of two grabs will be mixed and approximately 200 cc of composited sediment will be placed in a clean, prelabeled, wide-mouth Nalgene jar.	Tom Heitmuller, USGS, 2001, Quality Assurance Project Plan; EMAP-West-Coastal Monitoring, USEPA: EMAP, Gulf Breeze Laboratory, 152 p
CREATES-3	Sediment, Toxicity Test Sediment: EMAP-West	Benthic Grab	Sediment from a minimum of two grabs will be mixed and approximately 2000-4000 cc (depends on the number of toxicity tests to be performed) of composited sediment will be placed in a clean, prelabeled, wide-mouth Nalgene jar.	U.S. Environmental Protection Agency, 2001, National Coastal Assessment: Field Operations Manual, USEPA NHEERL, Gulf Ecology Division, Gulf Breeze, FL, 72
CREATES-4	Sediment, TOC and grain: EMAP-West	Benthic Grab	Sediment from a minimum of two grabs will be mixed. Approximately 100 cc of composited sediment will be placed in a small, preclean, prelabeled glass sampling jar and stored at 4 deg C for TOC analysis. Approximately 100 cc of composited sediment will be placed into a clean, prelabeled plastic (HDPE) jar and stored at 4 deg C for sediment grain analysis.	U.S. Environmental Protection Agency, 2001, National Coastal Assessment: Field Operations Manual, USEPA NHEERL, Gulf Ecology Division, Gulf Breeze, FL, 72
CREATES-5	Sediment, Composite Subsample for Inorganic Contaminants-VP	Benthic Grab	Sediment from a min of three grabs will be thoroughly mixed and approximately 100-150 cc of composited sediment will be placed in a clean, prelabeled, 250-ml HPDE wide-mouth bottle.	R. Valente and C. Strobel, 1993, EMAP-Estuaries Virginian Province: Quality Assurance Project Plan for 1993, U.S. Environmental Protection Agency, Office of Research and Development, 136 p
CREATES-6	Sediment, Composite Subsample for Organic Contaminants-VP	Benthic Grab	Sediment from a min of three grabs will be thoroughly mixed and approximately 250-300 cc of composited sediment will be placed in a precleaned, prelabeled, 500-ml glass wide-mouth jar.	R. Valente and C. Strobel, 1993, EMAP-Estuaries Virginian Province: Quality Assurance Project Plan for 1993, U.S. Environmental Protection Agency, Office of Research and Development, 136 p
CREATES-7	Sediment, Composite Subsample for Acid Volatile Sulfides-VP	Benthic Grab	Sediment from a min of three grabs will be thoroughly mixed and approximately 125 ml of composited sediment will be placed in a prelabeled, 125-ml polypropylene wide-mouth bottle.	R. Valente and C. Strobel, 1993, EMAP-Estuaries Virginian Province: Quality Assurance Project Plan for 1993, U.S. Environmental Protection Agency, Office of Research and Development, 136 p
CREATES-8	Sediment, Composite Subsample for Inorganic Contaminants-NCA	Benthic Grab	Only the top two-centimeter section from a min of three grabs will be thoroughly mixed and approximately 100-150 cc of composited sediment	U.S. Environmental Protection Agency, 2001, National Coastal Assessment: Field Operations Manual, USEPA NHEERL, Gulf Ecology

EMAP-CS **Environmental Monitoring and Assessment Program**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			will be placed in a clean, prelabeled, 250-ml HPDE wide-mouth bottle.	Division, Gulf Breeze, FL, 72
CREATES-9	Sediment, Composite Subsample for Organic Contaminants-NCA	Benthic Grab	Sediment from a min of three grabs will be thoroughly mixed and approximately 250-300 cc of composited sediment will be placed in a precleaned, prelabeled, 500-ml glass wide-mouth jar.	C.J. Strobel, 2000, Coastal 2000 - Northeast component: field operations manual, USEPA NHEERL, Atlantic Ecology Division, Narragansett, RI, 68 p
CREATEW-2	Water, Subsamples-Nutrient, Chlorophyll a, TSS: EMAP-West	Water Sampler	Nutrients and chlorophyll a: a disposable, graduated 50-cc polypropylene syringe fitted with a stainless steel or polypropylene filtering assembly was used to filter a parent water sample through 47 mm GF/F filters. 100-1,500 ml seawater was filtered. 1 ml of saturated MgCO3 was then filtered through each pad to buffer the chlorophyll sample against degradation. Approximately 40 ml of filtrate was preserved for nutrient analyses in a 60 ml Nalgene bottle. Total suspended solids: approximately 1 liter of unfiltered seawater was taken from the water sampler at discrete depths and poured into a 1 L polypropylene bottle.	U.S. Environmental Protection Agency, 2001, National Coastal Assessment: Field Operations Manual, USEPA NHEERL, Gulf Ecology Division, Gulf Breeze, FL, 72

EPAORD EPA Office of Research & Development

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
OSVBOLD	OSVBOLD Sample Collection Method	Water Sampler		

EPA_R7 US EPA Region 7

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SECCHI	secchi disk transparency			

ESTO Eastern Shawnee Tribe of Oklahoma

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ES_SCP	Eastern Shawnee Standard Sample Collection Procedure			ES_QAPP - Eastern Shawnee Tribe of Oklahoma, 10/1/2002, Eastern Shawnee Water Quality Monitoring Quality Project Plan, Eastern Shawnee Tribe of Oklahoma, 27 pages

Sample Collection/Creation Procedures

EUREKA **SUPERFUND EUREKA MILLS**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

FCPC FOREST COUNTY POTAWATOMI COMMUNITY (Wisconson)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FCPC_WQP	Forest County Potawatomi Community Water Quality Procedure		Generic FCPC procedure.	

FLPRMRWS Peace River Manasota Regional Water Supply Authority (FL)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	grab sample			
LICOR	Licor			

FONDULAC Fond Du Lac Band of Chippewa (MN)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FDL_SCP	Fond Du Lac Sample Collection Procedure		Samples collected in accordance with FDL standard procedures.	
UNKNOWN	UNKNOWN		Sample collection methodology unknown	

FORTPECK Assiniboine & Sioux Tribes Fort Peck Indian Reservation (MT)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
B_CPOM	B_CPOM		FORT PECK TRIBES SOP	FPTQAPP - Fort Peck Tribes, unknown, Fort Peck Tribes Quality Assurance Project Plan, Fort Peck Tribes, unknown
B_KICKNET	B_KICKNET		FORT PECK TRIBES SOP	FPTQAPP - Fort Peck Tribes, unknown, Fort Peck Tribes Quality Assurance Project Plan, Fort Peck Tribes, unknown
D-NET GRAB	D-Net Grab		Fort Peck Tribes SOP	FPTQAPP - Fort Peck Tribes, unknown, Fort Peck Tribes Quality Assurance Project Plan, Fort Peck Tribes, unknown
FPT-SCP	Fort Peck Tribes Sample Collection Procedure		See Fort Peck Tribes Standard Operating Procedures (SOP)	
PONAR GRAB	Ponar Grab		Fort Peck Tribes SOP	FPTQAPP - Fort Peck Tribes, unknown, Fort Peck Tribes Quality Assurance Project Plan, Fort Peck Tribes, unknown

FWC-WQMP Florida Keys NMS - Water Quality Monitoring Program

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WQ-SAMPLE	WQMP-Sample Procedures		Water was collected from approximately 0.25 m below the surface and at approximately 1 m from the bottom with a teflon-lined Niskin bottle (General Oceanics) except in the Backcountry and Sluiceway where it was collected directly into sample bottles. Duplicate, unfiltered water samples were dispensed into 3x sample rinsed 120 ml HDPE bottles for analysis of total constituents. Duplicate water samples for dissolved nutrients were dispensed into 3x sample rinsed 150 ml syringes which were then filtered by hand through 25 mm glass fiber filters (Whatman GF/F) into 3x sample rinsed 60 ml HDPE bottles. The resulting wet filters, used for chlorophyll a (CHLA) analysis, were placed in 1.8 ml plastic centrifuge tubes to which 1.5 ml of 90% acetone/water was added (Strickland and Parsons 1972). Unfiltered samples were kept at ambient temperature in the dark during transport to the laboratory. During shipboard collection in the Tortugas/Marquesas and overnight stays in the Keys, unfiltered samples were analyzed for alkaline phosphatase activity (µM h-1) and turbidity (NTU) prior to refrigeration. Filtered samples and CHLA filters were kept on ice in the dark during transport. During shipboard collection in the Tortugas/Marquesas and overnight stays in the lower Keys, filtrates and filters were frozen until further analysis.	

FWC/FWRI Fish Wildlife Conservation / Wildlife Research Institute(FL)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CREMP	Point Count		The CRMP collects two forms of data over 43 coral sites in the Florida Keys National Marine Sanctuary. First, a pair of scientific divers takes a census of stony coral species present in a 2 x 22 m sampling station (image at top). Second, the 2 x 22 m station is divided into three, 22 m long transects. Video data are collected along that transect using a downward pointing camcorder (image above). The video data are later analyzed in the lab for quantitative measurements of percent coral cover.	

FWCLOCAL Florida Fish and Wildlife Conservation Commission (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Routine water chemistry grab sampling			

Sample Collection/Creation Procedures

GLENDALE City of Glendale (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

Sample Collection/Creation Procedures

GOLDHILL **Region 8 Superfund: Gold Hill Town and Mine**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

GPORTAGE GRAND PORTAGE Band of CHIPPEWA INDIANS (MN)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GP-QAPP	Grand Portage SPC		Grand Portage Sample Collection Procedure created by GS for Roadmap	

HANALEI Hanalei Watershed Study (Region 9) - Kauai, Hawaii

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HANALEI	Hanalei Watershed Hui	Water Sampler		

HANNAHWQ HANNAHVILLE TRIBAL COMMUNITY

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HV_SCP	SAMPLE COLLECTION PROCEDURE		SAMPLE COLLECTION PROCEDURE	

HENDRICK Hendricks Mining & Milling

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

HI301H City and county of Honolulu

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FISHING	Collection of fish for bioaccumulation		Hook and line used to catch fish.	
FISHPROC	Fish processing for Bioaccumulation studies		Fish caught by hook and line for Bioaccumulation are sized (length and weight) by WQL and then shipped at 4C to contract laboratory. The contract laboratory excises fillets for muscle (and liver for Honouliuli) using TetraTech guidance.	
PLSAMP	WWTP sampling procedures		Permanent ISCO refrigerated samplers are used for all routine composite sampling. The sample collection is paced by signal from appropriate flowmeter. The 24-hour sampling period normally runs from 8AM to 8AM. A plastic carboy collects the sample which is then poured into precleaned plastic containers. The containers are chilled with ice and transported to the laboratory. Grab samples for field tests are taken in conjunction with the composite sample collection. The sample is pulled as a manual grab using the ISCO sampler and pH and temperature are taken immediately. HEM/SGT-HEM samples are collected at 8 hour intervals, at @ 1:30 AM, 9:30 AM, and 5:30 PM. The samples are collected directly into precleaned and solvent rinsed glass containers and are acidified with HCl. In most cases, the samples are stored in a secured refrigerator on-site for later pickup. The reported result for HEM/SGT-HEM are calculated using the individual grab results and the relative flows percentage at the time of collection. Enterococcus samples are collected between 12 noon and 3:00 PM. A sterilized scoop is used to grab the sample and the sample is aseptically poured into a sterile plastic container. The sample is chilled with ice and transported to the laboratory. For Priority Pollutant (and monthly Chlordane and Dieldrin) sampling, composite samples are collected using portable ISCO samplers hooked up	

HI301H **City and county of Honolulu**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			to the flowmeter signal. Only Teflon tubing is used and sample is collected into precleaned glass jars. Due to the large volume required, multiple jars are collected during the 24-hour period and combined together using a large teflon mixing bag. The multiple jars are secured in the laboratory receiving refrigerator until the sampling is completed. The combined sample is then poured into the appropriate containers (plastic with HNO3 acidification for metals, glass with no preservatives for organics). Grab samples for Volatiles are collected using a precleaned scoop. The sample is carefully poured into 40 mL VOA vials and sealed. Total Cyanide sample is also collected as a grab into plastic container with NaOH preservative. All samples are chilled with ice and transported to the laboratory.	
RWSAMP	Receiving water sampling procedures		For Nearshore and Offshore stations, samples are collected from a boat. GPS is used to locate stations. Surface samples are collected directly into the container or by using an appropriately prepared scoop. Mid-depth and bottom samples are collected using a van dorn device. For shore stations, landmarks are used to locate the sites. Samples for Enterococcus are collected using sterile scoops. The sample is then poured into the sterilized plastic sample container and chilled with ice.	
SEDIMENT	Sediment sampling			

HO-CHUNK Ho-Chunk Nation (WI)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HC041206	Ho-Chunk Nation QAPP 4/12/06	Miscellaneous/Other	Ho-Chunk Nation QAPP dated 4/12/06 outlines field measurement/observation and sampling procedures for routine monthly, intensive quarterly and synoptic pesticide sampling for tribal waters associated with the Kickapoo Trust Lands.	

IAAFO Iowa DNR's Animal Feeding Operation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKWN	Unknown-Historical Data		HIstorical Data - collection procedcure is not known	

IASNAPST Iowa Geological Survey (Iowa)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WHITBRST	Whitebreast Snapshot sampling procedure			

IL_EPA Illinois EPA

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
IL_EPA	DEFAULT SAMPLE COLLECTION PROCEDURE			

Sample Collection/Creation Procedures

INSTOR **Indiana STORET**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Water Grab			

Sample Collection/Creation Procedures

INTRMTN **Superfund Intermountain Waste Oil Refinery**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

IOWATER Iowa Volunteer Water Monitoring Program

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
IOWATER01	IOWATER Volunteer Monitoring Sample Collection			Rich Leopold et al., 2001, IOWATER Training Manual, IDNR, Rev. 4/2001

Sample Collection/Creation Procedures

IRONMT Iron Mountain Mine Superfund Site

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
IRONMT	Iron Mountain Superfund Sample Collection Procedures			

KATRINA4 Region 4 Katrina Emergency Monitoring Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

KATRINA6 Region 6 Katrina Emergency Monitoring Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

KATSPROJ Katrina Response Special Projects

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

KAWNATON Kaw Nation of Oklahoma

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
KAW_SCP	Kaw Nation Sample Collection Procedure			

Sample Collection/Creation Procedures

KBICNRD KEWEENAW BAY INDIAN COMMUNITY

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
KW_SCP	SAMPLE COLLECTION PROCEDURE		SAMPLE COLLECTION PROCEDURE	

KENAIWAF Kenai watershed Forum (Alaska)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WATER1	Water Sampler	Water Sampler		

KWMNDATA Keystone Watershed Montioring Network (Pennsylvania)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACTERIA	Bacteria Sampling for Center in the Park SEC	Miscellaneous/Other	Bacteria Sampling and testing for Center in the Park Senior Environment Corps. CIP monitors and collects samples, and Chestnut Hill College conducts the lab work.	Citizens' Volunteer Monitoring Program, 2001, Sampling of Surface Waters for Recreational Use Suitability, Pennsylvania Department of Environmental Protection, pp. 1-4
MACRO	Macroinvertebrate Count	Miscellaneous/Other		
MSLM	Mountain Springs Lake Monitoring	Water Sampler	Used a Van Dorn Water Sampler	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
TSS	Total Suspended Solids			

LADEQWPD LDEQ/Watershed Planning Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LDEQ	LDEQ WQN Data Collection Procedures		Procedures are conducted according the SOPs and QAPPs of the Office of Environmental Compliance/Surveillance Division.	

LAKELAND City of Lakeland (Florida)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FIELD	field observation		secchi disk	Hydrolab, 1999, Field Observations, City of Lakeland, 1
HWBACTI	Bacteria sampling on Lake Hollingsworth	Water Sampler		American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
MACROINVER	Macroinvertebrate Sampling	Benthic Grab	MAcroinvertebrate sampling in various city lakes, using petite ponar or ekman dredge.	USEPA, Donald J. Klemm, Philip A. Lewis, Florence Fulk, and James M. Lazorchak, 1990, Macroinvertebrate Field and Laboratory Methods for Evaluating the Biological Integrity of Surface Waters, USEPA, Environmental Monitoring Systems Laboratory- Cincinnati, Office of Research and Development, 600/4-90/030
PHYTO	Phytoplankton Sampling - grab sample	Miscellaneous/Other	Grab sample of Phytoplankton for various city lakes	Dr. St. Amand, A., 1990, HPMA Method for producing algal sample slides for Phytoplankton Analysis, University of Notre Dame, 1
SOP-1	Water Quality Sampling		Field sampling for water quality in various city lakes.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition

LEWWTP Littleton/Englewood Wastewater Treatment Plant (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab			
UNKNOWN	Unknown			

LRBOI Little River Band of Ottawa Indians

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LRB_NUT	Water Grab Sample	Water Sampler	Nutrient Sampliing for Lakes and Rivers	
LRB_SCP	HydroLab 4a	Miscellaneous/Other	Standard Sample Collection Procedures, In situ reading using Hydrolab 4a	

LTBBWATR Little Traverse Bay Bands of Odawa Indians

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LTBBQAPP	LTBB Sample Collection		Sample Collection Procedures available in LTBB Quality Assurance Protection Plan	

Sample Collection/Creation Procedures

MACOS **Region 8 Superfund: East Macos Watershed**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

MBMG Montana Bureau of Mines and Geology

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample, water		An individual discrete sample collected over a period of time not > 15 minutes.	

MCNCREEK Muscogee (Creek) Nation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
MC_SCP	Muscogee Creek Sample Collection Procedure		See Muscogee Creek QAPP	

MDEDAT01 Maryland Dept. of the Environment Dredging Ambient Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
1	Collection of the Benthos	Benthic Grab	A 0.0529 cubic meter Ponar Dredge is used to collect benthic samples. Three Ponar replicates are collected from each station. Samples are rinsed over a 0.5-mm sieve to separate the benthos from the sediments.	
2BGVV	Collection of Benthos with Van Veen	Benthic Grab	A 0.1 m2 Van Veen is used to collect benthic samples. Three samples are collected from each station. Samples are rinsed over a 0.5-mm sieve to separate the benthos from the sediments.	
3BCGR	Gravity Core of the Benthos	Benthic Corer	Core samples of the benthos are collected using a Benthos-type gravity corer (Model #2171) with clear cellulose acetate butyrate liners, (diameter of 6.3).	
4BGPT	Peterson Grab	Benthic Grab	A Peterson Grab is used to collected the upper 8 - 10 cm of sediment at each station. Sample area of the Peterson Grab is 305 x 305 mm and the volume is 9890 mL.	
5NNBS	Fish collection using beach seine			
6NTOT	Otter Trawl			

MDEDAT03 Maryland Dept. of the Environment Toxics Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Grab Sampling			

MDEDAT04 MD Dept. Environment In House Water Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BOAT	Boat Station Collections	Water Sampler	Boat station water quality samples consist of surface and bottom samples. They are collected by lowering a submersible pump equipped with a vinyl hose up to 150 feet in length to the desired depth	Annapolis Field Office, Water Quality Monitoring Division, 2001, Total Maximum Daily Load (TMDL) Quality Assurance Project Plan (QAPP) Eutrophication Sampling Component, Maryland Department of the Environment, Vol. 1
LAND-BR	Land Station Collection from Bridge	Water Sampler	All samples collected from land are surface samples that are collected by lowering buckets from bridge crossings. Bridge samples are collected using a 2.5 gallon plastic or stainless steel bucket, with a 10-50 ft rope securely attached to the handle.	Annapolis, MD Field Operations, 2001, STANDARD OPERATING PROCEDURES FOR THE COLLECTION AND HANDLING OF WATER SAMPLES, Maryland Department of the Environment, Vol.1 Appendix A
LAND-DIR	Land Collections Directly from Water Source	Water Sampler	Sample containers consist of one pre-labeled half-gallon plastic bottle; one pre-labeled one-quart plastic bottle; and one liter plastic container	Annapolis, MD Field Operations, 2001, STANDARD OPERATING PROCEDURES FOR THE COLLECTION AND HANDLING OF WATER SAMPLES, Maryland Department of the Environment, Vol.1 Appendix A

MDEDAT06 Private Groups,/Local Subdivision Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LAND_BR	Land station collection from bridge			
LAND_DIR	Land station collection directly from water			
MDE	MDE Field Office Procedures			

MDEDAT07 Maryland Dept. of the Environment Shellfish Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
APHA 3.2B	Recommended procedures for Exam of Seawater and Shellfish			
SP-001	Water Grab Sampling			

MDEDAT08 Maryland Department Of Environment Beaches Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Grab Sampling			

MDEDAT09 Maryland Dept. of the Environment Risk Assessment Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-003	Fish Tissue Extraction	Miscellaneous/Other		
SP-006	Compositing of Fish Tissue for Pesticides Analysis	Miscellaneous/Other		
SP-007	Netting Fish For Tissue Sample	Net/Non-Tow		
SP-009	Otter Trawl Operation and Collection	Net/Horizontal Tow		

MDEDAT10 MD Dept. of the Environment Private Pier Aquaculture Program

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-001	Water Grab Sampling			

MDEQ-WQ Montana DEQ - Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACT	Grab Sample for Water Bacteriology		Grab samples for water bacteriology are taken using a standard grab procedure with a sterile sample collection bottle. Care is taken not to touch the inside of the bottle or the lid. Sample are kept on ice until analysis.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
CHLPHL-1	Chlorophyll-a Template Sample		A flexible template is placed over stones along the transect. The area within the template is scraped and scrubbed clean. Samples are analyzed for chlorophyll a. Method is used for diatom, Nostic films, or short uniform growths of attached filaments.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
CHLPHL-1PD	Chlorophyll-a Template Sample Collected by Ponar Dredge		For transect points beyond reach of a wading person, a boat is used to collect benthic samples using a Ponar dredge. Bottom materials brought up by the Ponar dredge will be subsampled using the standard template method. (A flexible template is placed over stones along the transect. The area within the template is scraped and scrubbed clean. Samples are analyzed for chlorophyll a.)	
CHLPHL-2	Chlorophyll-a Rock Sample		Modification of the APHA procedure for sampling and extraction. Entire rocks sampled & chlorophyll extracted. Surface area of rocks is calculated. See MT SOP for method details. Post-extraction analytical procedure per APHA Standard Methods.	American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition
CNPSAMPLE	Algae Carbon and Nitrogen Content Sample Collection		Four water samples of known volume will be collected on GF/F filters and stored in 50 cc centrifuge tubes on ice (not frozen). Equal volume of water must be filtered on to each of these filters.	
COMPFLTR	Composite and Filtration of Quantitative Periphyton Samples		Collect a composite index sample from each transect as described in the EMAP Surface Waters: Western Pilot Study Field Operations Manual for Wadeable Streams, Figure 8-1 and Table 8-2. Prepare the chlorophyll and biomass samples from 25-mL aliquots of the composite index sample as described in Table 8-4.	Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors)., 2003, Environmental Monitoring and Assessment Program-Surface Waters: Western Pilot Study Field Operations Manual for Wadeable, U.S. Environmental Protection Agency, Washington, D.C., Unpublished Draft
DH-48	Water Sample Collected Using DH-48 Sampler		Water sample collected using the DH-48 sampler. Water and suspended sediment enters the sampler through an intake nozzle filling a 16 oz plastic bottle. An exhaust tube is cast into the body to	

MDEQ-WQ Montana DEQ - Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			allow air to escape down stream as it is displaced by the sample. The DH-48 is a cast aluminum sampler designed for use in streams which are shallow enough to be waded.	
DRIFTALGAE	Drifting Algae Sample Collection		Screen (area usually 0.3364 m2) held in screen for collection of "drifting algae".	
EWI	Equal Width Increment (EWI) Sample Collection		For the EWI sampling method, the stream cross section is divided into a number of equal-width increments. Samples are collected by lowering and raising a sampler through the water column at the center of each increment. (This sampling location is referred to as the vertical.) The combination of the same constant transit rate used to sample at each vertical and the isokinetic property of the sampler results in a discharge-weighted sample that is proportional to total streamflow. Isokinetic sampling is required for the EWI method: use the same size sampler container and nozzle at each of the sampling verticals and collect samples using the same transit rate at each vertical during descent and ascent of the sampler. Composite the subsamples from all verticals in a churn splitter or process subsamples through the cone splitter.	U.S. Geological Survey, 2006, National Field Manual for the Collection of Water-Quality Data. Chapter A4. Collection of Water Samples, U.S. Geological Survey, Version 2; Page 41
GRAB	Grab Water Sample		An individual discrete sample collected over a period of time not > 15 minutes.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
GRAB-SED	Grab Sediment Sample		Grab Sample for Sediment	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
HESS	Macroinvertebrate HESS Sample		Macroinvertebrate sample using a Hess Sampler. Rocks and subrate are scrubbed and cleaned. More than one site is used to gather an accurate macroinvertebrate sample.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
HOOP	Periphyton Hoop Sample		Metal hoop (710 cm2) is placed over bottom of stream and the bulk of all algal material within the hoop is collected. This captures plant material including that in the water column (vertically integrated). Typically, a composit of several samples is taken for analysis. Procedure used for	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1

MDEQ-WQ Montana DEQ - Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			filamentous algae associated with the substrate.	
IG	Integrated Grab Sample		Integrated sample collected from different points simultaneously, or within the time frame of a single discreet sample. Typically, a mixture of samples representing various points in the stream cross-section proportional to relative flow.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
IP	Investigative Procedure		Investigative procedure used for method research purposes.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
JAB	Macroinvertebrate JAB Sample		Macroinvertebrate JAB sample collected using a standard D-Net.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
KICK	Macroinvertebrate Traveling Kick Sample		This procedure for the deployment and handling of the 1-meter kick net is used for small stream riffle collection of macroinvertebrates.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
LAKE-DI	Lake Depth Integrated Water Sample		Equal volumes of water will be collected at each meter (starting from the surface) within a zone of integration, defined as the photic zone of the epilimnion determined as 3 times the Secchi depth, or to the depth of the thermocline, whichever is shallowest. In cases where the zone of integration is less than 3 meters deep, water samples will be taken at the surface, middle, and bottom of the depth interval. Water samples from the zone of integration will be composited into a single carboy from discrete vertical point samples taken by Van Dorn bottle, and are therefore depth integrated.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
MAC-LRG-R	Macroinvertebrate Non-Wadeable, Large River/Stream Sample		Macroinvertebrate sample collection procedure for EMAP Non-Wadeable Rivers and Streams (500 meters, 11 transects)	Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors)., 2000, Environmental Monitoring and Assessment Program-Surface Waters: Field Operations and Methods for Measuring the Ecological Condition of Non-Wadeable Rivers and Streams, U.S. Environmental Protection Agency, Cincinnati, OH., Unpublished Draft
MAC-R-500	Macroinvertebrate Composited Reach Sample		Collect a composite sample of transects along a reach using the kick net method described in the EMAP Surface Waters: Western Pilot Study Field Operations Manual for wadeable Streams, table 11-2. (500 micron mesh)	Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors)., 2003, Environmental Monitoring and Assessment Program-Surface Waters: Western Pilot Study Field Operations Manual for Wadeable, U.S. Environmental Protection Agency, Washington, D.C., Unpublished Draft

MDEQ-WQ Montana DEQ - Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
MAC-T-500	Macroinvertebrate Targeted Riffle Sample		Collect a composite sample of 8 targeted riffles using the kick net method described in the EMAP Surface Waters: Western Pilot Study Field Operations Manual for wadeable Streams, table 11-2. (500 micron mesh)	Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors)., 2003, Environmental Monitoring and Assessment Program-Surface Waters: Western Pilot Study Field Operations Manual for Wadeable, U.S. Environmental Protection Agency, Washington, D.C., Unpublished Draft
ORG-PEST	Organic Perticide Sample		Organic samples for pesticides are taken with a lab-prepared, glass sample collection bottle.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
PERI-1	Periphyton Scraped Substrate Sample		Scrape the entire surface of several rocks, lifting the algal film off from nearshore sediments. A stainless steel teaspoon is a good all-around tool for collecting microalgae.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
PERI-R	Periphyton Composited Reach Sample		Collect a composite sample on ten transects along a reach using an area delimiter (12 cm2) according to the method described in the EMAP Surface Waters: Western Pilot Study Field Operations Manual for wadeable streams, table 8-2.	Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors)., 2003, Environmental Monitoring and Assessment Program-Surface Waters: Western Pilot Study Field Operations Manual for Wadeable, U.S. Environmental Protection Agency, Washington, D.C., Unpublished Draft
PHYTOPLANK	Phytoplankton Sample		Phytoplankton samples are collected by filtering a known volume of water through glass fiber or membrane filters with an effective pore size of 0.45 um. For low densities collect a sample of up to 6 L. For richer eutropic waters 0.5 - 1 L.	
SED-1	Sediment Sieved Sample		Saturated sediment is collected and sieved in the field via gravity through a 0.062mm nonmetallic mesh inserted onto a large diameter plastic funnel. Site water is used to wet sieve 100 grams of fines into a large wide-mouth container.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
SED-CORE	Chlorophyll-a Sediment Core Sample		Core sample of the bottom is collected using a cut-off 60 cc syringe. After collecting several vertical inches of sediment the core is extracted all is discarded except for the upper 1 cm. Generally, a composite of at least 3 samples are combined for analysis. Samples are analyzed for chlorophyll a and corrected for phaeophytin.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
SED-COREPD	Chlorophyll-a Sediment Core Sample Collected by Ponar		For transect points beyond reach of a wading person, a boat is used to collect benthic samples	

MDEQ-WQ Montana DEQ - Water Quality Division

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
	Dredge		using a Ponar dredge. Bottom materials brought up by the Ponar dredge will be subsampled using the standard sediment core method. (Core sample of the bottom is collected using a cut-off 60 cc syringe. After collecting several vertical inches of sediment the core is extracted all is discarded except for the upper 1 cm. Generally, a composite of at least 3 samples are combined for analysis.)	
SED-LAKE	Sediment Lake Sample		Sediment is collected using specialized equipment. Sediment is sieved in the field via gravity through a 0.062mm nonmetallic mesh inserted onto a large diameter plastic funnel. Site water is used to wet sieve 100 grams of fines into a large wide-mouth container.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
SURBER	Macroinvertebrate Surber Sample		Aquatic macroinvertebrate sampling using a surber sampler.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
UNKNOWN	Unknown Sample Collection Procedure		Specific sample collection procedure information for this sample was either unknown or unavailable at the time the data was processed for loading into STORET.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

MEDEP Maine Department of Environmental Protection

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BM-MAC-1	Standard Macroinvertebrate Sample	Trap/Substrate		Maine Department of Environmental Protection, 2002, Methods for Biological Sampling and Analysis of Maine's Waters, MDEP, Augusta ME, 2002
BM-MACEX-1	ME DEP Qualitative Macroinvertebrate Method	Net/Non-Tow		
BM-MACEX-2	Ekman Grab - Macroinvertabrate	Benthic Grab		
BM-MACEX-3	Experimental Macroinvertebrate Sample	Miscellaneous/Other		
BP-PER-1	Periphytometer Slides	Miscellaneous/Other		Maine Department of Environmental Protection, 1999, Periphyton Quality Assurance Project Plan, MDEP, Augusta, ME, 1999
BP-PER-2	Natural Substrate Scrapings	Trap/Substrate		Maine Department of Environmental Protection, 1999, Periphyton Quality Assurance Project Plan, MDEP, Augusta, ME, 1999
BP-WAT-1	Water Chemistry Sample	Water Sampler		Maine Department of Environmental Protection, 1999, Periphyton Quality Assurance Project Plan, MDEP, Augusta, ME, 1999
M-COLLECT	Biological sample collection by hand	Miscellaneous/Other		
M-SEDGRAB	Sediment grab sample	Benthic Grab		
M-TRAP	Biological sample collection with trap	Trap/Substrate		
R-WATER	Water sample collection for rivers	Water Sampler		

MIDNITE Region 10 Superfund: Midnite Mine (WA)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
MMGSP	Midnite Mine Generic Sampling Procedure			

Sample Collection/Creation Procedures

MIDVALE **SUPERFUND MIDVALE RAILYARD**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

MNPCA1 Minnesota Pollution Control Agency

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BED SED 1	Stream Bed Sediment Grab with Tube	Miscellaneous/Other	Sample soft sediments from the pools with an inverted transparency tube to collect the top 10cm, and then extruded the core into the sample container with a stick.	
CF	Composite sample with auto-sampler	Water Sampler	Composite sample with auto-sampler	
CF-F	Composite sample, flow-weighted/flow-paced with auto-sampler	Water Sampler	Composite sample, flow-weighted/flow-paced with auto-sampler	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
CF-T	Composite sample, flow-weighted/time-paced with auto-sampler	Water Sampler	Composite sample, flow-weighted/time-paced with auto-sampler	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
CG-T	Composite of grab samples, time-paced	Water Sampler	Individual grab samples taken over time are composited for a single result.	
CM	Composite sample from multiple locations	Water Sampler	Composite sample from multiple locations on a waterbody, combined with a churn splitter.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
CO	Composite sample (other)	Water Sampler	Composite sample (other)	
CT-T	Composite sample, flow-triggered, time-paced, auto-sampler	Water Sampler	Automatic sampling at regular time intervals triggered by a pre-set increase in stream water level.	
CT-U	Composite sample, time-paced, trigger unknown, auto-sampler	Water Sampler	Automatic composite sampling at regular time intervals.	
D-T	Discrete sample, time-paced with auto-sampler	Water Sampler	Discrete sample, time-paced with auto-sampler	
G	Grab sample	Water Sampler	Submerge and fill a water sampling vessel, or sample directly into the sample bottle provided by the analytical laboratory, at a single point in a waterbody.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
G-DLF	Grab, Disturbed, Low-Flow		The modified grab sample was taken from Stephenson, and Rychert (1982). Bottom sediments were disturbed by raking a 4 sq. m. area for 30 seconds. Grab samples were then taken in downstream sediment plumes that exceeded 25	Stephenson, G.R., and R. C. Rychert, 1982, Bottom sediment: a reservoir of Escherichia coli in rangeland streams., Journal of Rangeland Management, 35:119-123

MNPCA1 Minnesota Pollution Control Agency

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			NTUs.	
LKDEPTH	Lake depth point sampling	Water Sampler	Lake water is sampled at a discrete depth in the water column using a vertical Kemmerer- or Van Dorn-type sampler.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
LKSURF2M	Lake surface 2-meter depth-integrated sampling	Water Sampler	Sample is collected by lowering a 2-meter-long, 2-inch-diameter PVC pipe vertically into the water, capturing the water in the pipe by stoppering the top end, raising the tube, and then releasing the water into a 2L bottle by removing the stopper.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
LKSURFOTH	Lake surface depth-integrated sampling other than 0-2m			
METALS1	Continuous-flow sampling, Clean Hands technique	Water Sampler	Lower teflon collection tube to a representative depth of the waterbody. Pump water into sample collection bottles. Tubing was cleaned with site water for 20 minutes between station visits.	USEPA, 1996, Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels., USEPA, EPA 821/R-96-008

MNPCAB Minnesota Pollution Control Agency Biological Monitoring

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
10 X 10	10 x 10 Releve plot		10 meter by 10 meter plot for plant identification in wetlands	
20 X 20	20 x 20 releve plot		20 meter by 20 meter plot for plant identification in wetlands	
5 X 20	5 x 20 releve plot		5 meter by 20 meter plot for plant identification in wetlands	
5 X 5	5 x 5 releve plot		5 meter by 5 meter plot for plant identification in wetlands	
ACT TRAP	Invert Activity trap		Ten modified 2 liter plastic beverage bottles are placed in the nearshore emergent vegetation zone for two consecutive nights.	
DIP NET	D-frame aquatic dip net		Two samples with a 600 micron mesh size dip net. Taken in the nearshore emergent zone.	
G	Grab Sample	Water Sampler	Submerge and fill a water sampling vessel, or sample directly into the sample bottle provided by the analytical laboratory, at a single point in a waterbody.	

MNPCAP Minnesota Pollution Control Agency

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BAIL	Bail; not able to pump	Water Sampler	Utilized with wells that cannot be pumped. Measure depth to water and well depth. Lower bailer into the well using a rope and recover water from the well. Pour water into 5 gallon bucket to measure water volume and to record field readings. Bail 3 to 5 well volumes of water from the well prior to sampling.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
NONSUBMERS	Non-submersible	Water Sampler	Utilized with shallow monitoring wells that does not have a pump installed. Measure depth to water and well depth. Install tubing or pump into well and begin flow, record field readings to determine stabilization. Field readings are collected utilizing a multi-parameter probe and flow cell. Stabilization occurs when 3 consecutive readings of Temperature, Specific Conductance and pH are all within 0.1 degree C, 5% millisiemens and 0.1 units, respectively. Collect samples after well has stabilized.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages
SUBMERS	Submersible	Water Sampler	Utilized with domestic or deep monitoring wells that have a submersible pump installed. Turn on pump to flow water, record field readings to determine stabilization. Field readings are collected utilizing a multi-parameter probe and flow cell. Stabilization occurs when 3 consecutive readings of Temperature, Specific Conductance and pH are all within 0.1 degree C, 5% millisiemens and 0.1 units, respectively. Collect samples after well has stabilized.	Minnesota Pollution Control Agency Quality Assurance Program, 2000, www.pca.state.mn.us/programs/qa_p.html, Minnesota Pollution Control Agency, all pages

MONT-DEQ Montana Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CHLORPHYL2	Chlorophyll, rock substrate		Modification of the APHA procedure for sampling & extraction. Entire rocks sampled & chlorophyll extracted - surface area calculated w/ special procedure. See MT SOP for method details. Post-extraction analytical procedure is standard.	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
COMP-H2O	Composite Sample, water		Collected by combining equal volumes of two or more grab samples collected at a fixed interval of time.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
DI	Depth Integrated Water Sample	Water Sampler		
FLBS-IVS	FLBS Integrated Vertical Sample, Water	Water Sampler	Nalgene PUR ester grade tubing. An individual vertical integrated sample collected in a Nalgene PUR ester grade hose, mixed in a HDPE carboy, and a single subsample poured into a sample bottle. Clean hose, carboy and sample bottle are rinsed on site.	
FLBS-VD	FLBS Van Dorn Sample, Water	Water Sampler		
GRAB	Grab Sample, water		An individual discrete sample collected over a period of time not > 15 minutes. Clean bottles are rinsed on site - sample is collected using MT DEQ SOP	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
GRAB-BACT	Grab Sample, Water Bacteriology		Grab samples for water bacteriology are taken using a standard grab procedure with a sterile sample collection bottle provided by the analytical laboratory. Care is taken not to touch the inside of the bottle or lid.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
GRAB-X3	Grab Sample, water, three sample bottles		An individual discrete sample collected over a period of time not > 15 minutes. Clean bottles are rinsed on site - sample is collected using MT DEQ SOP - 2.5 L total - three containers for nutrients, metals, solids & commons.	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
GW	Ground Water Sampling, bailer	Water Sampler	Groundwater sampling is accomplished by bailing or pumping - quantity of water removed before sample taken so sample is representative of water in the formation.	Montana Power Company, Environmental Engineering Department, Colstrip Project Division, 1997, Water Resources Monitoring Plan, Colstrip Project Division, Environmental Engineering Department, Colstrip Project Division, Montana Power Company, Rev 3, June 25 1997

MONT-DEQ Montana Department of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HISTORIC	Unknown, Historic Data, Migrated from STOREASE		STOREASE contained data downloaded from the mainframe STORET system and data that was entered directly into the PC-based STOREASE system. STOREASE contained many more fields and attributes than allowed in the 'old' STORET System.	
MACRO-HESS	Macroinvertebrate Sampling, Hess Sampler	Trap/Substrate		Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
MACRO-KICK	Macroinvertebrate, Traveling Kick	Net/Non-Tow	This procedure for the deployment and handling of the 1-meter kick net is used for small stream riffle collection of macroinvertebrates. (Standard D net and travelling kick per MT DEQ SOP)	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
PERI-1	Periphyton Sampling, scraped substrate		Scrape the entire surface of several rocks, lifting the algal film off from nearshore sediments. A stainless steel teaspoon is a good all-around tool for collecting microalgae.	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1
SED-1	Sediment Collection, Sieved (.062 mm)		Saturated sediment is collected and sieved in the field via gravity through a 0.062mm nonmetallic mesh inserted onto a large diameter plastic funnel. Site water is used to wet sieve 100 grams of fines into a large wide-mouth container.	Montana Department of Environmental Quality, 1995, Standard Operating Procedures Manual, MT DEQ, 1

MONT-PPL PPL Corporation (Montana)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DI-GRAB	Depth Integrated Surface Water Sampling		A DH-59 sampler is used for this sample collection procedure. The entire depth in each subsection is sampled using a constant vertical velocity (transit rate). The transit rate down to the bottom must be constant and the sampler immediately reversed in direction and a constant velocity maintained upward to the water surface. For sampling locations where several vertical sections are sampled, an equal width increment procedure will be used. In this case the stream or river width is divided into a minimum of 4-5 subsections each of equal width. A depth integrated sample is collected in the middle of each subsection using the above procedure. The subsection samples will be combined to yield a single composite sample.	
PERI-1	Periphyton Scraped Substrate Sample		A square area of 6.45 cm2 (2.54 cm on a side) is scraped from each of the ten rocks. The scraping tool will be well rinsed in between samples.	
POINTGRAB	Point Surface Water Sampling		A DH-81A sampler is used for this sample collection procedure. The sampler is lowered into the water with the intake facing upstream, lowered to near the bottom of the stream, and then removed. This method involves collecting a sample from only one point in the stream. See PPL SOP 5106 (Point Surface Water Sampling) for additional information.	
TRIPBLANK	Trip Blank		Trip blanks are prepared at the laboratory by filling the sample bottle with deionized water, and including this sample blank in the sampling kit. The trip blank remains in the shipping container (cooler) throughout the sampling event at the site and is returned to the laboratory for analysis along with the field collected samples. One trip blank is included for each container of samples submitted for analysis. Trip blanks containing target constituents above detection limits indicate problems during shipping and storage, and may also suggest laboratory cross contamination.	

Sample Collection/Creation Procedures

MTOLIVET **Region 8 Superfund: Mount Olivet Cemetery Plume**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

MTVOLWQM Montana Volunteer Water Quality Monitoring

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACT	Grab Sample, Water Bacteriology		Grab samples for water bacteriology are taken using a standard grab procedure with a sterile sample collection bottle provided with the analytical kit. Care is taken not to touch the inside of the bottle or lid.	
GRAB	Grab Sample, water		An individual discrete sample collected over a period of time not > 15 minutes.	
UNKNOWN	Unknown Sample Collection Procedure		Specific sample collection procedure information for this sample was either unknown or unavailable at the time the data was processed for loading into STORET.	

MTWTRSHD Montana Watershed Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACT	Grab Sample, Water Bacteriology		Grab samples for water bacteriology are taken using a standard grab procedure with a sterile sample collection bottle provided by the analytical laboratory. Care is taken not to touch the inside of the bottle or lid.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
CHLPHL-1	Periphyton sampling, template scraped substrate		A flexible template is placed over stones along the transect. The area within the template is scraped/scrubbed clean. Samples are analyzed for chlorophyll a. Method is used for diatom or Nostic films or short uniform growths of attached filaments.	
CHLPHL-2	Chlorophyll, rock substrate		Modification of the APHA procedure for sampling & extraction. Entire rocks sampled & chlorophyll extracted - surface area calculated. See MT SOP for method details. Post-extraction analytical procedure per Standard Methods (APHA).	American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition
FLBS-CHLA	FLBS Chlorophyll a sampling at depth		Opaque rubber tubing and impeller pump. An individual sample collected at depth of maximum fluorescence as determined using a shipboard fluorometer in an opaque HDPE bottle. Clean bottle is rinsed on site.	
FLBS-CHLA2	FLBS Chlorophyll a Integrated Depths		An individual vertical integrated sample collected in a garden hose, mixed in a HDPE carboy, and a single subsample poured into a sample bottle. Clean hose, carboy and sample bottle are rinsed on site.	
FLBS-IVS	FLBS Integrated Vertical Sample, Water		Nalgene PUR ester grade tubing. An individual vertical integrated sample collected in a Nalgene PUR ester grade hose, mixed in a HDPE carboy, and a single subsample poured into a sample bottle. Clean hose, carboy and sample bottle are rinsed on site.	
GRAB	Grab Sample, water		An individual discrete sample collected over a period of time not > 15 minutes.	American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition
HESS	Macroinvertebrate Sampling, Hess Sampler		Hess sampling.	

MTWTRSHD Montana Watershed Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HOOP	Periphyton Sampling, metal hoop, area standardized		Metal hoop (710 cm2) is placed over bottom of stream and the bulk of all algal material within the hoop is collected. This captures plant material including that in the water column (vertically integrated). Typically, a composit of several samples is taken for analysis. Procedure used for filamentous algae associated with the substrate.	
IG	Integrated Grab		Integrated sample collected from different points simultaneously, or within the time frame of a single discreet sample. Typically, a mixture of samples representing various points in the stream cross-section proportional to relative flow.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
JAB	JAB Macroinvertebrate sample collection using standard D-Net		JAB Macroinvertebrate sample collection using standard D-Net.	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --
KICK	Macroinvertebrate, Traveling Kick		This procedure for the deployment and handling of the 1-meter kick net is used for small stream riffle collection of macroinvertebrates. (travelling kick per MT DEQ SOP)	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
PHYTOPLANK	Phytoplankton sampling - quantitative filtration		Phytoplankton samples are collected by filtering a known volume of water through glass fiber or membrane filters with an effective pore size of 0.45 um. For low densities collect a sample of up to 6 L. For richer eutropic waters 0.5 - 1 L.	
SED-1	Sediment Collection, Sieved (.062 mm)		Saturated sediment is collected and sieved in the field via gravity through a 0.062mm nonmetallic mesh inserted onto a large diameter plastic funnel. Site water is used to wet sieve 100 grams of fines into a large wide-mouth container.	MT DEQ MDM, 1995, Standard Operating Procedures Manual, Montana Department of Environmental Quality, Volume 1
SED-CORE	Periphyton Sampling, core sample 5.7cm2 area		Core sample of the bottom is collected using a cut-off 60 cc syringe. After collecting several vertical inches of sediment the core is extracted all is discarded except for the upper 1 cm. Generally, a composite of at least 3 samples are combined for analysis. Samples are analyzed for chlorophyll a and corrected for phaeophytin.	
UNKNOWN	Unknown Sample Collection Procedure		Specific sample collection procedure information for this sample was either unknown or unavailable at the time the data was processed for loading into STORET.	

MTWTRSHD Montana Watershed Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
VAN_DORN	Van Dorn Water Sampler		Van Dorn Water Sampler	

MWRD Metro Waste Water Reclamation District (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab Sample using water sampler	Water Sampler		
PROBE	Multiparameter Water Quality Monitoring Sonde	Miscellaneous/Other		
SECCHI	Secchi Disc			
SHOCK	Bank electrofishing unit.	Electroshock		

MWRDSTOR Metropolitan Water Reclamation District of Greater Chicago

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
EPA METHOD	EPA Methods			USEPA, 1994, Methods for the Determination of Metals in Environmental Samples, Supplement I, USEPA, EPA 600-R-94-111
STD. METH	Standard Methods; 18th Edition			American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition

NARS EPA National Aquatic Resource Survey Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BENT-001	Benthic Macroinvertebrate Sampling	Net/Non-Tow	This procedure uses a modified D-frame kick net to sample Benthic Macroinvertebrates at 11 transects of assigned sampling points. Sampling point at each transect is determined by randomly choosing the first point (Left, Center, Right facing downstream), then progressing upstream systematically through Left, Center, or Right, in order, at each successive transect. The sample is always collected 1-m downstream of the the transect. Samples are combined in a sieve bucket or other container from each transect.	USEPA, 1999, Rapid Bioassessment Protocols for Wadeable Streams and Rivers: Periphyton, Benthic Macroinvertebrates, and Fish, 2nd ed, USEPA, EPA 841/B-99-002
ELCTRO-001	Backpack Electrofishing	Electroshock	Fish for 45 to 180 minutes among all sub-reaches based on stream size and complexity. If more than 50% can't be sampled in 180 minutes or less, spend 2 days sampling and consider back/towed electrofishing. Unit should be sent to pulsed DC. Set initial voltage based on conductivity of water. Begin sampling at downstream end of reach and fish in the upstream direction. Netter follows operator with net 1 to 2 ft from anode and nets stunned individuals and places them in a bucket. Process fish/and or change water after each sub-reach has been sampled.	
GRAB	Water Grab Sampling			
PERIPH-001	Periphyton Sampling	Miscellaneous/Other	Sample 1m downstream of each transect. Rotate Left, Center, Right for sampling point starting with randomly chosen by wristwatch or die method postion at transect A. Erosional Habitats: Collect rock or wood substrate into plastic funnel which drains to 500 mL container and scrub 12 sq. cm. area of upper substrate surface with toothbrush for 30 seconds. Rinse with minimum volume of stream water in wash bottle into container. Depositional Habitats: Vacuum top 1cm of sediments within 12 sq. cm. delimeter using catheter-tipped syringe. Empty syringe into 500 mL container containing samples from Erosional Habitats. Keep collection bottle out of sunlight. Mix 500 mL bottle throroughly. Record estimated volume.	

NARS EPA National Aquatic Resource Survey Data

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
VISOBS	Visual Observations			

NEIARCD NEIARCD (Iowa)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UPIA01	NE Iowa RC&D Sampling Protocol - Upper Iowa River		Water is collected at the sampling point by performing a sample bottle dip while wading; unless conditions exist that prohibit wading. In these circumstances, remote grab sampling will be performed. Remote grab sampling is performed by attaching a sample bottle to a telescoping pole. The sample bottles will not be rinsed with sample water prior to sample collection because pre-cleaned, unused bottles will be used for sampling. Grab samples will be collected at a middle depth in the water column without disturbing the stream bed or collecting floating material from the water surface. The sample taker will always face upstream and will allow the sediment plume to clear prior to collecting the sample. The sample bottle will be lowered into the water upside down to a depth of approximately 3/5 of the total water depth down from the surface of the water and allowed to fill at this depth. If the stream is very shallow, the directions above will be followed as closely as possible without touching or disturbing the streambed with the bottle. The sample bottles will be labeled on site and placed on ice in a closed cooler for transport to the collection area.	

Sample Collection/Creation Procedures

NKUWATER **Northern Kentucky University**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
1	LRWW sample	Water Sampler		

Sample Collection/Creation Procedures

NTEMPLE **Region 8 Superfund: West North Temple Plume**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

O-MTRIBE Otoe Missouria Tribe of Oklahoma

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
OM_SCP	Otoe-Missouria Sample Collection Procedure		Otoe-Missouria Sample Collection Procedure	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

OKCONCOM Oklahoma Conservation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
010	Sample Collection			
020	Width/Depth Integrated			
041	Discharge Interval - Automated			
090	Point/Pipe Sample			
COMBINED	Fish Collection Procedure-Combined Processes	Miscellaneous/Other	The collection of fish by OCC-WQ follows a modified version of the EPA Rapid Bioassessment Protocol V (EPA, 1989) supplemented by other documents. Specific techniques for, and relative advantages of seining and electrofishing vary considerably according to stream type and conductivity. The specifics are discussed in detail in Fisheries Techniques (edited by L.A. Nielsen and D.L. Johnson and published by the American Fisheries Society 1983). The collection of fish involves the use of two collection methods, seining and electroshocking. The combination of methods was selected in order to produce a representative fish collection. Variations of habitat, type of fish, and water chemistry dictate the use of different collection techniques. In general, each stream is sampled for a distance of 400 m. Seining is conducted before shocking. Seine height is dictated by water depth, and length is determined by width of the water being sampled. If possible, the seine should be 15-25% longer than the width of the waterbody being sampled and about 25% higher than the depth of the water. The seine is hauled with the current because fish tend to orient towards the current. Electrofishing involves the use of a backpack shocker that consists of a trailing stainless steel cable electrode and ring electrode mounted on the end of a fiberglass pole. The shocking team consists of at least two people. One carries and operates the shocker while the other(s) net stunned fish. The shocker is most useful where a seine cannot be used effectively in areas such as brush piles, rootwads, and cobble substrates. The forward electrode is gradually passed back and forth as the team walks downstream. As fish are stunned, they usually roll over and become more	

OKCONCOM **Oklahoma Conservation Commission**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			visible, allowing the netters to see and capture them. In waters of high conductivity (> 1000 µS/cm) electroshocking is ineffective, due to the highly conductive nature of the water. Under these conditions, only seining is conducted. In general, all fish are placed in 10% formalin immediately after capture. However, if larger fish (> 100 g) can be positively identified in the field, they are returned to the water in a location where recapture is unlikely. All large fish released are photographed on print film. A representative photograph is taken when large numbers of one fish species is collected and released. Collected organisms are identified to species by an experienced taxonomist.	
RI-KICK	Benthic Kick Procedure for Riffle Habitats	Miscellaneous/Other	Collection of Benthic Macroinvertebrates from Rocky Riffles: A. Suitable Substrate - A riffle is defined as any sudden downward change in the level of the streambed such that the surface of the water becomes disrupted by small waves. For this collection method the substrate of the riffle must be composed of gravel, or cobble from 1" to 12" in the longest dimension. Riffles with substrates of bedrock or tight clay are not suitable. B. Where to Sample the Riffle - Three 1 m2 areas of the riffle must be sampled. They can be square, rectangular or trapezoidal so long as each area equals 1 m2 in area. One should be in the fastest part of the riffle where the largest rocks and the smallest amount of interstitial sediment will generally be found. The second should be in the slowest part of the riffle, often near the edge of the stream where the smallest rocks and the greatest amount of interstitial sediment will be found. The third sample should be in an area intermediate between the first two. C. Method of Collecting the Sample - Support a 1-m2 kick net composed of a double layer of fiberglass window screen or a net of number 30 mesh in such a way that the current will carry any organisms dislodged from the substrate into it. The bottom of the net should be tight against the bottom	

OKCONCOM **Oklahoma Conservation Commission**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			of the stream and the current must be sufficient to insure that dense organisms such as small mollusks will be carried into the net from the sampling area. There is no definite cutoff for stream velocity in the sampling area, but if possible, riffles with average velocities of 1 foot/second or greater are preferred and should be chosen if possible. D. By kicking the substrate, vigorously agitate the substrate of a 1-m2 area of the bed of the riffle immediately upstream of the riffle until all rocks and sediment to a depth of at least five inches have been thoroughly scraped against each other. Organisms living between and upon the rocks will have been dislodged and carried into the net by the current. Any rocks too large to kick should be brushed by hand on all surfaces. This can be done using your hands or with the aid of a brush. If a brush is used, you must be very careful to clean it after each site to prevent contamination of the next sample with invertebrates from the previous site. Continue agitation and brushing until it can be seen that the area being sampled is producing no new detritus, organisms, or fine sediment. E. At this point, rinse leaves, sticks and other large debris caught in the net in the current in a manner such that organisms on them are carried into the net. When the volume of the sample is reduced so that three 1 m2 samples will loosely fill a 1 quart mason jar three fourths (3/4) full or less, remove all of the material from the net and place it in the mason jar. In no case should the Mason jar be filled more than 3/4 full of loose sample. Add 100% ethanol to the jar until the sample is covered and there is free ethanol on top of the sample. There should always be enough room in the jar to have at least 5 cm (2 inches) of free ethanol over the sample.	
SEINE	Seine Fish Collection Procedure	Miscellaneous/Other	Seining is conducted before shocking since fish that utilize cover in the stream will generally not leave the area when disturbed. These fish are	

OKCONCOM **Oklahoma Conservation Commission**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			most efficiently collected by shocking and should remain when electroshocking commences. Seining is performed with nets of various sizes with ¼" mesh. Seine height is dictated by water depth, and length is determined by width of the water being sampled. If possible, the seine should be 15-25% longer than the width of the waterbody being sampled and about 25% higher than the depth of the water. The amount of obstructions in the stream will often preclude the use of longer seines however. When this situation occurs, the crew leader will decide on the most effective combination of seines. OCC utilizes 4 and 6 foot seines in 10, 20, and 30-foot lengths. This will allow the center of the net to form a bag behind the operators where the fish are more likely to stay in the net. The seine is hauled with the current because fish tend to orient towards the current. In general, all fish are placed in 10% formalin immediately after capture. However, if larger fish (> 100 g) can be positively identified in the field, they are returned to the water in a location where recapture is unlikely. All large fish released are photographed on print film. A representative photograph is taken when large numbers of one fish species is collected and released. Collected organisms are identified to species by an experienced taxonomist.	
SHOCK	Electroshocking Fish Collection Procedure	Miscellaneous/Other	Electrofishing involves the use of a backpack shocker that consists of a trailing stainless steel cable electrode and ring electrode mounted on the end of a fiberglass pole. The shocking team consists of at least two people. One carries and operates the shocker while the other(s) net stunned fish. The shocker is most useful where a seine cannot be used effectively in areas such as brush piles, rootwads, and cobble substrates. The forward electrode is gradually passed back and forth as the team walks downstream. As fish are stunned, they usually roll over and become more visible, allowing the netters to see and capture	

OKCONCOM **Oklahoma Conservation Commission**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			them. In waters of high conductivity (> 1000 ?S/cm) electroshocking is ineffective, due to the highly conductive nature of the water. Under these conditions, only seining is conducted. In general, all fish are placed in 10% formalin immediately after capture. However, if larger fish (> 100 g) can be positively identified in the field, they are returned to the water in a location where recapture is unlikely. All large fish released are photographed on print film. A representative photograph is taken when large numbers of one fish species is collected and released. Collected organisms are identified to species by an experienced taxonomist. NOTE: When necessary a Boat-Mounted shocker is used.	
SV-KICK	Benthic Kick Procedure for Streamside Vegetation Habitats	Miscellaneous/Other	Collection of Macroinvertebrates from Streamside Vegetation Habitats: A. Determine Suitable Substrate - Any streamside vegetation in current that offers fine structure for invertebrates to dwell within or upon is suitable. The vegetation being sampled must be in the current so that it offers suitable habitat for organisms which collect drifting particles or which need flowing water for other reasons. This habitat will often be found along the undercut banks of runs and bends where the fine roots of grasses, sedges, and trees, such as willow and sycamore, hang in the water. B. Method of Collecting the Sample - This type of sample should be collected with a dip net made of #30 size mesh material. The net should be placed around or immediately downstream of the vegetation being sampled. The organisms can be dislodged from the roots either by vigorously shaking the net around the roots or by shaking the roots by hand while the roots is inside the net. C. Where and How Long to Sample - Sampling should continue for 3 minutes of actual root shaking. Do not count the time that elapses between sampling areas. Be careful to only sample roots in current. Usually, only one or two sides of a given rootmass are in current. Be careful not to sample the backside of a	

OKCONCOM Oklahoma Conservation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			rootmass that is in still water. D. At this point, rinse leaves, sticks and other large debris caught in the net so that organisms are not lost. When the volume of the sample is reduced so that it will loosely fill a 1-quart mason jar three fourths (3/4) full or less, remove all of the material from the net and place it in the mason jar. In no case should the Mason jar be filled more than 3/4 full of loose sample. Add 100% ethanol to the jar until the sample is covered and there is free ethanol on top of the sample. There should always be enough room in the jar to have at least 5 cm (2 inches) of free ethanol over the sample.	
UNK	Unknown			
WD-KICK	Benthic Kick Procedure for Woody Debis Habitats	Miscellaneous/Other	Collection of Macroinvertebrates from Woody Debris: A. Determine Suitable Substrate - Any dead wood with or without bark in the stream is suitable as long as it is in current fast enough to offer suitable habitat for organisms which collect drifting particles or which need flowing water for other reasons. The final sample should consist of organisms collected from an even mixture of wood of all sizes and in all stages of decay. B. Method of Collecting the Sample - This type of sample should be collected with a dip net made of #30 size mesh material. The net should be placed around or immediately downstream of the debris being sampled. The organisms can be dislodged from the debris either by vigorously shaking the net around the woody debris or by shaking the debris by hand while the debris is inside the net. Large logs that are too big to shake should be brushed or rubbed vigorously by hand while the net is held immediately downstream. C. Where and How Long to Sample - Sample for total of 5 minutes counting only the time that debris is actually being agitated. Include as many types of debris in the sample as possible. These types often include wood that is very rotten and spongy with or without bark, wood that is fairly solid which has loose and rotten bark,	

OKCONCOM Oklahoma Conservation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			wood that is solid with firmly attached bark and any combination of these states. They should range in size from 1/4" to about 8" in diameter. D. After sampling, rinse leaves, sticks and other large debris caught in the net so that organisms are not lost. When the volume of the sample is reduced so that it will loosely fill a 1-quart mason jar three fourths (3/4) full or less, remove all of the material from the net and place it in the mason jar. In no case should the Mason jar be filled more than 3/4 full of loose sample. Add 100% ethanol to the jar until the sample is covered and there is free ethanol on top of the sample. There should always be enough room in the jar to have at least 5 cm (2 inches) of free ethanol over the sample.	

OKCORCOM Oklahoma Corporation Commission

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
10	General Environmental Sample			

OKDAFF Oklahoma Dept. of Agriculture, Food and Forestry

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
10	General Environmental Sample		General Environmental Sample	

OKDEQ Oklahoma Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
100	Groundwater Sample		Grab sample collected after a set amount of time of pumping to waste - 5min/100ft well depth	
105	GWS Replicate/Duplicate		Replicate grab sample collected from a well after pumping and intial sample collection.	
200	Grab - Surfacewater		Grab sample collected from a surface water stream/creek or river, taken as close to thalwag as possible	
205	SWS Replicate/Duplicate		Replicate grab sample from a surface water or a duplicate sample collectect at the same time as original sample.	
210	Surfacewater Sample - WI		Composite sample consisting of a series of grab samples taken at equal intervals across the streams width	
300	Electrofish		The use of electricity to capture fish for tissue analysis	
305	Fish Tissue Replicate/Duplicate		A second set of fish, of the same species, collected on the same day, within the same size and class range as original sample	
310	Gill Netting		The use of monofilament netting of various mesh sizes to capture fish for tissue analysis	
320	Fish Combined		The combined use of all available methods to capture fish for tissue analysis	
400	Sediment Sample		Representative sample of sediment recently deposited by receding stream levels	
50	Field Blank		Reagent grade Water carried to sampling location and treated as an actual sample	
75	Field Parameters		Use of Electronic Meters to take measurements of surface waters.	

OKWRB Oklahoma Water Resources Board

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
10	General Environmental Sample		General Environmental Sample	
11	Environmental Churn Duplicate		Environmental Churn Duplicate	
12	Environmental Replicate		Environmental Replicate	
20	General Duplicate		General Duplicate	
21	Churn Duplicate		Churn Duplicate	
22	Replicate		Replicate	
30	General Blank		General Blank	
31	Analytical Bank		Analytical Bank	
32	Laboratory Bank		Laboratory Bank	
33	Field Blank		Field Blank	
34	Split Bank		Split Bank	
40	General Replicate		General Replicate	
41	Analytical Replicate		Analytical Replicate	
42	Laboratory Replicate		Laboratory Replicate	
50	Known Sample		Known Sample	
60	Spike Sample		Spike Sample	
70	Special Projects		Special Projects	

OSAGENTN Osage Nation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ON_SCP	Osage Nation Sample Collection Procedure		Osage Nation Sample Collection Procedure	OSAGE_QAPP - Dana Washbourne, 2002 rev 4/14/2005, Quality Assurance Project Plan For Water Pollution Control Surface Water Quality On The Osage Reservation, Osage Nation, 41

PATCMON Potomac Appalachian Trail Club Volunteer Monitoring - VA,MD

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
PROTOCOL1	Audubon Naturalist Society Protocol for Piedmont Streams	Net/Non-Tow	Select a site with riffle-pool-riffle sequence. Deploy the D-Net 9 times, 3 each in the downstream riffle, the pool, and the upstream riffle, always working from downstream to upstream. Physically disturb the habitat over about a 1 foot square above the mouth of the net, with handling and scrubbing of cobbles for about 45 seconds, and general benthic disruption for about 15 seconds, for a 1 minute gear deployment. Rinse the net contents with stream water as thoroughly as possible to minimize murkiness in the sample. Empty the contents of the net into collecting pans, carefully rinsing both inside and outside of the bag and mesh for maximum yield. Combine all samples. From the combined sample, collect one or more random subsamples, with the goal of obtaining 100 or more individual organisms. Enumerate all organisms in each subsample until the count of 100 is reached, then complete the enumeration of the final subsample. Repeat this entire protocol (not more than once) if 100 organisms are not obtained.	

PR-BEACH Puerto Rico Environmental Quality Board Beach

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-001	grab sampling	Water Sampler		

PR-COAST Puerto Rico Environmental Quality Board Coastal (Beach)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-001	grab sampling	Water Sampler		

PR-LAKES Puerto Rico Environmental Quality Board (Surface Water)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-001	grab sampling	Water Sampler		

PR-RIVER Puerto Rico Environmental Quality Board (Rivers)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB-001	grab sampling	Water Sampler		

Sample Collection/Creation Procedures

PREQB-GW Puerto Rico

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WSP-001	well collection procedure 001	Water Sampler		

QUAPAWTR Quapaw Tribe of Oklahoma

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
QT_SCP	Quapaw Tribe Sample Collection Procedure			

R2-LAB New York

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BCH-HELI	Collection for Summer Helicopter Sampling	Water Sampler		
SOP2-84004	SOP for Water and Sediment Sampling from the Helicopter	Water Sampler		

R4ATHENS EPA Region 4 Athens Lab (Georgia)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
R4ATHENS	EASOPQAM		All samples will be collected according to the procedures in the Ecological Assessment Standard Operation Procedures and Quality Assurance Manual, January 8 2002 (EASOPQAM) and the Environmental Investigations Standard Operating Procedures and Quality Assurance Manual, November, 2001 (EISOPQAM).	

Sample Collection/Creation Procedures

R8BRNFLD Region 8 Superfund: Brownfields

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

R9VOL Volunteer Monitoring Groups in EPA Region 9 (CALIFORNIA)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FP-001	Maacama Field Procedure	Water Sampler		

Sample Collection/Creation Procedures

RCKYFLTS **Region 8 Superfund: Rocky Flats Indstrl Pk Thoro-Aerrco-GWI**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

RITA6 Hurricane Rita Emergency Response Monitoring

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

Sample Collection/Creation Procedures

SACWSD South Adams County Water and Sanitation District (Colorado)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	GRAB			
UNKNOWN	Default Unknown			

SBMUNSEE STOCKBRIDGE-MUNSEE COMMUNITY (Wisconson)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SMFY04QAPP	Stockbrige Munsee FY2004 Qualtiy Assurance Project Plan		The FY2004 Quality Assurance Project Plan contains detailed information about all sample collection procedures used to collect water, invertebrate, habitat and vegetation data.	

SDGEO South Dakota Geological Survey

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GEO1	Ground Water Sample Collection Procedure	Water Sampler	Ground Water sample collected from well using a submersible pump. Water placed in a plastic sample bottle.	

SDWRAP **SD Dept of Environmental & Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
CABLKBOT	Blank Sample		Sample blank associated with a canal site.	
CAGRABOT	Bottle		Grab sample taken with a bottle in a canal.	
CAMSRMET	Meter-Observation		Meter readings or observations taken in a canal.	
FAGRABOT	Bottle	Water Sampler	Facility grab sample with a bottle.	
FAMSRMET	Meter-Observation	Miscellaneous/Other	Facility measurement with a meter or a facility observation.	
LAACMWSP	Water pump	Miscellaneous/Other	Lake composite algae sample with a water pump.	
LAAGRVAN	Van Dorn bottle	Miscellaneous/Other	Lake algae grab sample with a Van Dorn bottle.	
LAAGRWSP	Water Pump	Miscellaneous/Other	Lake algae grab sample with a water pump.	
LABLKBOT	Blank Sample	Water Sampler	Blank lake sample with a bottle.	
LACOMPPN	Petit Ponar	Water Sampler	Lake composite (mud) sample with a Petit Ponar for elutriate testing.	
LACOMVAN	Van Dorn bottle	Water Sampler	Composite with a Van Dorn Sampler	
LAGRAPON	Petite Ponar	Benthic Grab	Sediment grab sample taken with a Petite Ponar sampler.	
LAGRBVAN	Van Dorn bottle	Water Sampler	Lake grab with Van Dorn bottle	SDWRAP SOP - Watershed Assessment Team, June 2003, Standard Operating Procedure for Field Samplers Volume 1, State of South Dakota, Voume 1
LAINTVAN	Van Dorn bottle	Water Sampler	Integrated lake sample with a Van Dorn bottle.	
LAINTWAT	Water Pump	Water Sampler	Integrated lake sample with a water pump.	
LAMSRMET	Meter-Observation	Miscellaneous/Other	Lake measurement with a meter or a lake observation.	
LAMSRSON	Sonde-Observation	Miscellaneous/Other	Lake observation or measurement with a Sonde unit.	
LASEKMAN	Ekman	Benthic Grab	Sediment sample collected from a lake and with an Ekman dredge. For chemical analyses of the sediment.	
REACMVAN	Van Dorn bottle	Water Sampler	Reservoir composite algae sample with a Van Dorn bottle.	
REACMWSP	Water Pump	Miscellaneous/Other	Reservoir algae composite sample with a water pump.	
REAGRVAN	Van Dorn bottle	Water Sampler	Reservoir algae grab sample with a Van Dorn	

SDWRAP **SD Dept of Environmental & Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			bottle.	
REAGRWSP	Water Pump	Miscellaneous/Other	Reservoir algae grab sample with a water pump.	
REBEKMAN	Ekman	Benthic Dredge	Reservoir benthos sample with an Ekman dredge.	
REBLKBOT	Blank sample		Blank sample for a reservoir.	
REBPPONR	Petite Ponar	Benthic Dredge	Reservoir benthos sample with a Petite Ponar	
RECOMMET	Meter-Observation	Miscellaneous/Other	Meter readings taken from a composited reservoir sample.	
RECOMPPN	Petite Ponar	Water Sampler	Reservoir composite sample with a Petite Ponar sampler.	
RECOMVAN	Van Dorn bottle	Water Sampler	Reservoir composite sample with a Van Dorn sampler.	
REGRAPON	Petite Ponar	Benthic Grab	Sediment grab sample taken from a reservoir with a Petite Ponar sampler.	
REGRAVAN	Van Dorn bottle	Water Sampler	Reservoir grab sample with a Van Dorn bottle.	
REICMEKM	Ekman	Benthic Dredge	Reservoir invertebrate composite sample with an Ekman dredge.	
REICMPPN	Petite Ponar	Benthic Dredge	Reservoir invertebrate composite sample with a Petite Ponar dredge.	
REMSRMET	Meter-Observation	Miscellaneous/Other	Reservoir measurement with a meter or a reservoir observation.	
REMSRSON	Sonde-Observation	Miscellaneous/Other	Reservoir measurement with a Sonde unit or a reservoir observation.	
RESCMCOR	Gravity Corer	Benthic Corer	Reservoir sediment core sample with a gravity corer.	
RESCMPPO	Petite Ponar	Benthic Dredge	Reservoir sediment composite sample with a Petite Ponar dredge.	
RESEKMAN	Ekman	Benthic Grab	Sediment sample collected from a reservoir and with an Ekman dredge. For chemical analyses of the sediment.	
RIACMTIL	Tile Plate	Trap/Substrate	River invertebrate composite sample with a tile plate.	
RIBLKBOT	Blank Sample	Water Sampler	Blank sample for a river using a bottle.	
RIBPPONR	Petite Ponar	Benthic Dredge	River benthos sample with a Petite Ponar dredge.	

SDWRAP **SD Dept of Environmental & Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
RIBRBASK	Rock Basket	Trap/Substrate	River benthos sample using a rock basket.	
RICOMAUT	Autosampler	Water Sampler	River composite sample with an autosampler.	
RICOMBOT	Bottle	Water Sampler	Composite sample of river/stream water using bottle grab samples.	
RIGRABOT	Bottle	Water Sampler	River grab sample with a bottle.	
RIICMDNT	D-frame net	Net/Non-Tow	River invertebrate composite sample with a D-frame net.	
RIICMPPN	Petite Ponar	Benthic Dredge	River invertebrate composite sample with a Petite Ponar dredge.	
RIICMRBA	Rock Basket	Trap/Substrate	River invertebrate composite sample using a rock basket.	
RIINTINT	Integrated suspended sediment	Miscellaneous/Other	Integrated water sample taken with an integrated sampler.	
RIMSRMET	Meter-Observation	Miscellaneous/Other	River measurement with a meter or a river observation.	
RIMSRSEC	Secchi transparency tube	Miscellaneous/Other	Transparency measurement in a river using a transparency tube with a disk on the bottom.	
RIMSRSON	Sonde-Observation	Miscellaneous/Other	River measurement with a Sonde meter or a river observation.	
RIPERGLS	Glass slide	Miscellaneous/Other	Periphyton sampler using glass slides suspended in a stream.	
RIPERNAT	Natural substrate	Trap/Substrate	Periphyton sample obtained by scraping natural substrate.	
RISEKMAN	Ekman	Benthic Grab	Sediment sample collected from a river and with an Ekman dredge. Sample for chemical analyses of the sediment.	
RISPKBOT	Field spike		Field spike of a water sample taken from a river/stream.	
SECCHI	Secchi disk depth			
SSGRABOT	Bottle	Water Sampler	Storm sewer grab sample with a bottle.	
SSMSRMT	Meter-Observation	Miscellaneous/Other	Storm sewer measurement with a meter or a storm sewer observation.	
WEGRABOT	Bottle	Water Sampler	Grab sample from a well using a bottle.	
WEMSROBS	Meter-Observation	Miscellaneous/Other		

Sample Collection/Creation Procedures

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SDWRAP **SD Dept of Environmental & Natural Resources**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation

Sample Collection/Creation Procedures

SPANFORK **SUPERFUND SPANISH FORK LANDFILL**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

SRMTAKNY St. Regis Mohawk Tribe (New York)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
104BWQM001	CWA 104b Water Quality Monitoring YSI 6820	Water Sampler	YSI 6820 Datalogger and Sonde. Collects data on ph, conductivity, dissolved oxygen, temperature and turbidity.	
104BWQM002	CWA 104b Water Quality Monitoring YSI 6920	Water Sampler	YSI 6920 Datalogger and Sonde. Collects data on ph, conductivity, dissolved oxygen, temperature, turbidity, depth.	
FP-C106	Water Sampling	Water Sampler	1-L amber bottles will be used for the collection of 13 samples for analysis. All bottles used for this collection are chemically cleaned to avoid any outside contamination from entering the sample. The samples will be collected using a Wheaton Grab Sampler which allows for sub surface samples to be collected at 3 feet below the surface. All samples will be placed into a cooler which will then be packed in ice to keep samples at a low temperature (4-6 degrees C). A thermometer will be kept in the cooler and the temperature will be recorded in the logbook. Samples will be appropriately labeled and sent via Express Mail to the lab.	
FP-F106	Fish Sampling	Net/Non-Tow	The shiners will be collected using a seine net and/or minnow jug. Upon collection, the shiners will be, identified, measured, and placed in a plastic bag and then transferred to the foil. The shiners will be wrapped in hexane rinsed aluminum foil, placed in plastic bags, and then frozen to avoid deterioration of the sample. The samples will be placed in a cooler packed in ice and sent to the laboratory via Express Mail. A field data sheet will be filled out for each sample as well as a field notebook. One copy will be sent with the sample.	
FP-S106	Sediment Sampling	Miscellaneous/Other	Initially, all sediment samples will be collected utilizing a Wildco Sediment Coring Device and plastic tubes, which are used to contain sediment. If a sample cannot be collected with this method then the Ponar Dredge will be used. The sediment will then be transferred (in the field) to 6 oz. chemically cleaned clear bottles. The suggested sample mass ranges between 10-20 grams. The corer or dredge will be cleaned between samples	

SRMTAKNY St. Regis Mohawk Tribe (New York)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
			and a rinsate will be collected to show cleanliness. No preservative will be used in any sediment samples but they will be packed in a cooler with ice during shipment. Proper anti-exposure equipment will be used during the collection of sediments to avoid exposure to possible contaminants. All samples will be then sent via Express Mail to the lab for analysis.	
WLMMI	Wetlands Marsh Monitoring Inventory	Miscellaneous/Other	Volunteer project that collects bird, amphibian, and plant inventories.	
WLWQM001	Wetlands Water Quality Monitoring YSI 3800	Water Sampler	YSI 3800 Datalogger and Sonde for ph, conductivity, dissolved oxygen, temperature, turbidity and depth.	USEPA, 1979, Methods for Analysis of Water., USEPA, EPA 600/4-79-020
WLWQM002	Wetlands Water Quality Monitoring YSI 6820	Water Sampler	YSI 6820 Datalogger and Sonde. Collects data on ph, conductivity, temperature, turbidity, salinity and depth.	

Sample Collection/Creation Procedures

STANDARD **Region 8 Superfund: Standard Mine**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

STROUD Stroud Water Research Center (Pennsylvania)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
AUTOSAMPLE	Autosampler water grab sample	Water Sampler		
GRAB	Water Grab Sampling from Streams	Water Sampler		S-06-23R0.0 - Susan Herbert, 2004, Field Sampling for Stroud Preserve Streams, Stroud Water Research Center, pg 1-3
WELL_GRAB	Water Sampling from Wells			S-06-24R0.0 - Susan Herbert, 2004, Field Sampling for Stroud Preserve Wells, Stroud Water Research Center, pg 1-3

ST_CROIX St. Croix Chippewa Indians of Wisconsin (WI)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
STC_QAPP	St.Croix Quality Assurance Project Plan		Per 106 guidance	

SWFMDDEP Southwest Florida Water Management District (FLDEP)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Grab sample			

TAOSPBLO Pueblo of Taos (New Mexico)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
TP_SCP	Taos Pueblo Sample Collection Procedure		Taos Pueblo Sample Collection Procedure	Unknown, 19--, No Cite - Method Not Cited, Unknown, Vol --

TDECDOE Tennessee Department of Environment and Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
ROUTINE	Routine sample bottle	Miscellaneous/Other	Separate sampling bottles are used for: routine (BOD, solids, hardness), metals, mercury, nutrients (COD, ammonia, NO2 & NO3, TKN, phosphate), cyanide, and microbiologicals (E. coli, enterococcus, fecal coliform, fecal streptococci).	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
SED.-SPOON	Sediment sampling with spoons	Benthic Grab	Samples taken from streams with stainless steel spoons in areas of deposition of fine sediments (predominantly clay and silt).	
SEDIMENT	Sediment sampling with mini-ponar dredge or spoons.	Benthic Grab	Sediment sampling in the Clinch River done with a mini-ponar dredge. Sampling in tributaries done with waders and stainless-steel spoons.	

Sample Collection/Creation Procedures

TDECWPC Tennessee Department of Environment and Conservation

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
R	routine sample	Water Sampler		

THORNTON **City of Thornton (Colorado)**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	Unknown			

TSWQC Tri-State Water Quality Council (EPA Region 8)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BACT	Grab Sample, Water Bacteriology		Grab samples for water bacteriology are taken using a standard grab procedure with a sterile sample collection bottle provided by the analytical laboratory. Care is taken not to touch the inside of the bottle or lid.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
CHLPHL-1	Periphyton sampling, template scraped substrate		A flexible template is placed over stones along the transect. The area within the template is scraped/scrubbed clean. Samples are analyzed for chlorophyll a. Method is used for diatom or Nostic films or short uniform growths of attached filaments.	
GRAB	Grab Sample, water		An individual discrete sample collected over a period of time not > 15 minutes.	American Public Health Association, 1998, Standard Methods for the Examination of Water and Wastewater, 20th Edition., American Public Health Association, 20th Edition
IG	Integrated Grab		Integrated sample collected from different points simultaneously, or within the time frame of a single discreet sample. Typically, a mixture of samples representing various points in the stream cross-section proportional to relative flow.	American Public Health Association, 1992, Standard Methods for the Examination of Water and Wastewater, 18th Edition., American Public Health Association, 18th Edition
KICK	Macroinvertebrate, Traveling Kick		This procedure for the deployment and handling of the 1-meter kick net is used for small stream riffle collection of macroinvertebrates.	
SED-1	Sediment Collection, Sieved		Saturated sediment is collected and sieved in the field via gravity through a 0.062mm nonmetallic mesh inserted onto a large diameter plastic funnel. Site water is used to wet sieve 100 grams of fines into a large wide-mouth container.	
UNKNOWN	Unknown Sample Collection Procedure		Specific sample collection procedure information for this sample was either unknown or unavailable at the time the data was processed for loading into STORET.	

Sample Collection/Creation Procedures

UPPER10 SUPERFUND UPPER TENMILE CREEK MINING AREA

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

USACOEND US Army Corps of Engineers, Nashville District (Tennessee)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
BGPONPT	Petite Ponar Grab	Benthic Grab	Sediment Sample Collection	
WSKM-1	Sample Collection with Kemmerer Bottle	Water Sampler		
WSWB	Sample Collection with Water Bottle			

USFS0614 Umatilla National Forest (Washington and Oregon)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
COLLECT01	ISCO	Water Sampler	ISCO water sampler, composite sample, 4 samples per day/bottle, 6 hour interval	
COLLECT02	Grabs	Water Sampler	Sample by dipping bottle into water source.	

USFWS-NM New Mexico Ecological Services Field Office (New Mexico)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
FWS-2002	Minnow Habitat Water Quality Assessment			

USIOUX Upper Sioux Community (MN)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
GRAB	Water Grab Sample Collection Procedure		Standard Sample Collection Procedure for water samples analyzed in the laboratory. Bottle is rinsed 3 times before collection.	

USVIST Government US Virgin Islands

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SC-01	Ambient Water Sampling Procedure	Water Sampler	The sampler will grasp the container securely with one hand and plunge it's mouth down into the water, avoiding surface scum. Tip the bottle slightly upwards to allow air to exit and bottle to fill, leaving 1 inch air space in bottle after collecting.	Division of Environmental Protection, 2000, Standard Operationing Procedures for Ambient Monitoring, Division of Environmental Protection, 4 pages
SC-02	Effluent Grab Water Sampling Procedure	Water Sampler	Holding container with glove on plunge the container neck first into effluent leaving approximately an inch of space, tighten cap, place in cooler and take to the lab.	DPNR/DEP, 1999, SOP for Territorial Pollutant Discharge Elimination System, DPNR/DEP, 46 pages
SC-03	Effluent Composite Water Sampling Procedure	Water Sampler	Deploy samplers in proper location as indicated in approved permit. Test by switching the sample rate to manual then set sampler for 24hr samples on an hourly basis with required vol., hose length, hose size and start time. Start sample.	DPNR/DEP, 1999, SOP for Territorial Pollutant Discharge Elimination System, DPNR/DEP, 46 pages
SC-04	Sediment Bottom Sample	Benthic Dredge		
SC-05	Soil Sample	Benthic Dredge		

UTAHDWQ Utah Department Of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
DWQ-001	Water Grab Sampling	Miscellaneous/Other		
DWQ-002	Phytoplankton Sampling Gear	Water Sampler	Gear consists of 35 foot plastic tube with rope and weight on one end and a bucket	Division of Water Quality, 1996, Division of Water Quality Quality Assurance/Quality Control Manual, Division of Water Quality, 1
DWQ-003	Macroinvertabrate Modified Hess Sampling	Benthic Grab		Division of Water Quality, 1996, Division of Water Quality Quality Assurance/Quality Control Manual, Division of Water Quality, 1
DWQ-004	Macroinvertabrate Artificial Substrate Sampler	Trap/Substrate		Division of Water Quality, 1996, Division of Water Quality Quality Assurance/Quality Control Manual, Division of Water Quality, 1
DWQ-005	Macroinvertebrate kick net sampling	Net/Non-Tow	Samples macroinvertebrates with a kick net	
DWQ-006	Wetland Macroinvertabrate Net Sampling	Net/Non-Tow		
DWQFISHELE	DWQ Fish Sampling Procedure with an electroshocker	Electroshock		
DWQFISHNET	Fish collection procedure using a net	Net/Non-Tow		
PERIPHYTN1	Periphyton Sampling Gear	Trap/Substrate		
PERIPHYTN2	Periphyton Sampling with Artificial substrate	Trap/Substrate	Tiles are placed in the Stream for about 6 weeks. The area is then scraped and analyzed	
PERIPHYTN3	Periphyton sampling in the GSL	Miscellaneous/Other		
PHYTOBOT	Phytoplankton sampling on Bottom	Water Sampler		
PHYTOLO	Phytoplankton sampling in lower euphotic zone	Water Sampler	Phytoplankton sample is collected in a kemmerer bottle from 2 and 3 times the secchi depth and composited in a bucket.	
PHYTONET1	Phytoplankton samples collected by a net	Net/Vertical Tow	The net is towed from 3 times the secchi depth to the surface.	
PHYTOUP	Phytoplankton sampling in upper euphotic zone	Water Sampler	Phytoplankton sample is collected in a kemmerer at surface and secchi depth then composited in a bucket.	
TARRIFFLE	Target Riffle Macroinvertabrate Sampling Procedure	Net/Non-Tow	Procedure follows EMAP 2002 Targeted Riffle Standard Operating Procedure	

U_NH01 University of N H Center for Freshwater Biology (New Hampsh)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
LLMP_SAMP	UNH Lay Lakes Monitoring Program Sampling Procedures	Water Sampler	Grab samples collected at in lake deep spot locations as well as near shore locations near major tributary inlets and outlets. Samples will be collected from a canoe and collected at a depth of 0.5 meters using a vertical Van-Dorn sampler.	

WASISWCD Wasilla SWCD (Alaska)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
WATER1	Water Sampler	Water Sampler		

WATERLDF Lac Du Flambeau Band of Lake Superior Chippewa Indians DNR

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
HGQAPP06	Mercury and Fish Tissue Quality Assurance Protection Plan		Sample Collection Procedure	
LDF_SCP	SAMPLE COLLECTION PROCEDURE		SAMPLE COLLECTION PROCEDURE	

Sample Collection/Creation Procedures

WLBYRAIL **Region 8 Superfund: Welby Rail Yard**

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
UNKNOWN	UNKNOWN			

WREQC Wind River Environmental Quality Commission (Wyoming)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
IMSAMPLE	WREQC Sampling for InterMountain Lab Analyses	Water Sampler	A 100 ml polyethylene, kept at 4 degrees centigrade and with H2So4 preservative to a pH of less than 2 is used for ammonia, and nitrates. A 100 ml polyethylene bottle, kept at 4 degrees centigrade and with HN03 preservative to a pH of less than 2 is used for hardness and total recoverable metals. The rest of the analytes are prepared from a 500ml polyethylene sample bottle also kept at 4 degrees centigrade but with no preservatives. Holding times and other method details follow EPA 40 CFR Sec. 136.3.	

WSSC Water Sentinels Sierra Club (Epa Region 7)

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SC-001	sample collection procedures		procedures for macroinvertebrate sampling. see also Missouri Department of Conservation-Stream Team handbook; see also Missouri Department of Natura Resources SOPs. esp. FSS-012	USDOI, USGS, 1987, Methods for Collection and Analysis of Aquatic Biological and Microbiological Samples, Book 5, Chapter A4., USDOI, USGS, Book 5, Chapter A4

WY-DEQ Wyoming Dept. of Environmental Quality

Procedure ID	Procedure Name	Gear Group Name	Description	Citation
SP-MACRO	Benthic Macroinvertebrate Sampling	Trap/Substrate	Using a previously generated random number table the Surber sample is placed at 8 random locations, moving up the riffle, to create a composite sample. Benthic macroinvertebrates are collected in the net through careful agitation of the substrate.	Plafkin, J.L., M.T. Barbour, K.D. Porter, S.K. Gross, R.M. Hughes, 1989, Rapid Bioassessment Protocols For Use in Streams and Rivers, USEPA Office of Water, EPA/444/4-89-001
SP-WATER	Water Grab Sampling	Water Sampler	These water quality characteristics are sampled on location and, as dictated by the corresponding EPA method, acidifed, refrigerated and transported for laboratory analysis.	USEPA, 1983, Methods for Chemical Analysis of Water and Wastes, USEPA, EPA 600/4-79-020