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Project 51350

VARIANCE / FIELD CHANGE NOTICE

V/F No. R3-04
2505-WP-0022 R3-04

WBS NO.: 2505-WP-0022	**Page 1 of 1**
PROJECT TITLE: Integrated Environmental Monitoring Plan, Rev. 3.	**Date: 8-21-03**

VARIANCE / FIELD CHANGE NOTICE (Include justification):

Requirement: Specific NPDES sampling and analysis requirements are defined in Tables 4-3 and 4-5 per Section 4 of the IEMP.

Variance: The new NPDES sampling and analysis requirements as specified in Tables 4-3 and 4-5 are attached to this variance.

Justification: As of July 1, 2003, the Site began operating under new NPDES permit requirements, which include changes to the sampling and analysis requirements.

It should be noted that references to the FEMP have now been changed to FCP.

INFORMATION ONLY

REQUESTED BY: Charles White Date: 8-21-03

X IF REQD	VARIANCE/FCN APPROVAL	DATE	X IF REQD	VARIANCE/FCN APPROVAL	DATE
X	QUALITY ASSURANCE M. Hoge	8/26/03	X	ENVIRONMENTAL COMPLIANCE F. Johnston	8/25/03
	DATA QUALITY MANAGEMENT		X	IEMP PDO C. Tabor	8/21/03
	ANALYTICAL SERVICES			OTHER	
	OTHER			OTHER	

VARIANCE/FCN APPROVED [X]YES [ ]NO

REVISION REQUIRED: [ ]YES [x]NO

DISTRIBUTION

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QUALITY ASSURANCE:	OTHER:	OTHER:
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TABLE 4-3

SUMMARY OF SURFACE WATER AND TREATED EFFLUENT SAMPLING REQUIREMENTS BY LOCATION

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWP-01 and SWR-01 (SWR-01) (Paddys Run and Great Miami River Background)	**General Chemistry:**			
	Ammonia	-	Quarterly[d]	-
	Fluoride	Quarterly (B)	-	-
	Nitrate/Nitrite	Quarterly (B)	-	-
	Total hardness	-	Quarterly[d]	-
	Inorganics:			
	Antimony	Quarterly (B)	-	-
	Arsenic	Quarterly (B)	-	-
	Barium	Quarterly (B)	-	-
	Beryllium	Quarterly (B)	-	-
	Cadmium	Quarterly (B)	Quarterly[d]	-
	Chromium, Total	Quarterly (B)	Quarterly[d]	-
	Cobalt	-	Quarterly[d]	-
	Copper	Quarterly (B)	Quarterly[d]	-
	Cyanide	Quarterly (B)	-	-
	Lead	Quarterly (B)	Quarterly[d]	-
	Manganese	Quarterly (B)	Quarterly[d]	-
	Mercury	Quarterly (B)	Quarterly[d]	-
	Molybdenum	Quarterly (B)	-	-
	Nickel	Quarterly (B)	Quarterly[d]	-
	Selenium	Quarterly (B)	-	-
	Silver	Quarterly (B)	Quarterly[d]	-
	Vanadium	Quarterly (B)	-	-
	Zinc	Quarterly (B)	Quarterly[d]	-
	Radionuclides:			
	Cesium-137	Quarterly (B)	-	-
	Lead-210	Quarterly (B)	-	-
	Neptunium-237	Quarterly (B)	-	-
	Plutonium-238	Quarterly (B)	-	-
	Plutonium-239/240	Quarterly (B)	-	-
	Radium-226	Quarterly (B)	-	-
	Radium-228	Quarterly (B)	-	-
	Strontium-90	Quarterly (B)	-	-
	Technetium-99	Quarterly (B)	-	-
	Thorium-228	Quarterly (B)	-	-
	Thorium-230	Quarterly (B)	-	-
	Thorium-232	Quarterly (B)	-	-
	Uranium, Total	Quarterly (B)	-	-
	Pesticides/PCBs:			
	alpha-Chlordane	Quarterly (B)	-	-
	Aroclor-1254	Quarterly (B)	-	-
	Aroclor-1260	Quarterly (B)	-	-
	Dieldrin	Quarterly (B)	-	-
	Semi-Volatiles:			
	Benzo(a)anthracene	Quarterly (B)	-	-
	Benzo(a)pyrene	Quarterly (B)	-	-
	bis(2-Chloroisopropyl)ether	Quarterly (B)	-	-
	bis(2-Ethylhexyl)phthalate	Quarterly (B)	-	-
	Dibenzo(a,h)anthracene	Quarterly (B)	-	-
	3,3'-Dichlorbenzidine	Quarterly (B)	-	-
	Di-n-butylphthalate	Quarterly (B)	-	-
	Di-n-octylphthalate	Quarterly (B)	-	-
	p-Methylphenol	Quarterly (B)	-	-
	4-Nitrophenol	Quarterly (B)	-	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWP-01 and SWR-01 (SWR-4801) (Paddys Run and Great Miami River Background) Contd.	**Volatiles:**			
	Benzene	Quarterly (B)	-	-
	Bromodichloromethane	Quarterly (B)	-	-
	Bromomethane	Quarterly (B)	-	-
	Chloroform	Quarterly (B)	-	-
	1,1-Dichloroethene	Quarterly (B)	-	-
	Methylene chloride	Quarterly (B)	-	-
	Tetrachloroethene	Quarterly (B)	-	-
	1,1,1-Trichloroethane	Quarterly (B)	-	-
	1,1,2-Trichloroethane	Quarterly (B)	-	-
SWP-02 (Paddys Run)	**Radionuclides:**			
	Technetium-99	Quarterly (M)	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium 232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC)	-	-
SWP-03 (Paddys Run at Downstream Property Boundary)	**Inorganics:**			
	Chromium, Total	Quarterly (S)	-	-
	Copper	Quarterly (S)	-	-
	Cyanide	Quarterly (M)	-	-
	Mercury	Quarterly (M)	-	-
	Silver	Quarterly (M)	-	-
	Zinc	Quarterly (M)	-	-
	Radionuclides:			
	Radium-226	Quarterly (M)	-	-
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)[f]	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium-232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-01 (Northeast Drainage)	**Inorganics:**			
	Mercury	Quarterly (M)	-	-
	Cyanide	Quarterly (M)	-	-
	Radionuclides:			
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-02 (Storm Sewer Outfall Ditch)	**Radionuclides:**			
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)	-	-
	Uranium, Total	Quarterly (PC, M)	-	-
SWD-03 (Waste Storage Area)	**Inorganics:**			
	Copper	Quarterly (S)	-	-
	Cyanide	Quarterly (M)		
	Mercury	Quarterly (M)	-	-
	Silver	Quarterly (M)	-	-
	Zinc	Quarterly (M)	-	-
	Radionuclides:			
	Technetium-99	Quarterly (M)	-	-
	Thorium-228[e]	Quarterly (WP)	-	-
	Thorium-230[e]	Quarterly (WP)	-	-
	Thorium-232[e]	Quarterly (WP)	-	-
	Uranium, Total	Quarterly (PC)	-	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
PF 4001 (Parshall Flume - Treated Effluent)	**General Chemistry:**			
	Ammonia	-	3/Week[g]	-
	Carbonaceous biochemical oxygen demand	-	2/Week	-
	Fluoride	-	Monthly	-
	Nitrate/Nitrite	-	Monthly	-
	Oil and grease	-	2/Week	-
	Total dissolved solids	-	Monthly	-
	Total residual chlorine	-	3/Week[h]	-
	Total suspended solids	-	Daily	-
	Inorganics:			
	Antimony	-	Monthly	-
	Arsenic	-	Monthly	-
	Barium	-	3/Week	-
	Beryilium	-	Monthly	-
	Boron	-	Monthly	-
	Cadmium	Quarterly (S)	3/Week	-
	Chromium, Total	-	3/Week	-
	Cobalt	-	2/Week	-
	Copper	-	3/Week	-
	Cyanide	Quarterly (M)	Monthly	-
	Lead	-	3/Week	-
	Manganese	-	2/Week	-
	Mercury	Quarterly (M)	Monthly	-
	Molybdenum	-	3/Week	-
	Nickel	-	3/Week	-
	Selenium	-	3/Week	-
	Silver	Quarterly (M)	3/Week	-
	Zinc	-	3/Week	-
	Radionuclides:			
	Radium-226	Quarterly (M)	-	-
	Radium-228	-	-	Monthly
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M)	-	Monthly
	Uranium, Total	Quarterly (PC, M)	-	Daily
	Semi-Volatiles:			
	Bis (2-ethylhexyl) phthalate	-	Quarterly	-
	Volatiles:			
	Chloroform	-	Quarterly	-
	1,1-Dichloroethane	-	Quarterly	-
	Trichloroethene	-	Quarterly	-
	Other:			
	Flow Rate	-	Daily	-
SWRB 4002O[i] (Storm Water Retention Basin)	**General Chemistry:**			
	Total residual chlorine	-	Daily	-
	Total suspended solids	-	Daily	-
	Inorganics:			
	Beryllium	Quarterly (S)	-	-
	Cadmium	Quarterly (S)	-	-
	Copper	-	Monthly	-
	Cyanide	Quarterly (M, S)	-	-
	Manganese	Quarterly (S)	-	-
	Mercury	Quarterly (M, S)	Monthly	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWRB 4002O[i] (Storm Water Retention Basin) (Contd)	**Radionuclides:**			
	Radium-226	Quarterly (M)	-	-
	Radium-228	Quarterly (S)	-	-
	Strontium-90	Quarterly (M)	-	-
	Technetium-99	Quarterly (M, S)	-	-
	Uranium, Total	Quarterly (PC, M)	-	Daily
	Other:			
	Flow rate	-	Daily	-
SWRB 4002B (Treatment Bypass)	**Radionuclide:**			
	Uranium, Total	-	-	Daily during bypass
STRM 4003, STRM 4004[j] STRM 4005, STRM 4006 (Drainages to Paddys Run)	**General Chemistry:**			
	Total suspended solids	-	Semiannually	-
	Inorganics:			
	Copper (4003, 4004, 4006)	-	Semiannually	-
	Lead (4004, 4005, 4006)	-	Semiannually	-
	Mercury	-	Semiannually	-
	Silver (4004, 4006)	-	Semiannually	-
	Radionuclides:			
	Uranium, Total	Quarterly (PC, M, S)	-	-
	Other:			
	Fecal coliform	-	Semiannually	-
	Flow Rate	-	Semiannually	-
STP 4601 (Sewage Treatment Plant Effluent)	**General Chemistry:**			
	Carbonaceous biochemical oxygen demand	-	2/Week	-
	Ammonia	-	Every two weeks	-
	Total suspended solids	-	2/Week	-
	Other:			
	Fecal coliform	-	Weekly (May-Oct)	-
	Flow Rate	-	Daily	-

TABLE 4-3
(Continued)

Location	Constituent[a]	IEMP Characterization Requirements (reason for selection)[b,c]	NPDES Requirements[c]	OU5 ROD/FFCA[c] Requirements
SWR-4902 (Downstream of FCP Effluent)	**General Chemistry:**			
	Ammonia	-	Quarterly	-
	Total Hardness	-	Quarterly	-
	Inorganics			
	Cadmium	-	Quarterly	-
	Chromium	-	Quarterly	-
	Cobalt	-	Quarterly	-
	Copper	-	Quarterly	-
	Lead	-	Quarterly	-
	Manganese	-	Quarterly	-
	Mercury	-	Quarterly	-
	Nickel	-	Quarterly	-
	Silver	-	Quarterly	-
	Zinc	-	Quarterly	-

[a]Field parameter readings, taken at each location, include temperature, specific conductance, pH, and dissolved oxygen.
[b]B = Background Evaluation; M = Based on Modeling; PC – Primary COC; S – Sporadic Exceedances of FRLs or BTVs; WP – Waste Pits Excavation Monitoring
[c]"-"indicates the constituent is not included in the sample program.
[d]Refers only to location SWR-01 (NPDES location SWR-4801); constituents sampled quarterly.
[e]Constituent being monitored during excavation of the waste pits to assess thorium releases as a whole.
[f]The basis for the "M" designation is because of the contribution from an upgradient location (i.e., SWP-02).
[g]Sampled twice a week in winter (November 1 through April 30).
[h]Constituent not sampled from November through April.
[i]Constituents will be analyzed at each overflow event.
[j]New location STRM 4004A has been identified as an alternative sample location for STRM 4004. STRM 4004A will be sampled for the constituents if no flow is observed at STRM 4004 or is otherwise not accessible.

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TABLE 4-5

SURFACE WATER AND EFFLUENT ANALYTICAL REQUIREMENTS FOR CONSTITUENTS AT SAMPLE LOCATIONS PF 4001, STP 4601, STRM 4003, STRM 4004, STRM 4005, STRM 4006, SWRB 4002O, SWRB 4002B, SWR-4801, AND SWR-4902

Constituent[a]	Analytical Method[b]	Sample Type[c]	ASL[b,d]	Holding Time[b]	Preservative[b]	Container[b]
General Chemistry:						
Ammonia	350.1[e], 350.3[e], 4500C[f], or 4500F[f]	Composite or Grab[g]	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic or glass
Carbonaceous biochemical oxygen demand	5210B[f]	Composite	B	48 hours	Cool 4°C	Plastic or glass
Chlorine, residual	4500[f]	Grab	B	Analyze immediately	None	Plastic or glass
Fluoride	300.0[e], 340.2[e], 4500C[f]	Composite	B	28 days	None	Plastic or glass
Nitrate/Nitrite	353.1[e], 353.2[e], 353.3[e], 4500D[f], or 4500E[f]	Composite	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic or glass
Oil and grease	9070[h], 1664A[i] 5520B[f], or 413.1[e]	Grab	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Glass
Total dissolved solids	160.1[e] or 2540C[f]	Grab	B	7 days	Cool 4°C	Plastic or glass
Total hardness	2340C[f]	Grab	B	28 days	Cool 4°C, H_2SO_4 to pH < 2	Plastic
Total suspended solids	160.2[e] or 2540D[f]	Composite	B	7 days	Cool 4°C	Plastic or glass
Inorganics:						
Antimony	6020[h], 7000A[h], 3500[f], 6010B[h], 200.8[j], 220.2[e], or 272.2[e]	Composite or Grab[g]	B	6 months	HNO_3 to pH < 2	Plastic or glass
Arsenic						
Barium						
Beryllium						
Boron						
Cadmium						
Chromium, Total						
Cobalt						
Copper						
Lead						
Manganese						
Molybdenum						
Nickel						
Selenium						
Silver						
Zinc						

TABLE 4-5
(Continued)

Constituent[a]	Analytical Method[b]	Sample Type[c]	ASL[b,d]	Holding Time[b]	Preservative[b]	Container[b]
Inorganics (Contd):						
Mercury	7470A[h] or 1631[e,k]	Grab	B	28 days	HNO_3 to pH < 2	Plastic or glass
Cyanide, Free	9010[h], 9012[h], 335.2[e], 335.3[e], or 4500-CNI[f]	Grab	B	14 days	Cool 4°C, NaOH to pH > 12	Plastic or glass
Radionuclides:						
Radium-226	SCQ[l]	Grab	B	6 months	HNO_3 to pH < 2	Plastic or glass
Radium-228						
Technetium-99						
Strontium-90						
Uranium, Total	SCQ[l]	Grab/Composite[m]	B	6 months	HNO_3 to pH < 2	Plastic or glass
Semi-Volatiles:						
Bis(2-ethylexyl)phthalate	8270C[h]	Grab	B	7 days to extraction 40 days from extraction to analysis	Cool 4°C	Glass (amber wth Teflon lined cap)
Volatiles:						
Trichloroethene	8260B[h]	Grab	B	14 days	H_2SO_4 pH < 2 Cool 4°C	Glass (with Teflon lined septum cap)
Chloroform						
1,1-Dichloroethane						
Other:						
Fecal coliform	9222D[f]	Grab	B	6 hours	Cool 4°C	Plastic or glass (sterile)
Flow rate	NA	24 hour total	NA	NA	NA	NA
Field Parameters[n]	SCQ[o]	Grab	A	NA	NA	NA

[a]This represents a comprehensive list of constituents taken from the indicated list of surface water and treated effluent monitoring locations. Each individual location will be analyzed for a subset of these constituents which is summarized in Table 4-3.
[b]NA = not applicable
[c]For composite samples for PF 4001 and STP 4601, collect a flow-weighted composite sample over a 24 hour period; for SWRB 4002O, SWRB 4002B, STRM 4003, STRM 4004, STRM 4005, and STRM 4006, composite samples shall be comprised of four samples collected at intervals of at least 30 minutes but not more than two hours.
[d]The ASL may become more conservative if necessary to meet detection limits or data quality objectives.
[e]Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020
[f]Standard Methods for the Analysis of Water and Wastewater, 17th Edition
[g]Grab samples are collected at locations SWR-4801 and SWR-4902 for this constituent.
[h]Test Methods for Evaluation Solid Wastes, Physical/Chemical Methods, SW-846
[i]Method 1664, Revision A: N-Hexane Extractable Material (HEM; Oil and Grease) and Silica Gel Treated N-Hexane Extractable Material (SGT-HEM; Non-Polar material) by Extraction and Gravimetry, EPA/821/R-98-002.
[j]Methods for the Determination of Metals in Environmental Samples, EPA/600/R-94/111
[k]Method 1631 for mercury analysis will only be used at NPDES Permit locations where mercury sampling is required.
[l]Radionuclide analyses do not have standard methods; performance specifications are provided in Appendix G of the SCQ.
[m]Total uranium is a grab sample at STRM 4003, STRM 4004, STRM 4005, and STRM 4006 and a composite sample at all other locations.
[n]Field parameters include dissolved oxygen, pH, specific conductance, and temperature.
[o]Appendix K of the SCQ provides field analytical methods.

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