



Sampling and Analysis Plan
for Site Investigation
and Risk Assessment of the
Surface Water Operable
Unit (On-Site)



SWOU Overview

- Surface Water Operable Unit (SWOU) – source units that contain or potentially contribute to surface water contamination
- SWOU On-Site Assessment is first sequenced response action
- SWOU On-Site Assessment includes:
 - ✓ NSDD Sections 3, 4, and 5
 - ✓ PGDP outfalls
 - ✓ Internal ditches at PGDP
 - ✓ PGDP storm sewers
 - ✓ Evaluation of additional sediment controls
- SWOU Off-Site includes Little Bayou and Bayou creeks and is scheduled in outyears 2015 through 2017



Utilization of Historical Data

- Previous assessments reviewed to determine data gaps and designate areas adequately characterized with regard to potential for sourcing off-site contaminant migration
- Previous assessments included:
 - ✓ Historical data from NSDD Sections 3, 4, and 5
 - ✓ 2000/2001 assessment of outfalls
 - ✓ Waste Area Grouping (WAG) 15 Site Evaluation
 - ✓ Historical data from WAG 19
 - ✓ Historical investigations of storm sewers



Areas Targeted

- NSDD Sections 3, 4, and 5
- Surface soil and sediments of Outfalls 001, 002, 008, 010, 011, 012 (downgradient of storm sewer discharge point) and 015 and associated internal ditches and areas (SWMUs 92 and 97)
- Storm sewers on south side of C-333; storm sewers associated with C-337-A Vaporizer and C-340 Building; and storm sewers associated with C-535 and C-537 electrical switchyards
- Evaluation of need for additional sediment controls will be documented in D1 Site Investigation/Baseline Risk Assessment Report



NSDD and Outfall Sampling

Activity 1 “Hot Spot” Identification

- Complete survey sampling using indicator chemicals to identify “hot spots”
- NSDD indicator chemicals and associated indicator levels:
 - ✓ U-238 10 pCi/g
 - ✓ Cs-137 1 pCi/g
 - ✓ Total PCBs 1 mg/kg
 - NSDD – 284 samples planned
- Outfall indicator chemicals and associated indicator levels:
 - ✓ U-238 100 pCi/g
 - ✓ Cs-137 10 pCi/g
 - ✓ Total PCBs 20 mg/kg
 - Outfalls - 2329 samples planned



NSDD and Outfall Sampling

Activity 2 Definitive Sampling to further delineate “hot spots”/determine potential for migration

- Collect surface soil and sediment grab samples for fixed base laboratory analysis for inorganic chemicals, trichloroethene (TCE), semi-volatile organic compounds, and radionuclides
 - NSDD - 93 samples planned
 - Outfalls - 327 samples planned



Storm Sewer Sampling

- Step 1 Collect storm water samples at point of discharge to outfall
 - ✓ Contaminants of concern and associated indicator levels - Total PCBs (0.5 ug/L), TCE (5 ug/L), Total Uranium [30 ug/L (20 pCi/L)]
 - 24 samples planned
- Step 2 Collect storm water samples at locations upgradient of point of discharge to outfall (only for storm sewers that show indicator level exceedances for above samples)
 - ✓ Contaminants of concern and associated indicator levels - Total PCBs (0.5 ug/L), TCE (5 ug/L), Total Uranium [30 ug/L (20 pCi/L)]
 - Up to 72 samples planned



Storm Sewer Sampling

- Step 3 Collect soil samples from source areas (only for storm sewers that show indicator level exceedances for above samples)
 - ✓ Contaminants of concern and associated risk-based and waste disposition-based values will include the following:
 - ✓ Total PCBs – risk-based: 19.9 mg/kg; waste disposition-based: 50 mg/kg
 - ✓ TCE – risk-based: 141 mg/kg; waste disposition-based: 10.0 mg/kg and 39.2 mg/kg
 - ✓ ^{234}U – risk-based: 1,980 pCi/g; waste disposition-based: 150 pCi/g
 - ✓ ^{235}U – risk-based: 39.5 pCi/g; waste disposition-based: 150 pCi/g
 - ✓ ^{238}U – risk-based: 171 pCi/g; waste disposition-based: 150 pCi/g
 - Up to 50 samples planned



Schedule

- 04/30/04 – Issued D1 Sampling and Analysis Plan (SAP) for Site Investigation and Risk Assessment of the SWOU On-Site to EPA and KDEP
- 12/16/04 – Issued D2 SAP to EPA and KDEP
- 01/18/05 – EPA approved the D2 SAP (project schedule delayed due to review process and additional scope of work)
- 03/15/05 – Forecasted KY D2 SAP approval date (forecasted delays)
- Spring/Summer/Fall 2005 – Conduct fieldwork
- 05/26/05 – Issue D1 Site Investigation/Baseline Risk Assessment Report (SI/BRA) to EPA and KDEP
- 04/27/06 – Issue D1 SI/BRA to EPA and KDEP as Proposed in SMP Annual Revision for FY 2005 (assumes project schedule delayed)