Update on RCRA Corrective Action Activities

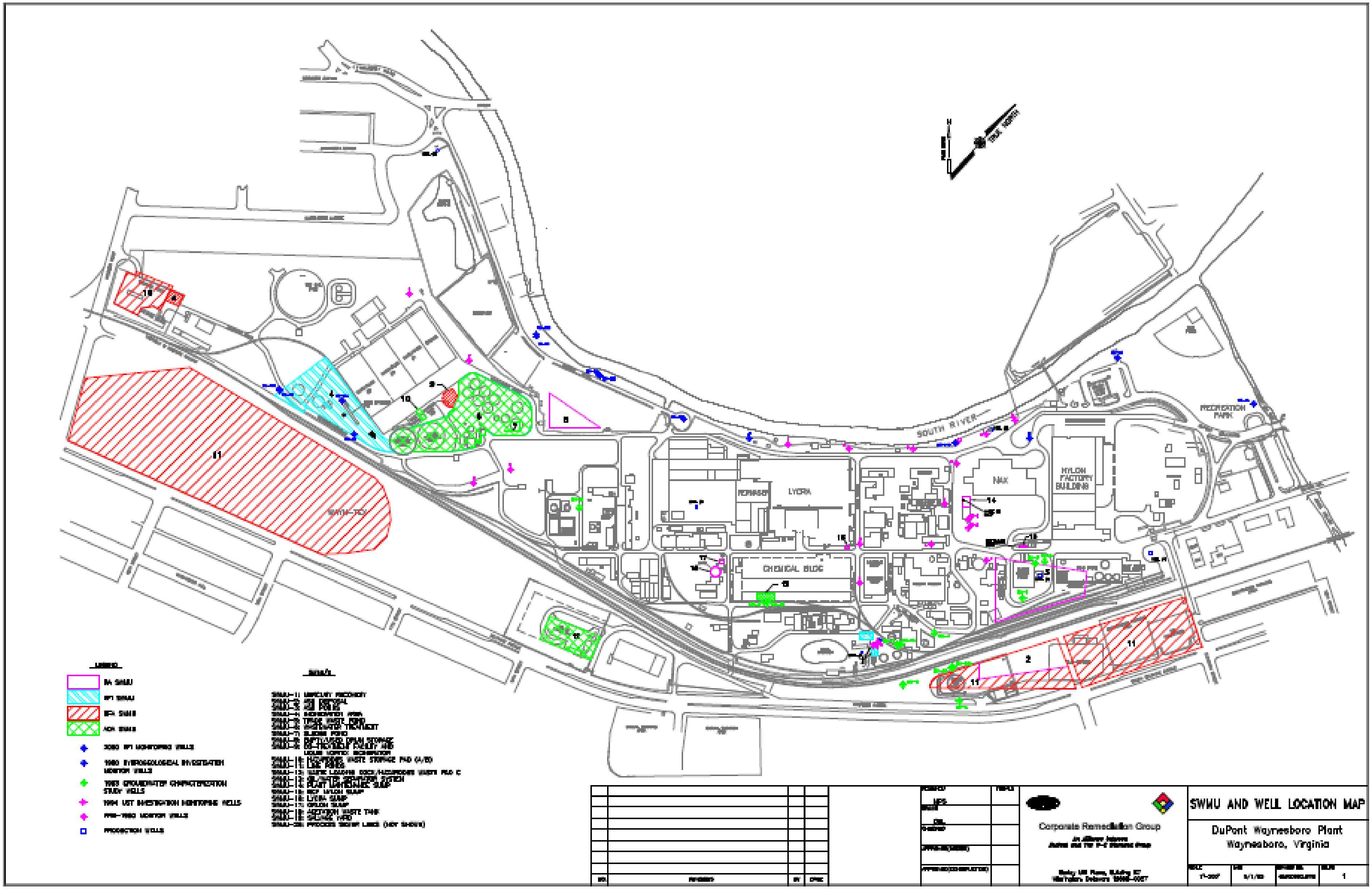
Waynesboro Invista Plant

South River Science Team Meeting

July 18, 2006

Tasks

- RCRA Facility Investigation (RFI)
- Groundwater Monitoring
- Storm Water Sampling
- Storm Sewer Investigation


SOUTH RIVER
RECREATION PARK
LYCRA
NAX
NYLON FACTORY BUILDING
CHEMICAL BLDG
Corporate Remediation Group
SWMU AND WELL LOCATION MAP
DuPont Waynesboro Plant
Waynesboro, Virginia

RFI: Phases I and II (2000-2005)

- SWMU investigations
  - Three areas impacted by mercury
    - SWMU 1 – Mercury Recovery Area: Elemental mercury observed in previous excavations but not in RFI. High soil gas vapor indicates presence of free mercury.
    - SWMU 4 – Incineration Area: Free mercury delineated in small area (~30’ x 30’). Additional soil sampling recommended to delineate residual mercury in soils.

RFI: Phases I and II (2000-2005)

- SWMU investigations (cont'd)
  - SWMUs 6/7 – Wastewater Treatment/Sludge Pond: Mercury was detected in downgradient groundwater. Further investigation of soil and groundwater required.
- Hydrogeologic investigation
  - A deep zone of clastic sediments in the northeast area of the plant identified by borehole drilling. Groundwater in this area may be in communication with underlying carbonate aquifer.

RFI: Phase III (proposed in 2006)

- SWMU 1 – Mercury Recovery Area
  - Collect soil samples for mercury analysis at previous soil gas monitoring points to demonstrate accuracy of soil gas screening
  - Sample ditches in former chemical building for mercury
  - Investigate Well #1 to see if it is a conduit to the underlying aquifer

RFI: Phase III (proposed in 2006)

- SWMU 4 – Incinerator Area
  - Complete delineation of mercury in soil
- SWMUs 6/7 – Wastewater Treatment/ Sludge Pond
  - Determine extent of contamination in soil beneath these SWMUs
  - Evaluate migration of constituents in groundwater from this area

Groundwater Sampling

- Phase I RFI recommended annual sampling program
  - Objective – Ongoing sampling of 38 wells for mercury to confirm Phase I results and monitor groundwater quality at site perimeter.
- 2½ years of sampling (2004-2006) completed to date
- Samples collected and analyzed using low-level mercury detection

Groundwater Sampling Results

- Mercury concentrations
  - Less than 10 times the National Ambient Water Quality Standard for Protection of Freshwater Aquatic Systems at all wells in 2005
  - Below the Virginia Groundwater Standard (VGS) at all downgradient perimeter wells
  - Above VGS in interior wells near former operating areas (SWMUs 1, 4, 6, and 7)

Phase II Stormwater Sampling

- Base flow sampling
  - Three rounds completed in December 2004
- Storm sampling
  - One storm event sampled in June 2005
  - Second event not collected before initiation of Phase III
- Sediment and Water Quality Survey
  - Completed in November 2004

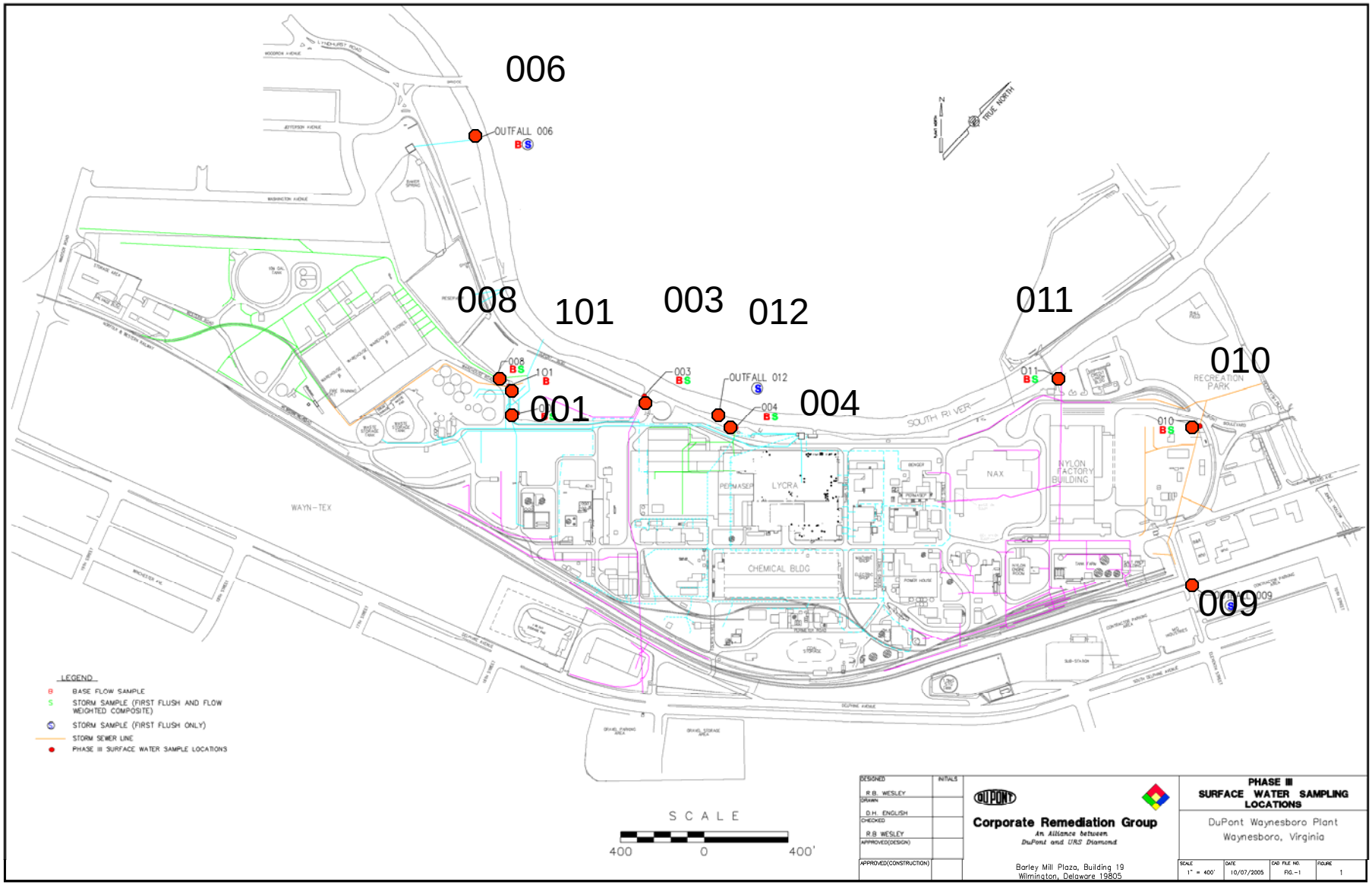
Phase II Stormwater Sampling Results

- Total mercury loading rates
  - Baseflow = 0.35 to 0.76 g/day
  - First flush = 0.64 g/day
  - Storm flow composite = 1.03 g/day
- Bioavailability estimates
  - Baseflow = 20% to 29%
  - First flush = 32%
  - Storm flow composite = 33%
  - Conservatively computed as a ratio of dissolved/total mercury
- Sewer sediments and water impacted by mercury in area near Chemical Building and SWMU 1

Phase III Stormwater Sampling

- 18-month program supports TMDL
- Primary outfalls
- Monthly baseflow sampling
  - Initial grab + 24-hour composite
  - Mercury and methylmercury (total and dissolved)
  - TSS
  - Flow
- Quarterly storm event sampling
  - First-flush + flow-weighted composite
  - Mercury and methylmercury (total and dissolved)
  - TSS
  - Flow
- Seven baseflow and two storm events sampled since November 2005

Phase III Stormwater Sample Locations



Storm Sewer Investigation

- Supplement to the Stormwater Sampling Program
- Phased investigation of the storm sewers
  - Quantify amount and location of mercury
  - Determine integrity of sewers
  - Determine ingress and/or egress mechanisms
  - Evaluate remedial options

Phase I Storm Sewer Investigation (ongoing)

- Prepare updated storm sewer drawings
- Incorporate analytical data
- Conduct field surveys to verify drawings
- Inspect manholes and catch basins
- Evaluate site drainage characteristics
- Identify data gaps
- Prioritize sections for detailed evaluation

Phase II Storm Sewer Investigation (4th Quarter 2006)

- Sample sediment and water
- Quantify mercury within the system
- Perform soil gas sampling of backfill
- Potential integrity test options
  - closed-circuit video inspections
  - tracer and dye tests
  - hydraulic pressure testing
- Identify breaks in line or loss of integrity

Phase III Storm Sewer Investigation (1st – 2nd Quarter 2007)

- Remedial alternatives analysis; potential options include
  - No action necessary
  - Sewer cleaning
  - Slip-lining of selected laterals
  - Abandonment of selected laterals
  - Targeted excavation and disposal of backfill