



South Carolina Department of Health and Environmental Control

EFP Products State Superfund Site

6247 Campbell Rd, York, SC



February 5, 2008

Proposed Plan Public Meeting
Angie Jones, Project Manager

EFP Products Site Proposed Plan Public Meeting

- Introduction
- Site History
- Previous Investigations
- Discussion of Cleanup Alternatives
- Analysis of Cleanup Alternative
- Preferred Cleanup Alternative/Proposed Plan
- Comments and Questions

Site History

- ◆ Early 1950s, Metals Protection Co. operated steel plating business
- ◆ Steel plates were rinsed through various methods after being removed from chromic acid plating tanks
- ◆ Plates were drained into rock filled sump built over an abandoned 50' well
- ◆ Rinse water was also pumped into a settling basin
- ◆ MPC's early rinsing methods did not remove chromium from the rinse water
- ◆ Releases occurred through the settling basin and the waste well

Site History

Continued...

- ◆ 1965-1989: Ownership transferred numerous times...then to EFP Products, Inc.
- ◆ 1990 merger: SPX Corporation assumes all debts/liabilities of previous owner, Kent-Moore Corp. & EFP Products, Inc. leased property
- ◆ 1991: DHEC began discussions SPX/EFP about chromium contamination on-site
- ◆ 1994: Groundwater sampling report submitted to DHEC

Consent Agreement #95-32-HW

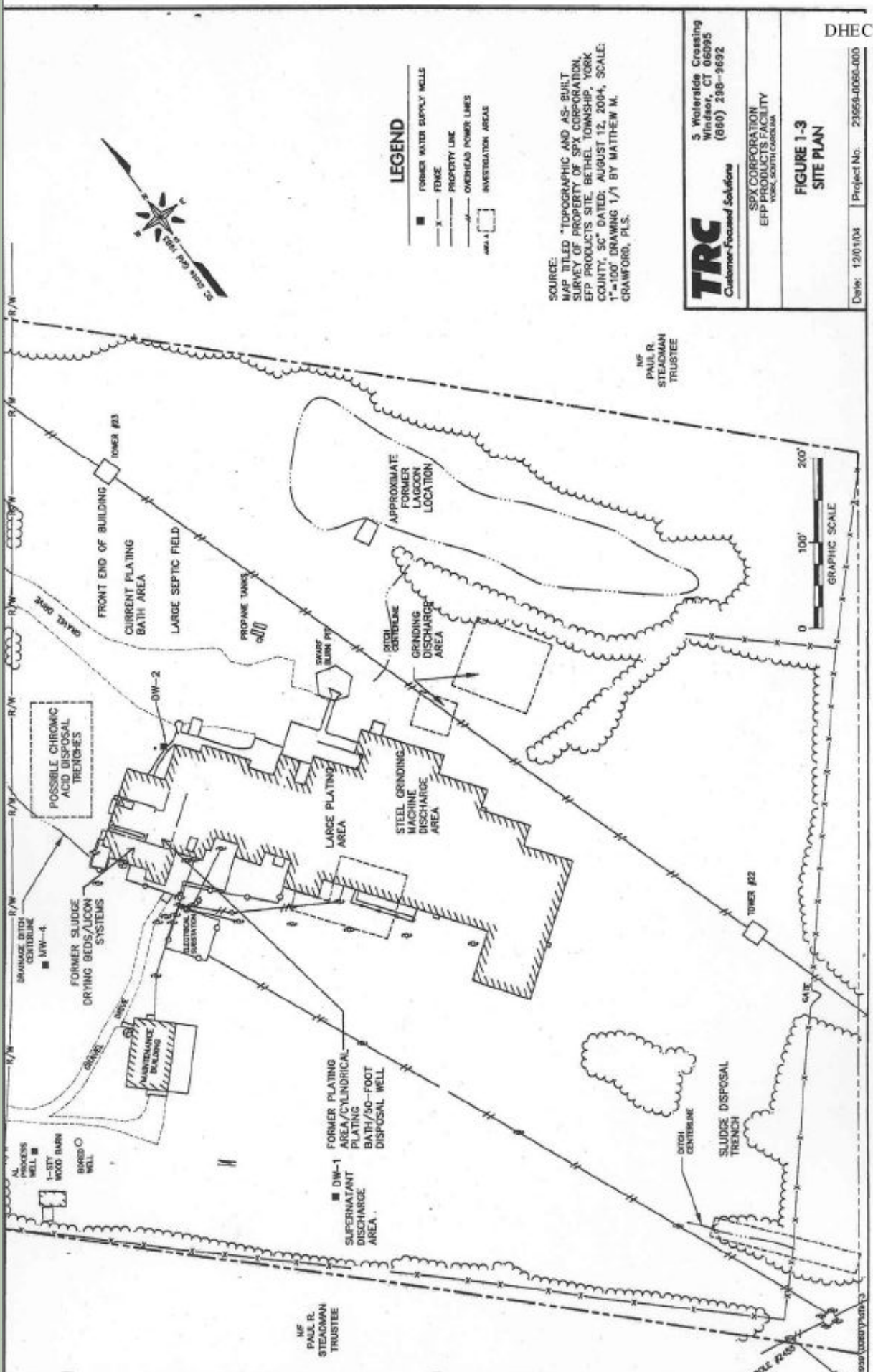
- ◆ 1995: SPX entered into a Consent Agreement (CA) with DHEC
- ◆ SPX agreed to perform a Remedial Investigation and Feasibility Study (RI/FS) in order to determine the source(s), nature, and extent of the contamination

Site Investigations

- Monitoring well installation
- Quarterly/annual sampling of monitoring wells and adjacent residential wells (since 1997)
- Geophysical survey – to identify bedrock fractures
- Hydraulic testing of select monitoring wells
- Sludge disposal trench investigation
- Plating area investigation



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Investigation Results

- Chromium detected in Site's soils
- Chromium detected in Site's groundwater
 - shallow
 - deep

Evaluation Standards for Chromium

- **Soil Cleanup Standard**

*USEPA Region IX Preliminary
Remediation Goals for direct
contact/ingestion:*

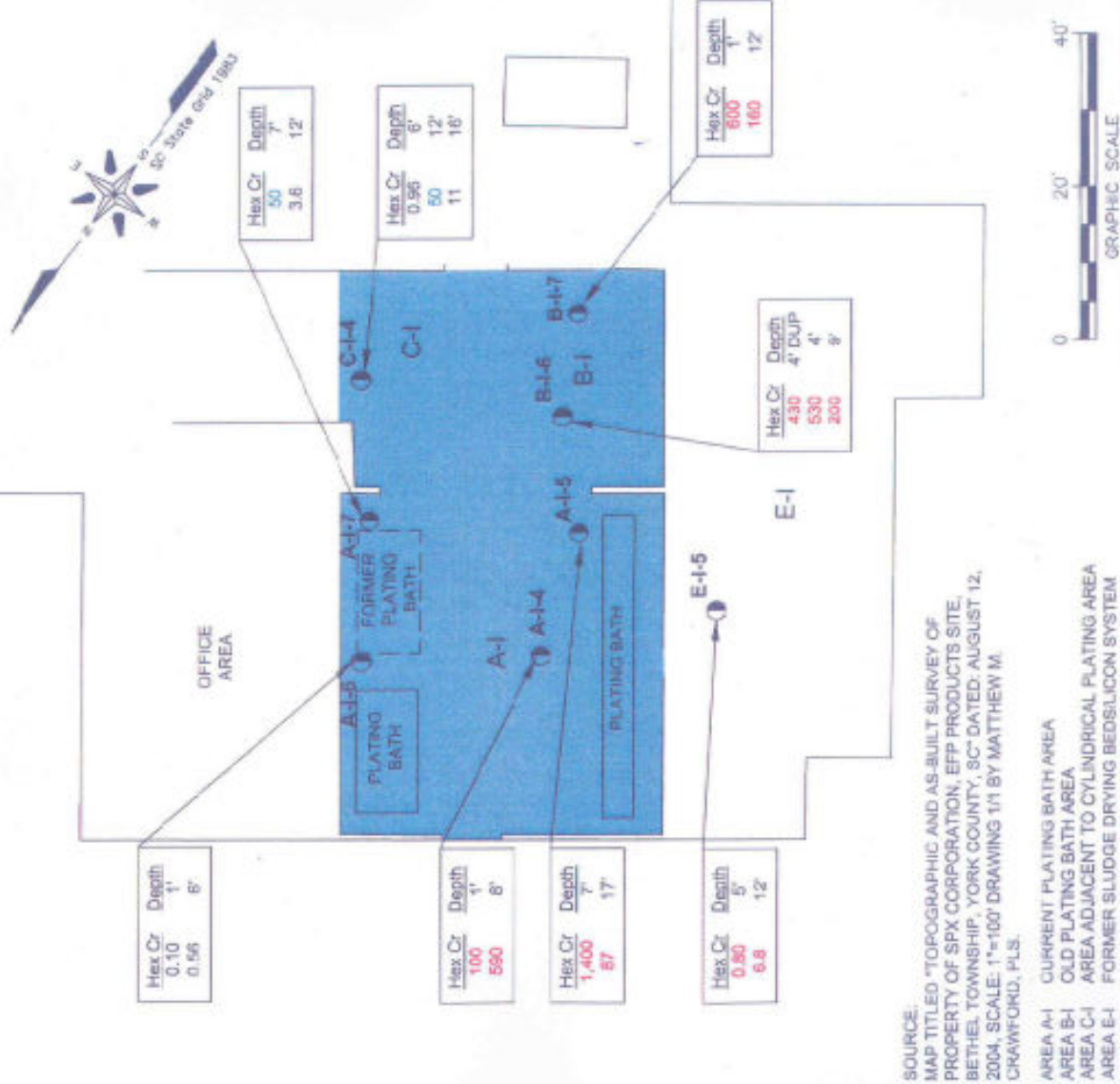
Industrial: 64 mg/kg

Residential: 30 mg/kg

Soil Results

- ◆ Soil samples collected outside the footprint of the building ranged from non-detect to 55 mg/kg. This value exceeds residential cleanup standards, but does not exceed industrial standards
- ◆ Soils beneath the building exceed **both** residential and industrial standards (max concentration detected 5500 mg/kg)

DHEC Fig. 4



SOURCE: MAP TITLED "TOPOGRAPHIC AND AS-BUILT SURVEY OF PROPERTY OF SPX CORPORATION, EFP PRODUCTS SITE, BETHEL TOWNSHIP, YORK COUNTY, SC" DATED: AUGUST 12, 2004. SCALE: 1"=100' DRAWING 1/1 BY MATTHEW M. CRAWFORD, PLS.

- AREA A-1 CURRENT PLATING BATH AREA
- AREA B-1 OLD PLATING BATH AREA
- AREA C-1 AREA ADJACENT TO CYLINDRICAL PLATING AREA
- AREA E-1 FORMER SLUDGE DRYING BED/SILICON SYSTEM

LEGEND

- SOIL BORING LOCATION ASSUMED EXCEEDANCE AREA
- Hex Cr Hexavalent Chromium

Hexavalent Chromium:
 PRG (Industrial): 64 mg/kg
 PRG (Residential): 30 mg/kg
 SSL (20x Dilution Attenuation Factor): 38 mg/kg
 (USEPA Region IX, October 2004)

TRC
 Customer-Focused Solutions
 5 Waterside Crossing
 Windsor, CT 06095
 (860) 298-9592

SPX CORPORATION
 EFP PRODUCTS FACILITY
 YORK COUNTY, PA 17301



Remedial Goals--Soils

- Prevent exposures to chromium in soils at levels exceeding the PRG (Industrial=64 mg/kg)
- Prevent migration of chromium from impacted soils

Soil Alternative S-1: No Action

- Required for comparison by NCP
- No active remediation
- No institutional controls
- No cost associated with this alternative

Soil Alternative S-2: No Action with Deed Restrictions

- Placement of deed restriction to ensure integrity of building floor over the former plating area is maintained
- Placement of deed restriction to ensure this portion of Site would NOT be developed in the future for residential use
- Estimated present worth cost: \$150,000

Soil Alternative S-3: Excavation and Off-Site Disposal

- Existing concrete floor removal
- Excavation of impacted soils beneath former plating areas
- Characterization of removed soils
- Stabilization of soils if leachability a concern
- Off-site disposal
- Excavation backfilled and floor replaced
- Deed restrictions
- Present Worth Value (including contingency): \$800K-\$1.5M

Evaluation Criteria

- Overall Protection of Human Health and the Environment
- Compliance with State and Federal Regulations.
- Long-Term Effectiveness
- Reduction of Contaminant Toxicity, Mobility, and Volume
- Short-Term Effectiveness
- Implementability
- Cost
- Community Acceptance

Evaluation of S-1: No Action

- Does not meet Evaluation Criteria
- Is not protective of human health and environment

Evaluation of S-2: No Action with Deed Restrictions

- Existing barriers to direct exposure and infiltration of precipitation limits mobility of soil contamination
- Deed restrictions effective (long-term) to prevent exposures to soil contamination
- Easily implemented
- No short-term risks

Evaluation of S-3: Excavation and Off-Site Disposal

- Soil removal limits mobility of soil contamination
- Deed restrictions effective (long-term) to prevent exposure
- Excavation activities may be limited due to presence of existing building
- Potential short-term risks associated with excavation within building confines, and contaminated soil management

Preferred Soil Cleanup Alternative

S-2: No Action with Deed Restrictions

- Deed restrictions are easy to implement and ensure future exposures to soils are minimized
- Minimizes leaching of chromium from soils into the groundwater by eliminating vertical flow of liquids through plating area soils
- Cost effective



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Evaluation Standards for Chromium

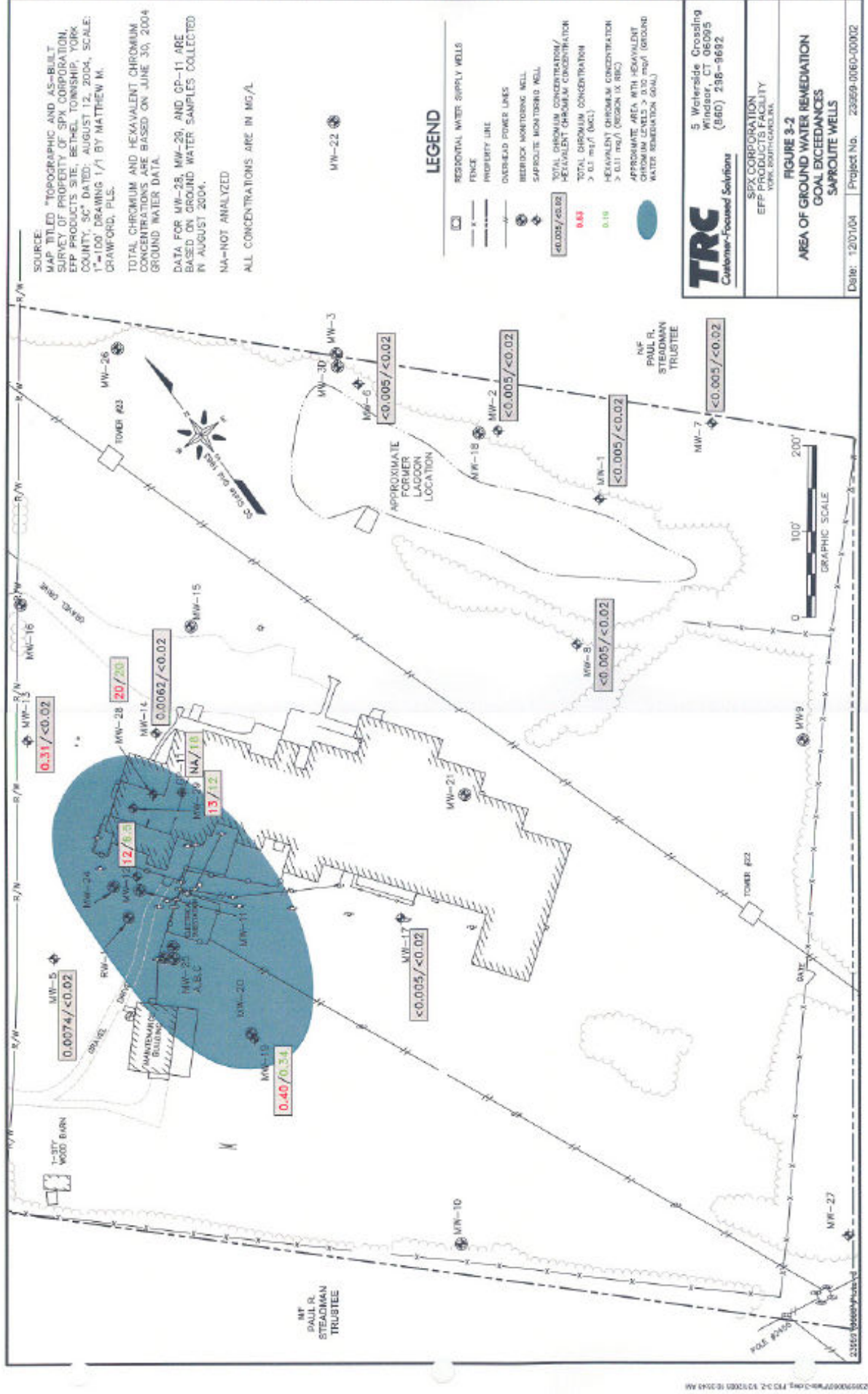
Groundwater Cleanup Standard

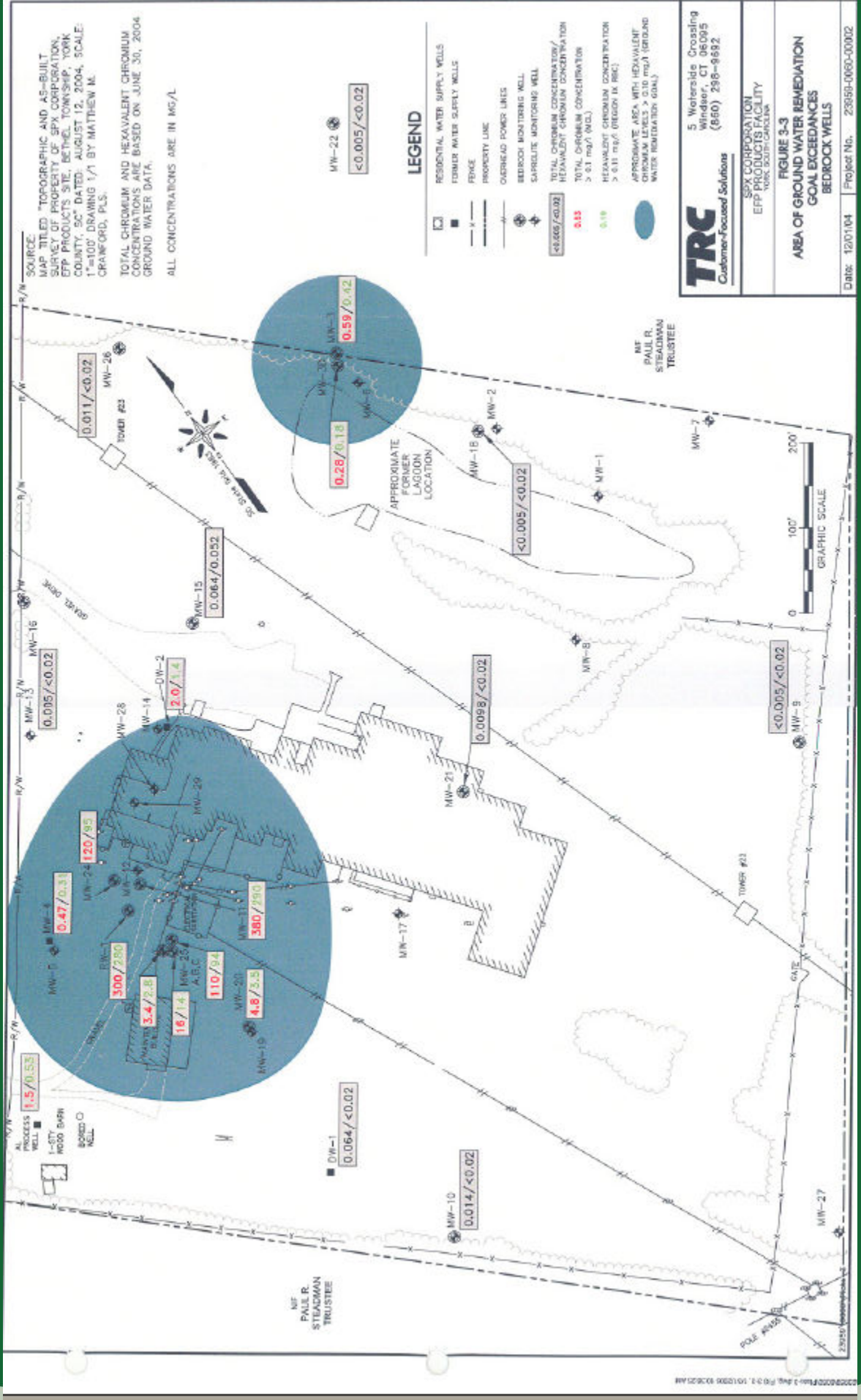
*Maximum Contaminant Levels (MCL)
established by SC State Primary Drinking
Water Regs:*

MCL: 0.1 mg/L

Groundwater Results

- ◆ Chromium has consistently exceeded acceptable regulatory level (the MCL of 0.1 mg/L) in shallow, intermediate, and deep bedrock wells onsite
- ◆ Nearby residential wells have never detected any site-related contamination





Remedial Goals--Groundwater

- Restore groundwater to MCL (0.1 mg/L) for chromium
- Prevent exposures to chromium in groundwater at levels exceeding the MCL
- Limit migration of chromium in groundwater at levels exceeding the MCL to minimize long-term threats

Groundwater Alternative GW-1: No Action

- Required to consider by NCP
- Baseline for comparison of other alternatives
- No active groundwater monitoring
- No institutional controls
- No restrictions on groundwater use at facility
- No protections for contamination reaching nearby residences
- No cost associated with this alternative

Groundwater Alternative GW-2: Groundwater Extraction, Treatment, Discharge with GW Restrictions & Continued Monitoring

Pre design studies

- Groundwater extraction
- On-site treatment
- Discharge to POTW
- Continued monitoring
- Deed restrictions
- Water supply and sewer service to site
- Estimated present worth value: \$7.7M

Groundwater Alternative GW-3 Source Area Extraction, Treatment & Discharge, In- Situ Treatment, GW Use Restrictions, & Continued Monitoring

- Pre-design studies
- Source Area: Extraction, On-site treatment, Discharge to POTW
- Outside source area: In-situ Treatment
- Continued monitoring with GW restrictions
- Water supply and sewer service to site
- Estimated present worth value: \$8.1M

Groundwater Alternative GW-4 In-Situ Treatment, GW Restrictions, & Continued Monitoring

- Pre-design studies
- In-situ treatment
- Continued monitoring
- Deed restrictions
- Contingency – future water supply installation

Options for Alternative GW-4

Option GW-4A

- In-situ injection in BOTH shallow and deep groundwater
- Estimated present worth value: \$2.6M

Option GW-4B

- In-situ injection in deep groundwater only
- Estimated present worth value: \$1.1M

Evaluation Criteria

- Overall Protection of Human Health and the Environment
- Compliance with State and Federal Regulations.
- Long-Term Effectiveness
- Reduction of Contaminant Toxicity, Mobility, and Volume
- Short-Term Effectiveness
- Implementability
- Cost
- Community Acceptance

Evaluation of GW-1: No Action

- Least protective alternative
- Attainment of MCL unlikely
- No long-term protection against exposures
- No reduction in mobility or toxicity other than natural attenuation processes
- No short-term risk, since no activity
- Remedial objectives not achieved in timely manner

Evaluation of GW-2 Groundwater Extraction, Treatment, Discharge with GW Restrictions & Continued Monitoring

- Long-term protection provided
- Treatment process reduces toxicity
- Requires long-term operation and maintenance of treatment system
- Short-term risk associated with handling extracted GW and sludge for treatment
- Time frame to achieve goals relatively long
- Requires treatment system construction and sewer line installation

Evaluation of GW-3 Source Area Extraction, Treatment & Discharge, In-Situ Treatment, GW Use Restrictions, Continued Monitoring

- Long-term protection provided
- Reduces toxicity
- Short-term risk associated with handling extracted GW and sludge for treatment
- Requires long-term implementation, although in-situ component may reduce overall time frame
- Permeability of saporlite may complicate cleanup goal attainment
- Requires long-term operation and maintenance of treatment system

Evaluation of GW-4A In-Situ Treatment (shallow AND deep), GW Restrictions, & Continued Monitoring

- Reduces mobility and toxicity
- Prevents exposure during implementation
- Minimal short-term risk
- Reduction in overall remedial time frame
- Contingency action to ensure long-term protection
- Faster reduction of chromium when treating BOTH shallow and deep GW
- Permeability of saprolite may complicate cleanup goal attainment
- Requires installation of extensive injection system

Evaluation of GW-4B In-Situ Treatment (fractured bedrock ONLY), GW Restrictions, & Continued Monitoring

- Reduces mobility and toxicity
- Focuses on treatment of more highly contaminated aquifer
- Not expected to impact saprolite plume
- Minimal short-term risks since existing bedrock wells may be used for injection of treatment material
- Continued monitoring ensures long-term protection
- Effectiveness would depend on ability to inject into bedrock fractures
- Contingency action to ensure long-term protection

Preferred Groundwater Cleanup

GW-4A: In situ Injection of treatment Materials into Saprolite and Fractured Bedrock—with Contingency

- Provides protection of human health and the environment
- Reduces GW contamination through treatment
- Contingency action provided



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The next step ...

Proposed Plan
& Comment
Period

RI/FS

Remedy
Selection

Upcoming Phases of Cleanup

- **Record of Decision (ROD):** identifies the selected cleanup method after review and consideration of all comments
- **Remedial Design (RD):** the development of specifications and drawings necessary for the construction and implementation of the **ROD**



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Public Comment Period

- Administrative Record—York County
Public Library, 21 East Liberty St, York
- Public Comment Period
– **February 6, 2008 through March 7, 2008**



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Discussion, Questions, and Comments

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