Department of Environmental Conservation

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Division of Environmental Remediation

Record of Decision

BB&S Treated Lumber Corporation Site
Town of Southampton, Suffolk County
Site Number 1-52-123

February 2000

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

BB&S Treated Lumber Corporation Inactive Hazardous Waste Site
Town of Southampton, Suffolk County, New York
Site No. 152123

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the BB&S Treated Lumber Corporation class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the BB&S Treated Lumber Corporation inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the BB&S Treated Lumber Corporation Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected extraction and treatment of the groundwater plume, and solidification/ stabilization and on-site placement of contaminated surface and shallow soils. The components of the remedy are as follows:

- Installation of extraction wells on and off site to capture the plume of contaminated groundwater. All collected groundwater will be piped back to the BB&S property, where a chemical precipitation treatment system in a new building, and a reinjection gallery, will be constructed.

- Excavation of soils contaminated above limits selected in Scenario B, i.e., where chromium concentrations exceed 50 parts per million (ppm). All excavated soils will be brought into the lumberyard and treated *ex situ* in a temporary plant by solidification/ stabilization. Treated residues will be placed on-site and covered with clean soil and/or the new building or pavement. All excavated areas will be backfilled with clean soil and reseeded.

- Site fencing will be repaired and maintained to restrict access and protect remedial components.

- A long term monitoring program will be instituted. This program will consist chiefly of periodic sampling of existing on-site monitoring wells and new off-site wells. This monitoring will begin as

soon as possible and continue during and after installation of the selected groundwater collection and treatment system. The new offsite wells will include sentinel groundwater monitoring wells between the contaminant plume or recovery wells and downgradient water supply wells.

- As a contingency plan, any existing household or business in the vicinity of this site whose water supply becomes impacted by chromium or other contaminants shown to have originated from this site will have treatment installed at the point of use.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

2/25/00
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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RECORD OF DECISION

BB&S Treated Lumber Corporation Site
Town of Southampton, Suffolk County
Site No. 152123
October 1999

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the BB&S Treated Lumber Corporation class 2, inactive hazardous waste disposal site (the "BB&S Site"). As more fully described in Sections 3 and 4 of this document, on-site manufacture of pressure-treated lumber has resulted in the disposal of hazardous waste, including copper-chromate-arsenate (CCA), a wood preservative, at the site. Some CCA was released or has migrated from the site to surrounding areas, including the upper glacial aquifer, a local drinking water source, and soils in the adjacent pine barrens. These disposal activities have resulted in the following significant threats to the public health and/or the environment:

- a significant threat to human health associated with contamination of a drinking water aquifer (which is the aquifer from which nearby wells draw their water), and contamination of surface soils on and off BB&S property;

- a significant environmental threat associated with the impacts of contaminants to biota, via historical spills and runoff of CCA solution that have contaminated soil at the site and in surrounding natural areas.

In order to restore the BB&S inactive hazardous waste disposal site to pre-disposal conditions to the extent feasible and authorized by law, but at a minimum to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous waste disposed at the site has caused, the following remedy was selected:

- Installation of extraction wells on and off site to capture the plume of contaminated groundwater. All collected groundwater will be piped back to the BB&S property, where a chemical precipitation treatment system in a new building, and a reinjection gallery, will be constructed.

- Excavation of soils contaminated above limits selected in Scenario B, i.e., where chromium concentrations exceed 50 parts per million (ppm). All excavated soils will be brought into the lumberyard and treated *ex situ* in a temporary plant by solidification/ stabilization. Treated residues will be placed on-site and covered with clean soil and/or the new building or pavement. All excavated areas will be backfilled with clean soil and reseeded.

- Site fencing will be repaired and maintained to restrict access and protect remedial components.

- A long term monitoring program will be instituted. This program will consist chiefly of periodic sampling of existing on-site monitoring wells and new off-site wells. This monitoring will begin as soon as possible and continue during and after installation of the selected groundwater

collection and treatment system. The new offsite wells will include sentinel groundwater monitoring wells between the contaminant plume or recovery wells and downgradient water supply wells.

- As a contingency plan, any existing household or business in the vicinity of this site whose water supply becomes impacted by chromium or other contaminants shown to have originated from this site will have treatment installed at the point of use.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site, in Section 6 of this Record of Decision (ROD), in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

The BB&S Treated Lumber Corporation, Inactive Hazardous Waste Disposal Site No. 152123, is located in the Town of Southampton in eastern Suffolk County, Long Island. The five-acre site, currently in use as a lumberyard for wholesale and retail lumber distribution, is located on Speonk-Riverhead Road approximately 1.5 miles north of the hamlet of Speonk. The site is found in a rural area considered part of the Central Pine Barrens Preserve. Figure 1 shows the locale of the site.

There are no residences immediately adjacent to the site, but residences are found within a half-mile radius, including south of the site in the general direction of groundwater flow. All local businesses and residences have private water supplies, obtained primarily from the upper glacial aquifer, a highly transmissive sand and gravel aquifer which is underlain in this region of Long Island by the Gardiners Clay unit at approximately 150 feet below land surface.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

The site operated as a lumber treatment and storage facility from the early 1980s. On-site lumber treatment consisted of placing wood in a pressure chamber with a concentrated solution of copper-chromate-arsenate (CCA), and pressurizing the chamber to drive the CCA into the wood. On depressurization, the chamber would be drained into lined sumps, the wood removed and allowed to drip-dry on a large concrete pad (shown on Figure 2). A flameproofing solution containing zinc oxide was also used at the site for a time to treat wood.

Releases of CCA to groundwater are believed to have occurred through leakage from the collection sumps, and possibly also through malfunction of a supply well valve. Drippings from the concrete pad most likely account for soil contamination noted in its vicinity and perhaps for contamination found in drainageways on site. Higher concentrations of CCA-derived contaminants found on the west side of the road in the pine barrens, across from a site drainage culvert, indicate larger surface discharges or spills in the past. Section 4 of this ROD describes the extent of this contamination, as determined during the RI/FS.

3.2: Remedial History

1985 Site contamination first came to the attention of the Suffolk County Department of Health Services when SCDHS sampled an on-site water supply well and found concentration of

chromium of 11,000 ppb, which exceeded the NYS drinking water standard of 50 ppb. Arsenic was also found in the well at 1200 ppb, exceeding the standard of 50 ppb. Further investigation of the site by SCDHS and NYSDEC ensued.

1987 BB&S Treated Lumber Corporation installed a network of seventeen monitoring wells and three extraction (recovery) wells to capture the plume of contaminated groundwater (chromium, copper, and arsenic, with mostly chromium off site). Extracted groundwater was treated on site using reverse osmosis (RO). Treated groundwater was returned to the aquifer by means of an on-site infiltration gallery. BB&S's pump-and-treat system, using RO, continued until 1995.

1990 It had become evident to NYSDEC that the RO system was failing to treat groundwater adequately due to operational problems. The Department notified BB&S of violations of State Pollutant Discharge Elimination System (SPDES) discharge limitations.

1993 NYSDEC designated the site a Class 2 site on the NYS Registry of Inactive Hazardous Waste Disposal Sites. NYSDEC began negotiations with BB&S to enter into an Order on Consent for a Remedial Investigation/ Feasibility Study (RI/FS).

1995 On refusal of BB&S to conduct a RI/FS, NYSDEC began the RI/FS under the State Superfund. The Department revoked the SPDES permit for the RO treatment system; BB&S ceased pumping and treating the plume.

1996 BB&S ceased pressure-treatment of wood at the site. SCDHS sampled residential wells south of the site to Old Country Road; no exceedances of standards were noted for chromium or arsenic. Levels of copper or lead found in some of the wells were attributed to pipe or solder materials in home plumbing.

1998 Again, SCDHS sampled private water supply wells south of the site, and no exceedances of standards were found for chromium or arsenic. Copper was found in some wells, again most likely due to home plumbing.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the BB&S Site and to evaluate alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, the NYSDEC has recently conducted a Remedial Investigation/ Feasibility Study (RI/FS).

4.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted in two phases. The first phase of field work was conducted between March 1996 and August 1996, and the second phase between February 1997 and November 1997. A report entitled "Remedial Investigation Report: BB&S Treated Lumber Site, Speonk, New York" (June 1998) has been prepared which describes the field activities and findings of the RI in detail. In addition, soil sampling was conducted during the FS, in September 1998, to more precisely define areas of contamination identified in the RI.

The RI included the following activities:

- *Installation of soil borings and temporary monitoring wells for analysis of subsurface soils and groundwater as well as physical properties of soil and hydrogeologic conditions.*

- *Surface and shallow soil sampling to determine the extent of shallow soil contamination on and off site.*

- *An engineering evaluation of the existing RO system and pumping well network to determine whether they could comprise a portion of the final remedy.*

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the RI analytical data were compared to environmental Standards, Criteria, and Guidance values (SCGs). Groundwater and drinking water SCGs identified for the BB&S Treated Lumber Corporation site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of the NYS Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup objectives (SCOs) for the protection of groundwater, background conditions, and health-based exposure scenarios. Site-specific soil cleanup goals are further discussed in Section 6.

Based on the RI results, in comparison to the SCGs and relative to potential public health and environmental exposure routes, soil and groundwater at the BB&S Site require remediation. These are summarized below. More complete information can be found in the RI report.

Chemical concentrations are reported in parts per billion (ppb) and parts per million (ppm). For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1 Nature of Contamination:

As described in the RI report, many soil and groundwater samples were collected at the BB&S Site to characterize the nature and extent of contamination. The category of contaminants which exceed their SCGs is the inorganics, specifically metals. The primary inorganic contaminants of concern are chromium (in both the hexavalent and trivalent forms) and arsenic. Copper was often found above its SCG in soil where arsenic and chromium were found. Zinc is also found in soil above its SCG, but to a lesser extent throughout the site. Copper and zinc were infrequently noted in groundwater above SCGs.

4.1.2 Extent of Contamination

Table 1 summarizes the extent of contamination for the contaminants of concern in groundwater and soils and compares the data with the SCGs for the BB&S Site. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

Surface samples (zero to three-inch depth) and subsurface soil samples (up to three-foot depth, and at select locations to 37 feet) uncovered soil contamination throughout the lumber yard, along Speonk-Riverhead Road, and in the "tributary", an off-site drainageway for surface water leading approximately 200 feet into the undeveloped, forested land west of the road. Chromium (as total chromium) was found in concentrations up to 284 ppm on site, within the fenced lumberyard, and in the off-site "tributary" area up to 845 ppm [the soil cleanup objective (SCO) is 50 ppm]. Arsenic was found up to 169 ppm on site and in the tributary up

to 591 ppm (SCO is 7.5 ppm). Soil contamination was also found offsite immediately to the east of the lumberyard, in the "windrow" area. See Figure 3 for an approximate depiction of the areal extent of contaminated soil (for arsenic above the SCO), and Figure 4 for an approximate depiction of the areal extent of contaminated soil (for chromium above the SCO).

Groundwater

Groundwater on site in the vicinity of the former wood treatment building is contaminated predominantly with hexavalent chromium in excess of SCGs (the groundwater standards are 25 ppb for arsenic and 50 ppb for chromium). The approximate limits of the plume in the vicinity of the site are depicted on Figure 2. Most sampling was conducted, and results show, contamination to exist at or near the water table (in a depth range from 38 to 70 feet below land surface). Concentrations of chromium near the building were found up to 10,810 ppb in recovery well RW-2. Arsenic was also noted in on-site groundwater, up to 571 ppb in well RW-1, but diminished rapidly to non-detect levels in most off-site wells. The monitoring well farthest south and downgradient of the site, MW-14, has shown chromium concentrations up to 416 ppb, which exceeds the SCG of 50 ppb. The plume extends to the south of the former wood-treatment building at least 1500 feet. Further well installation and groundwater sampling will be conducted during the remedial design to determine the areal and vertical extent of the plume.

The nearest residential well is approximately 600 feet from the site, but not directly downgradient. Wells in the range of 0.25 - 1.0 miles south of the site are in the potential path of the plume, based on the speed of groundwater flow and a contaminant transport model performed during the Feasibility Study. The most recent residential well sampling and analysis by the SCDHS in this area did not find any wells contaminated above SCGs, but the direction of the plume indicates a possible future impact to water supplies if the groundwater is not remediated.

4.2 Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the BB&S Site. A more detailed discussion of the health risks can be found in Section 6.0 of the RI report.

An exposure pathway is how an individual may come into contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Pathways which are known to or may exist at the site include:

- ingestion of soils or dusts on and off site; ingestion of groundwater.
- inhalation of dust from on- and off-site soils.
- direct contact with contaminated soils or groundwater.

4.3 Summary of Environmental Impacts:

This section summarizes the types of environmental impacts which may be presented by the BB&S Site. The Fish and Wildlife Impact Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources. The following pathways for ecological exposure have been identified:

- ingestion of soils or dusts on BB&S property or in off-site contaminated areas.
- absorption of contaminants into plant roots and/or animal ingestion of contaminated plants.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potential Responsible Parties (PRP) for the site, documented to date, include the BB&S Treated Lumber Corporation and related individuals and business entities.

The PRPs declined to implement the RI/FS at the site when requested to do so by the NYSDEC. After selection of a remedy in this ROD, the PRPs will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRPs, the NYSDEC will evaluate the site for further action under the State Superfund program. The PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all Standards, Criteria and Guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected should eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for the BB&S Site are:

- *Eliminate, to the extent practicable, ingestion of groundwater affected by the site that does not attain NYSDOH Part 5 Drinking Water Standards.*
- *Eliminate, to the extent practicable, off-site migration of groundwater that does not attain NYSDEC Class GA Ambient Water Quality Criteria.*
- *Eliminate, to the extent practicable, exposures to workers from shallow contaminated soils on site.*
- *Eliminate, to the extent practicable, exposures to the public from shallow contaminated soils on and off site.*
- *Eliminate, to the extent practicable, the exposure of wildlife to shallow contaminated soils on and off site.*

To these ends at the BB&S Treated Lumber Corporation site, scenarios for remediation of soil and groundwater, the affected media, were developed during the RI/FS. These scenarios are described below:

Soil:

- **Remedial Scenario A.** This scenario looks at cleanup (removal, treatment or containment) of all soils contaminated with arsenic in excess of the default SCO published in TAGM 4046 (7.5 ppm). The existing data indicate that a cleanup based on an arsenic SCO of 7.5 ppm would result in on-site chromium residuals no greater than about 11 ppm (SCO for chromium is 50 ppm). Figure 3 depicts the preliminary areas and average depths of impacted soil under this scenario (to be confirmed through further sampling during remedial design). The preliminary estimated volume of soil to be remediated under Scenario A would be 14,300 cubic yards.

- **Remedial Scenario B.** This soil cleanup scenario is based on cleanup of all soils exceeding the TAGM 4046 SCO for chromium (50 ppm). The pattern of soil results shows that if the chromium soil cleanup objective of 50 ppm is achieved, residual arsenic concentrations would be no greater than about 30 ppm and the quantity of soil to be remediated would be substantially less. Under either Remedial Scenario A or B, the cleanup objectives would be considered protective of public health and the environment. Ensuring that chromium is remediated to the TAGM 4046 objective of 50 ppm is compatible with the selected remedy to address the substantial chromium groundwater plume beneath the site. The arsenic residual of approximately 30 ppm would not impact groundwater, since the form of arsenic in the soil would not readily leach into groundwater. This is confirmed by RI results showing arsenic groundwater contamination only in the vicinity of the CCA spill locations, where arsenic was introduced to the water table in a soluble form.

  Figure 4 depicts the preliminary areas and average depths of impacted soil under this scenario (to be confirmed in remedial design). Some soils have been included in Remedial Scenario B, for example outside the eastern fence line, because the chromium concentration approaches 50 ppm. The preliminary estimate of soil to be remediated under Scenario B would be 5,300 cubic yards.

Both Scenarios A and B would be considered protective of public health and the environment. Moreover, these concentrations would not be inconsistent with cleanup objectives used for arsenic and chromium at other sites. In addition, either of these scenarios would promote removal, in most instances, of copper and zinc in soils to below their TAGM 4046 SCOs. RI data do not show copper and zinc to be significant contributors to groundwater contamination at the BB&S Site.

Groundwater:

- **On-Site Groundwater Collection/ Treatment Scenario.** This scenario consists of groundwater extraction from the previously-established pumping well locations depicted on Figure 2. These three wells would remove a volume of water (preliminarily determined to be 105 gallons per minute, to be confirmed during remedial design) sufficient to capture the source zone of chromium contamination at and near the site. This extraction well array, however, would not draw in or stop off-site migration of the portion of the plume south of the capture zone of RW-3. Due to the nature of this contaminant and the soils though which it would travel, very little natural attenuation of the off-site plume is expected. Therefore, under this scenario a Contingency Plan would be developed whereby, if monitoring of sentinel wells detected chromium above its SCG near private water supply wells, a fourth extraction well would be installed at the leading edge of the plume to arrest further

movement of the contaminant. Water removed from all remedial extraction wells would be pumped back to the site for on-site treatment, as described under the summary of groundwater alternatives in Section 7. Groundwater, after treatment to achieve SCGs, would be reinjected to the aquifer at the site.

- **On- and Off-Site Groundwater Collection/ Treatment Scenario.** This scenario presumes immediate installation of the fourth off-site well described previously at the leading edge of the plume, to be determined through an off-site groundwater investigation during the remedial design. All four collection wells would be piped back to the site for on-site treatment of groundwater and reinjection to the aquifer. The preliminary estimate of the volume of groundwater that must be collected to achieve this scenario is 135 gallons per minute, to be confirmed in remedial design.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

Potential remedial alternatives for the BB&S Treated Lumber Corporation site were identified, screened and evaluated in the report entitled "Engineering Feasibility Study, BB&S Treated Lumber Site" (August 1999).

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to design and implement the remedy, and does not include the time required to procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy. With the exception of the No-Action Alternative, alternatives are presented separately for the media of soil and groundwater.

7.1 Description of Alternatives

The potential remedies are intended to address the contaminated soils and groundwater at the site. A complete remedy for this site would consist of one alternative for soil combined with one alternative for groundwater. In this section of the ROD, soil alternatives are compared to one another and groundwater alternatives are compared to one another, to select the best alternative for each contaminated medium.

7.1.1 No-Action Alternative

The no-action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

At BB&S, the no-action alternative would include implementing deed or use restrictions, where legally possible, both on and off site to limit exposures to soil and groundwater. The fence around the BB&S lumber yard would be repaired and maintained. New sentinel wells would be installed off-site to detect movement of the plume toward private water supplies, and monitored regularly, in addition to on-site wells.

7.1.2 Alternatives for Soil

Asphalt Cover On Site and Disposal of Off-Site Soils

Under this alternative, the areas of affected soil within the fenced lumberyard would be paved with asphalt to prevent future contact. Impacted soils outside the fence would be excavated and transported to a licensed off-site facility for treatment and disposal. All excavated areas would be backfilled with clean soil and

reseeded. Under either Scenario A or B, the area of impacted soil discussed on page 7 and shown on Figure 3 (Scenario A) would be paved (essentially, the entire active working area of the lumberyard). It would be impractical to pave and maintain small, disconnected soil contamination areas exceeding the soil action levels under Scenario B, as shown on Figure 4. The asphalt cover on site would be sloped to drain to dry wells. The annual operation and maintenance (O&M) cost pertains to yearly maintenance of the cover.

Scenario A:

Present Worth:	$2,153,400
Capital Cost:	$2,075,400
Annual O&M:	$5,100
Time to Implement	11 months

Scenario B:

Present Worth:	$2,078,100
Capital Cost:	$2,000,100
Annual O&M:	$5,100
Time to Implement	11 months

In Situ Treatment by Solidification/ Stabilization

This alternative would consist of treating impacted soils at and around the site through the technology of solidification/ stabilization (S/S). This soil treatment is performed by mixing the soils with binding reagents (e.g., polymers or cement) to render the contaminants non-leachable. Solidification/ stabilization is especially appropriate for soils contaminated by metals and other inorganic contaminants which cannot be destroyed through chemical reaction or incineration. The exact binding reagents would be determined in a treatability study during the remedial design, and would be developed specifically for the soil matrix and contaminants at the BB&S Site.

The *in situ* S/S alternative would involve excavating and moving all impacted soils outside the fenced lumber yard to a treatment pit inside the fence. Soils in the treatment pit and on-site soils to be remediated would be mixed in the ground (using tilling equipment) with the S/S reagents and water. After testing to determine that the solidified/stabilized soils are not leaching contaminants, they would be covered in place with topsoil. Excavated off-site areas would be backfilled with clean soil and reseeded to prevent erosion.

Scenario A:

Present Worth:	$1,133,100
Capital Cost:	$1,133,100
Annual O&M:	$ 0
Time to Implement	10 months

Scenario B:

Present Worth:	$705,100
Capital Cost:	$705,100
Annual O&M:	$ 0
Time to Implement	10 months

In Situ Electrokinetic Remediation

This alternative would utilize an emerging, proprietary technology to remove the metallic contaminants from soils on and off site without having to excavate them. Electrodes would be placed in the ground in the impacted zones and current passed through the soil, while moisture and pH are maintained at appropriate levels through irrigation, as necessary. Metallic contaminants would migrate toward the electrodes, where they would be retained by a membrane and could be concentrated for disposal. Naturally-occurring, beneficial metals would be returned to the soil. This technology, compared to other soil treatments, would not significantly alter soil properties. Excavation would only be necessary to consolidate very shallow contaminated areas (six-inch depths on Figures 3 and 4) for treatment, after which the soils could be replaced.

Scenario A:

Present Worth:	$3,029,200
Capital Cost:	$3,029,200
Annual O&M:	$ 0
Time to Implement	24 months

Scenario B:

Present Worth:	$2,214,000
Capital Cost:	$2,214,000
Annual O&M:	$ 0
Time to Implement	18 months

Ex Situ Treatment by Solidification/ Stabilization and On-Site Disposal

This alternative would utilize the same technology described previously for *in situ* S/S, but instead of blending S/S reagents with the soils in the ground, all on- and off-site soils to be remediated would be excavated, brought to an on-site staging and treatment area and blended with the reagent in a temporary mixing plant. All excavated areas would be backfilled with clean soil and reseeded. The solidified soils would be placed on-site (in an unused portion of the lumberyard) and covered with clean soil (six inches minimum assumed for cost estimation) to protect them from future disturbance. There would be increased site disturbance during soil excavation and treatment and a greater need to control contaminant dusts; however, it would be easier to ensure thorough blending of soil and S/S reagents, which is critical to the effectiveness of this treatment. Leach testing would be performed on treated soil to ensure the contaminants are stabilized and will not migrate through leaching.

Scenario A:

Present Worth:	$1,289,800
Capital Cost:	$1,289,800
Annual O&M:	$ 0
Time to Implement	14 months

Scenario B:

Present Worth:	$741,700
Capital Cost:	$741,700
Annual O&M:	$ 0
Time to Implement	13 months

Ex Situ Treatment by Soil Washing and On-Site Disposal

Soil washing would involve excavation of impacted soils on and off site, and mixing soils in a treatment mill with water and leaching agents or surfactants to remove contaminants. A treatability study would be conducted during remedial design to find the appropriate washing reagents for site soils. Treated soils would be placed in an on-site disposal pit and covered with topsoil. All excavated areas would be backfilled with clean soil and reseeded.

Scenario A:

Present Worth:	$ 4,791,600
Capital Cost:	$ 4,791,600
Annual O&M:	$ 0
Time to Implement	16 months

Scenario B:

Present Worth:	$ 1,950,000
Capital Cost:	$ 1,950,000
Annual O&M:	$ 0
Time to Implement	14 months

Off-Site Treatment and Disposal

This alternative consists of excavation, removal and off-site disposal of contaminated soils on and off site at a licensed treatment and disposal facility. Soil would have to be transported a considerable distance off Long Island, since no treatment and disposal facilities were found to be available nearby. In accordance with current federal and state SCGs, the soils would be treated before placement in a landfill or use for another purpose. All excavated areas would be backfilled with clean soil and reseeded.

Scenario A:

Present Worth:	$ 5,278,900
Capital Cost:	$ 5,278,900
Annual O&M:	$ 0
Time to Implement	6 months

Scenario B:

Present Worth:	$ 1,974,100
Capital Cost:	$ 1,974,100
Annual O&M:	$ 0
Time to Implement	5 months

7.1.3 Alternatives for Groundwater

Reverse osmosis, the groundwater treatment originally used at the BB&S Site, was rejected from the alternatives for final evaluation in the FS. Reverse osmosis would generate two to four thousand gallons of concentrate (waste liquid high in contaminants) per hour; on- or off-site treatment of this volume of concentrate would be extremely costly. Unless wood treatment were to resume at BB&S, in which case the concentrate could be recycled and used in the treatment process, reverse osmosis would be very difficult and costly to implement compared to the alternatives below, which would be equally or more effective.

Chemical Precipitation Treatment

Chemical precipitation is a conventional treatment for metals in wastewater. At the BB&S Site, a treatment system would include the addition of reagents to the collected groundwater to cause metallic contaminants to precipitate out as solids. The resulting sludge would be separated from the clean water by filtration. The sludge, highly concentrated in contaminant metals, would be treated on-site if possible to render it non-hazardous before off-site disposal, or disposed of off site as a hazardous waste. Approximately four to five tons of sludge would be generated weekly and taken off-site for proper disposal. Treated groundwater would be returned to the aquifer through an on-site infiltration gallery.

On-Site Groundwater Collection/ Treatment Scenario:

Present Worth:	$ 3,718,200
Capital Cost:	$ 1,374,400
Annual O&M:	$ 152,400
Time to Implement	20 months

On- and Off-Site Groundwater Collection/ Treatment Scenario:

Present Worth:	$ 3,900,000
Capital Cost:	$ 1,450,000
Annual O&M:	$ 159,400
Time to Implement	20 months

Electrochemical Treatment

This treatment for metals-contaminated wastewaters is more innovative and utilizes electric current passed through wastewater together with appropriate reagents to ensure precipitation of the contaminants. At BB&S, following the electrochemical treatment, groundwater would be clarified, filtered and returned to the aquifer through an on-site infiltration gallery. This technology is proprietary and only one vendor could be found.

On-Site Groundwater Collection/ Treatment Scenario:

Present Worth:	$ 4,030,800
Capital Cost:	$ 1,691,000
Annual O&M:	$ 152,200
Time to Implement	20 months

On- and Off-Site Collection/ Treatment Scenario:

Present Worth:	$ 4,310,300
Capital Cost:	$ 1,773,400
Annual O&M:	$ 165,000
Time to Implement	20 months

Permeable Reactive Wall

This alternative for groundwater treatment was not evaluated in the FS, nor is it included in the Evaluation of Remedial Alternatives below. An emerging technology, a permeable reactive wall consists of a deep trench across the path of contaminated groundwater, filled with a reagent such as iron filings. Groundwater flows across the trench/ wall and through the reagent. Iron would reduce hexavalent chromium to the less soluble and hazardous trivalent form, effectively removing it from groundwater as it continues to flow

through the wall by natural movement. Permeable reactive walls have been successfully implemented to address groundwater plumes, but installation depths have been limited until recently. This technology will be evaluated as an alternative to groundwater collection and treatment during the remedial design in accordance with evaluation criteria in Section 7.2, and as more information concerning this technology becomes available.

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each of the criteria, a brief description is provided, followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

The no-action alternative would not comply with groundwater or soil SCGs, leaving contaminants above quality standards or guidance values in each medium. For groundwater, either treatment alternative would result in achieving water quality SCGs. However, the On-Site Collection/ Treatment Scenario would result in an untreated portion of the plume being left to migrate. Under this scenario, SCGs for water supply protection would be met through monitoring and the contingency plan to intercept the plume should it threaten to impact users. The On- and Off-Site Collection/ Treatment Scenario would comply better with ambient groundwater quality standards and guidance values, since the plume would be intercepted off site sooner, minimizing the impact to the aquifer.

With regard to soil alternatives, all those including treatment or containment of soils would comply with SCGs. Both Scenarios A and B were developed in accordance with the process found in TAGM 4046 to establish soil cleanup levels, in that groundwater protection, background levels, and human exposure have been considered for arsenic and chromium. Scenario A uses TAGM 4046's generic "background soil" concentration for arsenic, while Scenario B uses the process in TAGM 4046 to determine a site-specific cleanup level.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The no-action alternative provides insufficient protection of human health and the environment, though it includes monitoring and improved control of site access and use. These measures would not prevent exposure now or in the future to soils contaminated above clean-up objectives in the fenced lumberyard and especially off site. Without any collection of groundwater, both the "source" area of the plume, and its off-site extension, will continue to disperse and degrade aquifer quality, inevitably reaching the capture zones of private water supply wells. As discussed in the FS report, little natural attenuation of the chromium is expected in this aquifer.

Except for the no-action alternative, the alternatives for groundwater would each protect human health and the environment through collection and effective treatment. The On-Site Collection/ Treatment Scenario would be less protective of the environment than the On-and Off-Site Collection/ Treatment Scenario, since the off-site plume would continue to disperse and degrade aquifer quality. Immediate implementation of off-site collection and treatment would remove contaminants from the off-site aquifer, increasing protection of this resource for present and future use. In either case, protection of public health would be ensured by a program of groundwater monitoring and additional control measures if necessary.

Each alternative for soil (excepting no-action) would, in its end result, provide significant protection to human health and the environment by eliminating exposures to contaminated soils. Both Scenarios A and B are considered protective of human health, and would result in protection to the environment through minimizing potential future impact to biota.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

The no-action alternative would generate few or no additional impacts to the environment or community during its implementation. No short-term reduction of risk, however, can be expected from leaving the groundwater or soil in its present state.

The two alternatives for groundwater treatment each would pose few or no impacts to the public or the environment during construction, and are equivalent in time to achieve protectiveness. Comparing the scenarios of on-site versus on- and off-site collection/ treatment, the latter would lead to a faster removal of contamination from the aquifer, and would therefore be more effective in the short term.

The soil alternatives would pose various degrees of short-term impacts to BB&S workers, visitors, the public, and environment from disturbance and/or transport. *In Situ* Electrokinetic Remediation would pose the least impact of all, and is the only alternative which would not require clearing native vegetation in the "tributary" area off-site. The *In Situ* Solidification/Stabilization minimizes to some extent soil disturbance compared to *Ex Situ* S/S, not only because of in-ground mixing, but also because the time to complete the S/S would be shortened. The asphalt cap alternative would eliminate soil disturbance on site, but off -site soils would have to be excavated and transported over public roads to the off-site treatment and disposal facility. A greater risk of impact to off-site receptors through transportation of soil would be encountered in the Off-Site Treatment and Disposal Alternative, in which larger volumes of soil would be transported off site. In terms of the time for the remedial alternatives for soil to become effective, this last alternative of off-site disposal would require the least time, and *in situ* electrokinetic remediation the longest. In general for these alternatives, because the soil volume to be remediated under Scenario B would be less than Scenario A, both the time to achieve effectiveness and short-term impacts would be less under Scenario B.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

The no-action alternative would not be permanent or effective in the long term to control site risks, relying solely on monitoring, site security, and institutional controls such as deed and use restrictions, without eliminating or physically controlling site contamination.

The groundwater alternatives would require operation and maintenance over many years to be effective in the long term. Experience with "pump and treat" remedies shows that removal of contamination from an impacted aquifer, and attainment of cleanup goals, is not soon or easily achieved. Containment of a plume to protect surrounding water resources, however, is effective in the long term through a well-maintained system. Over the long term, both treatment alternatives and both collection/ treatment scenarios could be considered equivalent in terms of protection of surrounding water resources, because of the Contingency Plan contained in the On-Site Collection/ Treatment Scenario. The On-and Off-Site Collection/ Treatment Scenario would be more effective in the long term, however, since the entire plume would be targeted for prompt treatment, leaving less contamination that must be monitored and controlled.

For soil, the no-action alternative would leave a large volume of surface and shallow soil both in the lumberyard and off site. Fencing and deed restrictions would not be sufficient to prevent exposure to on-site soils, and no long-term protection is afforded from soils off site. The asphalt cap leaves on-site soils in place, though covered, and requires maintenance to remain effective in the long term. With the other alternatives, treatment of the soils would be permanent, though S/S would leave contaminants at the site. Electrokinetic remediation and soil washing would separate the metallic contaminants, which cannot be destroyed, from the soils; excavation and off-site disposal also would remove contamination from the site. By using S/S reagents appropriate to the site-specific soil matrix and the contaminants, however, long-term integrity of the treated soils against leaching could be assured. In addition, the treated soils would be placed within the fenced lumberyard where disturbance could be prevented, and the treated soils would be covered with clean soil and/or the new groundwater treatment building. Scenario A would leave a higher area and volume of treated soil residual on site requiring long-term management. Nevertheless, S/S under both Scenarios A and B would be permanent and effective in the long term to reduce site risks.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

The no-action alternative would do nothing to reduce the toxicity, mobility or volume of site contaminants.

The contaminants of concern at the BB&S Treated Lumber Site are metals and cannot be destroyed, or permanently rendered non-toxic, as can organic contaminants. The groundwater and soil alternatives each reduce the mobility of the metallic contaminants and to various degrees, their volume. The groundwater collection/ treatment alternatives would reduce the mobility of contaminants in the aquifer through collection and containment, the On-and Off-Site Collection/ Treatment Scenario doing so more effectively by not permitting dispersion of contaminants in the aquifer south of the source area. Moreover, groundwater collection/ treatment alternatives would remove and concentrate contaminants for off-site disposal, reducing their volume and presence at the site. The On-and Off-Site Collection/ Treatment Scenario would remove a larger mass of contamination.

Likewise for the soil alternatives, alternatives which separate and remove either the contaminants themselves, or contaminated soil altogether, most effectively reduce the volume of contaminated material at the site. These include electrokinetic remediation, off-site treatment and disposal, and soil washing. S/S would not reduce the volume of contaminated material, but would permanently reduce the mobility of contaminants. The asphalt cover would reduce mobility of contaminants through erosion or leaching, but not through permanent treatment. For alternatives involving treatment, Scenario A would lead to treatment of a greater

mass of contaminants and waste than Scenario B. The difference in contaminant masses removed or treated between these two scenarios may not exceed 20-30 percent, even though the volume of soil to be remediated under Scenario A would be roughly three times larger (in preliminary estimates) than under Scenario B. This is because the contaminants are concentrated in soil zones that would be remediated under either scenario.

6. Implementability. The technical and administrative feasibility of implementing each alternative is evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and material is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

The no-action alternative poses few or no technical difficulties to implement; obtaining and enforcing deed and use restrictions, however, may not be feasible off site.

Both groundwater alternatives are considered readily implementable from a technical point of view, space being available on site for both the treatment plant and a new reinjection gallery north of existing facilities. The lack of vendors for the electrochemical treatment alternative could pose an administrative difficulty in meeting competitive bidding requirements. No unusual delays would be encountered in obtaining discharge approvals and other permits for the construction and operation of the systems.

The treatment alternatives for soil (S/S, soil washing and electrokinetic remediation) vary in feasibility. S/S is the most proven technology and predictable in its implementation. The significant advantage of the *ex situ* S/S alternative over *in situ* S/S lies in the ability to better control the mixing of reagents and soil in a pug mill or other equipment versus in the ground. Thorough blending of the reagents with soil is critical to the effectiveness of S/S. The soil washing alternative would entail a treatability study to determine appropriate washing reagents to remove contaminants, and there is the possibility that no effective combination of reagents would be found, since multiple metals must be removed. Even if effective, the soil washing equipment could occupy too large an area to perform treatment on BB&S property, especially under Scenario A. Similarly, *in situ* electrokinetics is untried in the physical and geological setting of the BB&S Site, and could be found insufficiently effective upon testing. The excavation or *in situ* treatment of soils on site would interfere with normal lumberyard operation. Interferences with lumberyard operation would be minimized under Scenario B versus Scenario A because of the reduced area and volume of soils to be disturbed on site.

7. Cost. Capital, and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs for each alternative are presented in Table 2.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. **Community Acceptance** - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised.

In general the public comments received were supportive of the selected remedy, in particular the groundwater alternative. All expressed urgency that the remedy be implemented quickly. Most expressed

opposition to the State's proposal of Scenario B for soil remediation, rather than Scenario A. This issue has been addressed in Appendix A, the Responsiveness Summary. Many comments included technical recommendations or requests for modifications to the remedy. Concerns expressed by nearby residents about groundwater monitoring have led to modification of the selected remedy as described under Sections 8.1 and 9 of this ROD.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC has selected *Ex Situ* Solidification/ Stabilization, Remedial Scenario B for soil, and Chemical Precipitation, On- and Off-Site Collection/ Treatment Scenario for groundwater as the remedy for this site.

This selection is based on the evaluation of the alternatives developed for the respective media. With exception of the no-action alternative, each of the soil and groundwater alternatives would comply with the threshold criteria. For groundwater, the On- and Off-Site Collection/ Treatment Scenario will provide more immediate protection to public water supplies and remove more contamination permanently from the aquifer, at a marginally higher present worth than under the On-Site Collection/ Treatment Scenario. Conventional chemical precipitation is predicted to cost less to build and operate than electrochemical treatment.

For contaminated soils, S/S under Scenario B will be protective of public health and the environment. Human and environmental exposure will be further reduced by maintaining site security through the use of fencing. It is also reasonable to expect that low levels of CCA-related contaminants will continue to be deposited in the lumberyard soils from storage of treated wood, and therefore it will be difficult to maintain the "pre-release" (TAGM 4046) concentrations achieved under Scenario A, particularly for arsenic. Furthermore, the forms of arsenic and chromium present in the soil will not readily leach to groundwater, particularly in untreated areas left under Scenario B.
S/S is the most reliable and cost-effective of the treatment alternatives, and is a more permanent solution to the site threat than the asphalt cap. The reduced volume of soil to be treated under Scenario B will significantly ease the implementation of S/S and on-site disposal, and reduce short-term impacts from disturbance of soils. The marginal increase in cost and time for the *ex situ* S/S alternative versus the *in situ* S/S alternative will be greatly outweighed by the more reliable results which will be obtained through *ex situ* mixing of soil and S/S reagents. Additionally, consolidation of the treated soils into one place will ensure better long-term controls.

Designation of a Corrective Action Management Unit (CAMU): In order to complete the selected remedy component for soils, *ex situ* solidification/ stabilization, it will be necessary to designate a portion of the BB&S property as a Corrective Action Management Unit (CAMU). A CAMU is an area of the facility that is approved by the NYSDEC for the purpose of managing and implementing the treatment requirements of the chosen remedial action. A CAMU is based on federal regulations and promotes the use of on-site treatment of contaminated soil. Without the use of this mechanism, the treated soil could not be placed back into the ground on-site even after contaminants are treated by S/S. Use of a CAMU will promote on-site remediation and reduce off-site disposal. The dimensions, location, and maintenance/ monitoring program for the CAMU for the BB&S Site will be determined during remedial design, in accordance with procedures outlined in 6 NYCRR Part 373-2.19.

The estimated present worth to implement the remedy, for both soil and groundwater collection/ treatment, is $4,641,700. The cost to construct the remedy is estimated to be $2,191,700 and the estimated average annual operation and maintenance cost for 30 years is $159,400.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS will be resolved.

2. Installation of extraction wells on and off site both to capture the source area of the plume and to intercept the plume at its leading edge, i.e., where chromium exceeds its SCG of 50 ppb. All collected groundwater will be piped back to the BB&S property, where a chemical precipitation treatment system in a new building, and a reinjection gallery, will be constructed. Sludge produced from the chemical precipitation treatment will be disposed of off site, either as a hazardous waste, or if feasible, as a non-hazardous waste following on-site treatment.

3. Excavation of soils contaminated above limits selected in Scenario B. All excavated soils will be brought into the lumberyard and treated *ex situ* in a temporary plant by solidification/ stabilization. Treated residues will be placed on-site and covered with clean soil and/or the new building or pavement. All excavated areas will be backfilled with clean soil and reseeded.

4. Site fencing will be repaired and maintained to restrict access and protect remedial components.

5. The remedy results in untreated hazardous waste remaining at the site, since a long period of time will be needed to clean up the groundwater plume. A long term monitoring program will therefore be instituted. This program will consist chiefly of periodic sampling of existing on-site monitoring wells and new off-site wells. This monitoring will begin as soon as possible and continue during and after installation of the selected groundwater collection and treatment system. The new offsite wells will include sentinel groundwater monitoring wells between the contaminant plume or recovery wells and downgradient water supply wells. This program will monitor the effectiveness of the groundwater remediation and will be a component of the operation and maintenance for the site.

6. As a contingency plan, any existing household or business in the vicinity of this site whose water supply becomes impacted by chromium or other contaminants shown to have originated from this site will have treatment installed at the point of use.

8.1 Documentation of Significant Changes

In response to public comments, the following remedy elements described in the previous paragraphs were added to the remedy from that proposed in the PRAP:

- A contingency plan has been added to the monitoring of off-site groundwater quality, in which any household or business in the vicinity of the BB&S site, whose water supply becomes impacted by chromium or other site-related contaminants, will have treatment installed at the point of use.

- Installation and monitoring of off-site wells will begin as soon as possible, ahead of any negotiation, design or construction of the remedy.

- Any free liquids found in the former CCA treatment building will be removed and properly disposed of to prevent further releases. During a NYSDEC inspection in the fall of 1999, however, the CCA containers and treatment tanks appeared empty. Precaution will be taken during removal of tanks,

at such time that the treatment equipment is decommissioned by the site owner or NYSDEC, to prevent release of any residual free liquid.

These changes to the PRAP remedy are not expected to impact present worth by more than one percent; given the variability of Feasibility Study cost estimates, which are typically +50 /-30 percent of actual costs, the figures presented on Table 2 and above for the remedy have not been revised.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of citizen participation activities were undertaken in an effort to inform and educate the public about conditions at the BB&S Site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A repository for documents pertaining to the site was established at the NYSDEC headquarters in Stony Brook, NY, and also at the Westhampton Free Library, Westhampton, NY.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- In January 1996, a Fact Sheet announcing the start of the RI/FS and a public meeting was mailed to the site mailing list.
- In February 1996, a public meeting was held in Eastport, NY, concerning the work plan for the RI/FS.
- In November 1996, a second Fact Sheet was mailed to the site mailing list to summarize preliminary Remedial Investigation results and announce a public meeting.
- In December 1996, a second public meeting was held in Eastport, NY, to present preliminary Remedial Investigation results.
- In September 1999, a Fact Sheet was sent to the site mailing list announcing the release of the PRAP, and a public meeting was held on September 21, 1999, in Eastport, NY, to solicit comments on the PRAP.
- In February 2000 a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

DENSE
PITCH PINE – OAK
HEATH WOODLAND

EARLY
PITCH PINE
HEATH WOODLAND

SAND
&
GRAVEL
OFFICE

TRIBUTARY
AREA

OPEN
PITCH PINE – OAK
WOODLAND

DENSE
PITCH PINE – OAK
HEATH WOODLAND

SPEONK – RIVERHEAD ROAD

MW-15

MW-13

MW-16

MW-9

MW-8

MW-6

MW-5

MW-4

MW-3

MW-10

OFFICE / TREATMENT
BUILDING

CONCRETE
DRIP PAD

SHED

INFILTRATION
GALLERY

RW-1

PW-1

MW-7

RW-2

MW-1

MW-2
(ABANDONED)

EARLY
PITCH PINE
HEATH WOODLAND

(DESTROYED) MW-11

RW-3

MW-14

DW-1

DENSE
PITCH PINE – OAK
HEATH WOODLAND

LUMBER STORAGE AREA

MW-12

STORAGE
BUILDING

WINDROW

LEGEND

- DRINKING WELL
- MONITORING WELL
- PRODUCTION WELL
- RECOVERY WELL
- FENCE
- CATCH BASIN
- OUTFALL
- GROUNDWATER CONTAMINANT PLUME
  (GROUNDWATER CHROMIUM CONCENTRATIONS EXCEEDING 50 ug/l)

DENSE
PITCH PINE – OAK
HEATH WOODLAND

DENSE
PITCH PINE – OAK
HEATH WOODLAND

51TH AVENUE

RESIDENCE

NOTES:

1. SURVEY COMPLETED BY WENDEL SURVEYORS
   7405 CANAL ROAD
   LOCKPORT, N.Y. 14095
2. VERTICAL DATUM: NAVD 1988
   HORIZONTAL DATUM: NAD 1927

60' 0' 60' 120'
SCALE:

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MALCOLM PIRNIE

NO.	BY	DATE	REVISIONS

N.Y.S.D.E.C.
SPEONK, NEW YORK

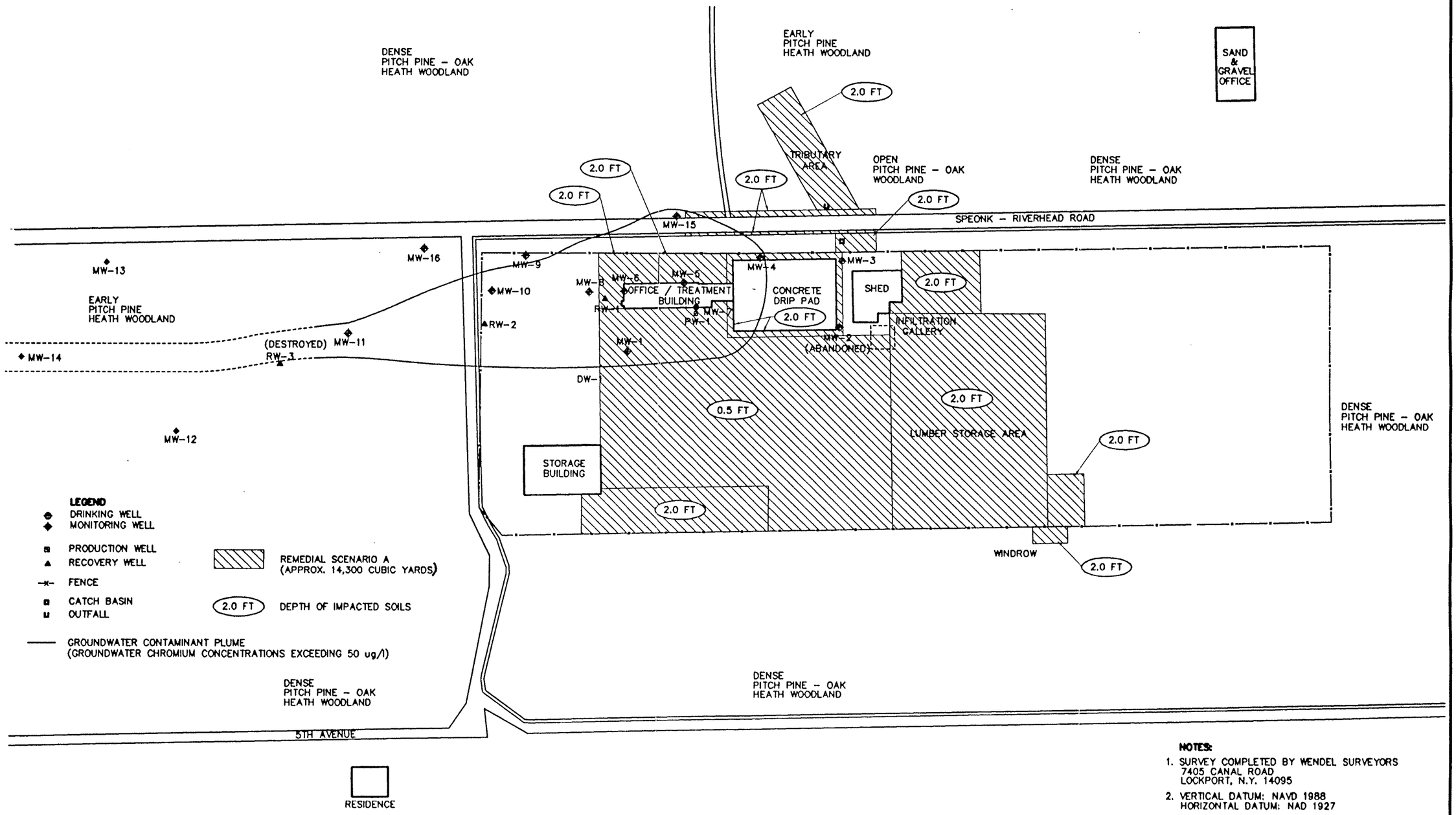
B & S TREATED LUMBER SITE

FIGURE 2

SITE PLAN

DATE APRIL 1999

SHEET 1 OF 1



NOTES:

1. SURVEY COMPLETED BY WENDEL SURVEYORS
   7405 CANAL ROAD
   LOCKPORT, N.Y. 14095
2. VERTICAL DATUM: NAVD 1988
   HORIZONTAL DATUM: NAD 1927

60' 0' 60' 120'
SCALE:

MALCOLM PIRNIE

REVISIONS

NO.	BY	DATE	REMARKS

PIC _____
PM _____
CHD _____

N.Y.S.D.E.C.
SPEONK, NEW YORK

BB & S TREATED LUMBER SITE

FIGURE 3
EXTENT OF IMPACTED SOILS UNDER REMEDIAL SCENARIO A
AS SHOWN

DATE AUGUST 1999

SHEET 1 OF 1

CAD FILE NO. 02660024

7519 ADMIN I:\ACAD\PROJ\3857\1417\02660224 Scale: 1:1 Date: 04/22/1999 Time: 10:13

DENSE
PITCH PINE – OAK
HEATH WOODLAND

EARLY
PITCH PINE
HEATH WOODLAND

SAND
&
GRAVEL
OFFICE

2.0 FT

2.0 FT

TRIBUTARY
AREA

OPEN
PITCH PINE – OAK
WOODLAND

DENSE
PITCH PINE – OAK
HEATH WOODLAND

2.0 FT

SPEONK – RIVERHEAD ROAD

MW-15

MW-16

MW-13

MW-9

MW-6

MW-5

MW-4

MW-3

MW-8

MW-10

OFFICE / TREATMENT
BUILDING

CONCRETE
DRIP PAD

SHED

RW-1

PW-1

MW-7

2.0 FT

INFILTRATION
GALLERY

EARLY
PITCH PINE
HEATH WOODLAND

RW-2

MW-14

(DESTROYED) MW-11
RW-3

MW-1

MW-2
(ABANDONED)

DW-1

0.5 FT

LUMBER STORAGE AREA

DENSE
PITCH PINE – OAK
HEATH WOODLAND

MW-12

STORAGE
BUILDING

2.0 FT

WINDROW

2.0 FT

LEGEND

- DRINKING WELL
- MONITORING WELL
- PRODUCTION WELL
- RECOVERY WELL
- FENCE
- CATCH BASIN
- OUTFALL

REMEDIAL SCENARIO B
(APPROX. 5,300 CUBIC YARDS)

2.0 FT — DEPTH OF IMPACTED SOILS

GROUNDWATER CONTAMINANT PLUME
(GROUNDWATER CHROMIUM CONCENTRATIONS EXCEEDING 50 ug/l)

DENSE
PITCH PINE – OAK
HEATH WOODLAND

DENSE
PITCH PINE – OAK
HEATH WOODLAND

5TH AVENUE

RESIDENCE

NOTES:

1. SURVEY COMPLETED BY WENDEL SURVEYORS
   7405 CANAL ROAD
   LOCKPORT, N.Y. 14095
2. VERTICAL DATUM: NAVD 1988
   HORIZONTAL DATUM: NAD 1927

60' 0' 60' 120'
SCALE:

MALCOLM PIRNIE

REVISIONS

NO.	BY	DATE	COMMENTS

DES
PM

N.Y.S.D.E.C.
SPEONK, NEW YORK

BB & S TREATED LUMBER SITE

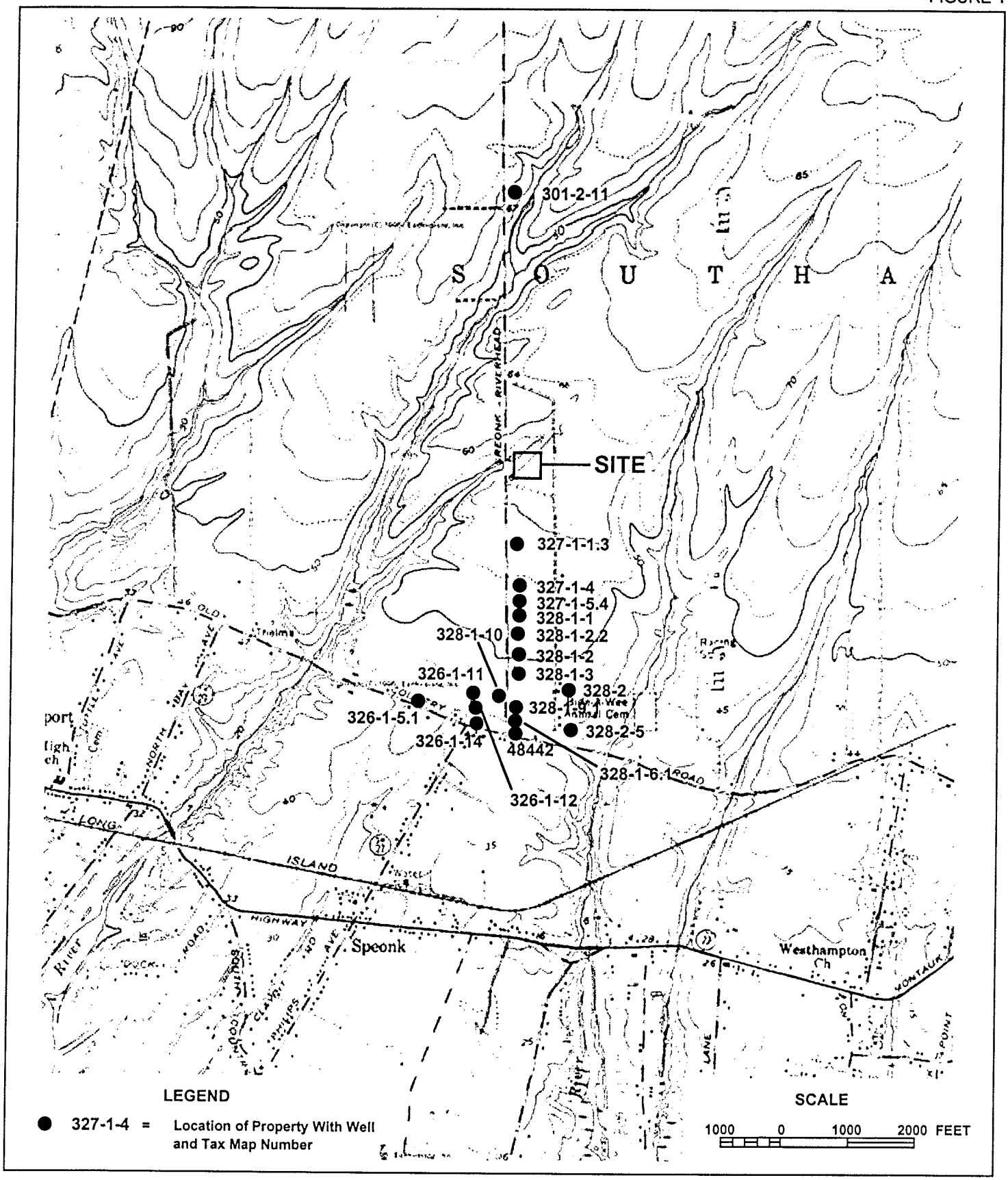
FIGURE 4
EXTENT OF IMPACTED SOILS UNDER
REMEDIAL SCENARIO B

DATE AUGUST 1999

SHEET 1 OF 1

4-2665233700 I:\ACAD\PROJ\26651117\D2666225 Scale: 1:1 Date: 08/19/1999 Time: 14:31

FIGURE 1



Source: U.S.G.S. Quadrangle Map - Eastport

LOCATION OF SITE AND PUBLIC AND PRIVATE WATER SUPPLY WELLS

BB&S TREATED LUMBER CORP.
SPEONK, NEW YORK

MALCOLM PIRNIE

APRIL 1999

Table 1
Nature and Extent of Contamination

MEDIA	CLASS	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs	SCG (ppb)
Groundwater	Inorganics	Chromium (total)	ND to 10,810	16 of 30	50
		Arsenic	ND to 571	4 of 30	25
		Copper	ND to 1,870	5 of 30	200
		Zinc	ND to 670	0 of 30	2000
MEDIA	**CLASS**	**CONTAMINANT OF CONCERN**	**CONCENTRATION RANGE (ppm)**	**FREQUENCY of EXCEEDING SCGs**	**SCG (ppm)**
Soils	Inorganics	Chromium (total)	0.83 to 845	44 of 145	50
		Arsenic	ND to 591	76 of 145	7.5
		Copper	ND to 563	30 of 98	25
		Zinc	3.0 to 248	18 of 84	20

Notes:

1. Groundwater results include all monitoring wells, for all sampling rounds, and temporary probe results. Monitoring well data shown are from unfiltered samples. Temporary probe samples were filtered due to very high turbidity.

2. Soil results include both surface and subsurface samples taken during the RI, and supplementary samples taken during the FS for chromium and arsenic.

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual O&M	Total Present Worth	Capital Cost	Annual O&M	Total Present Worth
No Action	$32,600	$7,000	140,700			
SOIL ALTERNATIVES						
	Scenario A			Scenario B		
Asphalt Cover On Site/ Disposal of Off-Site Soils	$2,075,400	$5,100	$2,153,400	$2,000,100	$5,100	$2,078,100
In Situ Solidification/ Stabilization	$1,133,100	$0	$1,133,100	$705,100	$0	$705,100
In Situ Electrokinetic Remediation	$3,029,200	$0	$3,029,200	$2,214,000	$0	$2,214,000
Ex Situ Treatment by S/S and On-Site Disposal	$1,289,800	$0	$1,289,800	$741,700	$0	$741,700
Ex Situ Treatment by Soil Washing and On-Site Disposal	$4,791,600	$0	$4,791,600	$1,950,000	$0	$1,950,000
Off-Site Treatment and Disposal	$5,278,900	$0	$5,278,900	$1,974,100	$0	$1,974,100
GROUNDWATER ALTERNATIVES						
	On-Site Collection/ Treatment Scenario			On- and Off-Site Collection/ Treatment Scenario		
Electrochemical Treatment and Reinjection to Aquifer	$1,691,000	$152,200	$4,030,800	$1,773,400	$165,000	$4, 310,300
Chemical Precipitation and Reinjection to Aquifer	$1,374,400	$152,400	$3,718,200	$1,450,000	$159,400	$3,900,000

APPENDIX A

Responsiveness Summary

RESPONSIVENESS SUMMARY

BB&S Treated Lumber Corporation
Proposed Remedial Action Plan
Southampton(T), SuffolkCounty
Site No. 152123

The Proposed Remedial Action Plan (PRAP) for the BB&S Treated Lumber Corporation Site was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on September 7, 1999. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil and sediment at the BB&S Site. The proposed remedy was to pump and treat groundwater and to excavate and solidify/ stabilize contaminated soil from on and off site with on-site placement.

The release of the PRAP was announced through a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on September 21, 1999, at the Eastport High School, Eastport, which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. Written comments were also received during the public comment period, which ended on October 8, 1999.

This Responsiveness Summary responds below to all questions and comments raised at the September 21, 1999 public meeting and to the written comments received.

QUESTIONS RECEIVED AT THE PUBLIC MEETING ON SEPTEMBER 21, 1999

Contamination and Remediation Concerns

COMMENT 1: What levels of arsenic and chromium were found in Monitoring Wells 12, 13, and 14?

Response 1: These wells are the southernmost wells and farthest from the site in the direction of groundwater flow. The June 1998 Remedial Investigation Report shows the well results as follows:

Total Chromium/ *Hexavalent Chromium*, in micrograms per liter or parts per billion (ppb)	May 1996	August 1996	February 1997
MW-12	1.7 B / *not detected*	not sampled	8.6 B / *not detected*
MW-13	not detected	not sampled	not detected
MW-14	27.9 J / *not detected*	416 / *355*	102 / *73*

Arsenic	May 1996	August 1996	February 1997
MW-12	not detected	not analyzed	not detected
MW-13	not detected	not analyzed	not detected
MW-14	not detected	not detected	not detected

A "B" or "J" after a result indicates that it is estimated because it is below quantifiable limits or there were difficulties with the analysis. See the Remedial Investigation Report (June 1998) for more details.

COMMENT 2: Has the equipment for pressure-treating wood at the BB&S Site been properly decommissioned? Is there copper-chromate-arsenate (CCA) preservative left at the site?

Response 2: Storage tanks for CCA preservative appeared to be empty during a November 1999 NYSDEC inspection. No bulk CCA liquid was observed to be present which would pose a spill hazard. Residues of CCA solution, however, may remain on equipment or in the wood treating building. NYSDEC's program for hazardous waste generators requires the wood treatment facility to be formally "closed" (i.e., to control, minimize or eliminate the escape of hazardous waste, hazardous constituents, or decomposition products to ground or surface waters or to the atmosphere) under state regulation. In addition, the facility closure must meet Suffolk County Sanitary Code Article 12 requirements. It would be the responsibility of the owner to clean the building and equipment to meet regulatory requirements.

COMMENT 3: Is there leaching of CCA to the soil from the wood stored at the site today?

Response 3: CCA in groundwater at the site derives from the past spills of CCA liquid that flowed down to the water table. CCA from wood stored on the ground surface, or shallow soil contamination, is not a significant contributor to the groundwater plume. This is demonstrated by the RI results.

COMMENT 4: There is a pipe culvert in the southeast corner of the site which caused runoff contamination off-site . Is there soil contamination in this area?

Response 4: Two off-site samples collected from that area did not contain elevated levels of site contaminants. However, NYSDEC will investigate this pipe culvert and take soil samples in this area during the remedial design because elevated levels were noted in September 1998 sampling nearby.

COMMENT 5: How have you determined the extent and size of the plume in the area?

Response 5: The present boundaries of the groundwater contamination plume are shown based on groundwater sampling. The plume begins under the drip pad area of the site and extends in a southerly direction. More sampling is needed to define the southern extent of the plume. The width of the plume appears to be relatively narrow (see Figure 2 of the PRAP and ROD). Long-term monitoring will include the current on-site wells and new off-site wells to be installed to the south and between the site and the nearest residences. This will clearly identify the limits of the plume and will ensure that the pattern of plume movement has not changed due to the pumping of nearby homeowner wells or other factors.

COMMENT 6: How soon will the remedial action plan be implemented?

Response 6: NYSDEC anticipates issuing a Record of Decision by early 2000. Under the law, NYSDEC must then offer the responsible parties the opportunity to perform the design and construction. If they refuse, then NYSDEC will design and construct the remedy. Because of the need for more investigation of the extent of the plume and soil contamination, and because some of the proposed remedy elements are complex, it may take as long as a year to design the remedy. The times estimated to complete the construction of the groundwater treatment system and to do various soil treatments or removal are listed in the PRAP and may take as long as twenty months. In view of these long timeframes and the movement of the plume, NYSDEC intends to install sentinel (early warning) wells as soon as possible in the year 2000, not waiting for the remedial design to begin or be completed. Private wells could be affected by early 2001, based on current groundwater modeling projections. The sentinel wells and a contingency plan to install point-of-use (in-home) treatment units will ensure protection of private water supplies until the remediation can be completed.

Health-Related Concerns

COMMENT 7: What are the health effects of arsenic exposure?

Response 7: The health effects of arsenic depend upon the chemical form of arsenic and on the extent and nature of the exposure. Factors that influence exposure include the exposure route (i.e., whether the chemical is ingested, inhaled or absorbed through the skin), how much arsenic one is exposed to and for how long. The health effects of arsenic are also influenced by exposure to other chemicals, as well as an individual's general health, age, sex, genetic makeup and lifestyle. Increases in skin cancer and cancers of the bladder, kidney and liver have been observed in some populations dependent upon water supplies containing several hundred micrograms per liter (µg/L, also known as parts per billion or ppb for water) or more of arsenic over long periods of time. It is not known whether long term use of water containing lower concentrations of arsenic can cause cancer; or, whether populations other than those studied would be likely to develop cancer. Inhalation exposure to high levels of arsenic in the workplace is associated with increases in lung cancer. Oral exposure to arsenic near the levels associated with cancer has also been associated with several noncancer effects, including gastrointestinal irritation, nerve damage, blood vessel damage, anemia and skin effects (warts and corns on the hands and feet and darkening of the skin). Although concentrations of arsenic in groundwater on site are similar to those that have been associated with adverse health effects, no one uses this water for drinking or other potable purposes.

COMMENT 8: Chromium and arsenic are two of the ten most toxic contaminants known. They are reproductive toxins and carcinogens. The State should talk to Dr. Mankowitz (*sic*), an expert on this, about the dangers of arsenic contamination.

Response 8: The "most toxic" contaminants are generally considered to be those that cause severe effects at very low levels of exposure. Inorganic arsenic and chromium VI may be considered to be in this category under specific exposure conditions. Comprehensive summaries of arsenic and chromium toxicity have recently been published by both the Agency for Toxic Substances and Disease Registry and the National Research Council. These summaries are authored and/or reviewed by recognized experts in arsenic and/or chromium toxicity. The summaries, or reviews, note that both arsenic and chromium are associated with severe adverse health effects depending on their chemical form, the exposure level, and the conditions of exposure. Some forms of arsenic are associated with cancer when levels as low as several hundred µg/L are ingested over long periods of time. One form of chromium (chromium VI) is associated with cancer when inhaled as a dust for long periods of time and is associated with adverse reproductive effects in mice when relatively high levels are repeatedly ingested. These types of toxic effects were considered in the derivation of drinking water standards and guidelines

for these compounds. No exposures of this magnitude are known to be associated with the BB&S site, nor is there any expectation that such exposures occurred. As noted above, contaminated groundwater at the site is not used for potable purposes.

COMMENT 9: What about workers at the site who were exposed to contaminated water or CCA in the past?

Response 9: Workers did not drink water from the contaminated production well. Employee exposure to contaminated water via incidental contact during the wood treatment process would not likely have been significant. Of more significance would be possible occupational exposures to the wood treatment agents themselves. Between 1980 and 1986, under the New York State Right-to-Know Law employers were required to provide information on such exposures to employees. After this time, the Occupational Safety and Health Administration (OSHA) required the provision of similar information under the federal Hazard Communication Standard. Under these rules, employers were required to inform employees of any hazardous materials they were potentially exposed to in the performance of their job as well as potential health effects, appropriate protective equipment, and spill remediation methods.

COMMENT 10: Don't workers at the site have a right to know about past exposures to CCA and its potential health effects? Should the State subpoena the work records of BB&S employees to notify them about past exposures?

Response 10: As noted above, information should have been provided to workers under the New York State Right-to-Know Law or the OSHA Hazard Communication Standard. Enforcement of these rules was the responsibility of the New York State Department of Labor and OSHA, respectively. Individuals with concerns about past or present exposures to CCA at BB&S may contact the NYSDOH Center for Environmental Health at 1-800-458-1158 to discuss their concerns.

COMMENT 11: The workers at the BB&S Site should receive medical monitoring and followup.

Response 11: Available biomonitoring tests cannot accurately detect past exposures to arsenic or chromium. Urine or blood tests reflect recent, acute exposures. Other tests, such as hair or nail analysis, are generally considered unreliable and subject to environmental contamination from various sources.

COMMENT 12: What about exposures of present employees at the facility?

Response 12: The former CCA treatment room at the BB&S Site is locked down and will be decommissioned. Exposure to environmental arsenic and chromium contamination from soil and dust in the yard is expected to be minimal. The risk of developing health effects from the expected exposure levels would be considered low.

COMMENT 13: Do workers at the BB&S Site drink water from the on-site well?

Response 13: Employees at BB&S do not drink the water from the contaminated on-site production well. A separate domestic well is used for drinking water and other potable uses at the facility. This water supply well was monitored by the Suffolk County Department of Health Services (SCDHS) as a non-community public water supply during the 1980s and early 1990s. At no time was

site-related contamination found in this well, nor was there any reason to recommend that it not be used for drinking water purposes.

COMMENT 14: In 1981 or 1982, a complaint was made by Larry Penny to the SCDHS regarding the dumping of CCA at the BB&S site. However, there was no action taken. Why?

Response 14: No documentation of a complaint filed in 1981 or 1982 can be located in the SCDHS files. The SCDHS was aware of potential CCA disposal concerns by 1985 and tested the on-site supply wells. When the production well was found to be contaminated, SCDHS sought NYSDEC involvement which, in turn, began enforcement activities to have the site investigated and remediated.

COMMENT 15: What has the health department done to mitigate problems since 1979?

Response 15: As previously noted, the SCDHS sampled the on-site wells at the facility and solicited the involvement of NYSDEC when groundwater contamination was discovered in 1985. SCDHS also implemented a program of sampling private water supply wells near the site. SCDHS continues to monitor private wells and has worked with the State to develop a remedy for the site contamination. No site-related contaminants have been detected in these wells. The New York State DOH has worked with NYSDEC during the site investigation and development of a remedy for the BB&S site, addressing issues of potential exposure and health effects related to site contaminants.

COMMENT 16: The Government drinking water standards keep getting lower as research progresses, so current standards cannot be trusted.

Response 16: Maximum Contaminant Levels (MCLs) are based on review of available toxicity information for the contaminant at the time the value is derived. These values incorporate factors (called uncertainty factors) to ensure that daily ingestion of water containing concentrations below the MCL for up to an entire lifetime is unlikely to pose an appreciable risk of adverse health effects, taking into account potentially sensitive populations (eg., children, the elderly). Additional uncertainty factors are incorporated into these values to account for the possibility that the contaminant may be more toxic than indicated by available information. New research findings on the toxicity of a specific contaminant may lead to re-evaluation of an existing water standard or guideline for that contaminant. In such cases, the standard or guideline may either increase or decrease depending upon the nature of the new information.

COMMENT 17: I would not consider half the government standards to be safe. If any private well gets any level of contaminant, people should stop drinking the water.

Response 17: NYSDOH does not have the authority to regulate the uses of private homeowner wells. Whether or not an individual should stop drinking water obtained from a private well that contains contaminants is an individual decision. In making this determination, the individual should consider the factors which influence the risk for adverse health effects. These factors include the toxicity of the contaminant, its concentration in the water, and how often the individual drinks the water. The risk for adverse health effects increases if the contaminant is relatively more toxic, is present at relatively higher concentrations, and/or if exposures occur frequently over a long period of time.

NYSDOH regulates public water supplies and has developed standards for broad populations. NYSDOH has developed maximum contaminant levels (MCLs), which are concentrations for specific contaminants, for public water supplies. The MCLs are established for contaminants in drinking water based on their toxicity and the assumption of daily ingestion for up to a lifetime. The MCLs are concentrations at which lifetime exposure to contaminants in drinking water is unlikely to pose an appreciable risk for

adverse health effects. MCLs are useful guidelines to consider when evaluating the health risks associated with private well contamination. If a contaminant is detected in private well water, the user may choose to compare its concentration to the MCL for that contaminant. If contaminant levels exceed these values, the user may choose to stop drinking the water or may seek guidance from the local health department to help determine if they wish to take action to reduce exposure.

COMMENT 18: The standards are set to protect white males. What about minorities, children, and the elderly?

Response 18: Standards such as maximum contaminant levels (MCLs) are not derived exclusively for the protection of white males. They are derived to provide an adequate margin of protection against adverse health effects for all members of the population, including potentially sensitive individuals such as children and the elderly. Some individuals may be more or less sensitive to chemical exposure than others due to a variety of different factors, including age, sex, general health, genetic makeup and lifestyle. The possibility that some members of the population may experience adverse health effects at lower levels of contaminant exposure than others is incorporated into the derivation of these values using uncertainty factors. These uncertainty factors are designed to provide an adequate margin of protection for all members of the population.

Legal/Enforcement Concerns

COMMENT 19: Why haven't the responsible parties put up bonds up front to cover the cleanup expenses at BB&S?

Response 19: Under NYSDEC regulations, new operations that handle hazardous materials must have closure plans including financial assurance; this was not a requirement, however, when BB&S operated.

COMMENT 20: Are you trying to establish the culpability of the BB&S Corporation?

Response 20: No. It is not necessary to do so to recover the costs of remediation.

COMMENT 21: Who are the owners/ responsible parties for the BB&S site?

Response 21: George Weiser was the president of the BB&S Treated Lumber Corporation during the wood treatment operation. There are several potentially responsible parties (PRPs) for this site including Thomas Samuels, an investor in the corporation. If necessary, the NYSDEC will investigate all PRPs for inclusion in its cost recovery effort.

COMMENT 22: Will BB&S supervise the clean-up and remediation at the site without NYSDEC oversight?

Response 22: No. If BB&S agrees to perform the remediation, environmental monitors or other qualified NYSDEC personnel will be assigned to the site during all critical remedial activities.

COMMENT 23: Will Thomas Samuels receive a bill for the investigation and remediation expenses at the BB&S site?

Response 23: If NYSDEC establishes that Mr. Samuels is a responsible party for the site, he would be charged with all or part of the "response costs" (all of the State's expenses for this site).

Water Quality Concerns

COMMENT 24: Will public water be provided to residents on Speonk-Riverhead Road?

Response 24: The remedial program for the BB&S Site does not call for providing public water. Based on testing of private wells in the area, there is no indication that site-related contaminants have affected off-site wells. The remedy selected for this site provides for intercepting and cleaning up the contaminant plume before it can impact nearby water supply wells. It is better to clean up the plume than to provide water, unless necessary to protect health, because the plume is a long-term threat to other private and community public water supplies in the area. The provision of individual private well treatment systems is included in this Record of Decision as a contingency plan, in the event a private water supply well is impacted.

COMMENT 25: How fast do groundwater and the plume move?

Response 25: Groundwater in the area moves about one foot per day. Generally, contaminant plumes move more slowly than groundwater due to the sorption/desorption of contaminant ions or molecules in the soil. During the past fifteen years, the plume at the BB&S Site has moved south in the direction of groundwater flow more than 1500 feet from the site (though chromium has not been detected in any private wells sampled by the SCDHS in this area). The plume movement may have slowed since the active discharges or leaks have been terminated.

COMMENT 26: What groundwater models were used?

Response 26: The MODFLOW and MODPATH models, developed by the United States Geological Survey (USGS) and used by several government agencies, were used to estimate the amount of water which must be pumped to contain the plume. A one-dimensional solute transport model was used to predict how long it may take the plume to reach private water supplies in its path. Details on these models and the assumptions used can be found in the August 1999 Feasibility Study Report.

COMMENT 27: For the groundwater recovery system, will existing wells be reused?

Response 27: Possibly, but if their depth and location are not optimal, they will be filled in and new wells installed.

COMMENT 28: The amounts of groundwater that you estimate must be pumped to contain the plume appear to be too low.

Response 28: The model results for the BB&S Site were based on limited aquifer data, so more work is needed during design to verify the amounts quoted in the PRAP.

COMMENT 29: Wells on Speonk-Riverhead Road and on Fifth Avenue have not been tested. Have all wells in the impacted area been tested for contamination? Should I be concerned?

Response 29: The SCDHS made numerous attempts to sample all the wells downgradient of the site, but a number of residences were not sampled because the occupants were not at home and did not

respond to notes left by SCDHS representatives. None of the wells sampled, including those closest to the site, have been found to be contaminated with site related chemicals.

COMMENT 30: Public water should not be viewed as an effective solution.

Response 30: Although considered by NYSDEC, provision of public water is not the proposed solution for this site. There are sites, however, where public water is an effective element of a remedial plan. This action must be balanced against the feasibility and benefit of cleaning up the aquifer, which is a better long-term solution, and of providing either temporary or permanent household treatment units.

COMMENT 31: The reinjection site for groundwater should be located so as to help contain the plume.

Response 31: This point is well taken. If too close to the pumping wells, a reinjection site can actually interfere with the "capture zone" of the pumping wells. Part of design efforts will be to model the impact of locating the reinjection site in various places and choose the best location.

COMMENT 32: Is there regular monitoring and testing of all residential wells in the impacted area?

Response 32: There is not currently regularly-scheduled monitoring of residential wells, but the SCDHS has performed several rounds of monitoring during the RI/FS. NYSDEC intends to increase the frequency of monitoring (see response to Comment 72).

COMMENT 33: How did the aquifer get so contaminated in such a short time?

Response 33: Effects from even a one-time spill can be catastrophic in terms of creating a big groundwater plume. At BB&S, surface spills of CCA occurred, and contaminants were carried off-site by rinse water and storm water, as in the woods on the west side of Speonk-Riverhead Road. However, it is more likely that the subsurface plume under and around the former wood treatment building was created by CCA that leaked directly to the groundwater table through the cracks or openings in the floor of the building.

COMMENT 34: Why hasn't the plume been washed away if groundwater moves as quickly as it does?

Response 34: The plume is partly under the buildings, where surface water cannot infiltrate and wash it away. Some CCA may be found in soil underneath the buildings, but above the water table, and is slowly making its way down to water. Whatever the cause, the "source area" of the plume appears to be taking a long time to dissipate.

Other Concerns

COMMENT 35: Were previous workers at BB&S trained or licensed to handle CCA?

Response 35: The head of the company was a licensed pesticide applicator, qualified to handle CCA. His certification covered the entire staff.

COMMENT 36: Does the Town of Southampton have a building inspector for the BB&S site? If so, what did the inspector do for this site?

Response 36: Readers are referred to the Town of Southampton for their policies and any action regarding the BB&S Site. Typically, the Town would refer an environmental concern to the SCDHS or the NYSDEC.

COMMENT 37: Could the BB&S owners have been transporting contaminated soil from BB&S to other sites they own such as the compost facility in Southampton?

Response 37: Over the past several years, during site inspections and field work, NYSDEC has not observed any evidence of the excavation or movement of soil from the BB&S lumberyard or surrounding land. During the actual site cleanup, the NYSDEC will have environmental monitors on-site to oversee critical activities such as the movement of soil. Under New York State law, transportation of hazardous materials requires the use of manifests to track delivery.

COMMENT 38: Is BB&S storing CCA wood legally? Does it have to be on a concrete pad?

Response 39: Regulations call for wood emerging from the pressure treatment chamber, still wet with CCA solution, to be placed on a specially-designed drip pad, often sealed concrete, with drains to catch any CCA runoff. This treatment no longer occurs at the site. Dried, CCA-treated wood, such as that now stockpiled and sold at the site, can be stored on bare ground.

COMMENT 40: Please hold future public meetings at the Speonk-Remsenburg School.

Response 40: In the future, staff will do their best to ensure that all public meetings will be scheduled at the Speonk-Remsenburg School. However, many schools have scheduling conflicts in the evenings so an alternative school, such as Eastport High School, may have to be used.

COMMENT 41: A NYSDEC representative was quoted at a previous BB&S public meeting as saying that Governor George Pataki is business-friendly and wouldn't want to put BB&S out of business. Is this true?

Response 41: Although this comment was made at a meeting in early 1996, there has never been a directive from Governor Pataki to NYSDEC to place a business' interest above that of protection of public health or the environment.

COMMENT 42: Why doesn't NYSDEC notify local officials of other cleanups which take place within the town? In the future, the NYSDEC needs to give the public proper notice regarding hazardous waste site cleanups such as BB&S, as well as oil spills and other environmental cleanups. In addition, the NYSDEC needs to provide adjacent property owners with information on the contamination at these sites.

Response 42: For cleanups requiring only a short period of time and a rapid response, such as an oil spill, NYSDEC does not typically perform the level of outreach, for example, as at the BB&S Site, which is under the "Superfund" or inactive hazardous waste site program. For the Superfund program, there is a more extensive effort to inform the public of progress on the cleanup. NYSDEC makes every effort to notify adjacent property owners of hazardous waste site cleanups. If people are unintentionally overlooked, we will correct and update our mailing lists.

COMMENT 43: The plume clean-up needs to be completed as soon as possible.

Response 43: The pumping wells to be installed as part of the pump-and-treat remedy will almost immediately contain the plume from migrating toward private wells. Even with the latest technology available, however, it will take a long time to remove chromium and other site contaminants from the aquifer to the point where all water, even in the plume area, meets quality standards. The pump-and-treat system, therefore, may have to run indefinitely to protect the water supply in the area.

COMMENT 44: By delaying effective action for over ten years, the NYSDEC allowed the clean-up at BB&S to get more expensive.

Response 44: NYSDEC has addressed this site pursuant to all applicable laws and regulations. As a direct consequence of the State's intervention in the mid-1980s, BB&S conducted an investigation of the site and installed a groundwater collection/ treatment system that, despite its problems, did result in some cleanup of the site. Once the PRPs refused to conduct further investigation to improve the remedy, the NYSDEC took over the remedial program. If the PRPs refuse to conduct the remedial design and construction, NYSDEC will use State Superfund money to complete the project.

COMMENT 45: In general, the NYSDEC has done a poor job of monitoring BB&S and other sites owned by Thomas Samuels.

Response 45: Like any government agency, the NYSDEC is guided by law and regulations in dealing with private citizens and businesses. Unless and until a violation of environmental laws is documented, the NYSDEC has no reason, nor authority to oversee a particular business's operation. If a business were in compliance with the law, NYSDEC would not ordinarily scrutinize its operations further.

COMMENT 46: In the early years of BB&S operation, there was no drip pad. CCA solution ran across Speonk-Riverhead Road in a "green river." Later, the Town of Southampton put in a culvert. There are still tanks on-site in the treatment building that are full of CCA.

Response 46: This information is consistent with Remedial Investigation results that showed high contamination on the west side of the road across from the drip pad. The remedy in this ROD includes the cleanup of the soil in that area. In general, decommissioning the former CCA treatment plant will be the responsibility of BB&S under NYSDEC oversight, but if CCA solution is found in the tanks, the liquid will be removed as part of this remedy. NYSDEC inspection in the fall of 1999 indicates there is little if any free liquid left in the tanks.

COMMENT 47: Who regulates the decommissioning of the CCA treatment plant at the BB&S site?

Response 47: NYSDEC's Division of Solid and Hazardous Materials, which regulates active hazardous waste treatment, storage or disposal facilites, would oversee decommissioning.

COMMENT 48: Can the dead trees located on Old Country Road be attributed to the contamination from the BB&S site?

Response 48: This is not likely given the distance of these trees from the site, and the probable dilution of the CCA before it would reach them via the intermittent tributary on the west side of Speonk-Riverhead Road.

COMMENT 49: Upon discovering the contamination at the BB&S site, did the NYSDEC force the plant to stop the treatment of lumber with CCA?

Response 49: No, because the BB&S Corporation offered the alternative of conducting a site investigation at their expense and implementing a cleanup.

COMMENT 50: What about CCA leaching from lumber at a storage yard in Southampton?

Response 50: Although studies indicate that arsenic may be present at elevated concentrations in soil adjacent to and beneath CCA-treated lumber, the studies have also found that arsenic does not migrate from the immediate vicinity of the lumber.

COMMENT 51: Does NYSDEC test surface waters to see if CCA is leaching from treated docks and wharfs?

Response 51: Leaching from treated wood in surface water would result in immeasurably small concentrations of chromium and arsenic, compared to other sources of contaminants.

COMMENT 52: By choosing a less costly cleanup and leaving behind more arsenic, isn't the State putting a dollar value on our future?

Response 52: The State has proposed a remedy that is protective of public health and the environment. To implement the Scenario A cleanup would not confer an appreciable amount of additional protection.

COMMENT 53: Ralph Schiano, South Fork Groundwater Task Force - "I agree with the Group for the South Fork that the groundwater portion of the remedy is strongly supported but that the soil remedy is inadequate. Only Scenario A is acceptable with an arsenic clean-up level of 7.5 ppm and a chromium clean-up level of 11 ppm. Scenario B doesn't eliminate the CCA exposure to workers, the public, and wildlife. If the Potential Responsible Party (PRP) will not address this problem, New York State should do it and sue the PRP for the costs."

Response 53: The remedy under Scenario B will not be inconsistent with the remedies selected at other arsenic- and chromium-contaminated sites across New York State for protection of human health. As suggested in comment 12 above, exposure of workers to existing contamination is not considered to be significant with respect to health effects. The proposed remediation will further reduce potential exposures of on-site workers. It will also clean up these contaminants to levels below the criteria recommended for biota. New York State has the means to perform the proposed remedial action even if the potentially responsible parties cannot or will not. In the event that the remediation of the Site is accomplished through the Superfund, the State will pursue the PRPs for cost recovery.

COMMENT 54: (From the South Fork Groundwater Task Force) "Groundwater contamination is very high and has migrated at least 1500 feet away from the site. Therefore, remediation should begin as soon as possible. For soil remediation, soils should either be removed or washed and put back on site; i.e., a separation technology is better than solidification. Vendors could try innovative technologies in portions of the site, but proven technologies should be used. Amortized over 30 years, the more aggressive remedy [Scenario A] is cost-effective."

Response 54: The soil washing or removal alternatives do result in separation and removal of the contaminants from the site, versus solidification/ stabilization and placement on site. However, as

evaluated in the Feasibility Study by a combination of several criteria, the soil washing and removal alternatives do not result in greater protection to health or the environment. Soil washing may be too difficult to implement, and soil removal would pose hazards to others during the transport of material offsite. The present worth (amortized cost) over 30 years of Scenario B is 58 percent of the present worth of Scenario A and Scenario B is protective of human health and the environment. Based on this and other evaluation criteria, Scenario B is the best overall alternative.

COMMENT 55: All environmental/ civic groups represented at the meeting endorse Scenario A for soil cleanup.

Response 55: The support of the community for this cleanup scenario is acknowledged. The State must select the remedy that is protective, cost-effective, and provides the best overall balance between the evaluation criteria, namely the following: protection of human health and the environment; compliance with applicable environmental laws, standards, criteria and guidance; short-term impacts and effectiveness; long-term effectiveness and permanence; reduction of toxicity, mobility and volume of hazardous waste; implementability; and cost.

COMMENT 56: There are over 900 people represented by the Hampton Bay Civic Association and the Rampasture Point Association. In addition, there are over 3000 families represented by the Group for the South Fork and over 400 people involved with the South Fork Groundwater Task Force. All these organizations support implementing Scenario A.

Response 56: See response to Comment 55.

COMMENT 57: Common sense dictates that as much arsenic as possible should be removed from the site and from the environment. This should include the extra 20-30 percent under Scenario A. Therefore, Scenario A should be implemented. The extra protection is well worth the cost to protect posterity. CCA causes cancer and birth defects as well as injuring plants and animals. As a result, we are lobbying the Town of Southampton to ban the use of treated wood in the Town.

Response 57: The additional removal of 20-30 percent of the contaminants would actually involve removing or treating about three times the volume of soil as for Scenario B. The extra arsenic removed under Scenario A would not result in a significant increase in protection to human health or biota. As suggested in the response to Comment 12 , present exposures of workers at the facility to existing contamination is not considered to be a significant public health concern. Scenario B will provide additional reduction in exposure to future users of the site and to biota at the site. The health effects noted under the response to Comments 7 and 8 are for exposures at considerably higher concentrations than those that may be associated with environmental contamination at BB&S.

WRITTEN COMMENTS RECEIVED DURING THE PRAP COMMENT PERIOD

Twelve letters were received, including comments from groups, individuals, and government agencies or officials. The groups included the following:

- Association of Southampton Neighborhoods
- Group for the South Fork
- South Fork Groundwater Task Force
- Speonk-Remsenburg Civic Association

Individuals included several nearby residents and other interested citizens. Government agencies and officials included the Suffolk County Department of Health Services (SCDHS) and New York State Assemblyman Fred W. Thiele, Jr. All letters are included in the Administrative Record for the BB&S Site (Appendix B). All commentors supported the PRAP remedy for groundwater (On and Off-Site Collection with Treatment by Chemical Precipitation). All expressed urgency that the remedy be implemented quickly. Most expressed opposition to the State's proposal of Scenario B for soil remediation, rather than Scenario A. Many included technical recommendations or requests for modifications to the remedy. These comments are summarized below, with NYSDEC's responses:

COMMENT 58: I urge the NYSDEC to immediately implement a remedial plan to clean-up the arsenic and chromium pollution at the BB&S Treated Lumber Site in Speonk. Specifically, I endorse the solidification remedy and the pump and treat remedies proposed by the NYSDEC, and urge that they be implemented immediately, and carried out in a timely manner.

Response 58: It is NYSDEC's intent to implement the remedy as soon as possible; see response to Comment 6.

COMMENT 59: The Group for the South Fork generally supports the NYSDEC in its efforts to remediate the longstanding soil and groundwater contamination at the BB&S Treated Lumber Site in Speonk, but we recommend amending the proposed remedy to include Soil Clean-up Scenario A instead of Scenario B.

Response 59: See responses to Comments 53 and 67.

COMMENT 60: (From the Group for the South Fork) Because of the urgent need for remediation, if the Potentially Responsible Party (PRP) does not assume responsibility for the remedial program, we strongly urge NYSDEC to pursue further action through the State Superfund Program. In this case, further action must include taking legal action against the PRP to recover all response costs incurred by New York State.

Response 60: See responses to Comments 53 and 69.

COMMENT 61: The Suffolk County Department of Health Services (SCDHS) concurs that the proposed remedy would be protective of human health. However, in order to minimize the potential for future direct exposures to treated soils, the SCDHS recommends that the remedial design investigate the alternative of burying the treated soils at least 6 feet below grade, with covenants on the property to prohibit the construction of basements.

Response 61: More soil cover over the treated soils will be considered, depending on where the disposal area will be located; it may be possible to place the treated soils entirely beneath a new groundwater treatment building and surrounding pavement. NYSDEC will negotiate the placement of appropriate deed restrictions on the property with the owner.

COMMENT 62: I suggest that the NYSDEC look into the option of providing all residents and businesses within the area with town/public drinking water. I feel this would be the most immediate remedy to the drinking water situation and is needed to ensure our safety.

Response 62: By the time design, easements and approvals were obtained, installing public water to area residents would take a similar amount of time to implement as the remedy in the PRAP. Many issues are involved in creating a public water district or extending an existing water district. It is

an equally protective, and more permanent, solution to contain and collect the plume. Done in a timely fashion, with monitoring, this remedy can be implemented in time to protect private well supplies. In addition, this remedy has been modified to include continued monitoring of private wells until the plume is controlled, and a contingency plan has been added to provide treatment of any private wells which might be impacted.

COMMENT 63: As an immediate aid, I think there was some mention of the installation of a cement breach wall at the most southerly point of the plume. I feel that installing such a wall to stop the progression of the plume while the site is being cleaned up, would offer further assurance to the concerned community.

Response 63: NYSDEC briefly mentioned an additional groundwater alternative, toward the end of the public meeting presentation, which is alluded to here. NYSDEC described a Permeable Reactive Barrier Wall, a technology which might be feasible to clean up the BB&S Site groundwater plume. This wall is not made of cement, but of a porous filtration material (such as found in home water filtration pitchers) that would allow the groundwater to flow through it, while it removed the contaminants. NYSDEC plans to evaluate this technology further, as it has many potential advantages compared to the proposed pump-and-treat remedy. All evaluation criteria would have to be considered, however, and the public would have to have the opportunity to comment on this change of remedy before it could be implemented. NYSDEC will notify the community of progress in evaluating this technology, and if it will be proposed in place of pump-and-treat with chemical precipitation.

COMMENT 64: I would recommend further testing for contaminants to the east of the site.

Response 64: Sampling during the Remedial Investigation indicated that groundwater is not significantly impacted east of the site, in part because groundwater flows toward the south. However, because of their proximity, the homes on Fifth Avenue nearest to the site will be monitored by means of direct testing of the homeowner well and/or installation of a sentinel well. SCDHS recently took samples at homes in this area; none had site-related contamination.

COMMENT 65: I ask that the NYSDEC move at the fastest possible pace to bring some remedy to this site.

Response 65: NYSDEC hopes to begin implementing the remedial action plan by the beginning of 2001 (one year from Record of Decision). The NYSDEC must negotiate with the responsible parties to take over clean-up activities. Once that has been completed, the remedy must be designed, which will include additional investigations. To protect private water supplies, the NYSDEC will expedite installation and sampling of sentinel monitoring wells in the year 2000, regardless of the progress of negotiations or design. See also response to Comment 6.

COMMENT 66: The monitoring of any future remedial action should not be left to the BB&S Treated Lumber Corporation.

Response 66: If BB&S chooses to complete the remedy for the site, NYSDEC will review and approve all elements of the design, and will oversee the construction, operation and maintenance of the remedial systems.

COMMENT 67: Scenario B leaves unacceptable residuals of arsenic; implement Scenario A. Scenario A is necessary not only to protect surface receptors, but groundwater.

Response 67: The New York State Department of Health has concurred that a soil remedy under Scenario B would be protective of human health. Comparison of residuals left under this scenario would also be protective of biota. Scenario A would go further to return the site to conditions similar to area background levels, or "pre-disposal conditions" as discussed in the PRAP, but would require removal or treatment of much more soil to obtain a minimal increase in protectiveness. It has also been demonstrated in the Remedial Investigation that surface and shallow soil contamination has not played a significant role in the contamination of groundwater, even in heavily contaminated zones such as the "tributary" west of the road. The residuals left under Scenario B will not pose a threat to groundwater.

COMMENT 68: Stabilization technology has been in use for less than twenty years and long-term problems have not been adequately studied. A technology which will remove the contaminants from the site, such as Off-Site Treatment and Disposal or Soil Washing should be selected. The increased cost of these alteratives, amortized over thirty years, is not too great an expense for a remedy that will be final.

Response 68: Solidification/ Stabilization (S/S) has been studied in many settings, such as for stabilizing nuclear waste, mine waste and for other metallic contaminants. Laboratory tests can and have simulated the long-term stresses associated with weathering. NYSDEC is confident that with proper binding agents, S/S can be an effective long term remedy for the soils. Since arsenic and chromium contamination cannot be destroyed, as an organic contaminant could, and cement is expected to be used as a binding agent, this treatment technology is considered to be a permanent remedy. Ongoing inspection and maintenance of site controls and a soil cover will help to ensure no future releases.

COMMENT 69: Aggressive cost recovery against the PRPs needs to begin, as soon as possible.

Response 69: NYSDEC is already in the process of documenting the responsibility of the PRPs for BB&S, and will continue its dialogue with them to obtain future cooperation or cost recovery.

COMMENT 70: NYSDEC has taken too long to address this site, and consequently the problem has grown worse.

Response 70: See response to Comment 44.

COMMENT 71: The off-site and near-boundary wells should begin pumping immediately to help contain the groundwater contamination plume.

Response 71: The pumping well located off-site has been destroyed, and those on-site may no longer be usable. Also, the new treatment system must be in place. The old reverse osmosis treatment system no longer functions; a new system (using chemical precipitation, as recommended in the PRAP) must be designed and built based on several wells pumping both on- and off-site groundwater to capture the plume. Plans will be developed for the pumping well network and groundwater treatment during the remedial design.

COMMENT 72: The residential wells downgradient of MW-14 will be impacted, if they have not been already. Please re-test all area wells immediately, and regularly.

Response 72: Wells will be resampled by NYSDEC or by the SCDHS in late 1999 or early 2000. NYSDEC will monitor sentinel wells and/or homeowner wells more frequently than previously, due to the movement of the plume, until the remedy is installed, and afterward to ensure it is effective.

COMMENT 73: The SCDHS does not test wells for more than minimal drinking water standards; it did not inform us of a hazardous site near our home.

Response 73: Homeowner wells in the path of groundwater flow from the BB&S Site have been tested for site-related contaminants, and the owners have been informed of the results and why their wells were being tested.

COMMENT 74: The Town of Southampton was not informed about this site by NYSDEC.

Response 74: NYSDEC has included Town officials on the mailing list for notices about the site since the Remedial Investigation began in late 1995.

COMMENT 75: Keep residents informed.

Response 75: NYSDEC will continue to mail notices to residents in the area of concern. Notices will inform the public of the progress of remedial design and construction, and availability of any new sample results or informational documents.

COMMENT 76: Do not implement the "No Action" alternative.

Response 76: As discussed in the PRAP, the No Action Alternative (only monitoring the site, not remediating groundwater or soil) is not protective of human health or the environment. Remedial action is necessary at this site, and a remedy consisting of *ex situ* solidification/ stabilization of contaminated soil, plus groundwater extraction and treatment, has been selected.

COMMENT 77: Threats to groundwater exist not only from BB&S but other sites in the area.

Response 77: Regional groundwater resources can be threatened over time by cumulative activities, past and present. NYSDEC and the SCDHS are working through several programs to identify and address groundwater contaminant sources on eastern Long Island. If you have an concern about a particular site or activity, write to NYSDEC or call 800-TIPP DEC (800-847-7332).

COMMENT 78: The consensus of the community is for Soil Cleanup Scenario A..

Response 78: See response to Comment 55.

COMMENT 79: Minimize airborne dusts during soil remediation.

Response 79: This is a concern NYSDEC and DOH are well aware of, and have published procedures to address fugitive dust during construction through air monitoring and mitigation measures such as spraying water or applying dust suppression agents.

COMMENT 80: Keep vertical as well as horizontal migration in mind in design of the monitoring network.

Response 80: This recommendation is well taken. Some groundwater data obtained during the Remedial Investigation indicate the presence of contamination at depths up to 100 feet below ground surface. Remedial design will include an evaluation of where wells should be screened to monitor contamination at all affected depths.

COMMENT 81: Chemical precipitation is the conventional and most reliable technology for metal remediations and should be the primary technology used at this site.

Response 81: The known effectiveness of chemical precipitation for treating the BB&S Site contaminants was one factor in choosing this technology as part of the proposed remedy. This technology will be used for groundwater; see response to Comment 54 concerning soil treatment.

COMMENT 82: Alternative technologies could be tested in limited areas of the site if vendors were to substantially discount their fees.

Response 82: BB&S may be a place to test alternative soil cleanup technologies, but this may be difficult due to access problems and the remediation schedule. Priority will be given to minimizing the time on-site.

COMMENT 83: Strategically locate the site of treated groundwater reinjection to help contain the plume.

Response 83: See response to Comment 31.

COMMENT 84: Cost must not be the determining factor when health and welfare are at risk.

Response 84: NYSDEC considers protection of human health and the environment to be one of the threshold criteria for evaluating any remedial alternative. No alternative is considered in the PRAP for other criteria, including cost, unless it passes the criteria of health and environmental protectiveness and complying with standards, criteria and guidance. The No Action alternative is the exception, since by law it must be considered, even if not protective, to show the effects of not remediating the site and that some remedial action is needed. Cost is only a criterion when comparing equally protective alternatives. Details of this analysis are presented in the PRAP and in the Feasibility Study Report.

APPENDIX B

Administrative Record

ADMINISTRATIVE RECORD

BB&S Treated Lumber Corporation
Town of Southampton, Suffolk County
Site No. 152123

1. Letter from Fred W. Thiele, Jr., Member of NYS Assembly, to Kathleen McCue, New York State Department of Environmental Conservation (NYSDEC), October 12, 1999. Comments on the Proposed Remedial Action Plan (PRAP) for the BB&S Treated Lumber Corporation Site.

2. Letter from Frances Genovese, Association of Southampton Neighborhoods, to Kathleen McCue, NYSDEC, October 6, 1999. Comments on the BB&S Site PRAP.

3. Letter from Mr. and Mrs. Robert Caccavalla to Kathleen McCue, NYSDEC, October 6, 1999. Comments on the BB&S Site PRAP.

4. Letter from Julie McConnell to Kathleen McCue, NYSDEC, October 6, 1999. Comments on the BB&S Site PRAP.

5. Letter from Ralph Schiano, South Fork Groundwater Task Force, to Kathleen McCue, NYSDEC, October 5, 1999. Comments on the BB&S Site PRAP.

6. Letter from Ramon D. Thorne to Kathleen McCue, NYSDEC, September 27, 1999. Comments on the BB&S Site PRAP.

7. Letter from James Pendleton to Kathleen McCue, NYSDEC, September 27, 1999. Comments on the BB&S Site PRAP.

8. Letter from Peggy Thorne to Kathleen McCue, NYSDEC, September 27, 1999. Comments on the BB&S Site PRAP.

9. Letter from Marybeth Greene to Kathleen McCue, NYSDEC, September 22, 1999. Comments on the BB&S Site PRAP.

10. Letter from Heide Leofken to Kathleen McCue, NYSDEC, September 22, 1999. Comments on the BB&S Site PRAP.

11. Letter from Steven Biasetti, Group for the South Fork, to Kathleen McCue, NYSDEC, September 21, 1999. Comments on the BB&S Site PRAP.

12. Letter from Sy Robbins, Suffolk County Department of Health Services (SCDHS), to Kathleen McCue, NYSDEC, September 1999. Comments on the BB&S Site PRAP.

13. NYSDEC, September 1999. Fact Sheet/ Public Meeting Invitation: Remedial Action Proposed for the BB&S Treated Lumber Corporation Site.

14. NYSDEC, August 1999. Proposed Remedial Action Plan for the BB&S Treated Lumber Corporation Site.

15. NYSDEC, August 6, 1999. Mass Loading/ Removal of Arsenic and Chromium, BB&S Treated Lumber, Site No. 152123 (table and chart).

16. Malcolm Pirnie, Inc., for NYSDEC, August 1999. Engineering Feasibility Study, BB&S Treated Lumber Site. Volume includes results of private well sampling by the SCDHS in December 1998-January 1999.

17. Malcolm Pirnie, Inc., for NYSDEC, June 1998. Remedial Investigation Report, BB&S Treated Lumber Site.

18. Malcolm Pirnie, Inc., for NYSDEC, November 1997. Remedial Investigation/ Feasibility Study Work Plan Amendment.

19. NYSDEC, November 1996. BB&S Treated Lumber Corporation Inactive Hazardous Waste Site: Fact Sheet No. 2.

20. SCDHS, May 1996. Private well sampling results in the vicinity of the BB&S Site.

21. Malcolm Pirnie, Inc., for NYSDEC, February 1996. Remedial Investigation/ Feasibility Study Work Plan. Volume also includes Citizen Participation Plan and Health and Safety Plan.

22. NYSDEC, January 1996. BB&S Treated Lumber Corporation Inactive Hazardous Waste Site: Fact Sheet No. 1.

23. Letter from Robert L. Marino, NYSDEC, to BB&S Creosol Lumber; Thomas Samuels; Kenneth Thommen, Town of Southampton Clerk; and Edward P. Romain, County of Suffolk; March 31, 1993. Designation of BB&S Site as a "Class 2" inactive hazardous waste site.

24. Groundwater Technology, Inc., for BB&S Treated Lumber Corporation, November 4, 1988. Project Update: July - September 1988.

25. Groundwater Technology, Inc., for BB&S Treated Lumber Corporation, March 1986. Subsurface Investigation Project Update.

26. Letter from Martin Trent, SCDHS, to BB&S, May 17, 1995. Advisory of chromium and arsenic in a supply well at the BB&S Site.